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Original Article

Qualitative Analysis of Obstacles Affecting the Development of Agricultural Tourism in the Rural Areas (Case Study: Zarivar Wetland in Marivan County)

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Abstract
Purpose- The main purpose of this research is to identify and analyze the performance of the two dimensions of tourism namely supply and demand to achieve agricultural tourism development in the rural areas of Zarivar Wetland in Marivan County as a capable destination in the field of agricultural tourism.
Design/methodology/approach- This qualitative research has delved into documentary sources to collect data in the theoretical phase, and conducted purposeful interviews with the Delphi group (decision-making Delphi) in the field phase to identify effective obstacles. The Delphi group included 26 individuals of development authorities, tourism activists, local tourism entrepreneurs and informants as well as experts of rural development and tourism in the region. It was conducted applying grounded theory technique.
Findings- The findings showed that the effective factors on the development of agricultural tourism in the region are in the form of two levels related to the development of mass tourism and specialized in the field of agricultural tourism. In the public sector related to the development of mass tourism, weakness in tourism infrastructures and services, weakness in marketing, weakness in training, protecting and diversifying the attractions, weakness in planning, monitoring and performance of governmental institutions, inappropriate business space and weakness in the needs and performance of tourists including 68 variables were identified as the main factors. In the specialized field and related to the development of agricultural tourism, , funding and financial flow, specialized advertising and highlighting, empiricism and creativity orientation, planning and management and traditional agriculture in the form of 34 variables were identified as the most important and effective obstacles of its development and expansion.
Practical solutions- Changing the view of regional development and tourism managers to a systemic vision in tourism management and then changing the procedure in emphasizing the development of mass tourism in Zarivar Wetland and emphasizing the expansion of tourism with agricultural as well as paying attention to the villages on the edge of the wetland to present in the tourism market of the region are vitally important.
Original/value- In today's era, according to the changes in the tourism market in attracting tourists with special motivations and taking the distance of the tourism market from mass tourism, the development of agricultural tourism can play as an important advantage in the field of rural tourism of Zarivar wetland and attract more tourists and increase their longevity.
Key words: Agricultural tourism, tourism system, Rural areas, Zarivar wetland.

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1. Introduction

The advent of modern tourism geography in the form of expressions such as; Post-Fordism and Post-Industrialism and transition from mass tourism to specialized and niche tourism, has changed the form and content of tourism activities and tourism is done with the motivation of recognizing differences, creating pristine experiences and achieving special motivations. This trend has resulted in the formation of products, flexible markets and diverse and new branches of tourism (Ziaie, 2009; Medina -Muñoz, et al., 2016; Zheng, 2016; Zotic et al. 2014). Meanwhile, in the previous two decades, the demand for outdoor recreation and contact with more traditional styles of life among health-conscious vacationers and tourists seeking alternatives to sun-drenched destinations and mass tourism has increased. Agricultural tourism is a response to this demand in remote areas and rural areas particularly in the vicinity of big cities (Dubois et al, 2017). Nowadays, agricultural tourism is one of the most key and fastest types of rural tourism, and it has a growing importance in the development of agriculture in villages. Therefore, the development of this type of tourism has been taken into consideration by policy makers and rural development planners as a leading sector in revolutionizing and diversifying the rural economy (Shpresim & Giovanni, 2022; Nur Utomo et al, 2023). In fact, in the changing environment of rural areas and traditional agriculture, it is essential to find new tools and alternatives for livelihood as innovation is a key tool to gain profit and sustainability in the competitive market as well as take advantage of the opportunities resulting from the change. Small-scale agritourism businesses have the capacity to provide necessary motivation in order to transform local resources to tourism products and services in local communities (Norozei & Fathi, 2018; Khairabadi et al., 2020).

In the meantime, it should be noted that the desirable expansion of various types of tourism industry, including the newest ones, namely event tourism requires several contexts since tourism is a broad and multi-sector activity (Kazemi, 2011; Anuar et al, 2012). Tourism is a complex system consisting of numerous sub-systems such as transportation, accommodation and hotels, food and beverage, recreation and cultural activities, financial and banking, advertising and public services, etc. interacting with one another. Also, extensive changes in consumers' demand for agricultural products and the effectiveness of both dimensions namely supply and demand of tourism system are other sub-systems of tourism (Kazemi, 2011; Postma, et al., 2013; Ielenicz & Simoni, 2013). Hence, it can be deduced that tourism as a system consisting of numerous elements and sub-systems can fulfill its role to realize the development and the destinations can have sustainable demands when all the elements of this system are placed in a coordinated set with each other in terms of quantity and quality. Based on the theory of systems, if there is a defect and deficiency in one of the elements, the performance of the whole system is disrupted (Kazemi, 2011). Accordingly, if the success, dynamics and desired impact of tourism are sought, all the dimensions, sub-systems and actors of this broad scene should be evaluated. This matter leads to comprehensive understanding of obstacles and problems and then practical planning based on the reality to solve them.

The study area of the research is Zarivar wetland tourism axis in Marivan County in Kurdistan province. This area has suitable potentials for the tourism development due to its location and topographical conditions, a combination of mountainous, plain environment and the beautiful Zarivar wetland; along with the history of ancient civilization and indigenous cultural ceremonies that have turned into tourism events at the regional level. At the regional level, the existence of innovative youth in the field of agricultural tourism, agricultural lands with medicinal plants, small-scale greenhouses and innovative products in the region (gardens of grafted crops and raspberries) along with fertile lands and extensive agriculture based on the county's brand products in the fields of strawberries and grapes, which are also nationally recognized; has been able to provide the development of specialized agricultural tourism along with mass tourism. The border opportunity of the region, the arrival of tourists from Kurdistan of Iraq and the proximity to the international rural tourism region of Oraman Takht could be effective opportunities in attracting tourists to the region if it moves towards the specialized tourism. Therefore,

tourism on Zarivar wetland should take distance from current situation with short-term stay of tourists and merely relying on commercial tourism at the level of Marivan city markets and visiting Zarivar lake; and move towards diversifying tourism attractions and capabilities so that it can meet the tourists' needs and tastes and consequently move towards increasing tourists' satisfaction and consequently their loyalty and returning. Furthermore, there is a need for agricultural activities in the region as the dominant activity to achieve more diversification and value addition and to get out of the stagnation and hidden unemployment of human resource productivity. Therefore, the research questions are as follows:

1. What are the most important obstacles affecting the development of agricultural tourism in the rural areas of Zarivar Wetland?
2. What is the status of the value chain of tourism activities in the region to achieve development of agricultural tourism?

2. Research Theoretical Literature

Agricultural tourism refers to visiting a farm for educational or recreational purposes. Agricultural tourism is related to family farms and depends on the activities of farmers who seek to diversify their income and create resilience against economic instabilities in the field of agricultural markets and climate change (Whitt, 2019). Also, the development of agricultural tourism means diversifying tourist attractions in tourist destinations and increasing the resilience of these destinations against the risks of tourism markets. Agricultural tourism increases farmers' income by providing recreational, educational services and selling agricultural products in farm markets (Valdivia & Barbieri, 2014). To develop agricultural tourism, depending on the cultural and natural features of a region, diversity in product and service offerings should be addressed (Hernández-Calzada et al., 2019; Benur, 2015; Brune et al., 2023). In agricultural tourism, visitors not only get a tourist trip, but also perceive a new feeling, positive feeling and behavior from the environment; particularly the agricultural society and farmer culture (Nur Utomo et al., 2023). Four main elements are needed to occur agricultural tourism; 1) The farmer who receives the guests and provides the required services; 2) The farm that must have a special feature and charm; 3) The village that has a favorable level of access to services and far from the city and very rich in terms of biodiversity and agriculture and 4) the tourists (Galluzzo, 2022; Baipai, 2021).

Agricultural tourism enables the local economy to develop and grow, provides employment opportunities for all ages and presents a quick response to the issue of unemployment. Agricultural tourism can reduce urbanization as well as migration on account of ameliorating the quality of life and work in the rural areas. Agricultural tourism contributes the rural community to achieve the two main goals of creating jobs and space for family members to diversify agriculture and consequently generating income. In fact, agricultural tourism encourages local businesses to emerge and develop because it creates demand for local products, which later leads to regional marketing. It also includes any effort to create added value and avoid intermediary costs. Basically, agricultural tourism allows the rural community to earn more income from the diversity of its economic activities. In addition, agricultural tourism strengthens social relations among villagers, because it requires cooperation among them to manage and promote the diversity of local heritage and cultural landscape. Another advantage is that agricultural tourism can reduce the issue of gender differences in the economic and social arena as it gives equal opportunities to men and women in tourism activities. Agricultural tourism increases tourists' respect for the native culture and traditions of the local community and value them. In addition, agricultural tourism benefits from the local natural environment. The main advantage is that it changes the approach of the rural people to the environment, makes them more sensitive to their environment and care more about it and consequently makes them more protective of the environment. Due to the benefits of the natural environment for the local people, the protection of the natural environment is considered significant for the local people, and they are encouraged to invest their funds in the protection of the natural environment and even promote the use of environmentally friendly technology. The development of agricultural tourism not only facilitates the protection and renovation of cultural and historical places, as well as other heritages, but also creates a positive atmosphere in the preservation of customs and traditions (Nur Utomo et al., 2023; Aguila & Ragot, 2014; Arroyo et al.,

2013; Ciervo, 2013). The relationship among rural tourism, agricultural tourism and rural development is depicted in figure 1.

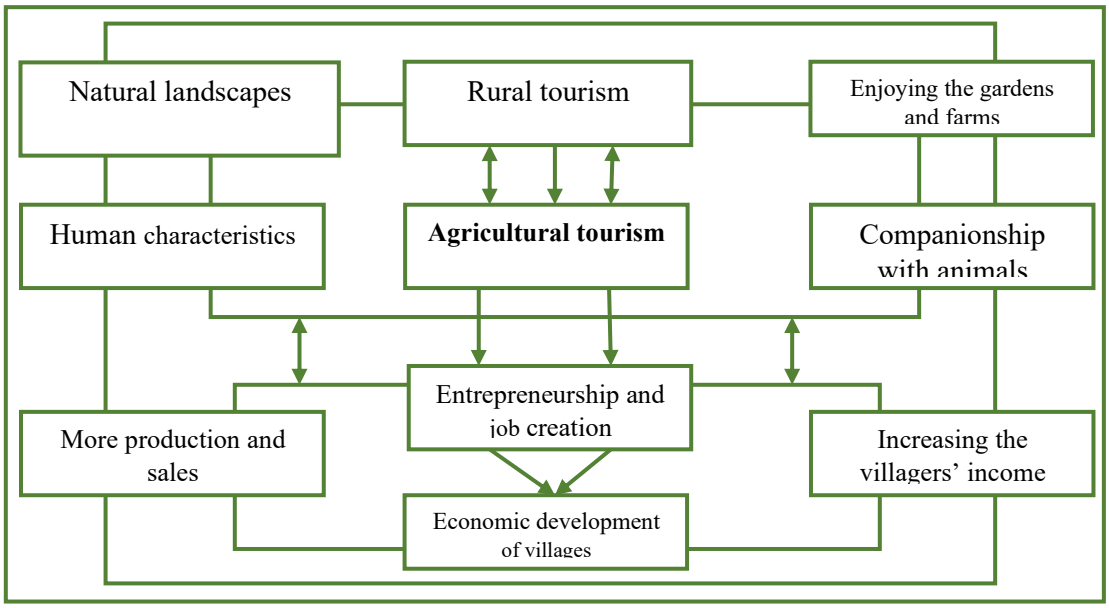

Figure 1. The relationship among rural tourism, agricultural tourism and rural development

Experts consider the development of agricultural tourism as an action in line with the creativity and innovation in the field of tourism development (Nur Utomo et al., 2023). Accordingly, activists in the field of agricultural tourism should consider continuous innovation and creativity as important cores of activity development as it increases motivation and reduces price sensitivity for tourists (Sumanapala, 2017). The tourists' mind and their needs are constantly changing and demanding new products, which should be taken into consideration by those involved in the field of agricultural tourism in relation to demand measurement and changes in tourists' tastes (Gómez et al., 2016). The development of agricultural tourism as a type of rural tourism is accompanied by its own complexities, and the factors affecting the performance of its components and elements should be identified with a comprehensive view in order to make appropriate policies for its development (Shpresim & Giovanni, 2022; Nur Utomo et al., 2023).

In sum (Figure 2), tourism is a system and managing the development of its various types would not be possible without a systemic approach (Anuar et al, 2012). The two main dimensions of the tourism system that shape the cycle, movement and development of tourism in a place are supply and demand: the demand includes all tourists applying for tourism from various national and international sources to the desired destination, which constitute the tourism target markets of that place and the supply includes attractions, accommodation units, transportation, services, tourism facilities, etc. of a place/region which attract tourists from the above-mentioned levels (Ghasemi Khozani, 2012). The tourism situation of the region should be investigated and evaluated based on a systemic approach to expand any type of tourism. Admittedly, destinations in the field of tourism will be leading and will reach sustainability in the field of tourism if all the sub-systems of its tourism system are in favorable conditions in terms of quantity and quality. Analyzing the state of tourism development in terms of supply and demand makes it possible to create a comprehensive view and identify strengths and weaknesses. This view makes the services, facilities and other indicators of the supply dimension match with the tourists' needs and willing (Heung et al., 2010). On the one hand, the sustainability and effectiveness of agricultural

tourism and the development and effective performance of the tourism system are mutually and bilaterally related; in such a way that the development of tourism (optimal performance of the tourism system) as the main driving force in attracting and sustaining demand and resources to the specialized field of agricultural tourism. On the other hand, the development of agricultural tourism as a specialized part in the field of tourism also leads to attracting the demand of tourists with special needs, creating pristine experience and diversifying the tourist attractions of the destinations and consequently creating many benefits. This matter is the basis for the stability and performance effectiveness of the elements and actors of the tourism system.

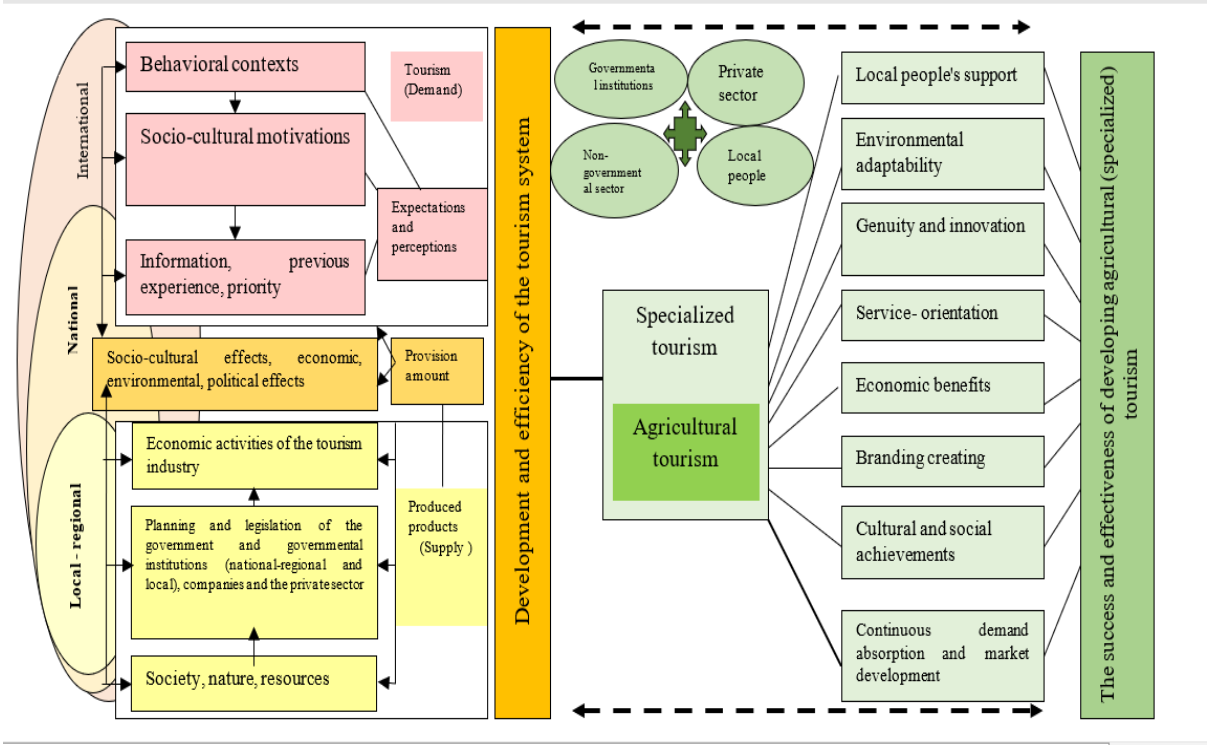

Figure 2. The theoretical framework of the research

3. Research Methodology

3.1. Geographical Scope of the Research

Zarivar freshwater wetland is located in 130 kilometers northwest of Sanandaj, the capital of Kurdistan province, and 3 kilometers west of Marivan city, and is one of the tourist attractions of Kurdistan province (Figure 3). Marivan city is also considered as one of the important tourist destinations of Kurdistan province due to its border and purchase attraction. Zarivar wetland tourism axis is considered as the most important rural tourism pole of Marivan County and the second rural tourism pole of Kurdistan province, after Oraman in Sarvabad County which has been registered in the world.

8 villages (Seyf-e Sofla, Kani Sefid, Yengigeh, Tafi Valley, Kollan, Kani Sanan, Ney and Pir Safa) with a population of 6491 are located within the boundaries of this wetland. This tourism axis is highly welcomed by domestic and even foreign tourists. In this rural tourism axis, there are 2 eco-residences; 2 garden restaurants, 1 coffee shop, 5 juice sales units along with retail shops to provide welfare services and catering to tourists (Figure 4).

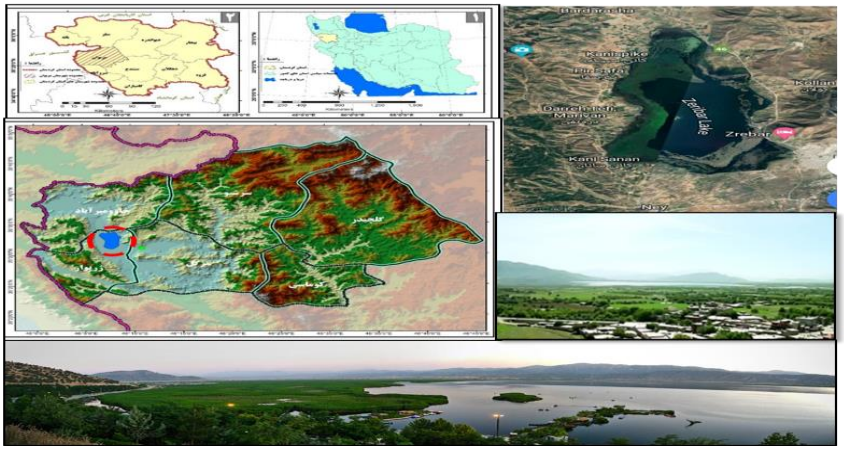

Figure 3. The geographic location of Zarivar wetland tourism axis

3.2. Methodology

The present applied research is descriptive-analytical in terms of method and qualitative due to the need to comprehensively understand and analyze the current status from all stakeholders' view point and to reach a clear status of the unknown current status. It has been carried out with the grounded theory technique. In this regard, it was necessary to form a Delphi group in order to identify key factors. In order to identify these people, a purposeful non-random sampling method was applied based on the snowball method. Theoretical saturation was achieved by interviewing with 26 people from the groups of development managers of the county (8 people with management experience over 4 years, natives, with relevant education in the field of rural development in the county governorship, Jihad Agriculture, Cultural heritage, Handicraft and Tourism Organization, Rural Cooperation, Omid Entrepreneurship Fund, Natural Resources, Environment, Housing Foundation), local rural informants (3 people with university education, good reputation among local people and participation in environmental and development NGO associations in the county, introduced by the district administration and sample village managers), economic investors in the region (2 people with macro projects in the field of tourism and 2 people in the field of small production), scientific experts in the field of development, especially the rural development of the province and Marivan county (6 people involved in compiling the rural development plans of Kurdistan province, especially the economic development and job creation and expert academic researchers with numerous researches in the field of rural development of the province, identified through the management and planning organization of the province and the Kurdistan Research Institute Kurdistan University), sample village managers of the county (3 people selected by the county governor) and tour organizers in the region (2 people). In the following, after analyzing the interviews and acquiring key points with open coding technique, extracted variables formed a questionnaire with a Likert scale (from 1-completely disagree to 5-completely agree). 50 members of the mentioned groups were selected (determined by snowball method and in a purposeful manner with the mentioned criteria). The analysis of the interviews was conducted with the grounded theory technique.

Figure 4. Some capabilities related to the agricultural sector and its complementary capabilities in the study area

4. Research Findings

After three stages of coding in the grounded theory technique; the main factors affecting the development of agricultural tourism in the rural areas of Zarivar wetland axis and their transformation into villages with an agricultural tourism brand were identified. As can be seen, obstacles and problems identified in different components and elements of the village tourism system and in two sections related to the general problems of tourism development (Table 1) and special problems and challenges of specialized agricultural tourism development in villages (Table 2). The scale of obstacles and problems identified from levels beyond the village includes at the level of Zarivar wetland, Marivan County and even the provincial tourism management of Kurdistan province. This is a reflection of the systemic nature of tourism activities and the effectiveness of various components and elements of this open system in the broad tourism scene from various factors (Figure 5). In the general section; both supply and demand dimensions and in the specialized section; identified obstacles and problems related to the supply dimension is effective in not being able to attract tourists.

The lack of desirability of the main elements of the supply dimension of the tourism system, from the provincial scale to the village level, encounters demand with numerous challenges and weaknesses. The problems identified in the demand dimension are also a reflection of the obstacles and problems in the supply dimension. This is despite the fact that in the important and outstanding destinations of the world's tourism field, the tourist destination acts in a demand-oriented manner, and today's modern tourism in its competitive market revolves around the demand dimension, which firstly requires the desirability of the supply dimension elements of the tourism destination. Furthermore, along with managers and planners as the main authorities of the rural development of the region, the local people are also effective by creating obstacles and challenges in the role of tourism as a diversifying factor in the village economy of the region.

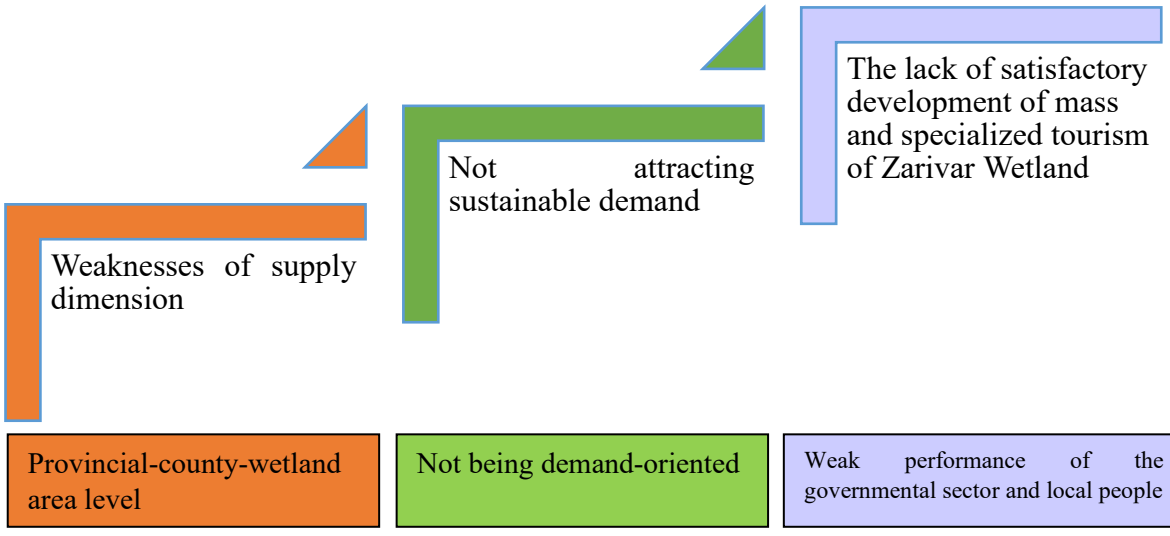

Figure 5. Obstacles and problems facing the development of agricultural tourism on the Zarivar wetland axis based on the systemic approach of tourism management

principle of sustainability (protection while exploiting) of this wetland. However, the field reality (Increasing water pollution, increasing waste, inflowing of sewage from villages, increasing constructions around it, entering over the carrying capacity of tourists, increasing dried land around the wetland, etc.) show that there is no Zarivar Wetland is facing myriad problems in the environmental field, which has threatened the survival of this wetland due to the unbridled growth of unorganized tourism. This is in spite of the fact that the development of agricultural tourism through this wetland could be possible only when it is maintained in accordance with the important

indicator or obstacle of the lack of context for the private sector to enter into investment.

The business space and the social environment are influenced by one another. In order to start new businesses that are here dependent on agricultural tourism in the villages, in addition to providing physical infrastructure, financial resources and favorable management; the social and cultural environment of the local people should support the start-up of new businesses of agricultural tourism. When, similar to the situation of the studied villages, the lack of local people's risk-taking to start new businesses (dependent on geotourism), the culture of determinism and villagers dependence, the fanatical and limiting beliefs of the women's presence in tourism activities, the villagers' willingness to attend in false and intermediary jobs due to being a border region, dominate the social environment of the villages, such an environment admittedly cannot support an entrepreneur or self-employed person by entering the field of agricultural tourism businesses. Such an inappropriate social and value environment to move towards the establishment of start-up businesses of agricultural tourism should be structurally and radically sought in the poverty indicator among rural households. Economic poverty is also along with social and cultural poverty, and this false sequence, like in the studied area, will have no result other than creating an inappropriate social environment and "anti" self-employment, competition and economic diversity values in the rural environment.

determination to manage and snort environmental sustainability of this wetland, and the continuation of this situation will mean a decrease in the level of attractiveness and ultimately the destruction of the wetland.

The villages on the border of the wetland have a satisfactory condition in terms of basic infrastructure (access to water, electricity, gas, and internet). Nonetheless, the desirability of the communication ways inside and outside the village is not in a satisfactory condition for expansion. A point to consider is the lack of providing infrastructure and facilities based on the specialized capabilities of the region. In the current state of development, the emphasis is on the specialized provision of infrastructures so that such existing capacities and capabilities can be beneficial and add value. There are no specialized complexes and centers in the field of tourism in the region, and specialized services are limited to a few ecotourism residences, which are far from real eco-oriented ecotourism residences.

Creating a security condition means threatening the most basic need of investment and micro and macro investors, that is, psychological security from investment return and investment security. Admittedly, in such a condition, even though Zarivar wetland and its surrounding villages have a great potential to expand agricultural tourism, private investors will not be able to take risks and invest. This matter, along with the lack of providing legal supports, has led to form an

Table 1. Problems of the general field of tourism development in the rural areas of the Zarivar wetland axis in the direction of the development of agricultural tourism in the region

Central components (dimensions)	Components	Concepts
Weaknesses of the supply dimension	Weakness in tourism infrastructures and services	Inappropriate initial spaces for tourists to enter the village and lack of appropriate elements for an important rural tourism destination, lack of accommodation and welfare facilities, especially during peak tourism times, not preparing high quality green and public spaces as a rest area for tourists, not completing the Hadi plan, the problem of supplying sustainable water in the residential part of the village
	Weakness in marketing	lack of using various advertising tools for marketing (especially digital marketing), lack of marketing and advertising in tourist destinations over the county and in the wetland area and Marivan city, lack of native tourist guides in the village and attraction of tourist tours, lack of a tourist guidance and leading center in Zarivar Wetland area, lack of segmenting tourism market, lack of specific approach and strategy in tourism marketing of the county

Central components (dimensions)	Components	Concepts
	Weakness in training	Not training officials in various departments and institutions related to tourism development about the performance, weakness in training and lack of capacity building and capacity development of the local community to support tourism (needs, behavior and necessity of hospitality to tourists), not supporting non-governmental associations in the field of tourism development in the village and Zarivar wetland area, lack or low level of skills of specialized and trained personnel in the field of tourism development in the county, wetland area and especially Yangijeh village, lack of the villagers' request and need feeling about the development of tourism from the authorities
	Lack of protecting and diversifying the attractions	Emphasizing the potential of nature tourism in Zarivar wetland area and not moving towards specialized tourism and specializing the attractions, changing the landscape of villages towards urbanization, the extreme land exchange and the extreme development of the second homes of city dwellers in the villages of the wetland area, lack of supporting for the most important tourist attractions of Marivan County and the villages of the Zarivar wetland area, that is Zarivar wetland and its destruction
	Weakness in planning, monitoring and performance of governmental institutions	Very weak market of tourism in Kurdestan province and Marivan County compared to the competitive tourism market of the country, lack of financial resources for the development of tourism in the county and villages around the Zarivar wetland area, absence of a long-term development program to identify the role and place of tourism in the development of the county and to identify target areas and villages and their capacities, not using local experts aware of the field conditions and the local community in making decisions related to tourism development especially in the villages of the wetland area, lack of organized efforts to attract investors to the field of tourism development in Zarivar wetland area, ignoring the value chain of tourism at county and even the provincial level, confusion in the field of management and exploitation of Zarivar wetland due to the multiple decision-making institutions, the lack of tourism development that supports the poor and the benefit of urban residents from the benefits of tourism in the villages of the wetland area, severe bureaucracy in granting facilities or obtaining permits in the field of tourism development especially in the wetland field due to environmental and security concerns.
	Inappropriate business space	Valorization of smuggling and profitability, tending to fake jobs, security vision in border management of the region, lack of small savings and investment funds, the poverty of the villagers and the weakness in providing (private) financial resources, the local people's lack of belief in receiving facilities with interest in order to invest in the field of tourism, existence of some bigoted opinions regarding the arrival and permanence of tourists, lack of economic competition in the region especially in the field of tourism among the villages around Zarivar wetland, low risk-taking of local people in starting new businesses especially in the field of tourism, the failure of previous businesses and investments at the village level and its inappropriate reflection, lack of supporting young entrepreneurs in villages and lack of motivation among these people and other young people.
Weaknesses of the demand dimension	weakness in the needs and performance of tourists	Short-term stay, low spending, cultural and social differences and contradictions, creating environmental contamination, the non-entry of many tourists from the Kurdistan Region of Iraq to the region and their

Central components (dimensions)	Components	Concepts
		departure from the region and Kurdistan province, unfamiliarity of some authorities with the region.

The development of agricultural tourism in the villages of the region will be achieved only when it attracts demand for this potential and market, and this will be possible through proper marketing. In terms of training status, what is important is the accumulation of indicators of the lack of officials' training in various departments and institutions related to the management and development of the villages in the region. This indicates that continuous training as one of the basic principles of sustainable development of tourism, on which agricultural tourism is also based, is necessary for the development of this type of tourism in its destinations. Many administrative, social and cultural obstacles can be removed by continuous training of involved and local people. This training also contributes to awareness and capacity building of the local people in line with the adoption and development of agricultural tourism.

Weaknesses related to marketing were emphasized as one of the most important known weaknesses among all the conducted interviews. In fact, the emphasis of many interviewees is on the lack of penetrating the tourism market of the studied villages in the field of agricultural tourism due to the weaknesses related to marketing. These weaknesses are completely felt in the field of tourism of the studied villages, from advertising to experience creation and visualization. The lack of a specific marketing strategy has caused the authorities of tourism development in the villages to try to create a favorable and positive image and not to implement appropriate measures. The lack of a specific marketing strategy has not led to the separation and segmentation of the tourism market of the villages in different fields with potential, especially the field of agricultural tourism in Zarivar wetland and the attraction of its appropriate demand. In other words, the development of mass tourism is still emphasized. The lack of a specific marketing strategy has caused the role of marketing intermediaries (tour guides, travel agencies, etc.) to be ignored. It also has made demand attraction and market expansion from the destination to be neglected. Not having a specific marketing strategy has caused tourists not to experience and create

In the specialized field related to agricultural tourism (Table 2), the identified obstacles and problems revels that there is still no serious determination in the development of agricultural tourism. In fact, the move towards the specialization of the tourism market has not been considered and the emphasis is still on the development of mass tourism. In addition, not turning to experience-based tourism and creativity, which are the modern principles of tourism development in important tourism destinations and the scientific foundations of tourism development, have made the existing attractions not be attractive for tourists or not be able to act as a factor in the return of tourists to the village. As before, tourist does not just have tendency to take a simple photo and tends to experience life and the feel new and memorable experiences. The attractions of the rural area of Zarivar wetland especially in the field of agricultural tourism have a lot of traction and the ability to attract tourists due to their cultural, social, and environmental history. Nevertheless, they have not been able to create a unique experience for tourists due to the lack of tourists' involvement and the general flow of tourism in the village and the lack of creativity in presenting the product. Another point of not turning to the development of specialized tourism based on agricultural attractions of the region is the lack of prevalence of activities related to this type of tourism in the economic field and the development of profit-oriented agriculture in the region. Even though innovative garden products and new gardens, as well as vast areas of the county's brand products with a name and mark in the field of agriculture can be observed at region level, the productivity of these farms is limited for a certain number of capitalist urban dwellers, and they do not see the need to expand and attract tourists to these farms. In other words, in the field of agricultural tourism, local people are not absorbed and do not have awareness. Indeed, if the development of agricultural tourism could be beneficial for the local people, the reception of the local people will be much more than the existing unfavorable situation.

marketing is an important and modern part of destination marketing in order to increase competitiveness. Nevertheless, the lack of experts in the field of tourism marketing, in the studied villages and Marivan County both in the administrative and executive field as well as the lack of proper and integrated management of tourism activities has caused marketing and market expansion to be neglected.

memories, and consequently the tourists' satisfaction and their loyalty and return will be severely challenged. In addition, the weakness of the specific marketing strategy has led to the ignorance of branding and the definition of a special brand, which is considered as a basic principle in marketing in all growing tourism destinations. Nowadays, marketing has entered the digital field and become specialized, and digital

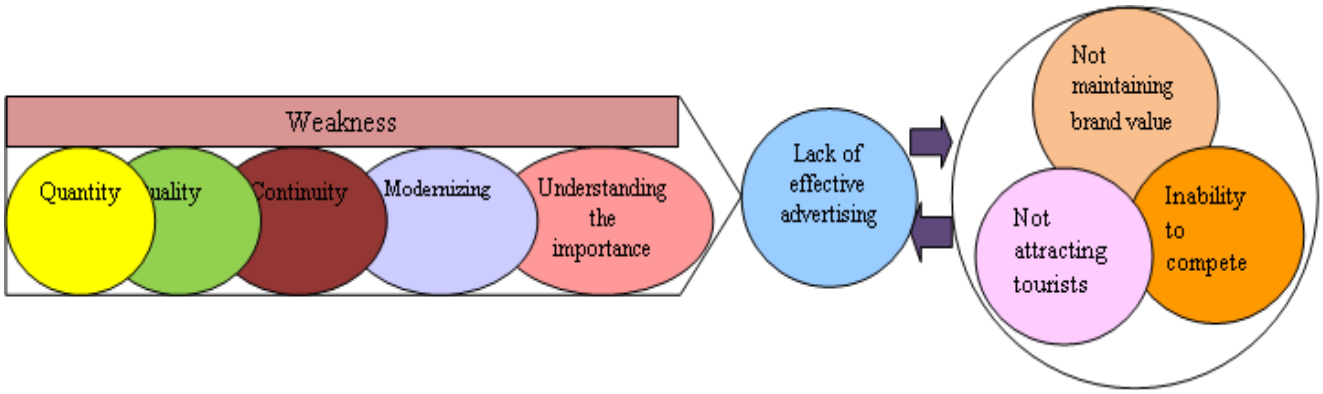

Figure 6. The shortcomings of the advertising field at the level of the studied villages and its effects

Traditional agriculture and its problems are one of the significant and influential factors on the lack of satisfactory development of agricultural tourism in the region. When the farmers in the region do not feel the need for transformation and do not pay attention to the opportunities and potential of regional tourism in the direction of diversifying the incomes from their farms and are not willing to make the least investment and effort, or when agricultural lands and gardens are so small and fragmented that they threaten the economic efficiency of any investment; the development of agricultural tourism as an innovative activity will encounter with difficulty. A point to consider is selling virgin land that is prone to the development of agricultural tourism in the region to urban

dwellers and the conversion of these lands into second homes for urban tourists has destroyed the virgin opportunities for the development of agricultural tourism. In addition, the lack of cooperation and joint cooperation among farmers, especially farmers with major and virgin farms of the region's brand products, which is related to the weakness of networking in the region; will be a major weakness in the development of agricultural tourism at the regional level. The existence of these cooperatives and networking among the leading and major exploiters could become a flow in the direction of the development of agricultural tourism by bringing the small exploiters together and increasing the sense of trust among them.

Table 2. Special obstacles and problems for the development of agricultural tourism in Zarivar Wetland tourism axis

Central components (dimensions)	Components	Concepts
Weaknesses of the supply dimension	Funding and financial flow	Inability to attract investors and special budget for the development of agricultural tourism, unprofitability of agricultural tourism (economically) for local people.
	Specialized advertising and highlighting	The weakness of documentation of festivals held in the field of agriculture in the region, lack of movement towards branding innovative garden products produced in the region by rural entrepreneurs, not taking advantage of all kinds of advertising tools and continuous promotions at the right time and place to highlight the potential of the agricultural tourism sector in the region, not holding specialized low-cost tours in the agricultural tourism sector or supplementing it with the tour program introduced to tourism area of Oraman or Marivan city.
	Empiricism and creativity orientation	Neglecting the proper space creation of the village, based on a village with a tourism brand especially agricultural tourism, lack of theme-making (scenery) and marking for agricultural tourism attractions and special farms in the region, lack of making memories and involving tourists in the course of agricultural activities, not preparing souvenirs related to agricultural products and the indigenous and cultural environment of the village by the village's and farmers' handicraft workshop, lack of a specific place for holding events related to agriculture, not prevalence of the events held in the social and tourism field of the region (isolation and remaining unknown), lack of movement towards festivals in the field of agricultural tourism activities, neglecting agricultural activities in ecotourism residences as a tourist activity and attraction to involve and attract tourists, lack of accommodations in special farms in the region.
	Planning and management	Emphasizing the development of mass tourism and not moving towards creativity-based and specialized tourism in the field of tourism management of the county and Kurdistan province, lack of definition of agricultural tourism as a specialized and profitable tourism market at the level of Marivan county and Kurdistan province despite numerous capacities and the definition as the mission of the county in the province's land development document and tourism development document in the national arena, neglecting the nurture of a professional and trained staff in the field of agricultural tourism, lack of specific planning and strategy in the development of rural tourism in the region by highlighting the role of agricultural tourism, lack of an organizational and operational structure designed to hold events in the region, lack of demand-oriented evaluations (needs assessment and demand assessment), not conducting studies in the field of defining and identifying areas and products that can be converted into an agricultural tourism event, not having the design of a tourism package that can be presented to tourists during their arrival in the region with an emphasis on agricultural tourism products (from accommodation to departure).
	Traditional agriculture	Small and fragmented lands, the low literacy of agricultural exploiters in the region, not penetrating technological marks in the production and sale of products, not forming tourism cooperatives especially among small farmers in the field of agricultural tourism development, not turning local people to create small workshops for agricultural products and tourists' involvement in this process, the sale of virgin rural lands in the wetland area to urban capitalists and the unbridled growth of the land exchange, the lack of local and weekly direct markets for the sale of agricultural products.

of this product. This quantitative and qualitative chain coordination is not observed in a systematic set at the level of the studied villages. As depicted in the following figures (6, 7 and 8), there are many missing loops in the value chain of the studied area, which are not addressed here due to identifying the obstacles in the previous section. Admittedly, there is no vision of integrated and chain management of

Investigating the tourism value chain of studied villages in line with agricultural tourism development: The tourism product value chain is a complex chain with numerous elements and subsystems, whose coordination in terms of quantity and quality in a systematic set will guarantee the development of tourism in the destinations and complete the value creation chain

villages of this chain from the first loop namely supply and support loops to the last loop related to the creation of experiences and measures related to the tourists' post-trip in order to create a sense of commitment and loyalty, many weaknesses and missing hoops have been formed.

tourism in the studied destinations. At the village level, the main view is based on attractions and at most, improving the level of welfare and accommodation services. However, forgetting other loops threatens the favorability of these mentioned loops. At the level of the studied

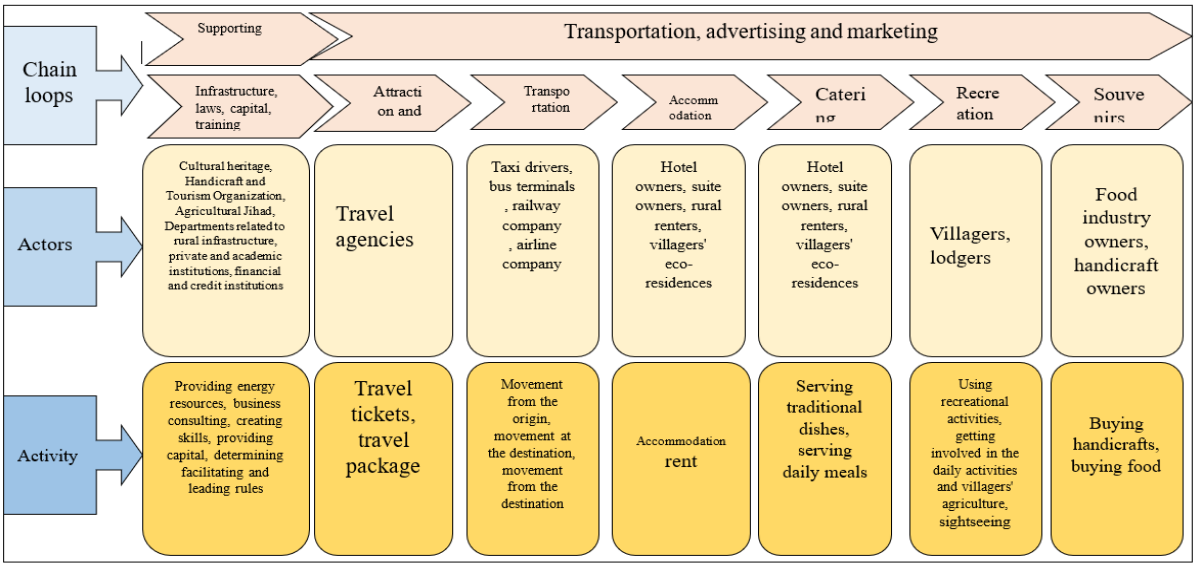

Figure 6- The value chain of the development of tourism activities

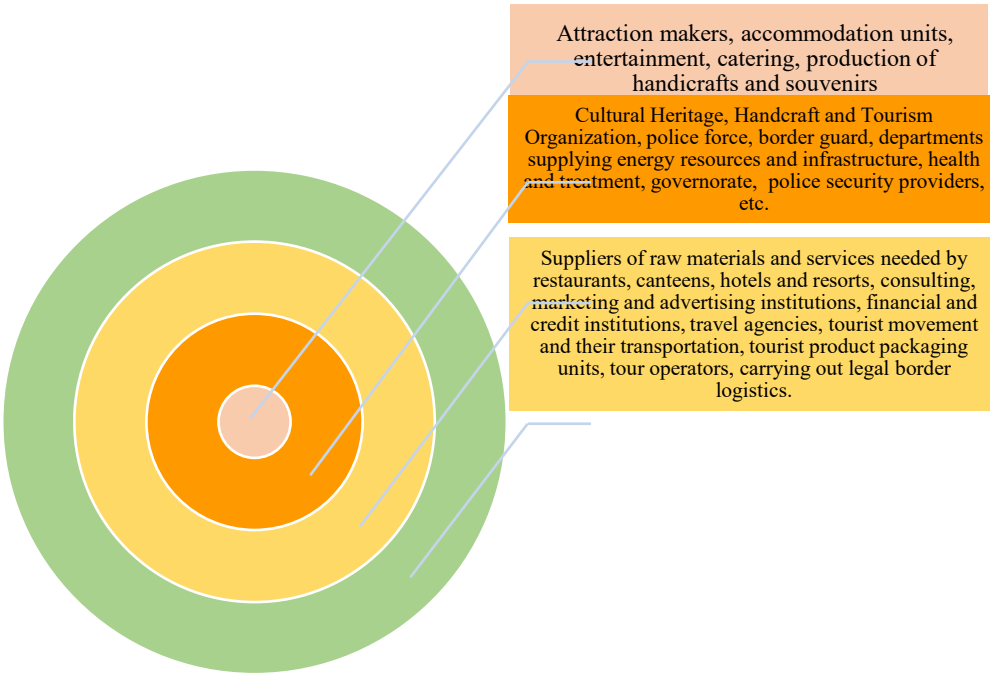

Figure 7. Actors in the main development loops of the rural tourism business cluster in the villages of the Zarivar wetland axis

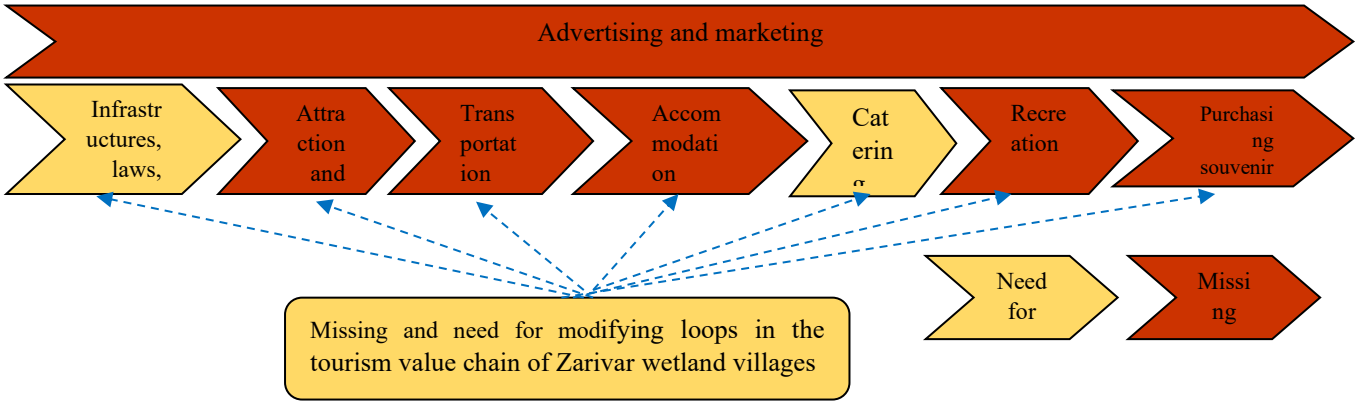

Figure 8- Missing and need for modifying loops in the tourism value chain of Zarivar wetland villages
Source: Research findings, 2023

Supply and support loop: In this loop, the main elements and players are governmental development institutions and organizations, then the private sector, and finally, non-governmental organizations. As discussed in the previous section, there are manifold problems from the planning situation to providing required infrastructure at the village level. There is no coordination between the private and public sector and then the entry of non-governmental organizations as the most important supporting institutions for tourism development at the village level. Development organizations in a county as a tourism destination at Kurdistan province level as a province with a tourism brand do not have a correct definition and an effective view on the development of rural tourism. Private sector is not supported. The investment risk is high in the region. The management vision in this border region is threat oriented and a waste of capital. The accommodation and welfare infrastructures needed at the village level in order to set up businesses related to tourism and provide services to tourists are very weak. The development of tourism is based on a centralized elite-oriented model without the involvement of local people and etc.

Attraction and distribution loop: In this loop, considered as the missing loop, the entry of travel tours to the village level is not in an organized way and through the travel agencies of the county or other regions. There are no tourism guides at the village level to attract tourist tours. Suitable packages are not considered to attract tourist tours.

Transportation loop: One of the most important loops in the tourism value chain of destinations is the transportation loop, because standard transportation can be the basis for inducing a sense of pleasure and relaxation to tourists. At the level of the region, this loop faces many weaknesses. As mentioned, the communication road to Marivan County is known as death roads. The communication roads to the villages will only bring fatigue and stress to the tourists due to congestion and the passage of cargo trucks in Kolan village and inappropriate and non-standard conditions in Kani Sanan village. There are no air and rail connections to the region. Transportation of tourists, which is not organizedly monitored in the county, is carried out with low quality.

Accommodation, catering and recreation loops: The condition of accommodation, catering and recreational activities at village level is very poor. All these three loops are considered as missing loops in the tourism value chain of the region. One of the main reasons for the lack of spending by tourists at the village level and the short stay time is the lack of these loops. The perception of tourism at the level of villages is merely being close to Zarivar wetland with spectacular nature, without accommodation, welfare, catering and recreation facilities or with very basic and weak facilities. Although in terms of accommodation, the proximity of the villages to Marivan city provides access to all kinds of accommodations, and this can be considered as an advantage for their tourism development, it worth noting that a pristine experience and sense of place is of paramount importance in the development of tourism and Geotourism for tourists. Accordingly, there is a need to create related facilities particularly in the specialized field of geotourism, at the village level.

In this loop, proximity to Marivan city, where is considered as a top destination in the development and tourism management of the county led related investments not to be carried out at the village level.

The loop of purchasing souvenirs and creating experiences; the end of the journey: A loop that its lack severely damages the development of mass tourism and specialized tourism with emphasis on agricultural tourism and the economic benefit of the studied villages on the edge of the Zarivar wetland. Creating experiences is the missing loop in the sustainable development of tourism and agricultural tourism in the studied villages of the wetland. According to the theoretical literature about creating experiences and its significance and impact on the development of tourism destinations; it is vitally important to consider creating memorable and different memories for tourists entering the studied villages. Zarivar wetland, the pristine natural environment around it and overlooking the villages, unique ethnic and cultural traditions and ceremonies with a long history, local foods, special clothes, garden and agricultural lands with county brand products in the province and the country (grapes, strawberries, raspberries) and etc. are all capabilities that can be used to bring tourists from passive and a mere visit to active and immersion in the village environment. If tourists get the experience of getting involved and participating in the village environment, they will definitely be more loyal, return again and will be the advertisers for the tourism of these villages. Such situation is not observed in the current status and tourists simply pass by the villages or make small purchases. Moving towards experiential tourism, which is a completely appropriate direction in the sustainable tourism development, can guarantee economic growth, preserve Zarivar wetland and its surrounding natural environment, and the cultural and human values of the villages, and create pleasure for tourists, the principles of which form the core of agricultural tourism development.

5. Discussion and conclusion

The findings related to the first question of the research, in line with Fotoohi et al., (2021), Baipai et al., (2021), Aghapour Sabaghi & Akbarnejad (2018) revealed that the obstacles affecting the development of agricultural tourism are in two levels namely mass tourism and specialized in the field of agricultural tourism as a specialized part of the diverse market of tourism activities. These obstacles and problems remind the adaptation of a systematic and planned management approach for the development of tourism in destinations, particularly in more specialized fields such as agricultural tourism. In the public sector related to the development of mass tourism, weakness in tourism infrastructures and services, weakness in marketing, weakness in training, protecting and diversifying the attractions, weakness in planning, monitoring and performance of governmental institutions, inappropriate business space and weakness in the needs and performance of tourists including 68 variables were identified as the main factors.

It is noteworthy that the border villages, such as the studied villages, are somehow marginalized in the center-periphery model and the centralized model (from national to regional level) in the distribution and enjoyment of development benefits. In these border villages, due to the many weaknesses of the economic and social structures, it is governmental institutions and their management and planning situation that should; first of all, create the environment for economic activity and utilization of potentials. The environment which not only has infrastructural, managerial and financial weaknesses, but also it is not in a satisfactory situation in terms of social and supporting values needed to move towards starting and supporting new tourism businesses. This situation is rooted in the villagers' poverty as economic poverty also leads to cultural and social poverty and creates a psychological and mental environment whose main features can be found in dependence, lack of risk-taking, contentment with the status quo, lack of need for transformation and persistence. On the other hand, due to the lack of monitoring the changes in the tourism market, the development authorities of the region are still focusing on Marivan city and the expansion of mass tourism, which has taken on a chaotic aspect in the current situation. This has caused agricultural tourism to be ignored as a special type of tourism in the region, the studied rural areas cannot compete with Marivan city in attracting tourists or complement it, and Zarivar Wetland is also exposed to many environmental threats. The problems of the general field of tourism development in the region were identified in both the supply and demand

dimensions. Considering the dependence of the demand dimension conditions, which are related to the tourists' needs, motivations and their level of satisfaction, it can be deduced that the numerous deficiencies and obstacles identified in the various elements of tourism supply dimension in the region have led to the creation of problems in the area of demand, such as tourists' unfamiliarity with the region and the length of their stay and their low cost.

In the specialized field and related to the development of agricultural tourism, funding and financial flow, specialized advertising and highlighting, empiricism and creativity orientation, planning and management and traditional agriculture in the form of 34 variables were identified as the most important special effective factors in the direction of its development and expansion. In order to develop agricultural tourism in the region, it is necessary to distance from the traditional agriculture of the region, which prevents any transformation and reconstruction. Admittedly, agricultural tourism needs professional principles in the field of tourism development, which is in conflict with the structural weaknesses in the field of agriculture in the region, especially in the field of cultivating innovative products and making empiricism in agricultural farms. Zarivar wetland tourism axis has virgin lands and special ability to develop event-oriented tourism. However, neither advertising nor special marketing has been conducted in a specialized way so far and tourists entering the wetland area also leave the farms and agricultural gardens without creating a special experience.

The findings related to the second research question showed that due to the lack of systematic vision and comprehensive management of tourism activities at the regional level, tourism activities could not be shaped in the form of a connected chain of the required loops. The main emphasis on the attraction of Zarivar wetland or the attraction-oriented development of tourism at the regional level has caused other needed loops for the flow of tourism activities to be ignored or considered less important. In the region's tourism chain, the loops of attraction and distribution, transportation, accommodation, recreation and creating experiences, along with advertising and marketing are the missing loops and infrastructures, laws, capital, training and catering are identified as the loops that need to be modified.

The lack of the empiricism loop causes the specialized tourism of the region not to be developed in the form of agricultural tourism and encounters little welcoming as the specialized tourists are seeking for pristine and unrepeatable experiences that create a sense of freshness and pleasure for them.

Finally, according to the findings, the following solutions are suggested in line with the development of agricultural tourism in the region:

At first, the development of agricultural tourism in villages of Zarivar Wetland axis should be seen in the form of rural tourism development in Zarivar Wetland axis and then, tourism development in Marivan city and event-oriented tourism in Kurdistan province. In this regard, considering the identification of the weakness of management and planning in both dimensions, as well as the obstacles identified in the form of this component as well as the systemic nature of tourism activities and the existence of multiple actors in its broad scene necessitates the need for integrated management for synergy, effectiveness, coordination and unified policy making.

Changing the view of development and regional tourism managers first to a systemic view in tourism management is of paramount importance. Then, changing the procedure of emphasizing the development of mass tourism in Zarivar wetland towards focusing on the expansion of tourism with agricultural and other special tourism motivations (sports, rural, adventure tourism, etc.) in Marivan city should be taken into consideration. Finally, attention to the villages on the edge of wetland is very necessary for these villages in order to be present in the tourism market of the region.

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Original Article

تحلیل کیفی موانع موثر بر توسعه گردشگری کشاورزی در نواحی روستایی محور تالاب زریوار شهرستان مریوان

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چکیده مبسوط

۱. مقدمه

امروزه گردشگری کشاورزی جزء کلیدی‌ترین و پرسرعت‌ترین اقسام گردشگری روستایی است و اهمیت فزاینده و رو به رشدی در توسعه کشاورزی در روستاها داشته و از این رو است که توسعه این قسم از گردشگری به عنوان بخشی پیش‌رو در تحول بخشی و تنوع بخشی به اقتصاد روستایی مورد توجه سیاستگذاران و برنامه‌ریزان توسعه روستایی قرار گرفته‌است.

منطقه مورد مطالعه پژوهش، محور گردشگری تالاب زریوار شهرستان مریوان در استان کردستان می‌باشد، منطقه‌ای که با توجه به موقعیت استقرار و شرایط توپوگرافی آن، همراه با سابقه تمدنی کهن و مراسم‌های بومی فرهنگی؛ زمینه‌های بسیار مناسبی را جهت توسعه گردشگری دارا می‌باشد. در این میان، در سطح منطقه، وجود جوانان نوآور در عرصه گردشگری و کشاورزی و ایجاد زمین‌های زراعی با دارا بودن گیاهان دارویی، گلخانه‌های کوچک مقیاس و محصولات نوآور در منطقه، همراه با زمین‌های حاصلخیز و گسترده کشاورزی، توانسته‌است زمینه‌های توسعه گردشگری کشاورزی تخصص‌محور را در کنار گردشگری توده فرآهم آورد. فرصت مرزی بودن منطقه و ورود گردشگران نیز از اقلیم کردستان عراق و همجواری با منطقه بین المللی گردشگری روستایی محور اورامان تخت، از فرصت های موثر در راستای جذب گردشگران منطقه در صورت حرکت به سمت تخصص‌محوری گردشگری خواهند بود. لذا گردشگری محور تالاب زریوار، بایستی از وضعیت کنونی که با اقامت کوتاه‌مدت گردشگران و صرفا تکیه بر گردشگری تجاری سطح بازارهای شهر مریوان و بازدید از دریاچه زریوار، متکی است؛ فاصله گرفته و به سمت تنوع بخشی به جاذبه‌ها و توان‌های گردشگری حرکت نماید.

۲. مبانی نظری تحقیق

گردشگری کشاورزی به بازدید از مزرعه به منظور آموزش یا تفریح اشاره دارد. گردشگری کشاورزی وابسته به مزارع کار خانوادگی است و وابسته به فعالیت کشاورزانی است که به دنبال تنوع بخشیدن به درآمد خود و ایجاد تاب‌آوری در برابر بی‌ثباتی‌های اقتصادی در حوزه بازارهای کشاورزی و تغییرات آب‌وهوایی هستند. همچنین، توسعه گردشگری کشاورزی به معنی تنوع بخشی به جاذبه‌های گردشگری در مقاصد گردشگری و افزایش تاب‌آوری برای این مقاصد در مقابل ریسک‌های بازارهای گردشگری است. گردشگری کشاورزی با ارائه خدمات تفریحی، آموزشی و فروش محصولات کشاورزی در بازارهای مزرعه‌ای، موجب افزایش درآمد کشاورزان می گردد.

صاحبنظران توسعه، گردشگری کشاورزی را اقدامی در راستای خلاقیت محوری و نوآوری در عرصه توسعه گردشگری می‌دانند. بر این اساس؛ فعالین عرصه گردشگری کشاورزی، نوآوری و خلاقیت مستمر را به عنوان هسته‌های مهم توسعه فعالیت درنظرداشته باشند چرا که موجب افزایش انگیزه و کاهش حساسیت بر روی قیمت برای گردشگران می‌گردد..

۳. روش تحقیق

پژوهش کاربردی حاضر به لحاظ روش، توصیفی – تحلیلی و به واسطه نیاز به شناخت و تحلیل جامع وضع موجود از دیدگاه تمامی ذی‌نفعان و رسیدن به وضعیتی شفاف از وضعیت ناشناخته موجود، دارای رویکردی کیفی است که با روش تئوری بنیادی، انجام پذیرفته است. برای این کار نیاز به تشکیل گروه دلفی بود. به منظور شناسایی این افراد از روش نمونه‌گیری غیرتصادفی به شیوه هدفمند مبتنی بر تکنیک گلوله‌برفی، بهره گرفته شد. در این راستا تا حصول به اشباع نظری با ۲۶ نفر از افرادی از گروه‌های مدیران توسعه‌ای شهرستان (۸ نفر)، آگاهان محلی روستایی (۳ نفر)، سرمایه‌گذاران اقتصادی در منطقه (۴ نفر)، متخصصان علمی عرصه توسعه به ویژه توسعه روستایی استان و شهرستان مریوان (۶ نفر)، دهیاران نمونه شهرستان (۳ نفر) و برگزارکنندگان تورهای گردشگری در منطقه(۲ نفر)، مصاحبه‌ها انجام گرفت. در ادامه پس از تجزیه و تحلیل مصاحبه‌ها و

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احصاء نکات کلیدی، متغیرهای استخراجی در قالب پرسشنامه‌ای در اختیار ۵۰ نفر از اعضای گروه‌های نام برده شده قرار گرفت. در نهایت، تجزیه و تحلیل مصاحبه‌ها با تکنیک تئوری بنیادی انجام گرفت.

۴. یافته‌های تحقیق

پس از طی سه مرحله کدگذاری در تکنیک تئوری بنیادی؛ عوامل اصلی اثرگذار بر توسعه گردشگری کشاورزی در نواحی روستایی محور تالاب زریوار و تبدیل آنها به روستاهایی با برند گردشگری کشاورزی؛ شناسایی گردید. موانع و مشکلات شناسایی شده در دو بخش مرتبط با مشکلات عمومی توسعه گردشگردی با در برگیرنده ۶۸ متغیر مرتبط با توسعه گردشگری توده، ضعف در زیرساخت‌ها و خدمات گردشگری، ضعف در بازاریابی، ضعف در آموزش، نبود حفاظت و تنوع بخشی به جاذبه‌ها، ضعف در برنامه‌ریزی، نظارت و عملکرد نهادهای دولتی، فضای نامناسب کسب و کار و نارسایی‌های مرتبط با نیازها و عملکرد گردشگران در به عنوان عوامل اصلی شناسایی شدند و در بخش تخصصی، چالش‌های ویژه توسعه گردشگری تخصصی حوزه کشاورزی در روستاها و در ارتباط با توسعه گردشگری کشاورزی نیز؛ تأمین و جریان مالی، تبلیغات تخصصی و برجسته‌سازی، تجربه‌گرایی و خلاقیت محوری، برنامه‌ریزی و مدیریت و کشاورزی سنتی در قالب ۳۴ متغیر به عنوان مهم‌ترین موانع ویژه موثر در راستای توسعه و گسترش آن شناسایی گردیدند. همچنین؛ مقیاس موانع و مشکلات شناسایی شده از سطوح فراتر از روستا در سطح حوزه تالاب زریوار، شهرستان مریوان و حتی مدیریت استانی گردشگری استان کردستان را دربر می‌گیرد.

۵. بحث و نتیجه‌گیری

نتایج نشان داد که موانع موثر بر توسعه گردشگری کشاورزی در منطقه در قالب دو سطح مرتبط با توسعه گردشگری توده و به صورت تخصصی در حوزه گردشگری کشاورزی وجود دارد. در بخش عمومی مرتبط با توسعه گردشگری توده، ضعف در زیرساخت‌ها و خدمات گردشگری، ضعف در بازاریابی، ضعف در آموزش، عدم حفاظت و تنوع بخشی به جاذبه‌ها، ضعف در برنامه‌ریزی، نظارت و عملکرد نهادهای دولتی، فضای نامناسب کسب و کار و نارسایی‌های مرتبط با نیازها و عملکرد گردشگران به عنوان عوامل اصلی شناسایی شدند.

در حوزه تخصصی و در ارتباط با توسعه گردشگری کشاورزی؛ تامین و جریان مالی، تبلیغات تخصصی و برجسته‌سازی، تجربه‌گرایی و خلاقیت محوری، برنامه‌ریزی و مدیریت و کشاورزی سنتی به عنوان مهمترین عوامل ویژه موثر در راستای توسعه و گسترش آن شناسایی شدند. دیگر نتایج نشان داد که بواسطه فقدان دید و نحوه مدیریت سیستمی و جامع فعالیت‌های گردشگری در سطح منطقه، فعالیت‌های گردشگری؛ نتوانسته در قالب یک زنجیره بهم پیوسته از حلقه‌های مورد نیاز، شکل گیرد. تاکید اصلی بر جاذبه تالاب زریوار و در واقع، جاذبه محور نمودن توسعه گردشگری در سطح منطقه موجب گردیده تا سایر حلقه‌های مورد نیاز در راستای به جریان افتادن فعالیت‌های گردشگری، نادیده گرفته شده و یا کم اهمیت تلقی گردد.

کلید واژه‌ها: گردشگری کشاورزی، سیستم گردشگری، نواحی روستایی محور تالاب زریوار.

تشکر و قدردانی

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Original Article

Determinants of Entrepreneurial Orientation of Rural Women Who Are Members of Microcredit Funds, Case Study: Western Iran

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Abstract

Purpose- Existing literature shows that women, especially rural women, play a prominent role in the development of small and medium-sized businesses; however, few studies have explored factors affecting the perceptions and entrepreneurial tendencies of rural women in developing countries, especially in Iran. The present study was conducted to investigate the determinants of entrepreneurial tendencies of rural women, who are members of microcredit funds, in western Iran (Kermanshah province).

Design/methodology/approach- This is an applied study of a correlational-descriptive nature with a quantitative approach that uses a survey method for data collection. The study population consists of all female members of microcredit funds in Kermanshah city (n = 626 people). Using Bartlett et al.'s table, 201 people were chosen as the research sample using a stratified random sampling method. They were selected by proportional assignment. The main data collection instrument was a questionnaire whose validity and reliability were confirmed using content validity, convergent validity, combined reliability and Cronbach's alpha. Data analysis was conducted using SPSS and Smart PLS software.

Findings- According to the results, the latent variables of social capital, recognition of opportunities and entrepreneurial skills had a positive and significant effect on the entrepreneurial tendency of rural women who are members of the microcredit fund; however, the positive and significant effect of entrepreneurial education on the entrepreneurial tendency of rural women was not confirmed. In addition, the findings showed that social capital has a positive and significant effect on entrepreneurial tendency through opportunity recognition.

Originality/value- The findings of this research have theoretical and practical implications for the development of entrepreneurship among rural women. That is while enriching literature on the subject, it helps policy makers focus on communication and social interactions, strengthen entrepreneurial skills and introduce entrepreneurial opportunities to develop entrepreneurship among rural women.

Keyword: Entrepreneurial orientation, Entrepreneurial skill, Social capital, Business development.

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1. Introduction

Women play an important role in promoting employment and improving the economic status of society. Therefore, recognizing their identity and independence and paving the way for their active participation in various economic and social affairs (Shiri et al., 2022; Alinejad et al., 2022), especially entrepreneurial activities, is a key factor in bolstering this driving force of economic and social cycles (Mozumdar et al., 2022; Alinejad et al., 2022; Varkianipor et al., 2019). However, as studies have shown, women are more vulnerable to poverty and gender discrimination due to their restricted capabilities and limited oppurtuities (Ghanbari, 2014). In light of these limitations, they have fewer opportunities for growth and development in entrepreneurship. Statistics on women' economic activities in the world indicates that women account for 25-35% of total economic activities in the world. In the case of Iran, this figure is 13.4%, which is far less than the average economic activity of women in the world. In addition, in terms of gender equality, Iran score is 0.587 (figures close to 1 denotes a smaller gender gap), ranking 139 among 144 countries in the world (Rahmati, et al., 2019). Therefore, preparing the ground for self-awareness and improved social and economic capabilities of women, as well as planning to improve women's participation in different fields of activities are essential to empower women in rural areas (Bijani et al., 2022). The new approaches to development have underscored entrepreneurship as a way of empowering women in rural areas as the biggest group struggling with deprivation (Mohammadi, et al., 2019). According to the emerging literature, women can make a significant contribution to entrepreneurial activity (Noguera et al., 2013) and economic development (Hechevarría et al., 2019) by creating new jobs and increasing the gross domestic product (GDP) (Ayogu and Agu, 2015), which has a positive impact on poverty mitigation and social exclusion (Cardella et al., 2020; Rae, 2015). Therefore, the comprehensive development of societies is predicated upon growth opportunity offered to every member of the society including women in rural areas. In this regard, one of the main constructs of entrepreneurship promotion is entrepreneurial orientation, which can urge women towards entrepreneurship. Entrepreneurial orientation, a key construct of entrepreneurship literature, has entered the mainstream literature since 1980 (Soininen, 2012). According to Covin and Lumpkin (2011), entrepreneurial orientation, rather than a specific or unique behavior or action, is a key element in entrepreneurship process. The point is that entrepreneurial orientation is a general and stable tendency that represents thoughts, desires, and interests in entrepreneurship. In fact, entrepreneurial orientation, as a business strategy, helps businesses to be innovative, lead the market in the discovery of new opportunities, and deal with risk differently (Al-Awlaqi et al., 2021). Indeed, entrepreneurial orientation helps entrepreneurs to grow and boost their performance (Fadda, 2018). Therefore, entrepreneurial orientation is of paramount importance in entrepreneurship research (Al-Awlaqi et al., 2021; Covin and Lumpkin, 2011; Wales et al., 2013; Wiklund, 2005; Rauch et al., 2015). The concept, as a strategic tendency of entrepreneurial behaviors in individuals, guides them towards innovation, dynamism, and risk- taking attitudes (George and Marino, 2011; Gupta and Gupta, 2015). Despite the importance of entrepreneurial orientation in shaping entrepreneurial behaviors in individuals, as noted in Entrepreneurship Global Monitor (EGM) 2020 report, Iran has a deplorable condition in terms of criterial like "Inability to start a business out of the fear of failure," "Rare attempts to find opportunities," "Failure to seize profitable opportunities when they emerge." According to EGM's report, the status of entrepreneurial orientations and perceptions in Iran is worse than other similar countries. Given that one of the goals of micro-credit funds is to promote and develop entrepreneurship among women in rural areas, the promotion and development of entrepreneurship among women living in rural areas depends more than anything on the improvement of their entrepreneurial orientation. Therefore, it is vital to determine the factors influencing the entrepreneurial orientation of women living in rural areas who are members of micro-credit funds. Hence, the present study seeks to expand the literature and provide practical findings to support entrepreneurship in Iranian women living in rural areas. Entrepreneurship in women, particularly in rural areas of Iran, has received scant attention. The present study is an attempt to explore factors affecting the

entrepreneurial orientation of women living in rural areas who are members of micro-credit funds in the western Iran (Kermanshah Province).

2. Research Theoretical Literature

2.1. Entrepreneurial Orientation

Entrepreneurship is one of the main derivers of socioeconomic development (Goulibaly et al., 2019). Given the role of entrepreneurship in economic growth, it can significantly contribute to economic development (Mahfud et al., 2010). Entrepreneurial orientation, a key construct in entrepreneurship literature, was introduced in 1980 (Soininen et al., 2012). There are several definitions for this concept. A review of literature suggests that entrepreneurial orientation is conceptualized in terms like processes, methods, and decision-making activities. It is also associated with the development and presentation of a new product or service (Naldi et al., 2007; Chen et al., 2006). Coving and Lumpkin (2011) argued that entrepreneurial orientation is not a specific factor or a unique behavior, but rather a key element in entrepreneurial process, which is highly important in entrepreneurial studies. They defined entrepreneurial orientation as a general and stable orientation that represents throughs, tendencies, and interests in entrepreneurship. Lumpkin and Des (1996) defined entrepreneurial orientation as a set of processes, methods, and decision-making activities that provide new methods (Mobini Dehkurdi et al., 2012). Clausen and Kormeliussen (2012) defined entrepreneurial orientation as processes, operations, and decision-making activities that lead to a new solution. From another viewpoint, entrepreneurial orientation includes methods, activities, and decision-making styles used for entrepreneurship (Alarcon et al. 2017). As a psychological concept, entrepreneurial orientation describes the intention and orientation of key actors and employees of an organization towards entrepreneurial tasks and behaviors (Krauss et al., 2005). Bilic et al. (2011) defined entrepreneurial orientation as individuals' tendency to start new businesses for themselves. To Lee et al. (2009), entrepreneurial orientation is a strategic orientation that encompass processes, measures, and decision-making activities that lay the ground for entering new markets. Bosso et al. (2013) listed different aspects of entrepreneurial orientation including innovation, reactiveness, risk-taking, aggressive competition, and independence. The definition of entrepreneurial orientation by Miller (1983), Kevin and Solving (1989) embraces three aspects: innovation, reactiveness, and risk-taking. By seeking new opportunities, innovation aims to create creative ideas and implement those ideas. Risk-taking is the courage to take actions under uncertain circumstances where there is the prospect of financial loss or sustained losses accrued by loans or obligations. Reactiveness escribes personal innovative behaviors, participation, and attempts to make changes. Miller (1983) and Kevin and Selvin (1989) contended that these aspects are inherently the same and they cannot be separated from each other (Kurniawan et al., 2019). Literature review suggests that several researchers have adopted the three aspects of risk-taking, innovation, and reactiveness to measure entrepreneurial orientation in women (Santos et al., 2017; Al-Awlaghi et al. 2018). These three aspects are also employed here to evaluate entrepreneurial orientation in women. The following section introducers the underlying factors of entrepreneurial orientation and develops hypotheses and a conceptual framework for the study.

2.2. Entrepreneurial education and entrepreneurial orientation

There are diverse definitions for Entrepreneurial education. Some define it as educating the basic and theoretical concepts of entrepreneurship, while others consider it as a theoretical and practical education. In other words, learning occurs through working with individuals who have received education and engaging in entrepreneurial processes under the supervision of consultants and experts (Choubdaran et al., 2019). Linan and Chen (2009) defined entrepreneurial education as a framework either within or outside the education system that creates or improves entrepreneurial intention or other traits that affect entrepreneurial intention such as entrepreneurial knowledge. They argue that the objective of entrepreneurial education is to identify and prepare potential entrepreneurs to set up a business, to empower individuals for planning a business, to improve and develop independent and risk-taking behaviors, among other things. Entrepreneurial education describes any educational program or process that develops entrepreneurial attitude and skill (Fayolle and Klandt, 2006). Studies suggest that individuals who take part in short entrepreneurial education courses display a higher tendency and orientation towards

starting a new business (Al-Awlaqi et al., 2018; Abdul Aziz and Jaafar, 2008). This tendency might be driven by the experience or knowledge gained from these courses (Ismail et al., 2009). Entrepreneurial education is a key factor in the emergence of entrepreneurial intention (Linan and Fayolle, 2015; Rauch and Hulsink, 2015). In fact, entrepreneurial education is one of the key tools to improve entrepreneurial orientation in individuals, especially in the developed countries where such educations are highly valued. Matlay et al. (2014) found that attending entrepreneurship courses boosted entrepreneurial intention in individuals. Other studies have also highlighted the role of education in development of entrepreneurship (Souitaris et al., 2007). Heshmatifar et al. (2019) stressed the role of entrepreneurial education in entrepreneurial spirit, arguing that such education can improve innovation, risk-taking, success-seeking, and independence in individuals. In addition, findings highlight the effect of education on different aspects of attitude, knowledge, behavior, and skill (Inna, 2012). In fact, entrepreneurial education improves entrepreneurial orientation in individuals (Fayolle and Gaily, 2015) and enhanced entrepreneurial orientation increases the likelihood of preferring entrepreneurship over other carrier paths (Chigunta, 2002). Tran (2014) asserted that entrepreneurship through digital media increased motivation, capability, and desire in women to start a business. Al- Awlaqi et al. (2018) noted that Entrepreneurial educations had a positive and significant role in entrepreneurial orientation That is, this education was positively and significantly related to the three aspects of entrepreneurial orientation (viz. risk-taking, proactiveness, and innovation). In light of these evidences, the following hypothesis is proposed: "Entrepreneurial education has a positive and significant effect on entrepreneurial orientation in women."

2.3. Social capital and entrepreneurial orientation

A number of studies have focused on entrepreneurial orientation and social capital as independent variables without examining their mutual relationship (Stam & Elifring, 2008). It is however essential to study how social capital improves entrepreneurial orientation (Wang & Altinay, 2012). Social capital, as an integral element of entrepreneurship process, plays a critical role in the development of entrepreneurial behavior and improved access to resources, market, and technology (Anderson et al., 2007). Therefore, social capital helps find innovative opportunities with unclear outcomes and also improves access to information by utilizing interpersonal relationship (Hargadon, 2002). On the other hand, due to excessive information, stagnation, lack of dynamism, myopia, among other things, social capital might have a negative effect on entrepreneurial orientation (Rodrigo Alarkun et al., 2018). According to Nahapit and Qushal's (1998) model, social capital comprises three aspects: relationship, cognition, and structure. Trust between activists in a network strengthens entrepreneurial orientation. Further, trust decreases time and energy required for supervising company goals and releases resources and time that can be spent on other activities such as innovation (Kaasa, 2009). Therefore, relational social capital facilitates innovation, learning, and creativity (Meeus et al., 2001). In addition, relational social capital not only leads to the transfer of new information, but also through amalgamation of the available knowledge, improves reactiveness (Shane, 2000). Trust is a factor, through which individuals can open new doors to gain new information and detect new entrepreneurship opportunities (Kown and Arenius, 2010). In addition, relational social capital can help overcome institutional limitations in entrepreneurship process and access key resources of competitive information (Florin et al., 2003). As one of the aspects of social capitals, by improving trust among individuals, it provides access to confidential information and increases the chance of developing joint ventures. Therefore, a strong relational social capital can improve entrepreneurial orientation by comprehending new opportunities, developing innovation, or taking risky measures (Rodrigo Alarkun et al., 2018). Cognitive social capital is another aspect of social capital that ensures identical perception of the interaction nature. It allows people to avoid misunderstanding in their communication; therefore, more congruity between individuals in terms of norms, objectives, and culture means that people have a stronger desire and tendency to perceive useful information and knowledge, which in turn enhances their innovations (Doh and Acs, 2010). Tang (2010) argued that organizations and companies with higher cognitive social capital can have an up-to-date perception of valuable information, being proactive, they can tap into that knowledge to spot entrepreneurship opportunities. High cognitive

social capital helps individuals and organizations to utilize external information and resources and adopt a higher level of risk-taking attitude (Iturrioz et al., 2015). In addition, cognitive social capital nurtures independent thinking. In fact, it mitigates the need for support and bolsters independence in strategic behavior (Rodrigo Alarkun, et al., 2018). Studies on the role of structural social capital in entrepreneurial orientation suggest that strong structural social capital expedites the transfer of information. However, knowledge redundancy restricts access to new information for innovation (Koka and Prescott, 2002). In addition, it creates internal blockage in organization, and lowers proactivity and discovery of new opportunities (Exposito-Langa et al., 2010). Rodrigo Alarkun et al. (2017) argued that strong structural social capital limits access to new and special knowledge due to the excessive redundant and knowledge. As a result, entrepreneurial orientation is limited in companies. Other studies have highlighted the role of structural social capital in improving entrepreneurial orientation (Zarei and Bagheir Gharebach, 2019; Shadousti, 2017; Shokrollahi and Karimi, 2016). Some researchers have reported the positive and significant role of social capital in entrepreneurship among women (Seyed Amiri et al., 2015; Barghi et al., 2018). In light of the above, the following hypothesis is proposed: "Social capital has a positive and significant role in entrepreneurial orientation of women. "

2.4. Opportunity recognition and entrepreneurial orientation

Opportunity describes a situation in which an individual believes that a new combination of resources would yield more profits (Shane, 2003). According to Corbet (2007) seizing an opportunity is the ability to see a good idea and transfer it into a business that will bring added-value and income. Entrepreneurship opportunity is a means to produce good and new services and to provide new production methods that have the potential to make profits (Shane, 2003). A question that is always asked is how, when, and why some individuals can find entrepreneurship opportunities, while others are oblivious to them. A body of research in different disciplines have sought to answer these questions and their efforts have expanded understanding in this field. Three major factors linked to the recognition of entrepreneurship opportunities have been identified over the past three decades including social and human resource (Ramos Rodriguez et al., 2010), personal traits (Zahra et al., 2006), and different levels of consciousness (Gaglio and Katz, 2001). Cognitive approach to these questions draws on psychology and sociology. Psychologists have demonstrated that internal traits of individuals such the need to be successful, center of control, resistance to ambiguities, emotional stability, and risk taking vary among individuals. These psychological traits explain individual discrepancies in terms of finding opportunities and displaying different behaviors towards such opportunities (Santos et al., 2018). These psychological traits, which can improve the ability to see opportunities, are linked to the individuals' entrepreneurial orientation, known as attitude to the risks of starting a new business (Miner 2000; Begley and Boyd, 1987; Zahra et al., 2006). In this respect, business owners tend to have a higher risk orientation and dealing with ambiguities (Begley and Boyd, 1987). These findings help explain why some people are more vigilant in seeing business opportunities and more proactive in grasping such opportunities (Santos, et al., 2018). The importance of the individual role of entrepreneur is highlighted in recognition and use of an opportunity (Mollman et al., 2007). Therefore, people often differentiate themselves with a set of emotions, cognitions, and intrinsic behavioral pattern at the beginning of an entrepreneurship process (Santos et al., 2018). Given the above explanations, one may say that the recognition of opportunities can affect and improve entrepreneurial orientation. Santos et al. (2018), in their study titled "Circumstances of entrepreneurial orientation in women" found that recognizing an opportunity has a positive and significant connection with entrepreneurial orientation in women. Therefore, the following hypothesis is proposed: "Opportunity recognition has a positive and significant effect on entrepreneurial orientation in women."

2.5. Entrepreneurship skills and entrepreneurial orientation

A successful entrepreneur needs to be equipped with a specific set of skills. Such skills are essential and pivotal to starting and developing a business successfully (Santos et al., 2018). Acquiring entrepreneurship skills improves entrepreneurial orientation in individuals. It makes them feel more willing and strong-minded to participate in

entrepreneurial jobs (Khoshmaram et al., 2017). Linan (2008) argued that to be a successful entrepreneur, individuals need to develop specific skills such as leadership and communication, innovation, networking, creativity, and problem solving. Taking into account entrepreneurial skills and their relationship with entrepreneurial orientation reported causal relationships between entrepreneurial skills and entrepreneurial orientation. Meeus (2006) contended that the use of interpersonal relationships among entrepreneurs and their organizational network can improve entrepreneurial orientation traits such as innovation, proactiveness, and risk-taking. In addition, Santos et al. (2018) found a positive relationship between entrepreneurial skills of women and entrepreneurial orientation. Hence, the following hypothesis is proposed: "Entrepreneurial skills have a positive and significant effect on entrepreneurial orientation in women."

2.6. Mediating effect

As mentioned, several studies have highlighted the positive role of social capital in improving entrepreneurial orientation. In addition, research on role of social capital in improving ability to recognize opportunities have underlined the positive effect of social capital on the ability to see opportunities. For instance, Khosmaram et al. (2017) asserted that social capital has a significant role in recognition of entrepreneurial opportunities. Other studies have also highlighted the role of social capital in seeing entrepreneurial opportunities (Tang, 2010; Farkas, 2021). Despite the extensive studies on the role of social capital and opportunity recognition in entrepreneurial orientation, there is a paucity of research on the mediating role of opportunity recognition between social capital and entrepreneurial orientation. In one of these studies, Imani et al. (2017) demonstrated that social networks play a mediating role in recognition of entrepreneurship opportunity. Therefore, to investigate the mediating role of opportunity recognition between social capital and entrepreneurial orientation, the following hypothesis is proposed: "Social capital has an indirect, positive, and significant role in entrepreneurial orientation among women (opportunity recognition as mediator)."

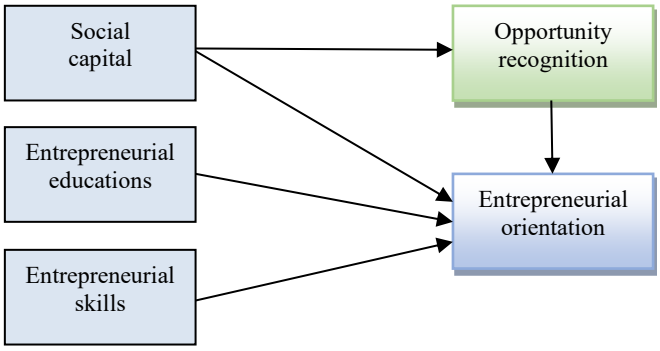

Figure 1- Proposed Model

The research model was developed based on literature review and the proposed hypotheses (Fig.1).

Entrepreneurship has been a male-dominated domain, but it has changed over time and today women are among the most memorable and inspiring entrepreneurs today, even in traditional sectors such as villages (Vinesh and Management, 2014). It is estimated that women significantly contribute to the development of entrepreneurship worldwide. In fact, in 2020, 187 million women were involved in the establishment and setting up of new companies, suggesting that about 42% of the world's entrepreneurs are women. (GEM, 2023). To date, women's entrepreneurship represents a major driving force of economic growth in developing countries because it plays a leading role in generating productive work, ensuring gender equality and reducing poverty (GEM, 2023). Entrepreneurial tendency plays a fundamental role in starting entrepreneurship in society. Entrepreneurial intention is described as "an intentional state of mind that prompts action and directs attention toward entrepreneurial behaviors such as setting up a new business and becoming an entrepreneur" (Esfandiari et al, 2019). On the other hand, research (Durmishi et al., 2023) shows that "innovation" and "opportunity recognition" wield the greatest impact on entrepreneurial orientation. Since entrepreneurship is a latent factor, subjective views of social assets and the individual's relative position in society are highly important. Therefore, entrepreneurial intentions are related to personal expectations of the support in a given society, market environment and individuals' skills (Farkas, 2021). A body of studies suggest that the social capital of society, which reinforces certain personal characteristics or behaviors, plays a key role in the decision-making and tendency towards entrepreneurial behaviors (Wu et al., 2022; Zhao et

al., 2023). Studies suggest that Iranian women enter the labor market basically under the influence of two pull factors (inclination and tendency) and a force (pressure). The latter describes a process in which women are persuaded to start a business or venture activity on the account of their enthusiasm and persistence to conduct a job independently (Nahavi and Kohensal, 2013). Soleimani & Zarafshani (2011) in their study on the predictors of entrepreneurial intention and tendency among the students of Agricultural Academy, found that two variables of attitude towards entrepreneurship and belief in entrepreneurial self-efficacy explains 54% of variation in entrepreneurial intention variable They also found that entrepreneurial self-efficacy has a positive and significant effect on entrepreneurial orientation. Another construct that affects entrepreneurial tendency is facilities (Lent, 2004). Facilities can directly influence the creative tendency of people (Lent, 2004). Facilities such as materials and tools or emotional and social support can have a bearing on the entrepreneurial tendency of people by providing feedback, negative or positive reinforcement or experience (Lent, 2004). To date, a host of studies have explored entrepreneurial orientation but still little is known on how an investment decision is formed and how people act on that decision. Therefore, the goal of this research is to explain predictors of entrepreneurship among rural women who are members of microcredit funds in Kermanshah province. By identifying these structures, a key step can be taken for developing entrepreneurship among rural women in this province.

3. Research Methodology

3.1 Population and sample

The study population consisted of women living in rural areas who were members of micro credit funds in Kermanshah Province, Iran (n=626). The sample size was determined using Bartlett et al.'s (2001) sampling table (n= 209). The participants were selected using stratified random sampling with proportional allocation. As depicted by the results, the mean age of the respondents was 42.36 years (SD=14.29), the majority were married (83.6%)and had elementary education (55.2%).

3.2 *Instrument*

The data-gathering instrument was a standard questionnaire that comprised six sections. Section one, a scale to measure entrepreneurial orientation, was based on Bolton and Lane's (2012) entrepreneurial orientation scale. The 10-item scale measured three aspects of risk-taking, innovation, and reactiveness. Section two, scale to measure social capital, is based on Nahapeit and Ghoshal's (1998) questionnaire. It consists of 26 items that cover three aspects of structural social capital, relational social capital, and social capital. Section three measures opportunity recognition. Inspired by Puhakka's (2010) scale, this 13-item scale measures three aspects of competitive campaign, proactive search of opportunity, and creation of innovative approaches from opportunities. Section four includes an entrepreneurial education scale, which is based on literature review and interview with experts. This 16-item scale measures two aspects of formal and informal educations. Section five, which measures entrepreneurial skills, is based on Linan et al.'s (2013) 10-item scale. All items are designed 5-point Likert's scale (1=very low, 2=low, 3=moderate; 4= high, and 5=very high). Eventually, section six collects demographic data (age, marital status, and education) with open/close-ended questions. Validity and reliability of the instruments were evaluating using One-Tail test, convergent validity, diagnostic validity, and combined reliability.

3.3 *Data analysis*

Inferential and descriptive data analyses were conducted using Smart PLS and SPSS. For descriptive statistics, frequency, relative frequency, accumulative frequency percentage, mean, SD, change coefficient, min, and max were utilized. The inferential statistics included structural equation model (SEM) with partial least squares approach in Smart PLS (V.3). In addition, Sobel test was employed to examine the mediation effect. The test is conducted as follows where *a* stands for path coefficient between independent and mediator variables; *b* is path coefficient between mediator and dependent variables; *Sa* denotes the standard path between independent and mediator variables; and *Sb* indicates standard deviation of the path between mediator and dependent variables.

$$Z - Value = \frac{a*b}{\sqrt{(b^2*s_a^2)+(a^2*s_b^2)+(s_a^2*s_b^2)}}$$

To determine the size of indirect effect through mediator, "Variance accounted for" statistic was used. This statistic, which measures the ratio of indirect effect to total effect, is obtained as follows. In this equation, *a* is the coefficient path between independent and mediator variables; *b* is the path

coefficient between the mediator and dependent variables; and c is the path coefficient between independent and dependent variables. The variance range is between zero and one with values close to one indicating stronger effect of mediator variable.

VAF= $\frac{a \times b}{(a \times b)+c}$

4. Research Findings

As regards entrepreneurial orientation and its constructs, the mean score of entrepreneurial orientation in the participants was 3.41 (SD=0.57). Reactiveness construct had a mean score of 3.58, which is higher than the two other constructs. The mean score of opportunity recognition in the participants was 3.41 (SD=0.60). Among the three constructs of opportunity recognition, creating an innovative solution out of opportunity had the highest mean score (3.51). The mean score of entrepreneurial skills and social capital of the participants was 3.15 (SD=0.63) was and. 91 (SD=0.47), respectively. Despite trivial different among the constructs of social capital, relational capital had the highest mean score (3.98). To examine the proposed study model and hypotheses, we used SEM to assess the measurement model and the structural model. After examining the measurement model of the study constructs, given that it is one-dimensional, and checking validity and reliability of the latent variables, the SEM was employed to test the hypotheses in the proposed model. The SEM results are illustrated in Fig. 2 and a summary of the results is outlined in Table 1.

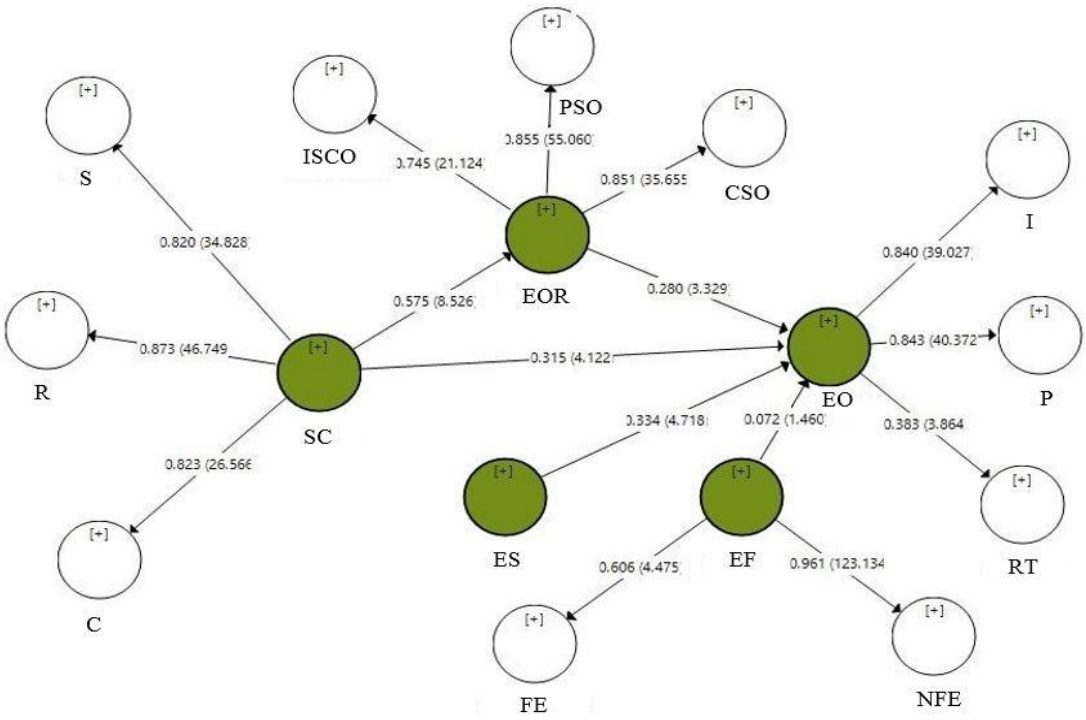

Figure 2- Path Model with Coefficients and t-values

S= Structural
R= Relational
PSO= Proactive searching of opportunities
C= Cognitive
CSO=Competitive scanning of opportunities
I= Innovation
RT= Risk-taking
P= Proactiveness
NFE=non-formal education
FE=Formal education
SC=Social capital
EOR=Entrepreneurial Opportunity recognition
EE=Entrepreneurial Education
EO=Entrepreneurial orientation
ES=Entrepreneurial skills
ISCO= Innovative solution creation of opportunities

Table 1- Path coefficients between the variables under study and significance level

Predictors	Beta	t-value	STDE	Sig.	Result	R2	f2	Q2
SC	EO	0.315	4.149	0.076	0.000	0.52	0.161	0.191
EOR	EO	0.280	3.327	0.084	0.001		0.107	
ES	EO	0.334	4.991	0.067	0.000		0.189	
EE	EO	0.072	1.465	0.049	0.143		0.011	

According to the results listed in Table 1, the path coefficient between social capital and entrepreneurial orientation is 0.315. The t-value for this construct is significant at 1% error level (t=4.194); therefore, H0 is not confirmed. Give the significance of this coefficient, it is safe to say that social capital of women living in rural areas, who are members in micro-credit funds, has a positive and significant effect on entrepreneurial orientation with an error level of 1%. In addition, the path coefficient between searching for opportunity and entrepreneurial orientation is 0.280. The t-value for this construct is significant at 1% error level (t=3.327) and therefore, H0 is rejected. Give the significance of this coefficient, it can be contended that searching for opportunity among women living in rural areas, who are members in micro-credit funds, has a positive and significant effect on entrepreneurial orientation with an error level of 1%. Moreover, the path coefficient between entrepreneurial skills and entrepreneurial orientation is 0.334. The of t-value for this construct is significant at 1% error level (t=4.991), and henceH0 is not substantiated. Considering the significance of this coefficient, it can be argued that entrepreneurial skills of women living in rural areas, who are members in micro-credit funds, has a positive and significant effect on entrepreneurial orientation with error level of 1%. Finally, the path coefficient between entrepreneurial education and entrepreneurial orientation is 0.072. The t-value for this construct is significant at 1% error level (t=1.465), and since this figure is less than the standard level (1.96), H0 is not so that entrepreneurial education does not have significant effect on entrepreneurial orientation. In general, a comparison of path coefficients and effect size (f2) between different paths in the model indicates that entrepreneurial skills with a path coefficient of 0.334 and f2 = 0.189 and social capital with a path coefficient of 0.315 and f2 = 0.161 had the highest impact on entrepreneurial orientation in women. In general, social capital, opportunity recognition, and entrepreneurial skills explained 59% of variance in entrepreneurial orientation of women. Therefore, the proposed path model can predict entrepreneurial orientation of women living in rural areas who are members of credit funds. One of the hypotheses was about the mediating role of opportunity recognition between social capital and entrepreneurial orientation. As listed in Table 2, the indirect effect of social capital on entrepreneurial orientation is 16%, which is significant with a t-value of 2.858 at an error level of 1%. Therefore, social capital has a significant effect on entrepreneurial orientation via opportunity recognition. In addition, z-value of Sobel for this path was above 1.96, which was significant at an error level of 1%. Therefore, the findings support the mediating role of opportunity recognition in the relationship between social capital and entrepreneurial orientation. As for the role of mediator variable and VAD, 31.75% of the effect of social capital on entrepreneurial orientation construct can be explained indirectly by the mediator variable of opportunity recognition.

5. Discussion and Conclusion

The results showed that social capital had a positive and significant effect on entrepreneurial orientation and hence the former can be improved by increasing the latter. Given that social capital contains three aspects (relationship, constructional, and cognitive), one may say that relational social capital prepares the ground for sharing new information by boosting trust among women in rural areas. The new information can help improve entrepreneurial orientation through searching for opportunities, innovations, and risk-taking. In addition, cognitive social capital prevents possible misunderstanding between individuals and promotes information sharing in terms of norms and goals. This also enhances individuals' perception of recent information and consequently proactiveness. Constructional social capital promotes rapid dissemination of information in credit funds and helps identify opportunities and engage in proactiveness. Consistent with these findings, other studies have highlighted the positive and significant role of social capital and its aspects in the

improvement of entrepreneurial orientation (Rodrigo Alarkun et al., 2018; Ietrius et al., 2015; Wang and Altinai, 2012). The findings suggested that ability to recognize opportunity had a positive and significant effect on entrepreneurial orientation. In other words, the ability of women, who are members of a micro-credit fund, affects their entrepreneurial orientation. Hence, by increasing their ability, entrepreneurial orientation of these women could be boosted. In fact, the ability to recognize an opportunity is rooted in individuals' attempt to meet the needs of society and to provide products/services with high financial returns. By searching for opportunities, it is possible to provide a suitable environment for entrepreneurial measures. Consisting with our findings, Santos et al. (2018) stressed the positive and significant role of searching for opportunities in improving entrepreneurial orientation in women. The findings showed that entrepreneurial skills of women living in rural areas is positively and significantly linked to their entrepreneurial orientation. Therefore, by improving such skills, it is possible to foster entrepreneurial orientation of women living in rural areas, who are also a member of micro credit funds. In fact, entrepreneurial skills such as planning and setting business goals, formulating a business plan, financial and accounting knowledge, problem analysis, and solution finding enable women in rural areas to start and develop a business successfully. In addition, creating and expanding professional relationships with individuals as well as key sources improves the traits of entrepreneurial orientation such as innovation, proactiveness, and risk-taking. In keeping with our findings, Santos et al. (2018) found a positive relationship between entrepreneurial skills and entrepreneurial orientation of women. In addition, other studies have also reported a positive and significant connection between entrepreneurial skills and entrepreneurial orientation. Data analysis did not show a positive relationship between entrepreneurial educations and entrepreneurial orientation among women living in rural areas, who are members of micro-credit funds. Contrary to this outcome, other studies have reported a positive and significant relationship between entrepreneurial educations and entrepreneurial orientation (Abdulaziz and Jafar, 2008; Matlay et al., 2014). The findings indicated that 87.7% of women living in rural areas had low level of attending entrepreneurship formal education and 91% of had moderate and low levels of non-formal entrepreneurial education. Therefore, the lack of a significant relationship between entrepreneurial education (formal and non-informal) can be attributed to their failure to attend educational courses. In general, this is an interesting finding and future studies should further explore this subject to enhance the generalizability of the findings. Is sum, the results suggested that social capital (seeing opportunity as a mediator variable) had a positive and significant effect on entrepreneurial orientation of the participants. In fact, higher social capital in these women lays the ground for recognizing entrepreneurial opportunities, which in turn improves their entrepreneurial orientation. In keeping with our findings, Imani et al. (2017) found that as a mediator variable, social media affects the ability to recognize entrepreneurial opportunities.

The criteria of entrepreneurial orientation of women living in rural areas, who are members of micro-credit fund, in Kermanshah Province, Iran were examined. It was found that latent variables of social capital, recognition of entrepreneurial opportunities, and entrepreneurial skills had a positive, significant, and direct/indirect effect on entrepreneurial orientation of the participants. On the other hand, the effect of entrepreneurial education (formal and non-formal) on entrepreneurial orientation of women was not confirmed. The findings have practical and theoretical implications for developing entrepreneurship in women particularly in rural areas. As regards the theoretical achievements, the study contributes to entrepreneurship literature in local and supportive institutions as well as micro-credit funds of women in rural areas. It also expands entrepreneurship literature in the developing countries (e.g. Iran) among certain demographic groups like women. In addition, the study helps bridge the gap in literature on the indicators of entrepreneurial orientation in women. As for practical achievement, the findings can urge managers and policymakers to pay greater attention to communications and social interactions, improvement of entrepreneurial skills, and detection and introduction of entrepreneurship opportunities, which consequently helps develop entrepreneurship in women living in rural areas. It is recommended to hold entrepreneurship events (e.g. brainstorming sessions, startup weekend) to

improve social and business connections and interactions among women living in rural areas and build up their entrepreneurial skills and knowledge. It is essential to find local and regional entrepreneurial opportunities and present them to women in rural areas through integrated studies. Like other field studies, the present has certain limitations. The first constraint is related to the participants. They were chosen from women in rural areas who were members of micro-credit funds in Kermanshah Province. Therefore, caution should be practiced in the generalization of the results to other women in rural areas and other regions. In addition, since all the participants were members of micro-credit funds in Iran (a developing country), the results cannot be readily generalized to women in other countries including developed and developing ones. This is due to different cultural, social, economic, and political conditions in countries. Therefore, it is necessary to conduct similar studies on women in rural areas in other regions and countries to enhance the generalizability of findings. One the main limitations of the present study was COVID-19 pandemic, which posed obstacles to the data gathering phase. To deal with this limitation, the questionnaires were administrated online or via telephone. Given the inherent problems associated with this method surely, it might have affected the results. Finally, study design was another major limitation of this study. Given the cross-sectional and quantitative nature of this study, it is not easy to prove the causal relationship among the variables. Hence, future studies can exploit longitudinal research design to demonstrate casualty between the variables. Moreover, future studies can use qualitative or mixed (qualitative and quantitative) paradigm to delve deeper into the factors of entrepreneurial orientation among women living in rural areas.

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Authors′ Contributions

The authors equally contributed to the preparation of this article.

Conflict of Interest

The authors declare no conflict of interest.

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Original Article

تعیین‌کننده‌های گرایش کارآفرینانه زنان روستایی عضو صندوق‌های اعتبارات خرد: مطالعه‌ای در غرب ایران

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چکیده مبسوط

۱. مقدمه

در حالی که ادبیات موجود نشان می‌دهد که زنان و به خصوص زنان روستایی نقش بارزی در توسعه کسب و کارهای کوچک و متوسط دارند؛ ولی مطالعات اندکی در خصوص عوامل مؤثر بر ادراکات و گرایشات کارآفرینانه زنان روستایی در کشورهای در حال توسعه و به خصوص در ایران انجام شده است. در راستای پر کردن این شکاف مطالعاتی، پژوهش حاضر با هدف بررسی تعیین‌کننده‌های گرایش کارآفرینانه زنان روستایی عضو صندوق‌های اعتبارات خرد در غرب ایران (استان کرمانشاه) انجام شد.

۲. مبانی نظری

کارآفرینی یکی از محرک‌های اصلی توسعه اقتصادی- اجتماعی است و کارآفرینان به واسطه مشارکت خود در رشد اقتصادی، نقش اساسی در توسعه اقتصادی دارند . در این میان گرایش کارآفرینانه به عنوان یک ساختار مهم در ادبیات کارآفرینی از سال ۱۹۸۰ همواره مورد توجه بوده است . بررسی ادبیات موجود حاکی از آن است که گرایش کارآفرینانه در واژه‌هایی از قبیل فرآیندها، شیوه‌ها و فعالیت‌های تصمیم‌گیری مفهوم‌سازی و تعریف شده است که توسعه و ارائه محصول و یا خدمتی جدید را به همراه دارد. گرایش کارآفرینانه را به عنوان یک جهت‌گیری کلی و پایدار که بیانگر تفکرات، تمایلات و علایق نسبت به کارآفرینی است، تعریف می‌کنند. گرایش کارآفرینانه به عنوان یک مفهوم روانشناختی، توصیف‌گر قصد و گرایش بازیگران کلیدی و کارکنان سازمان در ارتباط با وظایف و رفتارهای کارآفرینانه می‌باشد . محققان پنج بعد شامل نوآوری، پیشگامی، ریسک‌پذیری، رقابت تهاجمی و استقلال را به عنوان ابعاد گرایش کارآفرینانه بیان کرده‌اند. بررسی ادبیات موجود نشان می‌دهد که محققان برای سنجش گرایش کارآفرینانه زنان از سه بعد ریسک‌پذیری، نوآوری و پیشگامی استفاده کرده‌اند؛ از این‌رو، در پژوهش حاضر نیز برای سنجش گرایش کارآفرینانه زنان عضو صندوق‌های اعتبارات خرد شهرستان کرمانشاه از این سه بعد استفاده شده است.

۳. روش تحقیق

پژوهش از نوع کاربردی همبستگی-توصیفی با رویکرد کمی و روش پیمایشی است. جامعهٔ مورد مطالعه در این پژوهش، کلیهٔ زنان عضو صندوق‌های اعتبارات خرد شهرستان کرمانشاه (تعداد کل ۶۲۶ نفر) بودند که بر اساس جدول بارتلت و همکاران، تعداد ۲۰۱ نفر به عنوان نمونه تحقیق تعیین شدند و به روش نمونه‌گیری تصادفی طبقه‌ای با انتساب متناسب انتخاب شدند. ابزار اصلی گردآوری داده‌ها، پرسشنامه‌ای بود که روایی و پایایی آن با استفاده از روایی محتوا و روایی همگرا و پایایی ترکیبی و آلفای کرونباخ به تأیید رسید. به منظور تجزیه و تحلیل داده‌های گردآوری شده از نرم‌افزارهای SPSS و Smart PLS بهره گرفته شد. ابزار اندازه‌گیری این پژوهش پرسشنامه‌ای بود که در شش بخش تدوین شده بود. بخش اول پرسشنامه مقیاسی برای سنجش گرایش کارآفرینانه بود. برای این منظور، از مقیاس اندازه‌گیری گرایش کارآفرینانه بولتون و لانه (۲۰۱۲) استفاده شد. این مقیاس گرایش کارآفرینانه را با استفاده از ۱۰ گویه در قالب سه بعد ریسک‌پذیری، نوآوری و پیشگامی مورد سنجش قرار می‌دهد. بخش دوم پرسشنامه مقیاسی برای سنجش سرمایه اجتماعی بود. برای سنجش سرمایه اجتماعی از پرسشنامه ناهاپیت و قوشال (۱۹۹۸) که دارای ۲۵ گویه و سه بعد سرمایه اجتماعی ساختاری، سرمایه اجتماعی رابطه‌ای و سرمایه اجتماعی می‌باشد، استفاده شد. بخش سوم پرسشنامه مقیاسی برای سنجش

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تشخیص فرصت بود؛ در این بخش از مقیاس اندازه‌گیری پوهاکا (۲۰۱۰) استفاده شد. این مقیاس دارای سه بعد پویش رقابتی، جست و جوی پیشگام فرصت و خلق راهکارهای نواورانه از فرصت می‌باشد که این سه بعد در قالب ۱۳ گویه سنجیده می‌شوند. بخش چهارم پرسشنامه شامل مقیاسی برای سنجش آموزش کارآفرینانه بود؛ در این بخش پس از بررسی ادبیات موجود و مصاحبه با متخصصان، مقیاسی شامل ۱۶ گویه برای سنجش آموزش کارآفرینی در دو بعد آموزش‌های رسمی و غیر رسمی تدوین شد. بخش پنجم پرسشنامه شامل مقیاسی برای سنجش مهارت‌های کارآفرینانه بود؛ در این بخش از مقیاس لینان و همکاران (۲۰۱۳) که دارای ۱۰ گویه می‌باشد، استفاده شد. برای سنجش این پنج بخش از مقیاس لیکرت پنج‌درجه‌ای (۱- خیلی کم، ۲- کم، ۳- متوسط، ۴- زیاد و ۵- خیلی زیاد) استفاده شد. در نهایت، بخش ششم پرسشنامه شامل ویژگی‌های جمعیت شناختی (سن، وضعیت تاهل و تحصیلات) پاسخگویان بود که برای سنجش آن از سؤالات باز و بسته پاسخ استفاده شد. روایی و پایایی مقیاس سنجش سازه‌های پژوهش با استفاده از معیارهای تک‌بعدی بودن، روایی همگرا، روایی تشخیصی و پایایی ترکیبی بررسی و تأیید شدند.

۴. یافته های تحقیق

براساس نتایج پژوهش متغیرهای نهفتهٔ سرمایه اجتماعی، قابلیت تشخیص فرصت و مهارت‌های کارآفرینانه تأثیر مثبت و معنی‌داری به صورت مستقیم بر گرایش کارآفرینانه زنان روستایی عضو صندوق اعتبارات خرد داشتند؛ اما تأثیر مثبت و معنادار آموزش‌های کارآفرینانه بر گرایش کارآفرینانه زنان روستایی تأیید نشد. افزون بر این، یافته‌ها نشان داد که سرمایه اجتماعی به صورت غیرمستقیم از طریق تشخیص فرصت بر گرایش کارآفرینانه تأثیر مثبت و معناداری دارد.

۵. بحث و نتیجه گیری

یافته‌های این پژوهش دستاوردهای نظری و کاربردی مناسب برای توسعه کارآفرینی در بین زنان روستایی به دنبال دارد؛ به‌گونه‌ای که ضمن غنی کردن ادبیات موضوع به سیاست‌گذاران کمک می‌کند که با توجه بیشتر به بحث ارتباطات‌و تعاملات اجتماعی، تقویت مهارت‌های کارآفرینانه و معرفی فرصت‌های کارآفرینی در جهت توسعه کارآفرینی در بین زنان روستایی اقدام کنند.

واژگان کلیدی: گرایش کارآفرینانه، مهارت‌های کارآفرینانه، سرمایه اجتماعی، تشخیص فرصت.

تشکر و قدردانی

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Original Article

Emotional Intelligence and its Psychological Impact on the Performance of Employees in Nigeria Health Sector

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Abstract

Purpose- The purpose of this study was to determine the extent to which emotional intelligence have a psychological impact on the performance of employees in Nigeria health sector

Design/methodology/approach- A descriptive survey research approach was employed to achieve this goal, and the study's population comprised of 102 nurses and doctors of State Hospital Ijebu Ode, Ogun State, Nigeria. Since nurses and doctors are recognized as the professionals who provide care services to patients in the organization, they make up the population. The Yamane formula was used to determine the sample size of 81, and the convenience sampling technique was used to select the respondents

Finding- Out of the questionnaire distributed 72 was completed and returned, yielding 89% response rate. The analysis's showed that emotional intelligence has a 52% variance in employee performance, with a R square value of 0.520. Additionally, it was discovered that employee performance was significantly and favorably impacted by the emotional intelligence predictor variables of self-awareness, self-management, social awareness, and relationship management with a βeta values of 0.341, 0.411, 0.217, and 0.381, respectively

Original/value- An organization cannot experience improved performance or a sustained competitive advantage if its human resources are not managed efficiently. This is because human resources are the only resources within the organization that possess thoughts, feelings, and hopes. The study results would help managers in the health sector increase awareness of emotional intelligence's value within their workplaces as doing so would benefit both the employee and the organization.

Keywords- Self-Awareness, Self-Management, Social Awareness, Relationship Management, Emotional Intelligence, Employee Performance.

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1. Introduction

The human resource is been referred to as a valuable asset since employees perform the majority of the work required to achieve the organization's goals, and their success in doing so is crucial to the organization's ability to develop and survive (Raj, 2021). With this, firms have recognized the significance of employees' physical and mental well-being as a critical factor in determining the organization's performance. In order for the organization to achieve good performance, human resources must provide good and quality services to the organization with regard to the fulfillment of their roles and responsibilities in the various departments and units of the business (Bianchi, Schonfeld and Laurent, 2019).

The health sector is one of the most significant industries in every nation. since of the nature of their work, interactions between nurses or other caregivers and their patients are crucial since they form the core of the organization and necessitate emotional intelligence on the part of the staff. The healthcare professionals (nurses and doctors) are among the most stressful because of the close relationship they have with patient safety (Ahmed, Ata and Metwally, 2019). Patients often express negative emotions to their caregivers, such as sadness, hostility, distress, and discomfort, which makes caregivers work long shifts and wears them out physically (Ramadan et al. 2020). Should these caregivers in this position be unable to regulate their emotions, they will be unable to keep their composure when interacting with the patient in various contexts and to make sound decisions in emergency situations (Rakhshani et al. 2018).

As a result of the increasing patient demand in the healthcare industry, medical personnel are physically and emotionally overworked, and the rising number of patients who are seriously ill also contributes to their burnout (Kiishi, 2024). The reasons behind psychological impacts like stress and burnout in health professionals and the various consequences they bring about, including the person quitting the health environment or doing less well (Akanni, Obi and Oduaran, 2022). Emotional intelligence is therefore a highly valuable skill for health professionals because it can be said that managing and understanding patients' emotions enhances the level of safety that is guaranteed to a patient in areas like communication, the quality of patient-centered care, patient satisfaction, and worker performance (Kwajaffa et al. 2020).

Humans are made up of both emotions and reason. While reason allows humans to be logical, emotions give them the capacity to identify and feel emotions, which is what defines them as human (Obaide, 2022). While emotional intelligence is said to improve a person's professional development, adaptability, well-being, and performance, it has been asserted in the health sector that emotions are a major factor in why healthcare staff lose control over their patients (Rayan, Sisan and Baker, 2019). Additionally, numerous studies in Nigeria have demonstrated that the psychological effects of their occupations, such as stress and burnout, are numerous, and that their incapacity to manage these effects has an impact on the efficacy and efficiency of their services (Kiishi, 2024; Phina, Patrick and Nwabuike, 2022). This has been a major problem for the health sector, particularly in Nigeria where there are insufficient resources and facilities for the medical personnel. For this reason, this study aims to determine the psychological impact that emotional intelligence has on the work performance of Nigerian health sector employees.

The study was guided by the following research questions:

i. How does self-awareness affect the performance of employees in Nigeria health sector?
ii. What is the effect of self-management on performance of employees in Nigeria health sector?
iii. Does social awareness have an impact on performance of employees in Nigeria health sector?
iv. To what extent does relationship management have an effect on performance of employees in Nigeria health sector?

2. Research Theoretical Literature

2.1. Emotional Intelligence

Salovey and Mayer first coined the term "emotional intelligence" in 1990 and defined it as the capacity to effectively assess and communicate one's own emotions as well as those of others. Emotional intelligence, according to Salovey and Mayer (1990), is the basis of human vigor,

motivation, and ambition. This definition has been widely accepted by academics because it recognizes that emotions influence people's behaviors and can control their actions. As such, emotions should be handled carefully, particularly when an individual is confronted with extremely difficult circumstances (Hrefish and H.H., 2020). According to Goleman (1996), emotional intelligence is the capacity of an individual to identify and manage their own emotions since it plays a major role in how well they are able to relate to others' emotions as well as their own.

Emotional intelligence, according to Lee and Chelladurai (2018), is the capacity of a person to successfully relate to and comprehend people, as well as to be adaptable enough to successfully manage the demands of their environment. According to Raj (2021), emotional intelligence is the capacity a person possesses to recognize, communicate, integrate, and comprehend emotions—both their own and those of others—and how this affects their behavior, either positively or negatively. Miao, Humphrey and Qian (2020) used three models—the skills model, personality model, and mixed mode—to further describe emotional intelligence. The personality model relates to an individual's fixed personality, the skills model explains EI as their cognitive capacity, which is subject to change, and the mixed model combines their cognitive ability and personality qualities.

2.2. Employee Performance

Phina, Patrick and Nwabuike (2022) explained employee performance as the outcome of labor in terms of the caliber and quantity of people performing their tasks in line with the ones that have been allotted to them. Employee performance, according to Akanni, Obi and Oduaran (2022), is the way a worker in an organization carries out its primary responsibilities and duties while also adhering to the standards, criteria, and measurements that the company has established. According to Merkusi and Aini (2020), an employee's performance is determined by how much they contribute to the organization's goals, objectives, vision, and mission as stated in the strategic objective of the company.

Employee performance, according to Yan et al. (2018), is the total productivity of the workforce inside the company. This may be assessed using a variety of important metrics, including output, quality, quantity, effectiveness, efficiency, and many more. In a similar spirit, Mukokoma (2020) define employee performance as the extent to which a worker is able to fulfill tasks set by the company or achieve its objectives. The quality of an employee's work inside the company, their efficacy or contribution to the decision-making process, their degree of interaction with managers or other employees, and their aptitude for problem-solving are all considered aspects of employee performance (Kiishi, 2024). Employee performance, according to Vrontis et al. (2021), is a person's ability to use organizational resources effectively and efficiently as well as their capacity to help the organization achieve its stated goals.

2.3. Dimensions of Emotional Intelligence

Self-Awareness - According to Liu et al. (2023), self-awareness is a person's natural sense of intuition, preference, and ability. This goes beyond simply having the essential and sufficient knowledge about a given subject; rather, it refers to a person's capacity to both understand and apply that knowledge to more advanced study. An individual who possesses the capacity for self-awareness and that of others is always at an advantage over those who do not, as only knowledge of others provides the experience necessary to manage situations (Yan et al. 2018). According to Rezvani and Khosravi (2019), someone who is self-aware is able to recognize and comprehend the emotions of others as well as control their own and others' emotions as they arise and respond to them in a way that would lead to a positive conclusion.

Arousal and attention, sensory and motor, psychosocial, and cognitive are the four main distinguishing stages that Phina, Patrick and Nwabuike (2022) used to explain self-awareness. According to Phina, Patrick and Nwabuike (2022), arousal and attention refer to a person's capacity to notice emotions as they arise, while the sensory and motor stages are characterized by a person's capacity to articulate their feelings at that specific moment. The cognitive stage, the final step of self-awareness, is the abstract reasoning and the urgent need the person has to solve the problem, whereas the psychosocial stage is the ongoing realization of one's own skills.

H1: Self-Awareness has no significant effect on employee performance in Nigeria health sector

Self-Management- According to Salovey and Mayer (1990), self-awareness is the continuous process by which a person evaluates and regulates both their own and other people's behavior to make sure that the best conduct is demonstrated and that positive relationships are built. This is also achieved by routinely reminding people of the customs, values, and surroundings that surround their place of residence. Instead of shifting the blame elsewhere, the individuals take ownership of their acts, learn from their failures, and make sure that their conduct keeps improving (Srivastava et al. 2021). According to Vrontis et al. (2021), self-management is the adoption of a technique that enables a person to arrange their behaviors in accordance with those of their surroundings. By doing this, they are able to create goals, efficiently manage their time, and make wise judgments.

According to Schlaegel, Engle and Lang (2022), persons who are able to use self management to make sure that their activities and behaviors are guided and controlled so as to ensure that their desired goal is reached are known to be proactive. Within the company, cognitive and functional exercises are used to help individuals learn how to control their behavior and make sure that everything they do is directed toward improving performance. This can take the shape of activities that are either work-related or unconnected as long as the employees know what is expected of them and are given the opportunity to take charge of their circumstances, which is a requirement for achieving the required performance (Vetbuje and Olaleye, 2022).

H2: Self- Management has no significant effect on employee performance in Nigeria health sector

Social Awareness- According to Phina, Patrick and Nwabuike (2022), social awareness is the ability to recognize and respond to the needs of others. It is a third dimension of emotional intelligence. They clarified that this is crucial for efficient administration and motivating people to work toward a common objective because its importance can never be overestimated. According to Papathanasiou et al. (2021), social awareness is synonymous with empathy. They define it as the ability for a person to put themselves in the other person's shoes, identify with them, and use that emotion to inspire themselves to overcome any obstacles. This is mostly accomplished through social interactions, which serve as the foundation for how other people's conduct is influenced and, ultimately, how higher performance is possible.

According to Salovey and Mayer (1990), social awareness is the ability to understand situations from another person's perspective, recognize other people's feelings, and engage compassion in problem-solving. Srivastava et al. (2021) asserts that people with strong social awareness are better able to communicate a wide range of emotions than people without it. As a result, people are expected to have these skills, which enable them to understand other people's feelings, listen intently to what they have to say, and effectively engage with them (Obiekwe and Ogbo, 2020).

H3: Social Awareness has no significant effect on employee performance in Nigeria health sector

Relationship Management- Relationship management, according to Obaide (2022), is a critical component of emotional intelligence since it greatly enhances the effectiveness and standard of interpersonal interactions. Relationship management was defined as a person's capacity to comprehend both their own and other people's emotions in order to establish harmonious communication. According to Salovey and Mayer (1990), persons with strong relationship management skills can interact, communicate, and develop relationships with others in an efficient manner.

Schlaegel, Engle and Lang (2022) explained that relationship management would enable a person to respond positively to changes in their social and environmental context and also foster an environment that is encouraging to others because they are able to recognize, assess, and understand their own emotions as well as those of others. According to Obiekwe and Ogbo (2020), this dimension is more related to social skills since it describes a person's ability to take on leadership responsibilities and, more specifically, use it to influence and motivate others to achieve a shared objective.

H4: Relationship Management has no significant effect on employee performance in Nigeria health sector

2.4. Nexus between Emotional Intelligence and Employee Performance in the Health Sector

Health sector employees are known to encounter many challenges in the course of carrying out their duties and responsibilities within the organization. In order for them to do their jobs well, emotional intelligence is essential, and this has a big impact

on how well they perform within the organization (Akgerman and Sönmez, 2020). According to Schlaegel, Engle and Lang (2022), emotional intelligence increases the degree of collaboration inside a company and enables workers to function as a team more successfully. This is one of the most important components as it is required of employees to communicate with one another. Emotional intelligence plays a major role in this since it fosters a sense of trust among staff members, which in turn helps the business accomplish its goals and objectives (Srivastava et al. 2021).

Employees with emotional intelligence, according to Schlaegel, Engle and Lang (2022), are able to recognize the positive side of their actions and contributions inside the company. As a result, they are more likely to be devoted to the company, which improves performance. Alsufyani et al. (2022) revealed that stress and burnout are the primary causes of poor performance for workers in the health sector and thus concluded in their study that if workers in this field are able to recognize, regulate, and effectively manage their emotions as well as those of others, their performance within the company can improve. According to the study by Kwajaffa et al. (2020), employees are more likely to be engaged in their work when there is less burnout. This can be readily accomplished when the person in question has the ability to control both their own and other people's emotions.

Employees with emotional intelligence are better at handling stress in the workplace, preventing problems that could lead to depression, and stabilizing their moods. These skills will improve their performance in the workplace (Kiishi, 2024). According to Merkusi and Aini (2020), emotional intelligence has a direct bearing on workers' performance because it helps them control their emotions, enabling them to express their feelings in a more healthy and productive way. According to Mukokoma (2020), emotional intelligence can act as a catalyst for the development of stronger relationships within an organization. This is because when people understand emotion and feelings, it can increase employee confidence and facilitate the completion of tasks more successfully.

2.5. Theoretical Review

Maslow's Hierarchy of Needs Theory- Maslow Hierarchy of Needs Theory was one of the first theories to explain why people are motivated at work. It is based on the idea that people have needs that are arranged hierarchically, that satisfying one need leads to satisfying another, and that this is what motivates people to work in an organization (Stajkovic and Luthans, 1998). This theory also supports the efficient management of employees within an organization. This is because employees are a key component of an organization, and their motivation is essential for them to perform more effectively and efficiently (Maslow and Lewis, 1987).

When a person's needs are not satisfied in an organization, their level of satisfaction declines, which in turn lowers their performance (Mustofa, 2022). Abraham Maslow's theory was described in terms of five categories of basic needs, each of which has five levels of importance. These categories include safety needs, social needs, self-actualization, self-esteem, and physiological needs. According to this theory, a person's social needs are determined by their interactions with others and their level of acceptance and affection from them (Kiishi, 2024). The social needs are associated with emotional intelligence because emotional intelligence emphasizes how people relate to one another. Positive relationships among individuals raise employee satisfaction, which in turn improves employee performance within the organization (Alsufyani et al. 2022).

3. Research Methodology

A descriptive survey research strategy was used to efficiently accomplish the study's goal. According to Creswell and Clark (2017), this study design is very helpful for enabling a researcher to perform a basic statistical analysis and is also highly effective in interpreting the data. The study's population is 102 and this consist of doctors and nurses at State Hospital Ijebu Ode, Ogun State according to data gathered from the human resources department. Using Yamane formula, 81 make up the study's sample size, and convenience sampling technique was used. This makes it possible to gather data from the sample based on the elements' accessibility and simplicity of acquisition.

Data was collected from the respondents using a distributed questionnaire that included statements pertaining to the study variables (emotional intelligence and employee performance) as well as factors that reflect the respondents' demographic information. The five-point Likert scale, which

goes from strongly agree to strongly disagree, was used in the design of the study instrument to indicate how much respondents agreed or disagreed with the assertions. A pilot study was conducted to examine the validity and reliability of the research instrument. The results were deemed reliable by Pandey and Pandey (2021) since the Cronbach's Alpha coefficient was above 0.75. Descriptive analysis was used to compute the data, and multiple regression was used to do inferential analysis and determine the relationship between the research variables.

4. Research Findings

The total number of respondents identified for this study is 81; however, of those who received the questionnaire, 72 completed it and returned it, yielding 89% response rate.

4.1. Coefficient of Determination (R2)

Table 1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.723[a]	.520	.515	.21142

a. Predictors: (Constant), Self Awareness, Self-Management, Social Awareness and Relationship Management

The preceding table indicates that the R square value is 0.520. This indicates that while factors covered in the study had a 52% variation in employee performance, other factors not taken into account had a 48% variation. Therefore, it can be concluded that the study's components—social awareness, self-awareness, self-management, and relationship management—have a significant impact on how well workers in the health sector perform.

4.2. Analysis of Variance (ANOVA)

Table 2. ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.152	4	1.788	52.097	.000[b]
	Residual	32.776	68	.482		
	Total	39.928	72			

a. Dépendent Variable: Job satisfaction

b. Predictors: (Constant), Self-Awareness, Self-Management, Social Awareness and Relationship Management

According to Creswell and Clark (2017), the ANOVA is used to assess how different the data set in a study is from one another. The F statistics in the above table showed a value of 52.097 at a p value less than 0.05. A justification for the model's suitability in demonstrating the correlation between the research variables (emotional intelligence and employee performance)

4.3. Multiple Regression

Table 3. Coefficients[a] Results for Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.651	.314		1.14	.000
	Self-Awareness	.341	.037	.311	6.312	.001
	Self-Management	.411	.068	.215	3.15	.002
	Social Awareness	.217	.023	.118	3.156	.001
	Relationship Management	.381	.055	.201	2.872	.001

a. Dependent Variable: Job Satisfaction

The coefficient for self-awareness, as seen in table 3 above, had a βeta value of 0.341 and was significant at a level less than 0.05. this proving that self-awareness and worker performance at

State Hospital Ijebu Ode, have a good and significant relationship. this also means that, if all other factors stay the same, there would be a 34.1% increase in employee performance for every 1% increase in self-awareness of emotional intelligence.

The coefficient for self-management, as seen in table 3 above, had a βeta value of 0.411 and was significant at a level less than 0.05. Thus, proving that staff performance at State Hospital Ijebu Ode, and self-management have a good and significant relationship. This also means that, if all other factors stay the same, there would be a 41.1% increase in employee performance for every 1% increase in self-management of emotional intelligence.

Table 3 above demonstrates that the social awareness coefficient had a βeta value of 0.217, which was significant at a level less than 0.05. proving that there is a substantial and favorable relationship between State Hospital Ijebu Ode, employees' performance and social awareness. This indicates that, if all other factors stay the same, there would be a 21.7% increase in employee performance for every 1% increase in social awareness of emotional intelligence.

The coefficient for relationship management, as seen in table 3 above, had a βeta value of 0.381 and was significant at a level less than 0.05. this proving that relationship management and staff performance at State Hospital Ijebu Ode, have a good and significant relationship. This also means that, if all other factors stay the same, there would be a 38.1% increase in employee performance for every 1% increase in relationship management of emotional intelligence.

4.4. Discussion of Findings

The analysis revealed a positive and significant relationship between self-awareness and employee performance, which is consistent with earlier research by Kwajaffa et al. (2020), who defined self-awareness as the capacity to recognize one's own emotions as well as those of others. When this is achieved, an individual is better able to respond and relate in ways that will improve their performance. This supported the findings of Akanni, Obi and Oduaran (2022), who postulated that a person's emotional vulnerability is reflected in their level of self-awareness and that this has a significant impact on how well they perform.

The results of the analysis also showed a strong and positive correlation between employee performance and self-management, which is consistent with the findings of Obaide (2022), who defined self-management as the proactive application of a plan that helps people align their actions and motivates them to take actions that advance their goals. According to the study by Mukokoma, (2020), self-management is crucial for an individual's ability to exercise self-control and manage their time. It also helps them make wise judgments, which improves performance. This adds credence to the research conducted by Papathanasiou et al., (2021), who found that people who engage in self-management are better able to control and steer the activities going on around them, which helps them accomplish their goals.

The above analysis's hypothesis, which states that there is a positive and significant relationship between social awareness and employee performance, was also accepted. This is consistent with the findings of Alsufyani et al., (2022), which explain that when people have social awareness, they can effectively express their emotions, which has an impact on their decision-making. According to Olatunji, Idemudia and Owoseni (2020), social awareness is the capacity for an individual to comprehend a range of emotions and, as a result, know how to connect with people in a way that enhances their performance in the workplace.

The analysis also supported the final hypothesis, which found a strong and positive correlation between relationship management and worker performance. This finding is consistent with the research conducted by Obiekwe and Ogbo (2020), who discovered that people with strong relationship management skills would find it easier to connect with others and build relationships, particularly when working in a team. As a result, performance would increase. Additionally, Kiishi (2024) found a correlation between relationship management and worker performance, explaining that relationship management is critical to enabling people to work together productively within an organization to achieve a common goal, which in turn boosts worker satisfaction and productivity.

5. Discussion and Conclusion

Consistent with earlier research, the study has demonstrated the critical role that emotional

intelligence plays in the performance of workers in the health sector, specifically in relation to how well they relate to patients and other employees within the organization. According to the study, healthcare professionals who are able to identify, understand, and regulate their own emotions as well as those of others will be able to increase patient satisfaction, which in turn will enable them to function as a cohesive team within the organization and lead to improved performance.

The study's recommendations suggest that management in the health sector educate their staff members more about the value of emotional intelligence as doing so will help the company as a whole as well as the employees. This could be achieved by setting up or holding training sessions and seminars that give their staff members a thorough understanding of how to manage their emotions in the workplace in order to improve their performance. Additionally, the organization's management should create a positive work environment. One way to do this is by putting in place a feedback system that enables employees to speak openly and directly with management about anything that is bothering them, as well as to express their opinions and feelings about their experiences working there.

It is also recommended that more research focus on variables not covered in the study in order to obtain a deeper understanding of this study variable. This could potentially improve employees' emotional intelligence within the organization and improve their performance. In addition to the health sector, future research should focus on other organizations or sectors, such as the manufacturing, educational, and many more, in order to close the gaps in the study. Finally, in order to address the limitations of the study and determine whether the findings are still valid, future research would take into account other research designs and instruments.

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Authors′ contributions

The authors equally contributed to the preparation of this article.

Conflict of interest

The authors declare no conflict of interest.

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Original Article

Factors Affecting Ongoing Preventive Behaviors of Sheep Farmers Against the Prevalence of Covid-19

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Abstract

Purpose: Despite much evidence on consumers' behaviors and veterinarians' perspectives against Covid-19, nor have the past inquiries surveyed ranchers and livestock breeders' hygiene behaviors against Covid-19, serving as the main actors in the supply chain of livestock-product. Therefore, this study intends to be notified of the hygiene behaviors of ranchers and sheep farmers to curtail the spread of Covid-19.

Design/Methodology/Approach: Using the theory of planned behavior and health belief model, this study contributes to predicting sheep farmers' behaviors in Maragheh County, northwestern Iran (2021-2022). Based on the quantitative paradigm and non-experimental research design, the study benefits from the cross-sectional survey to gather the data of 207 sheep farmers using questionnaire. To analyze the data, linear regression model (LRM), analysis of variance, and univariate GLM were used.

Findings: Using the Univariate General Linear Modeling (UGLM), it was found that subjective norms (SNs) ($\eta 2_{SNs} = 0.374$) and perceived behavioral control (PBC) ($\eta 2_{PBC} = 0.246$) have a significant influence on behavior, further, these factors have different variate values at three levels of production unit type, inclusive of mechanized (n = 27), semi-mechanized (n = 47), and traditional (n = 133), most value of SNs and PBC falls under the category of traditional production units. The interaction of the SNs variable (SNs × Production Unit) with the levels of the production unit is statistically significant (F = 1.87, $p < 0.05$; $\eta 2_{SNs} = 0.374$).

Original/Value: This study fulfilled the knowledge gap of the factors that contribute to forecasting hygiene behaviors of sheep farmers against Covid-19. The agenda of recommendations would have impacts on health and wellbeing of not just sheep farmers but also public people by promoting the preventive behaviors of ranchers and sheep farmers against the spread of Covid-19.

Keywords: Preventive Behaviors, Sheep Farmers, Ranchers, prevalence, Covid-19.

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1. Introduction

The prevalence of epidemics shows that the prevalence of Ebola in West Africa between 2013 and 2016, the outbreak of the coronavirus in 2002 and 2003, and its developed form in 2019, acute respiratory infection of SARS-CoV, have led to more than 8,000 human infections with the 10% death (Vergara-Alert et al., 2017). The coronaviruses are large and enveloped and positive-stranded RNA viruses that are classified as coronaviruses in the coronavirus family and the order Nidovirales (Murray et al., 2010). Evidence suggests that from a sequence homology perspective, a group of coronaviruses, such as swine-borne gastroenteritis virus causes intestinal and enteric disease in domestic animals (Murray et al., 2010) and Bovine coronavirus mainly causes intestinal disease in cattle (Burimuah et al., 2020), feline coronavirus (FCoV) and Canine coronavirus have also been reported (Murray et al., 2010). Following the diagnosis of coronavirus in dromedary camels of Saudi Arabia, Oman, and Qatar, these animals were identified as a potential source of transmission of coronavirus (Munyua et al., 2017) and infection of the Middle East Respiratory Syndrome virus to humans, a high percentage of dromedary camels (56.4%) provide the evidence of MERS-Covid infection (Kasem et al., 2018). In 2013, a new human coronavirus called the Middle East respiratory syndrome coronavirus, MERS-CoV, with severe pneumonia emerged in Saudi Arabia, by December 2016, MERS had more than 1,800 cases and a 35% mortality rate (Vergara-Alert et al., 2017). The Middle East Respiratory Syndrome led to human disease for the first time since 2012 (Kasem et al., 2018).

Most research in the field of Covid-19 disease focuses on the behavioral patterns of citizens living in urban areas as a significant center of the human population, with less attention to the behavior of rural people as the most important actors associated with the primary links of the food production and supply chain (Yazdanpanah et al., 2020; Pakravan-Charvadeh et al., 2021; Burlea-Schiopoiu et al., 2021). In the supply chain of livestock products, ranchers play a vital role in shortening the treatment chain of Covid-19 disease because they are directly and closely associated with the livestock products and their behaviors play a significant role in reducing the prevalence and transmission of Covid-19 to humans.

Due to the physiological similarities between humans and animals, the coronavirus has the potential to cause a common disease between them. Before the spread of the coronavirus in the world, the transmission of the virus, called MERS, originated in camels. Evidence from phylogenetic analysis and MERS-Covid isolates (MERS CoV) showed that the sequences are closely related to other MERS-Covid strains derived from camels and humans (Kasem et al., 2018). Performing preventive and health care behaviors by farmers in production units has an important role in preventing the development and spread of Covid-19 because 60% of infectious diseases have a common origin in humans and animals (Hashem et al., 2020), as emphasized future population food requirements for health (Desjardins et al., 2010). Being cognizant of the potential role of livestock in disease transmission is vital for understanding the epidemiology of the disease (Vergara-Alert et al., 2017). In particular, from the perspective of farmers, compared to the direct costs of the production unit, the effects of common disease risks between humans and livestock are less obvious and considered (Kristensen & Jakobsen, 2011). Today, in health care policies, special attention is paid to preventive measures, especially these measures play a substantial role in shortening the treatment chain of Covid-19. Evidence suggests that appropriate preventive measures have played a crucial role in controlling calf diarrhea (Rai et al., 2011).

According to the World Health Organization, the number of cases of Covid-19 disease in Iran reached 2,093,452 cases, being conducive to the death of 64,764 people. The application of preventive behaviors has a vital role in shortening the treatment chain of the disease (WHO, 2021). From the technical point of view of treatment, it is also important to pay attention to the behavioral patterns of ranchers in preventing the outbreak of Covid-19 disease, despite the policies' emphasis on finding an animal model of disease to produce a vaccine (Vergara-Alert et al., 2017) and antibiotics, excessive use of vaccines and antibiotics in livestock leads to the development of bacteria resistant to them (Dixon et al., 2014). Economically, the prevalence of pathogens can also affect economic systems. Evidence shows that as a result of the pandemic SARS epidemic, the

global economy has cost between $ 30 billion and $ 100 billion (Veterinary Report Towards One Health, 2012).

Although much evidence on consumers' behaviors and veterinarians' perspectives against Covid-19, nor have the past inquiries surveyed ranchers and livestock breeders' hygiene behaviors against Covid-19, serving as the main actors in the supply chain of livestock-product. However, after the emergence of Covid-19, the country's research system has conducted significant research to promote disease prevention behaviors using samples from patients, citizens, and medical staff (Khazaee-Pool et al., 2020; Nasirzadeh et al., 2020; Rahmanian et al., 2020) and significant studies on the intent and behavior of ranchers, producers of livestock products and products to prevent the spread of various common diseases between livestock and humans, for example, Congo fever (Masoudy et al., 2016), anthrax (Seid et al., 2020), Escherichia coli (Toma et al., 2015), gastrointestinal nematode (Velde et al., 2015), and Malta fever (Babaei et al., 2014); but very little research has been done on the study. The behavior of ranchers has been done to prevent the outbreak of Covid-19, therefore, the present study would investigate the causal relationship between the factors affecting the preventive behaviors of ranchers in the Sahand Mountains of Maragheh township from the outbreak and spread of Covid-19. The following objectives of the research are presented:

(1) To identify the determinants of behaviors to prevent the spread of Covid-19;
(2) Determining the strength of the theory of planned behavior and the health belief model in predicting the variation of behavior to prevent the spread of Covid-19;
(3) Determining the interactions of driving factors and the level of livestock production units;
(4) Providing the management implications to the veterinary network to disseminate among the community of farmers to apply preventive behaviors to reduce the prevalence of Covid-19.

2. Research Theoretical Literature

2.1. Theory of planned behavior (TPB)

The basic premise of the TPB is that persons express rational behaviors in the form of a balance between the benefits and costs of behavior, as they also express views about the desirability or undesirability of behavior (Ajzen & Driver, 1922). The three main constructs of the TPB (i.e., attitude, subjective norms, and behavioral control) predict behavioral intent and indirectly influence individuals' actual behaviors (Fishbein & Ajzen, 1977). The reason for using this theory in this research is that it is now accepted that the motivations of ranchers to continue a behavior and accept behavioral changes are not rooted solely in economic or financial aspects and cannot be based solely on simple concepts of economic rationality. Despite the importance of cost and benefit in measuring choices, ranchers operate in a social context that either confines the behavioral choices or facilitates and gives rise to choices (Garforth, 2015) (see figure 1).

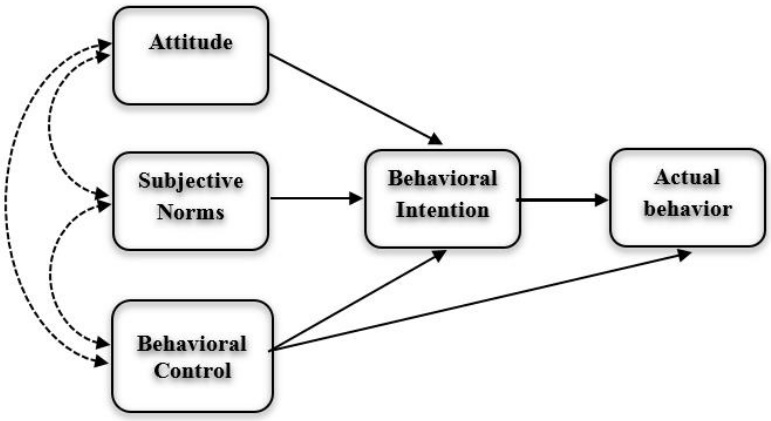


figure. 1. Theory of planned behavior (Fishbein and Ajzen, 1977)

2.2. Health belief model

Many studies have used the health belief model to explain health behaviors (Karimi Aval et al., 2019; Garforth et al., 2013; Velde et al., 2015; Yazdanpanah et al., 2020). The reason for using the health belief model in this research is the most semantic and content compatibility of its structures with the context and objectives of the research. In the field of livestock behavior, some studies have studied the behavior of this group of people. Technically, this model has been the basis for examining measures based on anti-virus treatments, such as Crimean – Congo hemorrhagic fever (CCHF) (Whitehouse, 2004; Paragas et al., 2004). Evidence shows that the educational intervention implemented by the health belief model has a favorable effect on reducing risk factors and improving preventive behaviors of brucellosis in farmers (Farzadmehr et al., 2019) (see Figure 2).

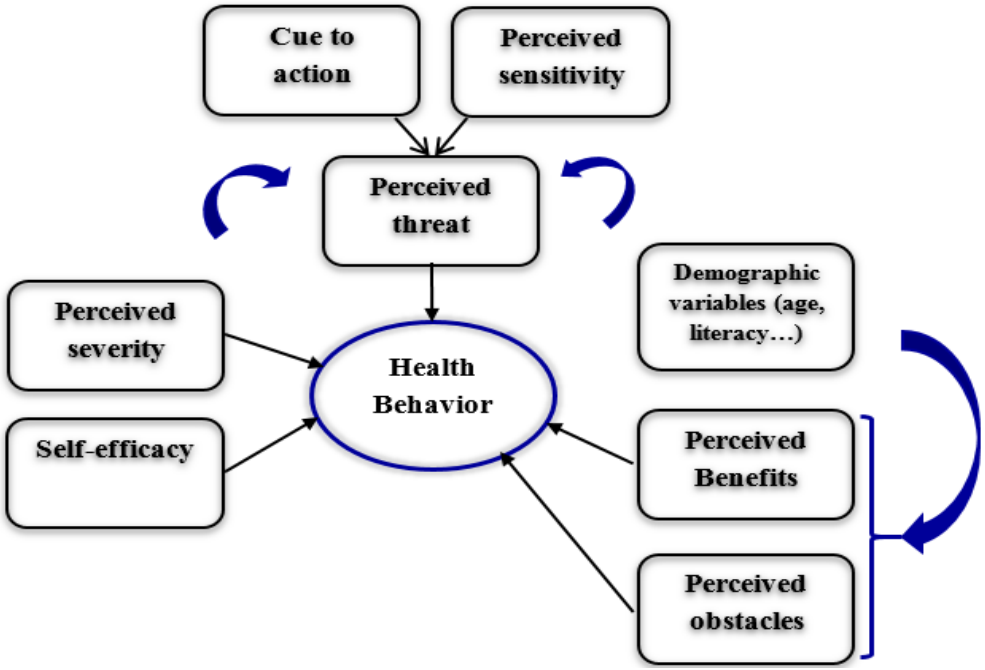


Figure. 2. Health belief model
(Glantz cited in Wilson et al., 2015)

The reason for combining the two models is that, for example, a study by Velde et al. (2015) shows that the combined model accounts for 46% of the variance of intent to accept targeted diagnosis and therapies and targeted therapies. Table 1 shows the conceptual constructs of the two theories.

Table 1. Conceptual constructs of the two theories of planned behavior and the pattern of health belief

Theory	Construct	Conceptual definition	Application
TPB	attitude	The evaluation of the desirability/desirability of a fact or object.	Orientation to execute an action or project. Prevent social, economic, and financial losses and costs. Implement a measure.
	Subjective norms	person's perception that his or her close and respected friends are encouraging or hindering a behavior.	Getting help from people with cultural norms to institutionalize a behavior / change a behavior.
	PBC	The perception that one is able to do a healthy behavior.	Provides PBC in performing recommended actions, training, and guidance. Uses progressive goal setting. Gives verbal reinforcement. Shows desirable behaviors.

Theory	Construct	Conceptual definition	Application
			Reduces anxiety.
HBM	Perceived sensitivity	Belief in the possibility of danger or disease.	Defines the level of the population at risk. Personalizes risk based on a person's characteristics or behavior. Makes perceived sensitivity more compatible with a person's actual risk.
	Perceived severity	Belief in the seriousness of the situation and the continuity of its results.	Determines the consequences of hazards and conditions
	Perceived benefits	Belief in the effectiveness of the recommended action to reduce the risk or severity of its effect.	Defines the action is taken (how, where, when). Clarifies the expected positive effects.
	Perceived obstacles	Belief in the tangible and psychological costs of recommended action.	Identifies and reduces understandable barriers through reassurance, correction of misinformation, incentives, and assistance.
	Cue to action	Strategies to activate individual readiness.	Provides information, awareness-raising, and the use of appropriate reminder systems.
	Trust in the government	The level of people's trust in government agents, specialists, and policymakers.	Facilitate the change of inappropriate behaviors, avoid spending financial resources and spend a lot of time changing inappropriate behaviors.

Note: Adapted from Glantz cited in Wilson et al. (2015) and Ajzen & Driver (1992)

2.3. Preventive behavior against the spread of coronavirus

Understanding behavior as an observable, continuous, and long-term action is relevant to the discussion of rationalism. Farmers and ranchers engage in behaviors that make sense to them under the certain farm, family, and business conditions (Garforth, 2015). In the field of health, behavior relies on health-based actions. Recognizing biosafety in production units is a new way to motivate and encourage farmers to manage and control disease (Maye & Chan, 2020). However, despite having sufficient awareness of biosafety, farmers do not necessarily perform the best animal health practices in production units (Palmer, 2009). In this regard, the main challenge for policymakers, veterinarians, and public health professionals is to gain an understanding of the rationality of ranchers and how they see and evaluate the world (Garforth, 2015). In the meantime, official institutions provide scientific, logical, and technical reasons for encouraging ranchers to adopt biosecurity practices on the farm; whereas, ranchers and farmers resist the acceptance of treatment methods based on animal health and form rationality based on social, cultural, and economic contexts (Palmer, 2009).

2.4. Attitudes towards Covid-19

It includes the attitude of judgments and evaluations based on desirability and non-desirability about objects and subjects. In the field of animal health, attitudes are related to views based on online information or information retrieved from the memory of farmers, which, given the economic, technical, and financial conditions of the farm, can be the nature of a disease agent. Evaluate diagnostic or therapeutic measures such as antiviral, antibacterial, and antiparasitic measures, for example, Kristensen and Jakobsen (2011) state that Danish ranchers' perceptions of biosecurity vary and have a variety of perspectives, including participatory, ambiguous, elusive, and introverted. The first view is based on external decisions and actions (External biosecurity) and participation. The nature of the second view is ambiguous, with a civilized, laborious approach, and more of a kind of mental and impractical expression (Trouble with more abstract). The third view considers these measures to be based on a civilized approach, disregarded rules and legislation, and the fourth view focuses on the introverted nature of internal herd management. Garforth et al. (2013) combined the TPB with the HBM to study the biosafety behaviors of sheep and pig herders and state that disease management behavior is influenced by

their attitudes toward actions. Toma et al. (2015) also report that attitudes help shape the behavioral tendencies of ranchers to control and manage Escherichia coli infections. A study in the northeastern regions of Ethiopia shows that anthrax prevention practices are more likely to be performed by farmers with a positive attitude (Seid et al., 2020). Velde et al. (2015) reported that Belgian ranchers' attitudes toward diagnostic methods are the strongest predictors of acceptance of diagnostic methods such as targeted therapies and selected targeted therapies. Jack et al. (2017) describe concerns about increasing resistance to anthelmintic resistance in sheep herds in the UK to 400 ranchers using a conceptual model based on socio-psychological factors. They surveyed and concluded that a positive attitude towards nematode control services is the main reason for accepting sustainable methods of parasite control.

2.5. Subjective Norms (SNs)

The mental norm of a person is defined as the fact that close and respected friends encourage or hinder a behavior (Ajzen & Driver, 1992). Evidence suggests that mental norms include ranchers' perceptions of what celebrities do in similar situations and their understanding of important issues that play a decisive role in adopting measures to manage parasitic diseases (Garforth et al., 2013). By integrating the TPB and the HBM, Velde et al. (2015) accentuate an introduction to the importance of sustainable control strategies to antiparasitic resistance in dairy cows in Belgium, as concluded, the SNs is one of the factors influencing the intention of dairy farmers to use diagnostic methods such as targeted therapies and targeted therapies.

2.6. Perceived Behavioral Control (PBC)

The PBC consists of two parts (1) the mentality of individuals to be able to perform a behavior and (2) environmental conditions and infrastructure. The first part deals with the perceived ability of ranchers to implement control behaviors to prevent and prevent the spread of disease, which is known as self-efficacy. The experience shows that disease management behavior among ranchers is influenced by their perception of the effectiveness of methods to reduce disease risk, their understanding of their ability to apply specific methods, and their understanding of factors that limit their ability to influence specific factors (Garforth et al., 2013). In the field of preventive behaviors to prevent the spread of Covid-19 (Yazdanpanah et al., 2020) reported that by finding a pattern of health belief, self-efficacy has a positive and significant effect on prevention intentions and behaviors. Research shows that self-efficacy plays a key role in predicting changes in ranchers' preventive behavior in preventing the spread of malaria (Babaei et al., 2014) and Crimean-Congo fever (Karimi Aval et al., 2019; Masoudy et al., 2016). Khazaee-Pool et al. (2020) reported that among the constructs of the health belief model, self-efficacy has the strongest predictor and the largest share in predicting the prevention behavior of Covid-19. Also, evidence suggests that PBC has a positive effect on the willingness to accept diagnostic and therapeutic methods among dairy farmers (Velde et al., 2015).

2.7. Behavioral intention (BI)

In their study examining the determinants of occupational behavior of 283 farmers in Flanders using the TPB to conceptualize the constructs that predict intention and behavior, Colémont and Van den Broucke (2008) concluded that behavioral intention has a positive and significant effect on their preventive behaviors. Moreover, Yazdanpanah et al. (2020) surveyed 305 rural youth in rural areas of Southeastern Iran and concluded that behavioral intention has a positive and significant effect on preventive behaviors of rural youth and the highest variance of behavior explained and estimated by behavior intention.

2.8. Perceived sensitivity

Sensitivity is defined as the belief that a person is at risk for disease (Glantz cited in Wilson et al., 2015). Evidence suggests that perceived susceptibility is an important predictor of protective behavior against infectious diseases (Bish & Michie, 2010). In the study of factors affecting the prevention behaviors of brucellosis in livestock farmers in Charroimagh, Babaei et al. (2014) showed that perceived sensitivity is one of the strongest predictors of livestock behavior. Karimi Aval et al. (2019) also provide evidence that Crimean-Congo antipyretic behaviors in ranchers are positively correlated with perceived sensitivity. In a descriptive-analytical study using 400 people in Mazandaran province, Khazaee-Pool et al. (2020) have concluded that the behavior of preventing the spread of Covid-19 disease and perceived sensitivity are significantly correlated to each other. In contrast to research in the field of animal health, which shows the positive effect of the perceived sensitivity variable, the study of

Velde et al. (2015) shows that perceived sensitivity has a significant effect on the intention to accept the method. There are no diagnostic tools in the field of treatment of livestock parasitic diseases.

2.9. Perceived severity

The evidence from the study of Yazdanpanah et al. (2020) suggests that perceived severity has a positive and significant effect on behavioral goals and intentions in preventing the spread of Covid-19. Also, perceived severity has a positive and significant effect on preventive behaviors. Evidence also suggests that the greater perceived severity of the disease is an important predictor of behavior for protection against pandemic diseases (Bish & Michie, 2010). Karimi Aval et al. (2019) also believe that Crimean-Congo antipyretic behaviors in ranchers have a positive correlation with perceived severity. Other studies have reported the lack of effect of the intensity variable perceived by ranchers on the acceptance of diagnostic methods, due to low perception of the threat of disease (Velde et al., 2015).

2.10. Perceived benefits

By surveying 200 cattle farmers in Zabol city using a questionnaire including the constructs of HBM, Masoudy et al. (2016) provided evidence that behaviors to prevent the spread of Congo fever have a positive and significant relationship with perceived benefits. In a study by Renault et al. (2020), the perceptions of 988 heavy livestock breeders in Belgium, France, Germany, Spain, and the Netherlands about biosecurity measures were identified. This study showed that the actual implementation of health measures is significantly affected by farmers' perceptions of the perceived benefits of these measures. In the field of preventive behaviors to prevent the outbreak of Covid-19 disease, the evidence also showed that there is a positive and significant correlation between the prevention behavior of Covid-19 disease and perceived benefits (Khazaee-Pool et al., 2020).

2.11. Perceived obstacles

Evidence suggests that Crimean-Congo antipyretic behaviors in livestock farmers have a significant negative correlation with perceived barriers (Karimi Aval et al., 2019). In the field of corona outbreak management, there is also evidence that the greater the barriers to preventing Covid-19, the slower the onset of behaviors (Khazaee-Pool et al., 2020). In the field of meat management, a study by Hambolu et al. (2013) shows that tuberculosis risk behaviors among meat sellers in Nigeria who eat contaminated parts of the lungs. To reassure customers that the meat they eat is safe, it is accompanied by a barrier that restricts sales without tasting the meat.

2.12. Cue to action

Guidelines for action include strategies for activating a person's preparedness to deal with a disease agent (Glantz cited in Wilson et al., 2015). Guides include reading scientific resources such as newspapers or articles, organizing lectures and encouraging people to participate in them, and distributing scientific and promotional journals (Yazdanpanah et al., 2015). In the field of livestock disease management, there is evidence of the effect of variable guidance for action on livestock behavior. For example, Babaei et al. (2014) report that the practice guide is a strong predictor of antipyretic pastoral behavior in ranchers. Karimi Aval et al. (2019) also provide evidence that Crimean-Congo antipyretic behaviors in ranchers have a positive and significant relationship with practice guidance. Jack et al. (2017) also believe that encouraging ranchers to test the effectiveness of treatment in the area of sustainable control of parasitic diseases is part of the guidance-related measures needed to change farmers' perceptions of risk.

2.13. Trust in the government in controlling the corona

Trust in government specialists and agents is one of the fundamental components for the participation of livestock breeders, dairy farmers, and herders in accepting preventive activities in livestock units. Even, the participation of farmers in government projects aimed at managing and controlling livestock diseases and promoting anti-disease activities is related to the component of trust in government agents. In this regard, the evidence suggests that the way farmers view the sources from which they obtain information is one of the reasons why their decisions are not always the ones that others expect; some recommendations are not accepted simply because the farmer does not consider the person or organization as a reliable source (Garforth, 2015). There is also evidence that greater trust in authorities is associated with preventive behavior in pandemic diseases (Bish & Michie, 2010). Manufacturers use their information more when the source of information

is reliable and trustworthy. Experience shows that livestock breeders in Australia use veterinarians, Table 2 displays the hypotheses of the study.

industry agencies, and the government as sources for reliable information (Paquette et al., 2020).

Table 2. Hypotheses of the study

Hypothesis	Hypothetical Statements
1	Attitude has a positive effect on farmers' behavior to prevent the spread of Covid-19.
2	SNs have a positive effect on farmers' behavior to prevent the spread of Covid-19.
3	PBC has a positive effect on farmers' behavior to prevent the spread of Covid-19.
4	BI has a positive effect on livestock prevention behavior of Covid-19.
5	Perceived sensitivity has a positive effect on farmers' behavior to prevent the spread of Covid-19.
6	The perceived severity has a positive effect on farmers' behavior to prevent the spread of Covid-19.
7	Perceived benefits have a positive effect on farmers' behavior to prevent the spread of Covid-19.
8	Perceived barriers have a negative effect on farmers' behavior to prevent the spread of Covid-19.
9	Trust in government has a positive effect on farmers' behavior to prevent the spread of Covid-19.
10	Cue to action has a positive effect on farmers' behavior to prevent the spread of Covid-19.

3. Research Methodology

Based on the quantitative paradigm and non-experimental research design, the study benefits from the cross-sectional survey to gather quantitative data.

This study was conducted in Maragheh Township, being ranked as third in production in East Azerbaijan province, Iran (IRNA News Agency, 2020a). In this township, 60,000 tons of livestock and poultry feed are annually produced (IRNA News Agency, 2020b). The production of this township includes 34,000 tons of milk, 2.4 thousand tons of sheep meat, 7,000 tons of poultry meat, 19,000 tons of eggs, and 3.1 thousand tons of fish meat (ISNA, 2021). The share of light dairy cattle is 11,000 tons with 100,000 heads and the share of heavy dairy cattle is 23,000 tons of milk with 12,000 heads. The total number of heavy livestock in the township is 22,000 and the total number of light livestock is about 204,000. Heavy livestock of the township is raised in 67 units of industrial and semi-industrial livestock and 40 units of sheep and the rest in traditional rural livestock. Therefore, the study of the intentions and behavior of farmers in preventing the outbreak of Covid-19 is a necessary measure in the production units of livestock products in this township.

In this study, data and information were collected from ranchers and sheep farmers using the techniques of the focus group, structured interview, and survey using questionnaire.

In this study, according to the population of the livestock community of Maragheh township, the sample size was determined using the Krejcie-Morgan table, with a margin error of 5% (N ≈1200) (Krejcie & Morgan, 1970). To survey the research sample, a stratified random sampling method with appropriate assignment according to the geographical areas of Maragheh township (district and village) was used. After estimating the sample size, the villages in each stratum (or village) were selected by a simple random sampling method and according to the ratio of the number of farmers to the total population of farmers in each village, a percentage of the sample size was allocated to them. It should be noted that Maragheh township has 6 villages (South Sarajoo, East Sarajoo, West Tea Teapot, North Sarajoo, West Sarajoo (Central), and Qara Naz) which according to the number of farmers in each village were surveyed.

In the present study, quantitative data analysis was performed using SPSS24 software. Some statistical methods and models for analyzing quantitative data include the linear regression model (LRM), analysis of variance, and univariate GLM.

To achieve acceptable face validity of the questionnaire, as the main instrument of data collection, a group of experts in the fields of agricultural extension, animal husbandry, and veterinary medicine was used, thereby expressing their views and opinions on the wording, correction of inappropriate items in measuring in indices, confirm the logical number of questions of the whole questionnaire, partial questions, not being on-general, one-sided questions and also confirm the logical number of selected questions of each concept (or construct) and based on their comments and suggestions, the questionnaire was modified.

4. Research Findings

4.1. Descriptive statistics

As illustrated in Table 3, the descriptive results of the research show that 94.7% of the respondents are male and the rest (5.3%) are female. According to the achieved result, the average of respondents is 47.74 years, which indicates that the sheep farmers are adults, also the experience average is 31.14 (SD = 16.97). The largest number of respondents fall under the category elementary school and guidance and high school, with an aggregate percentage of 74.2%. About the nature of production units, this variable includes three categories of mechanized (13%), semi-mechanized (22.7), and traditional (64.3%), the highest frequency is related to traditional animal husbandry and the lowest frequency pertains to the mechanized category. In addition, the vast majority of the studied ranchers own their production unit. In terms of the number of animals, the collected data show that the frequency of heavy and light livestock is 105,896 and 345,577. Given the economic feature, respondents have indicated that they fall under the category of favorite status (n = 181, 87.4).

Table 3. Descriptive statistics of sample (n = 207)

Variables	Level	(%)	Mean or Sum($\sum x_i$)	SD
Gender	Male (n = 196)	94.7		
	Female (n = 11)	5.3		
Age			41.74	16.97
Educational attainment	Illiterate (n = 44)	22.7		
	Elementary school (n = 58)	29.9		
	Guidance and High School (n = 86)	44.3		
	Bachelor (n = 4)	2.1		
	Masters and higher (n = 2)	1		
Livestock work experience			31.14	16.97
Type of livestock ownership	Owner (n = 176)	85		
	Rentier (n = 15)	7.2		
	Owner-renter (n = 12)	5.8		
	Livestock worker (n = 4)	1.9		
Prevalence of Covid-19	High risk (n = 19)	9.2		
	Low risk (n = 150)	72.5		
	Safe (n = 38)	18.4		
Type of production unit	Mechanized production unit (n = 27)	13		
	Semi-mechanized production unit (n = 47)	22.7		
	Traditional production unit (n = 133)	64.3		
Number of livestock	Heavy livestock (n = 60)		105,896	
	Light livestock (n = 147)		345,577	
Number of visits to the Veterinary Network Organization per month			2.58	1.29
Economic status	Very Undesirable (n = 0)	0		
	Undesirable (n = 0)	0		
	Medium (n = 11)	5.3		
	Favorite (n = 181)	87.4		
	Very Desirable (n=15)	7.2		
Access to bank credits	Yes (n=23)	11.1		
	No (n=184)	88.9		

Note: Some variables have a nominal scale, where, others have a scale measure.

Table 4 shows the research indicators and respective items, the measurements of construct-average and Cronbach's alpha are also illustrated

Table 4. Measurements of TPB and HBM

Theory/Items	Mean (Std. Deviation)	Cronbach's Alpha
THEORY OF PLANNED BEHAVIOR		0.70
1. Attitude towards Covid-19	3.62(0.94)	
Corona is a dangerous disease.		
Corona endangers human health.		
Corona endangers the health of the rancher.		
Corona endangers the health of livestock products (meat and dairy).		
2. SNs	4.04(0.67)	
People who are important to me think that I should take preventive measures to prevent Covid-19.		0.77
My family members consider it important to take preventive measures to prevent Covid-19.		
My friends think that preventative measures are useful to prevent Covid-19.		
3. PBC	3.74(0.66)	0.56
I am confident that I can take preventive measures to prevent Covid-19.		
I have the necessary skills to take preventive measures to prevent Covid-19.		
I have the necessary financial resources to take preventive measures to prevent Covid-19.		
I have the necessary tools and facilities to take preventive measures to prevent Covid-19.		
4. Intention	4.09(0.55)	0.81
I plan to take preventive measures to prevent Covid-19 in the next 6 months.		
I intend to encourage other ranchers to take preventive measures to prevent them from developing Covid-19.		
I plan to attend preventive measures classes to prevent Covid-19.		
Behavior (Preventive measures against coronavirus)		
HEALTH BELIEF MODEL		
5. Sensitivity	4.02(0.88)	0.73
How likely do you think it is that patients with Covid-19 will recover within the next month?		
How likely do you think it is that Covid-19 can be transmitted from humans to livestock?		
How likely do you think it is that livestock products (meat and dairy) will be infected with the Coronavirus?		
6. Severity	2.96(0.63)	0.83
It will be very serious and difficult for me to get Covid-19.		
My Covid-19 causes me a lot of mental problems.		
If my animals get Covid-19, my life will be in jeopardy.		
My Covid-19 causes me a lot of economic problems.		
If my livestock products are contaminated, my customers' purchases will be reduced.		
If the contamination of my livestock products is confirmed, the credibility of my products among customers will decrease.		
7. Cue to action	3.78(0.98)	0.82
Study of scientific materials in the field of common diseases between animals and humans, transmission routes, and health recommendations regarding the consumption of food products of animal origin		
Find out about Covid-19 in newspapers, radio and television, and the veterinary network		
Discussion with experts of the veterinary Department about ways to prevent and deal with Covid-19		

Theory/Items	Mean (Std. Deviation)	Cronbach's Alpha
8. Perceived benefits	3.82(0.89)	0.83
Preventive measures can prevent Covid-19.		
Preventive measures prevent me from transmitting the disease to livestock.		
Doing preventative measures makes me feel better (less stressed).		
9. Perceived obstacles		
Preventive measures cost me a lot of money.	3.85(1.10)	0.76
Low government financial support for ranchers is an obstacle to preventive measures.		
10. Trust	3.69(1.11)	0.86
I trust what veterinary network experts say about Corona.		
I trust the government's proposed measures (Corona Anti-Corruption Protocols) to curb Covid-19.		

4.2. Sub-division of behavior (BHV)

Table 5 shows the behaviors of ranchers regarding preventive measures against Covid-19. On average, the general index of ranchers' behaviors in coronavirus prevention is 3.94 ($\bar{x}$ = 3.94; Std. Deviation = 0.34), which indicates that ranchers' general behavior is between "sometimes" and "often." This variable has three sub-variables (1) use of personal protective equipment and facilities ($\bar{x}$ = 4.20; Std. Deviation = 0.60), (2) observance of protection and health principles ($\bar{x}$ = 3.81; Std. Deviation = 0.31), and (3) refraining behavior (i.e., Avoidance) ($\bar{x}$ = 3.83; Std. Deviation = 0.59). The first treatment with the three variables "use of masks, gloves, and hats and work clothes in the production unit," "wearing masks and wearing gloves, hats and work clothes before entering the production unit," and "use of disinfection pool to enter the stables were weighed. As can be seen, all sub-behaviors have a value higher than the average mean. The highest average of the sub-index is related to the first index (i.e., the use of personal protective equipment and facilities). We compared the sub-division of BHVs regarding production units (i.e., Mechanized, semi-mechanized, and traditional). There is a significant difference among production units respecting the item of "Extensive cleaning and disinfection of the exterior and interior floor of the stables and springs with alcoholic disinfectants, other disinfectant materials" ($F(df_{Total} = 204) = 3.21$, $p < 0.05$) (see Table 6). The average of this item in semi-mechanized production units (Mean = 1.72) is more than the two production units of mechanized (Mean = 1.45) and traditional (Mean = 1.38).

Figure 3 illustrates the results of correlation analysis (or Zero-ordered correlation), partial correlation, and part correlation, just the association of SNs ($r_{Z-O} = 0.46^{p<0.001}$; $r_{Partial} = 0.35^{p<0.001}$; $r_{Part} = 0.29^{p<0.001}$), PBC ($r_{Z-O} = 0.51^{p<0.001}$; $r_{Partial} = 0.46^{p<0.001}$; $r_{Part} = 0.41^{p<0.001}$), and severity ($r_{Z-O} = -0.07^{p<0.05}$; $r_{Partial} = -0.14^{p<0.05}$; $r_{Part} = -0.11^{p<0.05}$) with BHV is statistically significant. The coefficient of partial correlation demonstrates the association of dependent variable with a special independent variable if the correlational association of other independent variables in regression function with the that independent and dependent variable is constant, as the same for part correlation, except the correlational relationship of other independent variables on just respective independent variable stays constant (Munro, 2005).

Table 5. Details of BHVs of ranchers concerning preventive measures against coronavirus

Behavioral preventive measures against coronavirus	Symbol in SPSS	Never	Rarely	Sometimes	Often	Always
1. Personal Behavior (Personal protective equipment) ($\bar{x}$ = 4.20) (Std. Deviation = 0.60)						
Use of masks, gloves, hats and work clothes in the production unit.	BHV1	0.5	1.5	4.9	60.5	32.7
Put on a mask and wear gloves, hats, and work clothes before entering the production unit.	BHV2	0.5	2.0	8.3	50.7	38.5

Behavioral preventive measures against coronavirus	Symbol in SPSS	Never	Rarely	Sometimes	Often	Always
Use the disinfection pond to enter the stables.	BHV3	0.5	22.4	42.4	34.6	.5
2. Observance of protection and health principles ($\bar{x}$ = 3.81) (Std. Deviation = 0.31)						
Regular bathing, regular handwashing with soap and water.	BHV4	0	2.9	25.4	41.0	30.7
Extensive cleaning and disinfection of the exterior and interior floor of the stables and springs with alcoholic disinfectants, other disinfectant materials.	BHV5	0	3.9	19.0	46.8	30.2
Cleaning and disinfecting the equipment of the production unit with alcoholic disinfectants and etc.	BHV6	1.0	.5	4.4	36.1	58.0
Covering the coughs and sneezes with a tissue.	BHV7	12.3	13.2	11.3	34.3	28.9
Isolation and quarantine of animals with a history of disease or physical weakness of healthier animals.	BHV8	40.7	24.5	6.4	17.2	11.3
Reading the instructions of the department and the veterinary network.	BHV9	26.3	29.8	24.4	13.2	6.3
Calling a veterinarian to inspect the animals, monitor, and screen them.	BHV10	3.9	17.6	11.7	32.7	34.1
Take cold medicine to livestock	BHV11	18.5	15.6	16.6	28.8	20.5
Provide sheltered, windbreak, dry bed, and insulation shelter for livestock	BHV12	1.0	1.0	3.4	50.2	44.4
Proper nutrition of livestock with suitable nutrients (fresh and high energy fodder, concentrate)	BHV13		1.4	4.3	51.2	43.0
Storage of livestock fodder in a suitable place (dry and free of moisture), to prevent fungal infection and production of aflatoxin toxin	BHV14	0	1.4	9.2	47.8	41.5
Vaccination of livestock against diseases that can cause Covid-19 (such as snow fever, malt, etc.)	BHV15	0	2.9	4.8	28.5	63.8
Use a ventilator and leave the doors and windows of livestock halls open	BHV16	0	1.9	9.2	55.1	33.8
3. Avoidance behavior ($\bar{x}$ = 3.83) (Std. Deviation = 0.59)						
Staying at home and resting during illness or having symptoms (e.g., cough, sneezing, fever).	BHV17	0	1.9	9.2	56.0	32.9
Avoiding close contact with people who have symptoms of a disease such as, cough, fever, or a history of illness, or are suspected of having the disease.	BHV18	1.5	2.9	23.3	43.2	29.1
Reducing the use of public places in daily life activities (e.g., friendly outings, crowded places, markets).	BHV19	3.9	12.2	13.7	51.7	18.5
Considering social distance when confronting friends or livestock workers.	BHV20	2.9	11.7	10.2	53.2	.22
Avoiding touching face, nose, or mouth with dirty hands.	BHV21	2.4	13.2	15.1	45.4	23.9
Refraining from entering unauthorized persons to places of keeping or slaughtering the livestock.	BHV22	11.9	10	9	39.8	29.4
Preventing people other than the personnel of the production unit from entering the production site (such as neighbors, customers, etc.)	BHV23	9.8	10.3	6.9	43.6	29.4

Table 6. Comparison of BHVs in production units (i.e., Mechanized, semi-mechanized, and traditional)

	Production Unit Type	F	*p*-value

Preventive measures against Covid-19	Mechanized (n=27)	Semi-Mechanized (n=47)	Traditional (n=133)		
PB	4.24	4.11	4.13	0.99	ns
MASK1	4.29	4.17	4.08	1.43	ns
MASK2	4.30	4.11	4.23	1.27	ns
DISINF	4.14	4.06	4.08	0.18	ns
OPHP	3.80	3.81	3.88	0.73	ns
BATH	4.02	3.98	3.88	0.31	ns
ALCOH1	**1.45**[a]	**1.72**[b]	**1.38**[c]	**3.21**	***p* < 0.05**
ALCOH2	3.52	3.65	3.50	0.52	ns
COVER	3.52	3.65	3.50	1.32	ns
ISOLAT	2.21	2.64	2.44	1.22	ns
READ	2.37	2.57	2.50	0.17	ns
VETERI	3.73	3.85	3.69	0.73	ns
COLD	3.23	3.15	2.92	0.63	ns
SHELTE	4.35	4.34	4.48	1.52	ns
NUTRI1	4.35	4.30	4.52	1.43	ns
NUTRI2	4.31	4.21	4.37	1.27	ns
VACCI	4.53	4.43	4.74	1.18	ns
VENTI	4.22	4.13	4.30	1.63	ns
AB	3.83	3.82	3.85	0.01	ns
STAY	4.19	4.17	4.30	1.52	ns
CLOSE	3.89	4.00	4.22	1.43	ns
PUBLIC	3.68	3.67	3.73	1.27	ns
SOCIAL	3.79	3.76	3.88	0.18	ns
TOUCH	3.75	3.76	3.73	0.73	ns
PLACE	3.75	3.76	3.73	0.31	ns
PERSON	3.73	3.60	3.31	0.75	ns
MASK1	3.71	3.74	3.77	1.43	ns
Total BHV	3.95	3.91	3.95	0.54	ns

Note: Numbers in bold are related to the total average of indices. Average is between 1 and 5 ($1 \leq \bar{x} \leq 5$).

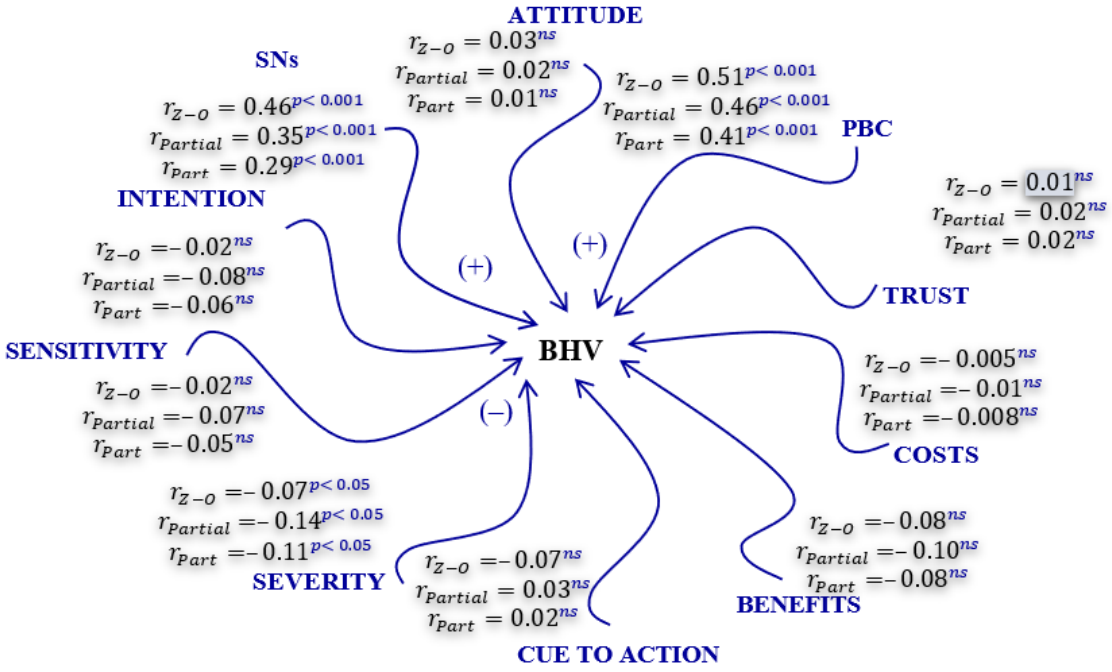


Figure. 3. Correlation analysis or Zero-ordered correlation (Z-O), part and partial correlation

Table 7 manifests the measurements of the VIF and Tolerance indices. As can be seen, the cut-off rate for VIF (VIF <10) and Tolerance (Tolerance = $\frac{1}{VIF} > 0.20$) is well observed. These values indicate that the linear effect does not threaten the analysis and provides the necessary preparation for subsequent inferential analysis.

Table 7. VIF and Tolerance of indices

Variables	Collinearity statistics	
	VIF	Tolerance
Attitude	1.101	0.908
SNs	1.275	0.784
PBC	1.167	0.857
Behavioral Intention	1.052	0.951
Perceived Sensitivity	1.094	0.914
Perceived Severity	1.150	0.870
Cue to action	1.228	0.814
Perceived Benefits	1.076	0.929
Perceived Costs	1.295	0.772

Note: Tolerance=$\frac{1}{VIF}$

Table 8 shows the coefficients obtained from linear regression analysis.

Table 8. Beta coefficients (βs) of factors in predicting the types of behaviors and whole behavior

Factors	Behaviors			
	Protective Equipment[(a)]	Health protective behaviors[(b)]	Avoidance behaviors[(c)]	Whole BHV[(d)]
Attitude	0.015	0.037	− 0.013	− 0.013
SNs	0.228***	0.169*	0.186*	0.186***
PBC	0.456***	0.072	0.246***	0.246***
Behavioral Intention	0.019	− 0.074	− 0.091	− 0.091
Perceived Sensitivity	− 0.063	− 0.157*	0.069	0.069
Perceived Severity	− 0.090	0.118	− 0.191*	− 0.191*
Cue to action	0.022	0.144*	− 0.066	− 0.066
Perceived Costs	− 0.020	− 0.094	0.072	0.072
Perceived Benefits	− 0.047	− 0.060	− 0.045	− 0.045
Trust	0.018	− 0.079	0.047	0.047
(a) F(df = 10) =14.238, $p < 0.001$, $R^2 = 0.39$		(b) F(df = 10) = 2.60, $p < 0.01$, $R^2 = 0.12$		
(c) F(df = 10) =4.50, $p < 0.001$, $R^2 = 0.19$		(d) F(df = 10) = 12.68, $p < 0.001$, R2 = 0.19, $R^2 = 0.40$		

Note: * is significant at < 0.05, *** is significant at < 0.001

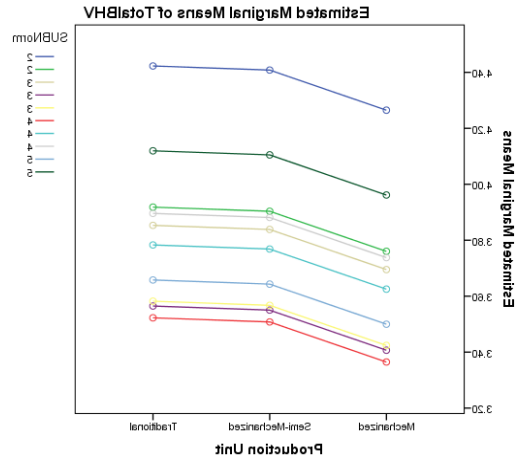
To test this hypothesis whether predictor variables interact with each other at different levels of the production unit (industrial, semi-industrial and traditional) or not, univariate GLM was used. This analysis answers the hypothesis that the values of variance explained by the health behavior of farmers in different levels of predictor variables are significantly different or not. Table 9 displays the result of the Tests of Between-Subjects Effects in GLM. As can be seen, the value of the F statistic in one-way ANOVA is significant for the two variables of SNs (F(df=9) = 4.843) and PBC (F (df=10) = 2.386). The estimated effect size in the GLM for the two variables of SNs and PBC is 0.374 and 0.245, respectively ($\eta 2_{SNs} = 0.374$; $\eta 2_{PBC} = 0.246$). Further, the interaction of SNs variable between the levels of the variable production unit is significant (i.e., SNs × Production Unit).

Table 9. GLM to examine the interactions of factors with the production unit in predicting BHVs

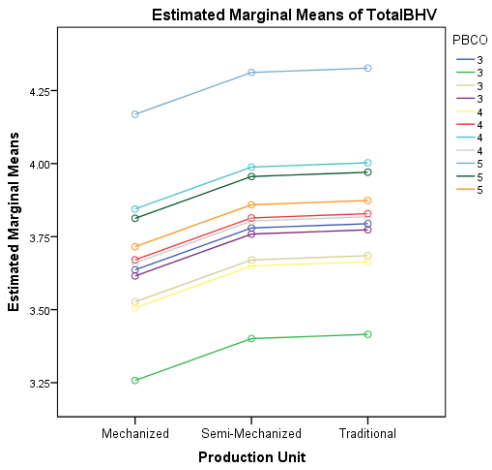
Variables	Type III[(a)]	F	Eta-squared (η^2)
Attitude	0.907	0.816	0.152
SNs	3.029	4.843***	**0.374**
PBC	1.658	2.386**	**0.246**
Behavioral Intention	0.722	1.299	0.125
Perceived Sensitivity	1.074	1.189	0.175
Perceived Severity	1.108	0.613	0.179
Cue to action	0.333	0.399	0.062
Perceived Costs	0.532	0.851	0.095
Perceived Benefits	0.554	0.613	0.098
Trust	0.409	0.736	0.075
SNs × PBC	3.07	1.14	0.28
SNs × Production Unit	**1.39**	**1.87**	**0.04**
PBC × Production Unit	0.80	1	0.45

Note: Eta-squared (η^2) statistics, was measured through $\eta^2 = \frac{SS_{between}}{SS_{total}} = \frac{SS_{between}}{SS_{total} + SS_{within}}$, with taking a root from η^2, the value of eta or the correlation ratio is calculated (Gray and Kinnear, 2012). The multiply symbol is a sign for "interaction." In this analysis, Type III Sum of Squares was used.

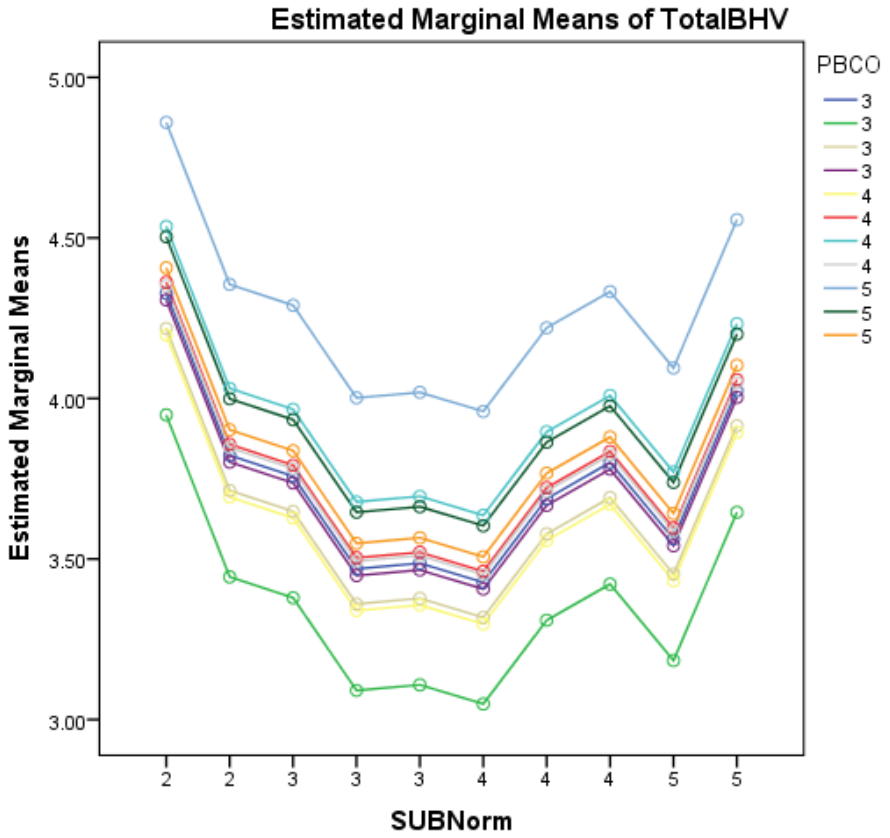
As shown in Figure 4, ranchers in the group of traditional production units have higher SNs compared to industrial and semi-industrial production units. This shows that the effect of SNs is more effective for sheep farmers with the traditional production units than the other two production units.



(a)



(b)



(c)

Figure. 4. The illustration of interactions: (a) SNs × Production Unit, *p*-value < 0.05, (b) PBC × Production Unit, (c) SNs × PBC using GLM

5. Discussion and Conclusion

As the results showed, the SNs variable is one of the most remarkable determinants of anti- Covid-19 behaviors. Among the variables that make up the theoretical framework, this variable is one of the most important variables, where the constructs of HBM were not effective in accounting for anti-Covid-19 behaviors. This points to the significance of social and SNs in the formation of health behaviors and in the case Covid-19. As post-behaviorists analyze behaviors in the social and cultural contexts and do not regard behavior as a separate entity from their contexts. Therefore, this finding shows that friends and close and respected people of ranchers have a substantial role in the formation of preventive behaviors, due to the close and reciprocal interactions of ranchers, these people play an encouraging role to perform anti-Covid-19 behaviors and actions. It is noteworthy that due to the great publicity and variety of television and radio programs that play a role in republishing the condition of Covid-19 patients, they were somehow exposed to recovering from Covid-19 disease and the phenomenon of social interaction. One evaluates one's own behavior and that of others. Therefore, due to the acceptability of these people, ranchers approve of their recommendations and even avoid doing inappropriate things that spread the coronavirus, provided that people with high acceptance reject it, behaviors in favor of Covid-19. Much research and evidence show that SNs influence behavior. On the other hand, during the Covid-19 era, a large part of discussions, local dialogues, informal and formal dialogues, the text of organizational exchanged letters, policies, and a large part of media programs used the subject of Covid-19 disease. This would play a role in establishing the reality of Covid-19 disease as a dangerous and serious disease. The prevailing conditions in society have permeated all homes due to the use of mass media, and all citizens are involved in the coronavirus issue. Therefore, social norms would be an influential factor in the persistence of anti-Covid-19 behaviors. In general, the role of SNs, as a reminder and warning to ranchers by environmental social forces, is

significant. The results also showed that the values of social norm variables could affect the value of total behavior at different levels of the type of production unit. This shows that the relationships and interactions between traditional ranchers and friends and relatives are more dynamic and the social environment formed would lead to the creation of social norms that affect behavior. This finding is consistent with the findings of research like Garforth et al. (2013) and Velde et al. (2015).

The results also showed that PBC has a significant effect on livestock behaviors. The PBC is defined as the assessment of ranchers of the difficulty and being ease of the behavior of anti- Covid-19 measures. In this regard, PBC determines behavior, provided that this variable reflects the ranchers' actual control over the behavior; in other words, PBC could create a perceptible perception of work in the mental framework of ranchers. In addition, this perception is the result of the readiness of the environmental settings governing the production unit and the work organization, and beyond, the policy initiatives taken by the agricultural and veterinary sector, which could ultimately make the implementation of anti-Covid-19 behaviors and actions easier or more difficult. In this regard, past actions of ranchers in dealing with and managing previous diseases, such as brucellosis, malaria, and snow fever could, as their previous experience, form PBC, which expand or contract the anti-Covid-19 behaviors. The PBC consists of two components of belief in control and perceptual power, the former is the belief that there are factors that facilitate or prevent a particular behavior and the latter includes the perceived power to control each of these facilitators or deterrents. The effort expended by ranchers to perform anti-Covide-19 behavior is likely to increase as the perceptual PBC increases. The direct effect of PBC on behavior occurs when there is a correlation between the perception of control and the actual control of ranchers to perform anti- Covid-19 behaviors. According to the study, as derived from this study, the PBC affects anti-covid-19 behavior directly. Although PBC reflects farmers' confidence in their ability to perform anti-covid-19 behavior and is considered synonymous with Bandura's self-efficacy structure, PBC is a large part of Bandura's self-efficacy. In the comparison between perceived self-efficacy and PBC, it can be said that perceived self-efficacy is not based on people's beliefs about their abilities. This finding is harmony with the studies like Babaei et al. (2014), Karimi Aval et al. (2019), Masoudy et al. (2016), Khazaee-Pool et al. (2020), Velde et al. (2015).

The purpose of this study was to investigate the determinants of behaviors and preventive measures for Covid-19 disease. The results showed that the SNs have a positive and significant effect on Covid-19 management behaviors. A large and significant part of the SNs arises from information broadcasted by media to people who are respected and accepted by ranchers, which shape the realities of ranchers' life indirectly. The main platform for realizing these people is the information that is provided to the community by the media. Therefore, it is an important issue, explicitly suggested that to form anti-covid-19 facts, the media continue to cover the anti-covid-19 facts under reports of deaths, statistics, and adverse consequences of non-compliance with anti-covid-19 measures. These facts also indirectly affect the behavior of ranchers by retelling and reminding them through respected people. Therefore, it is recommended that the mass media republish the main facts about the dangers and harms of covid-19 disease. This in itself can be a fact for people accepted by farmers. Clearly, due to the effect of PBC on behavior, the respective institutions and departments, such as the veterinary network and farmers' organizations with the intervention of livestock cooperatives serve to increase the PBC of ranchers. In this case, training classes would increase the information and knowledge of farmers. Furthermore, by holding workshops and extension classes, it is possible to train farmers in the necessary skills for anti-covid-19 measures and transfer skills. On the other hand, by improving the skills of ranchers, they would gain the necessary confidence to implement the measures. It would be for planners, policymakers, and executives in the animal health sector to deliver health-driven assistance and financial support to ranchers to establish environmental contexts that facilitate ranchers' behaviors. Therefore, it would be important for ranchers to receive livestock subsidies to purchase Covid-19 controlling tools for ranchers through government support such as interest-free or low-interest loans.

This study faced with three limitations (1) lack of available scientific resources that have directly studied the preventive behaviors of ranchers. For this reason, more time would be needed to study articles and dissertations, which can affect the time

of the whole project. (2) Research projects in their various stages require the expenditure of financial resources, and financial constraints may delay and prolong the process of conducting research phases. (3) When ranchers have little information and the resources available to ranchers vary, in these situations, PBC may not predict behavior correctly.

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Authors' contributions

The authors equally contributed to the preparation of this article.

Conflict of interest

The authors declare no conflict of interest.

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Original Article

عوامل موثر بر رفتارهای پیشگیرانه مستمر گوسفندداران در برابر شیوع کووید-۱۹

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چکیده مبسوط

۱. مقدمه

تاکنون به صورت قطعی گزارشی مبنی بر ابتلای دام و طیور به ویروس کوید-۱۹ گزارش نشده و سازمان بهداشت جهانی صراحتاً انتقال این ویروس از دام به انسان و بالعکس را تأیید نکرده است؛ ولی این موضوع تحت پژوهش‌های گسترده قرار دارد. بیشتر تحقیقات در حوزه بیماری کوید-۱۹ توجه خود را روی الگوهای رفتاری شهروندان مقیم مناطق شهری به عنوان کانون قابل ملاحظه جمعیت انسانی قرار داده و توجه کمتری به رفتار افراد روستایی به عنوان مهمترین کُنشگران مرتبط با حلقه‌های ابتدایی زنجیره تولید و عرضه مواد غذایی دارند. در این میان، شناسایی دلایلی که نشان می‌دهد چرا تصمیمات دامداران همیشه تصمیمی نیست که به نفع سلامت مصرف کنندگان باشد، از اهمیت زیادی برخوردار است و چالش‌هایی را برای سیاستگزاران، دامپزشکان و متخصصان بهداشت عمومی ایجاد می‌نماید. سؤالی که مطرح می‌شود این است که چرا الگوهای رفتاری مبتنی بر بهداشت و به نفع سلامت در سطح واحدهای تولیدات دامی، جامع و فراگیر نیست؟ انجام رفتارهای پیشگیری و مراقبت‌های بهداشتی توسط دامداران در واحدهای تولید نقش مهمی در جلوگیری از شیوع، توسعه و فراگیری عامل بیماری کرونا دارد. در این راستا، تحقیقات بسیار اندکی پیرامون بررسی قصد و رفتار دامداران برای جلوگیری از شیوع بیماری کرونا انجام شده است. به همین دلیل، مطالعه حاضر به بررسی رابطه علّی عوامل مؤثر بر قصد و رفتار پیشگیرانه از شیوع و سرایت بیماری کرونا توسط دامداران مناطق کوه‌های سهند شهرستان مراغه می‌پردازد.

۲. مبانی نظری تحقیق

درک رفتار به عنوان یک کُنش قابل مشاهده، مستمر و در طولانی مدت به بحث منطق گرایی مرتبط می‌باشد. کشاورزان و دامداران رفتار و کاری را انجام می‌دهند که در شرایط خاص مزرعه، خانواده و تجارتشان برای آنها منطقی باشد. در حوزه بهداشت و سلامت، رفتار به کنش‌های مبتنی بر بهداشت و سلامت تکیه دارد. شناخت امنیت زیستی در واحدهای تولید راه جدیدی برای ایجاد انگیزه و تشویق کشاورزان برای مدیریت و مهار بیماری‌هاست. نگرش قضاوت‌ها و ارزیابی‌های مبتنی بر مطلوبیت و غیر مطلوبیت پیرامون اشیاء و موضوعات را شامل می‌شود. در حوزه سلامت و بهداشت دام، نگرش‌ها به دیدگاه‌های مبتنی بر اطلاعات آنلاین یا اطلاعات بازیابی شده از حافظه دامداران مربوط می‌شود که با در نظر گرفتن شرایط اقتصادی، فنّی و مالی مزرعه، می‌توانند ماهیت یک عامل بیماری‌زا، اقدامات تشخیصی یا درمانی نظیر اقدامات ضد ویروسی، ضد باکتریایی و ضد انگلی را ارزیابی کنند.

هنجار ذهنی ادراک فرد از اینکه دوستان نزدیک و مورد احترام وی تشویق کننده یا مانعی برای انجام رفتار وی هستند، تعریف می‌شود. شواهد حاکی از آن است که هنجارهای ذهنی شامل درک دامداران از آنچه که افراد مشهور و مقبولشان در شرایط مشابه انجام می‌دهند و درک آنها از موضوعات مهم است که نقش تعیین کننده در پذیرش اقدامات جهت مدیریت بیماری‌های انگلی دارد. تجربه نشان می‌دهد که رفتار مدیریت بیماری در بین دامداران تحت تأثیر ادراک آنها از کارآیی روش‌ها برای کاهش خطر بیماری، درک از توانایی آنها در کاربرد شیوه‌های خاص و درک آنها از عواملی که توانایی آنها را برای تأثیرگذاری عوامل خاص محدود می‌کند، است.

۳. روش تحقیق

پژوهش حاضر بر اساس طرح تحقیق، یک پژوهش توصیفی – همبستگی است. در این پژوهش از طرح تحقیق آمیخته اکتشافی برای ترکیب داده‌ها استفاده شد و با گردآوری داده‌های کمّی، نسبت به آزمون فرضیه‌ها اقدام شد. از بین دامداران شهرستان مراغه، با استفاده از جدول کِرجسی-مورگان با خطای حاشیه ۵ درصد به تعیین اندازه نمونه پرداخته نمود. برای انتخاب نمونه تحقیق از روش نمونه گیری تصادفی طبقه‌ای با انتساب متناسب با توجه به مناطق جغرافیایی شهرستان مراغه (بخش و دهستان) استفاده شد. در این پژوهش، از نرم افزار SPSS22 و AMOS20 برای تحلیل داده‌ها استفاده شد. روش‌ها و مدل‌های آماری جهت تحلیل داده‌های کمّی

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عبارتند از آزمون همبستگی پیرسون، آزمون تی استیودنت مستقل، تحلیل واریانس و تحلیل مسیر.

۴. یافته‌های تحقیق

نتایج مدل‌سازی خطّی تک متغیره نشان داد که متغیر هنجارهای ذهنی ($\eta 2_{SNs}$ =۰/۳۷۴) و کنترل رفتاری درک شده ($\eta 2_{PBC}$ =۰/۲۴۶) تأثیر قابل توجهی بر رفتار دارند. این دو متغیر در سه سطح نوع واحدهای تولیدی مکانیزه (n1=۲۷)، نیمه مکانیزه (n2=۴۷) و سنتی (n3=۱۳۳) مقادیر متفاوتی دارند. بعلاوه، بیشترین مقدار متغیر هنجار ذهنی و کنترل رفتاری به واحدهای تولیدی سنتی دام ارتباط دارد. بعلاوه، برهمکنش متغیر هنجار ذهنی و سطوح واحد تولیدی (SNs × Production Unit) از نظر آماری معنادار است ($\eta 2_{SNs}$ =۰/۳۷۴؛ F=۱/۸۷ ؛ $p < ۰/۰۵$). این یافته نشان می‌دهد که دوستان و افراد نزدیک و مورد احترام دامداران نقش مهمی در شکل‌گیری رفتار پیشگیری دارند. به دلیل تعاملات نزدیک و متقابل دامداران، این افراد نقش تشویق کننده برای انجام رفتارها و اقدامات ضد کرونا توسط دامداران دارند. نکته قابل توجه این است که به دلیل تبلیغات و تنوع زیاد برنامه‌های تلویزیونی و رادیویی که در بازنشر وضعیت و شرایط بیماران کرونا نقش داشتند، افراد را در معرض یادآوری لحظه‌ای از بیماری و پدیده کرونا هدایت می‌کرد و در تعاملات اجتماعی هر کسی رفتار خود و دیگران را مورد ارزیابی قرار می‌داد. بنابراین، دامداران توصیه‌های آنها را با توجه به داشتن مقبولیت این افراد تأیید و از انجام کارهای نامناسبی که موجود نشر ویروس می‌شود، پرهیز می‌کنند. در دوران کوید-۱۹، بخش قابل توجهی از بحث‌ها، محاوره‌های محلّی، محاوره‌های غیر رسمی و رسمی، متن نامه‌های رد و بدل شده سازمانی، سیاستگذاری‌ها و بخش عمده‌ای از برنامه‌های رسانه‌ای از موضوع «کرونا» استفاده می‌کردند. این موضوع می‌تواند در ایجاد واقعیت بیماری کرونا به عنوان یک بیماری خطرناک و جدی نقش داشته باشد. شرایط حاکم در جامعه نیز به دلیل استفاده از رسانه‌های جمعی به تمام خانه‌ها رسوخ کرده و همه شهروندان درگیر موضوع کرونا بودند. بنابراین، هنجارهای اجتماعی می‌تواند یک عامل پرگذار در پایداری انجام رفتارهای ضد کرونا باشد. همچنین، متغیر هنجار اجتماعی می‌تواند در سطوح مختلف نوع واحد تولید روی رفتار دامداران تأثیر داشته باشد. در این راستا، هنجار ذهنی درک شده برای دامداران واحدهای تولید سنتی بیشتر از دو واحد مکانیزه و نیمه مکانیزه است. این نشان می‌دهد که روابط و تعاملات بین دامداران سنتی و دوستان و نزدیکان از پویایی بالاتری برخوردار است و محیط اجتماعی منجر به ایجاد هنجارهای ذهنی می‌شود که بر رفتار تأثیر می‌گذارد.

۵. بحث و نتیجه‌گیری

هدف از انجام این تحقیق، بررسی تعیین کننده‌های رفتارها و اقدامات پیشگیرانه ابتلا به بیماری کوید-۱۹ است. در ارتباط با تأثیر متغیر کنترل رفتاری بر رفتارها و اقدامات، پیشنهاد می‌شود که مروجان امور دام، آموزش‌های خود را با هدف بالابردن دانش و مهارت دامداران در حوزه اعمال رفتارهای ضد کرونا اعمال نمایند. در این راستا، تغییر نگرش و دیدگاه دامداران نیز عنصر مهمی است که احتمال بروز رفتارهای ضد کرونا را ارتقاء خواهد داد. مروجان و تکنسین‌های دامداری باید با برگزاری کلاس‌های توجیهی و ترویجی به انتقال دانش بهداشت دام به دامداران بپردازند و سطح یادگیری دامداران را ارتقاء دهند. از سوی دیگر، کنترل رفتاری با در اختیار گذاشتن منابع پولی برای دامداران ارتقاء می‌یابد. فراهم کردن امکانات و فناوری‌های مربوطه برای ارتقای سطح کیفی خدمات واحدهای تولیدی می‌تواند کنترل رفتاری را در دامداران ارتقاء دهد. در واقع، با مدیریت افکار، احساسات و رفتارهای دامداران، می‌توان به ارتقای سطح بهداشت واحدهای تولیدی و جلوگیری از سرایت عوامل بیماری زا در دوران کرونا و پساکرونا کمک نمود.

کلید واژه‌ها: رفتارهای پیشگیرانه، گوسفندداران، دامداران، شیوع، کووید-۱۹.

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Original Article

Non-Revenue Water Implications on Organisation Operation Cost and Customer Satisfaction: A Case of Musoma Urban Water Supply and Sanitation Authority (MUWASA)

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Abstract

Purpose- This study examined the effects of non-revenue water (NRW) on organisation running costs and customer satisfaction. The intention was to describe the NRW's effects on the MUWASA's performance as a case study. Specifically, it identified factors prompting non-revenue water; described the NRW effects on organisation running costs; and examined the level of customer satisfaction towards service provision.

Design/methodology/approach- A purposive sampling technique was used to pick respondents for the household survey and key informant interview. The study included 100 respondents (70 connected customers and 30 employees of the authority). MUWASA serves 5 zones of the municipality; therefore, the study obtained 70 connected customers from the five zones of the authority. The household survey and the key informant interviews (KII) were the main data collection methods, the survey technique was used to collect data from 100 respondents and seven were involved in key informant interviews. Descriptive and inferential statistics and content analysis were used in data analysis.

Findings- The findings have indicated that NRW affects the water utility revenue collection, and organisation running costs, which jeopardizes customer satisfaction with the organizational service delivery.

Originality/value- Based on the National Water Policy of 2002 which aims at achieving sustainable, effective, and efficient development and management of Water Supply and Sanitation one of its objectives is to create an enabling environment and appropriate incentives for the delivery of reliable, sustainable, and affordable water supply and sanitation services. Therefore, the findings of this study are a catalyst for the improvement of the set policy objectives and enhance interventions where necessary.

Keywords- Non-revenue water, Customer satisfaction, Operation costs, Connected customers, Water service, Water connection.

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1.Introduction

Water that is generated (or purchased) but not sold to consumers is referred to as non-revenue water, and it is expressed as a proportion of the total volume of water produced (EWURA, 2021). The feasible level of NRW measures is determined by the water utility company's performance level. A significant reduction in NRW is frequently challenging to achieve when the performance level is very low. For instance, a water supply utility with limited water availability cannot easily prevent underground leaking because there is no water flow in the pipes for an extended period, but they may still prevent visible leaks on the ground (Ndengwa, 2016).

The International Water Association (IWA) indicated that if the water losses in developing countries could have been halved, the saved water would have been enough to so supply around 90 million citizens (AWWA 2004). One of the major issues affecting water companies in developing countries is the substantial variance between the volume of water put into the distribution system and the amount of water billed to consumers (Non-Revenue Water [NRW]).

High NRW in a way infringes the rights of underserved and connected consumers as it limits cost recovery and sustainability leading to an unjustified burden for paying consumers. The global volume of non-revenue water (NRW) or water losses is staggering. It is reported that annually about 16 billion m^3 of water which are delivered to consumers (customers) are however, not invoiced due to theft, poor metering, or corruption (Frauendorfer and Liemberger, 2010).

The challenge of NRW may bring about such problems in providing satisfactory water supply to both rural and urban areas with growing populations, especially in developing countries. According to Martins (2014), the order of magnitude of NRW values that exist in many poorly managed utilities is certainly unacceptable due to the high level of NRW. The high levels of NRW normally jeopardise the levels of efficiency. When treated water is lost; water collection, treatment, and distribution costs are normally increasing, water sales tend to decrease, and substantial capital expenditure programs are often promoted to meet the unplanned ever-increasing demand (Frauendorfer and Liemberger, 2010).

Based on this conceptual gap it is observed that most water utilities are faced with the challenge of water losses in water utility management all over the world and it is even more challenging and serious in developing countries. Despite the efforts done by MUWASA towards the availability of clean and safe water sustainable 24 hours, the Authority is faced with the problem of water losses or non-revenue water. The situation of non-revenue water at MUWASA was 2,885,765 m^3 in 2019/20 which was about 49.7% and 2,520,197m^3(43.1%) in 2020/21 which shows a steady reduction of NRW in the authority but still high above the national benchmark average of 20% NRW. Therefore, this study determines the impacts of non-revenue water on water authority performance, effects on customer satisfaction on received services, and recommends efficient measures for the problem in the study area.

The NRW may tend to jeopardise authorities' performance towards achieving their objectives of meeting the provision of quality water service to its customers. How NRW affects the operation costs of MUWASA and meeting its customers' satisfaction was the central target of this study. This study, therefore, addresses the problem of NRW and its impacts on the water authority operation costs and its effects on customer satisfaction in accessing quality service. Based on the variation nature of the specific objectives of the study it was healthy and necessary for the study to adopt two different theories. These theories include the Expectation Confirmation Theory (ECT) by Oliver (1980) and the Servqual Model by Parasuraman *et al*., (1985).

The Expectation Confirmation Theory (ECT) by Oliver (1980) was used to guide this study. The theory explains a firm's expectations and perceived performance. This theory elaborates four main constructs expectation, performance, disconfirmation, and satisfaction. According to Oliver (1980), expectations-confirmation theory postulates that expectations, coupled with perceived performance, lead to post-purchase satisfaction. This effect is arbitrated through positive or negative disconfirmation between expectations and performance. If a product outperforms expectations (positive disconfirmation) post-purchase satisfaction will result; however, if a product falls short of expectations (negative disconfirmation) the consumer is likely to be dissatisfied (Oliver, 1980; Spreng *et al.* 1996). The four main constructs in the model are expectations, performance, disconfirmation, and satisfaction. A person's level of satisfaction with a water utility will be a function of the person's knowledge about water utility-related issues and how well their water utility performs relative to the expectations that a person has for the utility (American Water Works Association, 2004).

The service quality in the customer satisfaction model (Parasuraman *et al*., 1985 cited by Daniel and Berinyuy, 2010) was also used in this study. The service quality model is a composite of five dimensions (reliability, responsiveness, assurance, empathy, and tangibles to determine service quality). Four of the five dimensions, responsiveness, reliability, assurance, and empathy mainly focus on the human aspects of service delivery, and the fifth one focuses on the tangibles of service (Daniel and Berinyuy, 2010). The SERVIQUAL model deals with expectations and perceptions of individuals

about services offered, in this view the model has been used to measure the quality of services by MUWASA to the expected customers in the study area concerning NRW control of the authority. This model was relevant for the study because it has relieved the knowledge of how the challenge of non-water revenue in the study area may affect customer satisfaction on service delivery specifically on service reliability and responsiveness.

2. Research Methodology

The case study design was applied in this study. This design was selected because it allows quantitative and qualitative approaches (Bryman, 2007). This design enabled the study to obtain detailed information and to undergo an intensive analysis of a single case. The design enabled the study to undertake an intensive examination of MUWASA as a case under investigation.

This study was conducted at Musoma Urban Water Supply and Sanitation Authority (MUWASA). In the quarter of the 2021/2022 financial year MUWASA had a total of 20,949 connected customers. The MUWASA was selected because, in the Water Utilities Performance Review Report for the Financial Year 2020/21, it was reported to be the least performed in overall NRW management (EWURA, 2021).

The unit of analysis for the study was the Authority (MUWASA). The study population was categorised into two water users (customers) and employees of MUWASA from technical, finance, human resource, and commercial departments. The study used simple random and purposive sampling techniques to select the respondents. A simple random sampling technique was applied to customers while convenience sampling was applied to get respondents from the employees from the various sections of the Authority.

The study included 100 respondents (70 connected customers and 30 employees of the authority). MUWASA serves 5 zones of the municipality; therefore, the study obtained 70 connected customers from the five zones of the authority. The 30 (employees) respondents included 20 permanent employees and 10 casual labours (temporary employees). The Authority had 81 permanent employees and about 60 temporary employees (casual labour). There were four departments (Finance, Technical, and Commercial and Human resource and administration departments) of its organisation structure; hence, the study distributed 30 respondents from MUWASA employees for the questionnaire as follows: respondents from, the finance department, commercial department, technical department, and human resource and administration were also included.

The process of data collection among others involved a survey technique that included the connected customers and MUWASA employees. Two sets of questionnaires were presented for the two types of respondents, and they were the main tools for this study. Moreover, the MUWASA employees were also included in this technique. The prepared questionnaires were very useful in this technique in collecting primary data (both qualitative and quantitative). This technique was the best method available for the study as explained by Creswell (2015), that is best for social scientists interested in collecting original data and is an excellent vehicle for measuring the attitudes and orientations of a large population. Five key informants were involved in key informant interviews, these were proposed based on their professions, titles, age and experience or period of use of MUWASA services. The specific information collected included billing problems, revenue loss, NRW control redressing mechanisms and other relevant information to suit the study. The interview checklist was prepared as a guideline (George, 2022; Leavy, 2017). This technique was useful because it enabled the study to collect in-depth data from those obtained using a questionnaire.

The Quantitative and inferential statistics data were analysed using IBM Statistical Package for Social Sciences (SPSS) Statistics, Version 23, and Microsoft Excel 2010 programs. The coded data were transferred into computer code sheets and were then processed to determine descriptive statistics such as frequencies and percentages to analyse the quantitative information. Moreover, descriptive and inferential statistics were the principal components in quantitative data analysis whereas percentages and frequencies were obtained.

Quantitatively, the extent of customer satisfaction with MUWASA water service and dealing with NRW challenges were determined through the gap score and unweighted average serviqual score model. The calculations were performed in five steps: Step 1: Using the tailored serviqual questionnaire the score for each of the 5 expectation statements and each of the 5 perception statements were obtained from each respondent. Step 2: Is the computation of the Gap Score (GS) = Perception (P) – Expectation (E). Step 3: The average GS for each dimension of service quality was obtained through assessment of the gap scores for each statement that constituted the dimension and dividing the sum by the number of statements making up the dimension. Step 4: The calculated average for each of the five dimensions was then summed up, and the result was divided by five (total number of the dimensions) to obtain the average serviqual score, which represents the unweighted measure of service quality for the MUWASA water services in the study area.

Qualitative data analysis was performed to assess the extent to which customers were satisfied with the services they received from MUWASA, five statements of service quality concerning the water service provision as they are affected by the NRW incidences were tested.

The origin of the statements was basically from five dimensions as suggested by Parasuraman *et al*. (1991). To respond to the statements, the respondents had to choose one service quality scale option (1 = not satisfied at all, 2 = satisfied little and 3 = satisfied very much) for each statement to indicate their perceptions and expectations of water service from MUWASA and dealing with NRW occasions. The dissimilarity between perceptions and expectations is called a quality gap. If (Perceptions - Expectations) < 0, the quality is unacceptable; if the answer is 0, the quality is satisfactory; and if the answer > 0, the quality is acceptable (Parasuraman *et al*., 1991). This statistical conclusion by Parasuraman *et al*. (1991) was used to generate an empirical conclusion for this study.

3. Research Findings

3.1 Non-revenue Water Problem

The purpose of the study specifically intended to deal with the problem of NRW and how it affects the operation costs as well as how it jeopardizes customer satisfaction. Hence two specific considerations were involved in this study. However, the study began by analysing the NRW challenges in the organisation operation costs. These findings would have to play a part in the strengthening of the management of NRW among the water utilities. The findings in Table 1 indicate how the respondents considered the various expenses that the authority concurs with because of the NRW prevalence.

Table 1- Non-revenue Water Problem on Organisation Operation Cost

NRW Problems on operation cost	Frequency	Percent (%)
High operating and distribution expenses	27	90.0
Extra energy expenses	28	93.3
Inability to meet proper maintenance program	23	76.7
Insufficient revenue to meet general operation costs	24	80.0
Workers' incentives are delayed to be paid on time	26	86.7
Delay in new water supply infrastructure investments	25	83.3
Repeated repairing of the water infrastructure and networks	22	73.3

It was furthermore, reported that the non-revenue water problem increases operation costs significantly, for a lot of money is spent in purchasing fittings, valves, and pipes for attending leakages and replacement of worn-out pipes and water meters. Besides the money spent on those items, much money is also spent on the provision of incentives to people from local communities who cooperate with the water utility in the reduction of NRW by notifying the water utility about illegal connections. Moreover, it was also ascertained that too much money is also spent on the payment of labourers for the excavation of trenches for the replacement of worn-out pipes through extra duty hours of which the money would have been spent to strengthen the water distribution networks. One of the key informants said that:

"*……. there are several problems, especially on operation costs which are associated with NRW including…. production costs becoming higher sometimes than the revenue that is collected and sometimes water rationing to zones and creating chaos to the community whereas water service is stopped in certain lines for a time while the other is getting water….*".

Similar findings have also been reported that the NRW always and merely puts pressure on the financial management of the operation, making it difficult to provide the services. Efforts must be there to minimise NRW as much as possible, this is because the water produced and distributed with costs should not be wasted (JICA, 2020). Moreover, it was reported that too much time and resources are spent in the processes of repairing the destructed systems rather than investing in new connections.

Plate 1- MUWASA Workers Replacing Burst Water Pipes in a Distribution Line

Another interviewee appealed that:
"……. NRW water affects operational costs because we are producing more water but selling less. Percentage wise, we are currently selling only 60% of the water that we are monthly producing. If we reduce NRW, there is a possibility of reducing the operational costs significantly…….".
The study was also informed that the problem of NRW in the study area has many effects on the operation costs. For example, it was described that some other impacts of the non-revenue water incidences on the operation cost include the cost of treating water to an acceptable standard (purchasing of water purifying chemicals), transporting water to the reservoir tanks and customers (power charges as used to operate water pumps) as well as maintenance of the equipment/machinery at the treatment plant. The report in the Manager's NRW Handbook for Africa (2010) nails this by indicating that customer metering is not universally applied, tariff systems and revenue collection policies often do not reflect the true value of water supplied, and this limits the utility cost recovery.
Water that is lost on its way to the customer without generating revenue for the authority has serious financial impacts on the authority. This is because pipe bursts and leakages require expensive repair works which also increases operation and maintenance costs for the authority. It was described that revisiting the MUWASA case around 40% of the produced water, which has gone through costly treatment processes and subsequent transportation to various points, does not generate revenue but leads to a huge operation costs burden. Hence reducing NRW is an important step towards the commercial viability of the Authority whereby the saved money would have been used for expansion and establishment of new water services into other areas hence leading to increased water network connections of the authority.

3.2 Non-Revenue Water Effects on Customer Satisfaction

The study was also interested in measuring if MUWASA customers are satisfied with the services received from the utility. The intention was to assess customers' satisfaction with the quality of the service received from MUWASA given the NRW incidences. The extent of customer satisfaction with the MUWASA water service provision and dealing with NRW challenges was determined by the service quality using the following steps:
Step 1: Using the tailored serviqual questionnaire the score for each of the 5 expectation statements and each of the 5 perception statements were obtained from each respondent. Step 2: Is the computation of the Gap Score = Perception – Expectation. Step 3: The average gap score for each service quality dimension was obtained by assessing the gap scores for each statement that constituted the dimension and dividing the sum by the number of statements making up the dimension. Step 4: The calculated average for each of the five dimensions was summed up, and the result was divided by five (total number of the serviqual dimensions) to obtain the average serviqual score, which represents the unweighted measure of service quality for the MUWASA water services in the study area.
The findings in Table 2 indicate that customers were only satisfied with the service of the water connection (with mean dimension = 0) despite the challenges of NRW incidences in the study area. The authority is in a good position to satisfy its customers in terms of water connection service. The NRW incidences are likely to reduce the speed or influence the capacity of the authority to supply water to new customers as it may make the authority not establish new connections but deal with the problem of leakages. Pipe bursting as well as other NRW incidences hence leading to no new or new connected customers. However, this was not the

case with MUWASA. For the customers they must support that are satisfied with the speed and water connection service from the authority. This is also well supported by Frauendorfer & Liemberger (2010) who ascertained that in Asia the volume of water that is lost has immediate effects on the supply of water for the volume of water is reduced and hence limiting water connection and supply.

Table 2- Calculation of Gap Score and Unweighted Average Servqual Score

Sn.	Service Dimension	Perceptions score (P)	Expectations score (E)	Quality gap (P-E)	Mean for dimension
Dealing with the NRW problem		65	70	-5	-1
Customer care during NRW reporting (Employees respond to customers' complaints reported timely)		60	67	-7	-1.4
Water connection service		70	70	0	0
Water service availability 24hrs/7days		59	65	-6	-1.2
MUWASA response to reported water leakage, pipe break		70	68	2	0.4
Unweighted average Servqual Score					-0.64

Another satisfaction point was on how MUWASA technical staff responds to reported water leakage, pipe break which had a mean dimension of 0.4. While for the other remaining three service dimensions had negative mean dimensions indicating that their service responses were not unacceptable. This is due to the descriptions given by (Parasuraman *et al*., 1991) where it was described that if (Perceptions - Expectations) < 0, the service quality is unacceptable; while if it is 0, the service quality is satisfactory; and if it happens to be > 0, the service quality is acceptable.

In this case therefore no service was at an acceptable point indicating that there are several complaints on the service that is provided by the authority on service provision which need to be redressed seriously by the authority's management without forgetting being in collaboration with other relevant stakeholders like the customers, private sectors like material service providers (contractors) as well as area leaders. Moreover, of the three dimensions with negative scores, there was no service dimension which was the most deficient for their mean dimension scores were closely ranging from -1 to -1.4 (Table 2).

Furthermore, the findings in Table 3 indicate that 75.7% of the customers' respondents were satisfied very much with how the authority deals with their problems, while on the other side on services like; Customer care during NRW reporting (Employees respond to customers' complaints reported timely), Water connection service, Quality of water (MUWASA provide quality water service 24hrs to their customers) and MUWASA response to reported water leakage, pipe break respondents were little satisfied at an average of 45.7%, 81.4%, 60%, and 54.3% respectively. However, the level of not satisfied at all was higher at 32.9% for customer care during NRW reporting while very minimum in the not satisfied at all with 2.9% for the water connection service and the same service minimum of 15.7% at the level of satisfied very much.

These findings implicate that the level of customer satisfaction is at an average level because of the variations of the responses for the reported events and customer challenges on water service delivery as far as NRW prevalence is concerned in the study area. The findings are in line with assumptions of the Expectation Confirmation Theory (ECT) by Oliver (1980). According to Oliver (1980), expectations-confirmation theory posits that expectations, coupled with perceived performance, lead to post-purchase satisfaction. This effect is mediated through positive or negative disconfirmation between expectations and performance.

Table 3- MUWASA Customer Satisfaction Status on Service Delivery (n=70)

Type of Service Dimension	Levels of Satisfaction					
	Satisfied very much		Satisfied a little		Not Satisfied at all	
	Freq.	%	Freq.	%	Freq	%
Dealing with the NRW problem	53	75.7	12	17.1	5	7.1
Customer care during NRW reporting (Employees respond to customers' complaints reported timely)	15	21.4	32	45.7	23	32.9
Water connection service	11	15.7	57	81.4	2	2.9

Type of Service Dimension	Levels of Satisfaction					
	Satisfied very much		Satisfied a little		Not Satisfied at all	
	Freq.	%	Freq.	%	Freq	%
Quality of water (MUWASA provides quality water service 24hrs to their customers)	15	21.4	42	60.0	6	8.6
MUWASA response to reported water leakage, pipe break	23	32.9	38	54.3	9	12.9

The discussion with one of the ward executive officers (WEOs) in the study area on MUWASA services and responses on breakdowns of its service lines, it was indicated that there variations in the opinions of the levels of satisfaction because the responding rate and level among MUWASA staff have also variations because at a time they receive complaints on a certain issue they might have been into another duty this may lead either a delay or fastening of the response to a reported challenge. But this can also be considered on the characteristics homogeneity and heterogeneity of the customer respondents described earlier that this can be one of the factors of the variations of the responses from MUWASA service and NRW response rate satisfaction among customers.

"*……the levels of satisfaction on MUWASA service and response to NRW incidences will not and will never be equally among the respondents due to various reasons including technical, human and financial ones……basing on the capacity and position of the authority at that particular time the incidence is being reported…….*".

Studies emphasise that to improve the efficiency and quality of water services and develop customer loyalty and improved satisfaction, service providers (water utilities), regulators, and decision-makers must introduce appropriate management tools for measuring and monitoring their performance. The managers of water utilities need to understand the importance of data collection, verification, storage, and processing to the utilities' success. This is supported by the author who pointed out that the operator (water utility) should be convinced that the task goes far beyond fulfilling the requirement of a financial statement where numbers are placed in columns, but also about how the data is useful for water service management among the utilities (Shushu et al., 2021).

3.3. Contributions and Practical Implications

Water resources and water service distribution have much potential for domestic and industrial use. Non-revenue water (NRW) is the water that is generated (or purchased) but not sold to consumers. The NRW evaluation is based on water loss as a percentage of production, the volume of water loss per kilometer of pipe network per day, and the volume of water loss per water connected per day. The studies recognize the importance of improving the amount and volume of NRW for the performance of water utilities. This study was conducted at MUWASA to contribute knowledge and enlighten the communities and water utilities stakeholders on the effects of NRW prevalence and its importance to effective control. The findings of this study have also provided new insights into the body of literature concerning customer satisfaction with water service delivery as far as NRW is concerned and effective measures to be undertaken in case of such incidences.

In terms of methodological approach, the study provided an alternative way of determining the levels and causes of community (water utility customers) satisfaction and the outcomes of their dissatisfaction with the services provided by the water utility. The study constructed five tailored statements based on the services by the water utility (MUWASA) and connected with the statements originating from the serviqual model's five dimensions (reliability, responsiveness, tangibles, assurance, and empathy) as suggested by Parasuraman *et al*. (1991).

The theoretical contribution of the findings of the study has proved that the Serviqual model and the Expectation Confirmation Theory (ECT) are relevant approaches to enlighten and examine the organization's performance with the services provided and the expectations and satisfaction of those who receive the services (customers). Therefore, the findings from this study have increased awareness and provided new knowledge about the adverse effects of NRW and how properly they can be handled. The findings have a specific critical influence on MUWASA as a case under investigation and other organizations with similar characteristics as water utilities.

4. Discussion and Conclusion

The study utilised a total of 100 respondents (70 MUWASA connected customers and 30 MUWASA employed staff) for the survey techniques. In a survey 55.7% of customer respondents were males and 44.3% were females while 80% of MUWASA employed staff were male and the remaining 20% were females, this also indicates that 63% of all respondents were males and 37% were females.

Moreover, a total of seven other MUWASA employed staff were used in this study as key informants in key

informant interviews. Furthermore, 21.4% of the connected customer respondents have a bachelor's degree education while 40% of the MUWASA employees had the same level of education. These variations justify the idea that the study had captured a range and diversity of information from the heterogeneous composition of respondents. This enriched the study with abundant of information as required for analysis and generalisation.

The findings of the study indicate that there are various effects of the NRW incidences that affect the organisation's performance in terms of revenue collection, organisation running costs, and improved water service provision to its customers hence delaying meeting the customers' expectations.

The study has found that the performance of the organisation has been jeopardized in relation to the prevalence of NRW hence leading to the problem of limited customer satisfaction based on the services that are expected to be received from the authority. This is because, from the study findings, it was argued that the level of customer satisfaction was very limited as expected.

The study calls upon the responsible authorities (MUWASA) to take proper measures to make sure that all the incidences of NRW are reduced and their related or associated effects are well addressed through various techniques. This will enable the authority to retain its standards as per organisation vision and mission and hence reduce customer complaints.

The authority should make sure that there is a proper maintenance programme of water distribution systems to the entire existing network including all customer service lines. Deprived maintenance has the problem of encouraging pipe leakages and bursts as well as shortening of pipes' life span. This study hence calls for the scheduled water system maintenance programme in place to manage this problem of NRW in the study area. Moreover, the study recommends that the Authority make sure that the existing relationship with the community members especially in the areas of water network security is well maintained and strengthened.

The study recommends to the authority (MUWASA) that during customer awareness programs and campaigns all customers should be emphasised and encouraged to report all observed and found illegal connections but there would be reporters of such incidences should be duly provided with monetary awards by the authority to motivate more people to come out and give information on illegal connections and deliberate vandalism of water infrastructures. Finally, the study recommends that the Authority make sure that all the water service provision related grievances are well redressed, and the solutions are in place on time, and they are effective.

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Authors′ contributions

The authors equally contributed to the preparation of this article.

Conflict of interest

The authors declare no conflict of interest.

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Original Article

Analysis of the Impact of Smart Tourism on the Sustainable Development of Rural Businesses in Tafresh County, Iran

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Abstract

Purpose- Rural tourism is considered a potential solution for rural communities to overcome economic challenges; in this context, smart tourism can be viewed as a logical advancement from traditional tourism, providing a balanced approach to revitalizing rural settlements and creating new economic opportunities for farmers and local communities. Accordingly, given that smart tourism can play a significant role in the sustainable development of businesses and the overall economy of villages, the aim of this research is to analyse the impact of smart tourism on the sustainable development of rural businesses in the Tafresh County.

Design/methodology/approach- Therefore, this study is applied and employs a descriptive-analytical method, and from a paradigm perspective, it is classified as quantitative research. The required information was collected through both documentary-library and field methods. The statistical population of the study includes 28 villages in Tafresh County. In the field method, a researcher-made questionnaire was used. For data analysis, exploratory factor analysis, one-sample T-test, and the MARCOS multi-criteria decision-making model were utilized.

Findings - The results from the exploratory factor analysis indicated that among the five identified factors, social and infrastructural factors in smart tourism have the greatest impact on the sustainable development of rural businesses. The results from the MARCOS decision-making model also showed that the villages of Kookan, Khank, and Naqousan are in a more favorable position regarding the indicators of smart tourism in the sustainable development of rural businesses.

Keywords: Smart tourism, Rural businesses, Exploratory factor analysis, Infrastructural factor, Tafresh County.

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1.Introduction

Tourism industry is one of the largest sources of job creation and economic growth in regions, and its rapid growth leads to significant economic, social, and environmental changes (Meshkini et al., 2012). It can guide the flow of social, economic, cultural, and political activities and, with rational planning and management, can yield substantial profits for governments (Khosravi, 2007; Habibi Kaveshkouhi et al., 2019). In other words, tourism can be considered one of the phenomena of the present century that ranks as the third most important industry in the world after oil and automotive industries. Besides alleviating poverty, promoting justice, and creating employment opportunities, it generates high income and penetrates all aspects of human life (Milen Kawasaki, 2012). Accordingly, tourism can have a remarkable impact on economic, social, structural, and aesthetic frameworks (Stetic, 2012). In the meantime, studies indicate that Iran ranks among the top ten countries in terms of tourism potential (Vahidi Rad & Pasad, 2015). One important branch of tourism is rural tourism. Rural tourism is a combination of economic, social and environmental components of rural areas. It relates to people, space, and products while having unique impacts on the environment and economic growth (Yang et al., 2021).

Hence, considering the structural characteristics of Iran's rural settlements, it can be stated that rural residents face challenges such as unemployment, low agricultural productivity, increasing migration to cities, and urban marginalization (Azkia & Ghaffari, 2004). Developing tourism is one solution to overcome these issues in rural communities. Tourism can lead to the development of tourist destination areas, where millions of villagers live. The development of rural tourism has advantages such as increased employment opportunities; optimization of transportation; creation and increase in residents' income; protection of cultural heritage; real global potential for economic enhancement; influx of investment, implementation of projects facilitating innovative entrepreneurial initiatives; development of social infrastructure to remove unemployment and poverty; and ultimately helping create better living conditions for thousands residing in villages (Wang et al., 2020; Lopez-Sanz et al., 2021). In general terms, tourism can serve as a tool for developing rural areas since it can act as a new financial resource that improves local people's economic status while also being a means to alleviate poverty and increase job opportunities (Giaoutzi & Nijkamp, 2006; Breidenhann & Wickens, 2004; Fossati & Panella, 2000; Lee & Chang, 2008; Sebele, 2010). Given the undeniable role that tourism plays in employment generation, addressing unemployment issues as well as fostering businesses and entrepreneurship—and overall impacting the economy, society, and environment within rural settlements—it is essential to focus on sustainability across all dimensions of tourism. One of the approaches that significantly impacts the sustainability of tourism businesses is the development of new technologies in these enterprises (Rana, 2021). Accordingly, with the expansion of industries, information technology has rapidly infiltrated various aspects of human life and is considered one of the influential components in various business sectors, especially in tourism businesses (Dehdashti Shahrokh & Jamal Abad Shakiba, 2013). Therefore, in the present era, it is impossible to overlook various approaches and global transformations in the field of tourism. In fact, over the past few decades, tourism has experienced remarkable growth due to technology and innovation (Yang et al., 2021), necessitating technological development and, in other words, smartization. Smartization has gained strength in rural areas of developed countries over the past two decades and plays a crucial role in the sustainability of rural tourism (Zavratnik et al., 2020). Thus, it seems that the smart village approach can provide a pathway to overcome unsustainability and achieve sustainable development in rural areas. Neglecting technological changes—one of the pillars of a smart village—places a rural settlement efficiency at its lowest level for residents, especially educated individuals, leading to increased migration. Additionally, it negatively impacts any limitations regarding technology, employment, economy, and welfare for rural residents while exacerbating temporal and spatial constraints. Given these discussions, achieving sustainable development—especially in rural areas—requires studying and examining smart

village strategies and their indicators so that we can leverage the capabilities offered by this approach through analysis and application (Anabestani et al., 2024).

In this regard, tourist villages of Tafresh County possess high potential for attracting tourists due to their geographical location and natural attractions as well as historical-cultural features such as unique architectural styles due to mountainous location; numerous rivers and springs; special customs; unique agricultural, horticultural and livestock products; handicrafts; diversity of animal and plant wildlife; etc. today, rural tourism requires smartization and development of tourism infrastructure; therefore, developing rural tourism without paying attention to smartization or utilizing new technologies for enhancing tourism businesses is temporary and unsustainable. What is crucial for sustaining rural tourism is business sustainability and consequently ensuring job stability and income for villagers. Therefore, since Tafresh County has diverse resources both natural and human-made, adopting a smart rural tourism development approach leads to diversity of economic activities through development of tourism businesses at the village level while having positive impact on job creation and income for villagers. In this sense, the present study aims to examine the impact of smart tourism on developing rural businesses and regional economies; therefore, this objective could be effective in developing smart rural tourism and improving economic, social, and environmental conditions for villagers in Tafresh County.

2. Research Theoretical Literature

The growth and development of tourism as a strategy for rural development, is a relatively new concept, whose importance has been considered by local policymakers and planners. With this attitude, there is another belief that considers rural tourism as a certain solution for the development of rural areas (Roknodin Eftekhari, 2002). In this respect, one of the useful and effective ways to utilize rural tourism is the development of smart rural tourism which combines traditional rural culture with information and communication technology applications. Its goal will focus on balancing competitiveness with social and environmental sustainability (Shen & wang, 2018).

Smart tourism results from the development of modern information and technologies which we are recently connected to and leads to competitive advantage of a tourism destination compared to other tourism destinations. In smart tourism, information technology plays a significant role in integration of services provided to tourists (Nadali & Sefidchian, 2018). In this regard, developing smart tourism includes: utilizing smart technologies to enhance business innovations, and ultimately providing superior experiences to tourists and rural residents (Buonincontri & Micera, 2016). As an approach, smart tourism helps destinations in terms of facilitating and supporting its interactions with tourists and residents, its participations within and outside tourism domain, its commercial and physical environment, and tourism activities. The core philosophy of smart tourism is the innovative utilization of technology and strategic collection and management of information (Del Chiappa & Baggio, 2015). Smart rural tourism has been also shaped based on these concepts of smart tourism. As Rudwiarti et al., identified four main characteristics for smart tourism including: sustainability, participation, betterment of well-being, and implementation of information and communication technology (Rudwiarti et al., 2021).

Since sustainability is a significant issue in the development of rural tourism and active businesses in this field, sustainable rural tourism requires a holistic approach which takes the social, economic, and environmental impacts of tourism into consideration. Utilization of modern technology is another issue that plays a role in sustainability and growth of economy and tourism businesses. Tourism businesses must continuously be innovative in order to remain lasting and sustainable (Mishra, 2013). Hence, in the present era, the use of modern technologies has a remarkable impact on tourism industry, by basically converting the effectiveness and productivity of tourism organizations, their business methods and ways of interactions between customers and providers. Therefore, exploitation of modern technologies, is the key driver in tourism industry as well as rural tourism (Buhalis & Law, 2008). Thus, in order to sustain rural tourism businesses, it is necessary to pay more attention to villagers' capabilities in smartization of villages, focusing on valuable concepts such as local e-businesses, development of green technology, local marketing, etc. based on reducing the distance

between producers and consumers by enhancing technical knowledge, raising awareness and providing education. With this perspective, smart economy and businesses can serve as a transforming axis and one of the effective subcomponents in smartening villages through collaboration with other internal elements such as smart communities, smart governance, smart ecology, etc. which can accelerate achieving sustainable rural development (Moridsadat & Ma'malvand, 2018).

2.1. Research Literature

A review of different studies related to the subject of this research indicates that Iran has limited experiences in the field of smart villages. However, some domestic and international studies have been conducted on smart rural tourism and sustainable development of rural businesses which are summarized below. According to the research results of Anabestani & Javanshiri (2017), it was determined that rural creative economy indicators, with a weight of 0.534, human capital with a weight of 0.148, and economic indicators with a weight of 0.138 have the greatest impact on the formation of smart rural development. Zavratnik et al., (2018) consider smart villages as an essential approach to encounter the numerous challenges faced by today's societies. They have identified spatial differences as the most important criterion in their study on the conditions of smart villages in Slovenia. Ardito et al. (2019) studied big data in smart tourism including: challenges, issues, and opportunities. The results indicated that in the era of digital transformation, big data plays a crucial role in changing global travel patterns and creating challenges and remarkable opportunities for established companies and new entries into the tourism industry. All these companies can gain valuable information to predict tourist demand, ability to make better decisions, management of knowledge flows, interaction with customers, and providing best services in a more efficient and effective way. Aziza and Susanto (2020) presented a smart village model for rural areas including 6 dimensions: governance, technology, resources, services, life, and tourism. They believed that implementation of this model has been successful in Bonywangi region in Indonesia.

Zhao & Zhang (2021) conducted a study on revitalization of rural tourism from the perspective of smart tourism. This article examines opportunities for developing rural tourism through smart tourism, evaluates the status of rural tourism development within the framework of smart tourism, shapes rural tourism using internet information modes and eventually summarizes pathways for developing smart tourism. Balina (2020) in examining smart rural tourism experiences in Spain shows that smart rural tourism projects have been noteworthy, and support for them is recognized as the most important factor. Rural tourists value technological innovation in rural destinations, particularly those information and communication technology tools that enhance their tourism experience. Li & Zhang (2022) in a study on the development of smart tourism integration model to preserve the cultural heritage of ancient villages, concluded that, smartization is identified as one of the reliable approaches for the development of tourism in the region; developing infrastructure, government and private sector support and participation of local community play an important role in this field.

Ballina (2022) has studied the smart concept in rural tourism comparing two phases (2016- 2019). The results show the importance of smartphone in rural tourism, temporary growth in its tourist service use and most importantly, technological applications which improve enjoyable stay. The rural tourist does not abandon the use of information and communication technology (ITC) either before or after the trip. Specifically, planning to determine the rural status, is the core of smart rural tourism. Since it must focus on new technological tools for tourists. Ciolac and colleagues (2022) demonstrated in their study of smart tourism villages that in these villages, the components of technology, service delivery, education and comprehensive local awareness, participation, investment, infrastructure improvement, and innovation in businesses have been effective in strengthening and growing smart tourism. Amrullah et al., (2023) examine the impact of business innovations and sustainable smart tourism on the performance of managers in tourist destination villages. This research has been conducted to analyze the impact of innovation and competitive advantages on managerial performance in sustainable tourist villages. Priatmoto et al., (2023) analyzed the complexities of rural businesses. Moradi et al., (2023) conducted a study on spatial explanation of tourism clusters

with a focus on small rural businesses in Tabas area. The results emphasized on the importance of developing tourism clusters and creating required infrastructure for small businesses and analyzed tourism clusters in villages with high potential as well. The results of the research by Anabestani et al. (2023) indicated that there are numerous possible scenarios regarding the impact of smart villages on the sustainability of peri-urban settlements in the metropolitan area of Tehran, specifically within the Islamshahr County. Among these, 14 scenarios exhibit weak compatibility, while only 1 scenario demonstrates strong and sustainable compatibility (zero incompatibility). The first scenario, which is a positively oriented scenario, has a total interaction effect score of 733 and a compatibility value of 13.

Safri Aliakbari (2022) concluded in his analysis of the smart tourism context in targeted tourist villages and the challenges ahead in the Paveh County that traditional structures in villages, particularly in the realm of rural tourism, remain intact, and there is no tangible and planning-based framework for smart tourism in these villages. Bahadori Amjaz et al., (2022) examined the role of the main components of the formation of the smart growth strategy in sustainable development of rural settlements (Case study: Jiroft County). The obtained results based on PLS structural model, the dimension of transportation and communication (0.723) had the highest impact on the formation of smart growth within the studied area. The next indicators were improvement of physical context, improvement of environmental quality, sustainability of local community, stability of local economy, improving the quality of housing, and intensive density and development with values of 0.715, 0.707, 0.706, 0.704, 0.626, and 0.459, respectively. The results of spatial analysis show that, the highest ranks of rural settlements in terms of benefiting from smart growth indicators belong to the villages of Aliabad, Dowlatabad, Dobaneh, Hosseinabad Dehdar, Esmaieli Sofla, Golab Soufian, and the lowest ranks belong to the villages of Tarj, Konar, Sandal, Narjou, and Saghdar.

Mirzaei Rezqabad et al., (2024) also evaluated the tourism destination villages in Qom Province in terms of smart village components and concluded that, improvement and utilization of smart components can accelerate the growth and development of tourism in villages and the concept of smart village must be comprehensively developed in various aspects. The results of the research by Anabestani and Barani Alikabari (2024) indicate that the concept of smart rural tourism is the result of a set of indicators including smart economy, smart governance, smart infrastructure, smart people, smart connectivity, and smart education. The results of the one-sample t-test showed that among the indicators of smart rural tourism, the indicators of smart governance, smart people, smart economy, and smart education were identified as the most important indicators of smart rural tourism in the studied villages, with means of 3.95 and 3.90, respectively.

The review of existing studies indicates that no research has been conducted on the subject of this study so far. It can be concluded that, considering smart tourism and its impact on business development in rural settlements, the present study is a new and significant research, which aims to analyse the components of smart rural tourism formation and its impact on the development of rural businesses in tourist destination villages of Tafresh County.

3. Research Methodology

The present theoretical research is conducted with applied purposes using the descriptive-analytical method. Also, the current study has a quantitative approach in terms of its paradigm. Data collection for information related to research literature was done through library method; field method and researcher-made questionnaire were also used. The questionnaire was designed in the form of a Likert scale (very low, low, average, high, and very high). The statistical population consists of 28 sample villages of Tafresh County. This County has a central part and four villages named Bazarjan, Roudbar, Kharazan, and Kouh panah. According to 2016 census there were 2231 households in the studied villages. Therefore, using Cochran's formula, 216 households were determined as the sample size. Simple random sampling method was used to select sample households. Validity of the questionnaire was confirmed by five professors and Cronbach's alpha was used to determine its reliability which was calculated to be 0.96, indicating an extremely high validity of the research tools. The collected data were analyzed using SPSS software. Descriptive and inferential statistics were used. Descriptive statistic such as mean, frequency, and frequency percentage were

used to examine individual characteristics. Exploratory factor analysis, and one sample T-test were used to evaluate the impact of smart tourism on the development of rural businesses, and finally, MARCOS decision-making model was employed to perform spatial analysis and rank the studied villages. Table (1) indicates the information related to households, population, and sample size of the studied villages.

Table 1. demographic information and sample size of the studied villages

Row	Village	Household	Population	Sample Size
1	Shahrab	172	389	11
2	Joftan	154	382	10
3	Naqousan	110	233	9
4	Kahak	110	292	9
5	Khanak	108	248	9
6	Fark	102	227	8
7	Ghezeljeh	101	289	8
8	Zarjin	82	189	8
9	Koloo Olya	82	174	8
10	Haftan Olya	82	234	8
11	Koryan	78	242	8
12	Abreh dar	77	133	8
13	Koohin	71	148	7
14	Bazarjan	68	172	7
15	Kandej	68	137	7
16	Koloo sofla	67	152	7
17	Fesengan	65	160	7
18	Kabouran	63	136	7
19	Dinjerd	63	224	7
20	Joraqin	62	132	7
21	Qaraja Qieh	62	191	7
22	Kangaran	60	133	7
23	Gazavand	59	168	7
24	Asiab Jalal sofla	57	174	7
25	Koukan	53	226	7
26	Nobahar	53	152	7
27	Azadin	52	108	7
28	Alvijan	50	127	7
	Total	2231	5572	216

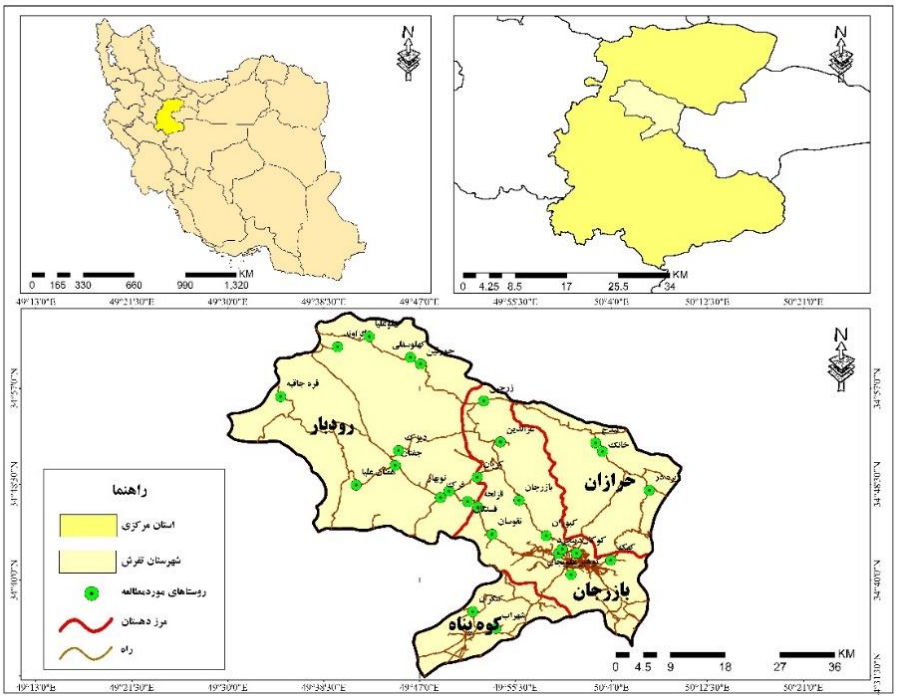

Figure 1. location of the study area

4. Research Findings

4.1. Demographic Characteristics of the Respondents

Descriptive findings of the study show that, most respondents were male with a frequency of 141 people (65.3%) and 37% of them were in the age group of 41 to 50 years. 88% of the respondents, that is, most of them were married. In terms of educational status, most of them (30.1%) had a bachelor's degree and higher. Considering employment status, most respondents, that is 31.9%, were employees and finally, most respondents (42.6%) had an income between 10 to 20 million TOMAN. Table 2 indicates the results of descriptive findings.

Table 2. Demographic Characteristics of Respondents

Description	**Frequency**	**Percentage**
Gender	**Women: 75 Men: 141**	**Women: 34.7 Men: 65.3**
Age	21 to 30: 26 31 to 40: 67 41 to 50: 80 51 to 60: 35 Above 60: 22	21 to 30: 5.6 31 to 40: 31 41 to 50: 37 51 to 60: 16.2 Above 60: 10.2
Marital Status	Single: 26 Married: 190	Single: 12.1 Married: 88
Educational Status	Illiterate (able to read Qoran): 18 Primary education: 23 Middle school education: 32 High school: 24 Diploma and higher: 54 Bachelor degree and higher: 65	Illiterate (able to read Qoran): 8.3 Primary education: 10.6 Middle school education: 14.8 High school: 11.1 Diploma and higher: 25 Bachelor degree and higher: 30.1
Job	Former: 54 Rancher: 16 Employee: 69 Worker: 26 Freelance jobs: 30 Other: 21	Former: 25 Rancher: 7.4 Employee: 31.9 Worker: 12 Freelance jobs: 13.9 Other: 9.7

Description	Frequency	Percentage
Gender	**Women: 75 Men: 141**	**Women: 34.7 Men: 65.3**
Income	Less than 5 million TOMANS: 32 5 to 10 million TOMANS: 76 10 to 20 million TOMANS: 92 More than 20 million TOMANS: 16	Less than 5 million TOMANS: 14.8 5 to 10 million TOMANS: 35.2 10 to 20 million TOMANS: 42.6 More than 20 million TOMANS: 7.4

4.2. Factor analysis of smart tourism indicators

In the present study, the statistical test of exploratory factor analysis was used to evaluate the impact of each of the indicators of smart tourism on sustainability of rural businesses. In exploratory analysis the researcher is trying to examine the experimental data to identify indicators and also the relationships between them. In the current research, 42 factors were identified as smart tourism indicators which affect the sustainability of rural businesses; these indicators were selected based on the previous studies. In this regard, to ensure the internal consistency of the variables and the appropriateness of their number for factor analysis, Bartlett's test and KMO were used. According to table (3), the KMO value, which is equal to 0.837, is greater than 0.5; thus, the number of respondents is sufficient for factor analysis. The significance level (sig value) is less than 0.05, indicating the correlation and suitability of the variables in question for conducting factor analysis.

Table 3. Values of KMO and Bartlett

KMO value	0.837
Bartlett value (Bartlett Test):	8441.249
Degree of Freedom	861
Significance Level	0.000

In the next step, the factors were categorized; the most related factors were placed in the same category. Therefore, as observed, based on exploratory factor analysis, factors were divided into 5 categories. As mentioned above, factors with the highest correlation were placed in the same category and factors whose factor load was less than 5% were removed from items. 29 out of 42 factors had a factor load more than 5% and the rest were removed. The remained factors were labeled based on the contents of each category. The results indicate that, among the extracted factors which one has the greatest impact on the sustainability of rural businesses.

According to table (4) among 5 identified factors, social factor has the greatest impact on the sustainability of rural businesses. In agreement with findings, social factor explains 21.02% of total variance. Among the 7 social variables of smart tourism, the variables "social trust in the internet platform and the data published on it" (factor loading 0.79), "educating people about online platforms and e-government" (factor loading 0.78), and public awareness of smart tourism platforms" (0.73) have the greatest impact on the sustainability of rural tourism businesses, respectively.

The second factor mentioned as infrastructural factor explains 19.5% of the variance related to the impact of smart tourism on sustainability of rural businesses. Among infrastructural indicators, "the existence of communication and infrastructure and suitable electronic facilities in the village" with a factor load of 0.71, "having a smart guide system in the village" with a factor load of 0.69, "high quality internet access and benefiting from proper bandwidth in the village" with a factor load of 0.67 have the greatest impact on the sustainability of rural businesses.

Administrative institutional factor is the third indicator that explains 19.5% of the total variance. Among 5 variables of this factor, "providing government services to villagers on the platform of smart (internet)" with a factor load of 0.63, "coordination between the government and the local community (strengthening E-government)" with a factor load of 0.60 have the highest impact on the sustainability of rural businesses.

The next factor is tourism potential which explains 11.5% of total variance and among its 6 loaded variables, "online access to village information (tourist destination villages)" with a factor load of 0.66, "virtual tourism experience in tourist destination villages" with a factor load of 0.61 and

"the number of visitors to tourist attractions (annually)" with a factor load equal to 0.59 have the greatest impact on the sustainability of rural tourism.
And finally, economic factor with explaining 7.9% of variance has the lowest impact on the sustainability of rural tourism. However, among its variables, "current role of tourism in rural economy" with a factor load of 0.63, and "the rate of tourism employment for the residents of the villages" with a factor load of 0.61 have the highest impact on the sustainability of rural tourism.
The identified factors, special values, and variance percentages of each factor and factor loads of each indicator can be observed in table (4).

Table 4. Identified factors, special values, variance percentages, and factor loads of research variables

Factors	Special values & variance percentages	Variables	factor loads
Social	Special value: 9.2 Variance percentage: 21.02	People's awareness of smart platform of tourism	0.729
		Educating people about online platforms and e-government	0.785
		Social trust in internet and published data on it	0.799
		Community participation in the field of tourism	0.682
		People's belief in online access to tourism services	0.511
		Access to social and communicative media in the village	0.603
		Ability of people to use the online platform in the village	0.642
Infrastructural	Special value: 7.4 Variance percentage: 19.5	Easy access to SMS and multimedia services in the village	0.605
		Active social networks (virtual) in the village	0.630
		Access to high quality internet and benefiting from proper bandwidth in the village	0.675
		Benefiting from electronic infrastructure of bank transactions in the village	0.635
		Having smart guide system in the village	0.698
		Having communicative infrastructure and proper electronic installations	0.712
Administrative Institutional	Special value: 5.8 Variance percentage: 14.4	Local institution's activity to create smart tourism platform	0.523
		Active private sector in the field of tourism	0.568
		Coordination between government and local community (strengthening E-government)	0.601
		Providing government services to villagers on smart platform (internet)	0.630
		Government's financial support in the field of rural tourism	0.523
Tourism potential	Special value: 4.6 Variance percentage: 11.5	The power of rural tourist attractions to attract tourists	0.513
		The number of visitors to tourist attractions (annually)	0.595
		virtual tourism experience in tourist destination villages	0.613
		Online access to village information (tourist destination villages)	0.663
		Creating a database of tourist attractions in the village	0.543
		Establishing electronic security in the village	0.557
Economic	Special value: 3.3 Variance percentage: 7.9	People's financial capability to create tourism businesses	0.554
		The rate of tourism employment for rural residents	0.612
		Benefiting from bank credits in the field of rural tourism	0.581
		Annual income status of rural households from tourism	0.578
		Tourism's current role in rural economy	0.632

The findings of table (5) indicates that, the calculated mean of research dimensions has been measured with the hypothetical mean and the true mean of respondents' opinions was less than (3) in all dimensions. This, indicates that achieving sustainability in rural businesses requires management and planning and creating necessary infrastructure to develop smart tourism in the studied villages. Among research dimensions, infrastructural dimension has the highest mean

2.39 and the lowest mean belongs to economic dimension (1.83). considering the obtained significant level, the value of(sig,) is significantly less than 0.05 in all dimensions which is applicable to the society.

In the following, considering the research factors which were categorized into 5 dimensions, one sample T-test was used to evaluate the impact of smart tourism on the sustainability of rural businesses.

According to the results, the value of t-statistic is negative in all dimensions. The mean is also less than the hypothetical mean (3); therefore, it can be said that, currently, smart tourism has little effect on the sustainability of rural businesses in the studied villages.

Table 5. Examining the research variables using one sample t-test

Factors	t-statistic	mean	Standard deviation	Significance level	Degree of freedom	Confidence interval at the 95% level	
						Lower limit	Upper limit
Social	-13.60	2.31	0.745	0.000	215	-0.79	-0.59
Infrastructural	-12.10	2.39	0.743	0.000	215	-0.71	-0.51
Administrative Institutional	-17.74	2.17	0.684	0.000	215	0.92	-0.73
Tourism potential	-14.69	2.36	0.641	0.000	215	-0.73	-0.56
Economic	-26.36	1.83	0.655	0.000	215	-1.26	01.09

Source: research findings, 2024.

4.3. Spatial analysis of research variables at the level of rural settlements of the studied area

In the present study multi-criteria decision-making models were used to spatially analyse the research variables at the level of sample villages. Multi-criteria decision making models (MARCOS) are among decision making methods which were presented in 2019. MARCOS stands for "measurement of alternatives and ranking according to compromise solution". MARCOS is a powerful method for making decisions in complicated situations. Implementing and utilizing this method allows researchers to evaluate options that have multiple criteria and indicators, ultimately prioritizing them and determining the most suitable option among the available choices. This method was introduced by Steve wicks et al., (2019). The steps of this method are outlined below.

Step one: formation of decision matrix

In the MARCOS technique, options are evaluated using n criteria; therefore, each option is assigned a score based on each criterion. These scores can be based on quantitative and real values or quantitative and theoretical values. In any case, a decision matrix of size m*n must be formed.

Step two: determination of ideal and anti-ideal

In this section, the ideal values (AI) and anti-ideal values (AAI) are determined in accordance with equations (1) and (2). The statement B refers to criteria that have a profit aspect, while C refers to criteria that have a cost aspect.

$$AI = \max_i x_{ij} \quad if\ j \in B \quad and \quad \min_i x_{ij}\ if\ j \in C \tag{1}$$

$$AAI = \min_i x_{ij} \quad if\ j \in B \quad and \quad \max_i x_{ij}\ if\ j \in C \tag{2}$$

Step three: normalization In this section, both criteria with benefit and cost aspects are normalized using equations (3) and (4).

$$n_{ij} = \frac{x_{aj}}{x_{ij}} \quad if \quad j \in C \tag{3}$$

$$n_{ij} = \frac{x_{ij}}{x_{aj}} \quad if \quad j \in B \tag{4}$$

obtained the weighted matrix.

Step four: weigh down
In this section, using equation (5), the weights of the criteria are multiplied by the normal matrix to

$$V_{ij} = n_{ij} \times W_j \quad (5)$$

Step five: the degree of desirability of options
In this section, the ideal (K+) and anti-ideal (K-) desirability of options are calculated based on the equations (6) and (7).

$$K_i^+ = \frac{S_i}{S_{ai}} \quad (6)$$

$$K_i^- = \frac{S_i}{S_{aai}} \quad (7)$$

In the above equations S_i=(i=1,2,\ldots,m) is the sum of the values of each row in weighted matrix which is obtained from the equation (8).

$$S_i = \sum_{j=1}^{n} V_{ij} \quad (8$$

Step six: determining options' optimal performance In this section optimal performance of each option is calculated based on equation (9).

$$f(K_i) = \frac{K_i^+ + K_i^-}{1 + \frac{1 - f(K_i^+)}{f(K_i^+)} + \frac{1 - f(K_i^-)}{f(K_i^-)}} \quad (9)$$

In the above equation, $f(K_i^-)$ is the anti-ideal desirability performance and $f(K_i^+)$ is the ideal desirability performance, both being obtained from equations (10) and (11).

$$f(K_i^-) = \frac{K_i^+}{K_i^+ + K_i^-} \quad (10)$$

$$f(K_i^+) = \frac{K_i^-}{K_i^+ + K_i^-} \quad (11)$$

Step seven: ranking options: In this section, ranking is done through using values obtained from equation (11) which are options' desirability performances. The option with the greatest value of desirability performance receives the highest rank.

In the present study, weighing down has been conducted, using MEREC technique. This method utilizes a new idea for weighting criteria which was presented by Keshavarz Qarabaie et al., under the title "Method Based on the Removal Effects of Criteria". This technique is similar to methods such as Shannon's Entropy, IDOCRIW, and Critic.

Table-6. The results obtained from MARCOS decision making model

Village	Si	F(K)	Rank	Village	Si	F(K)	Rank
Asiab Jalal	2.311	0.680	4	Qezeljeh	1.397	0.411	25
Abreh dar	1.566	0.461	24	Kabouran	1.618	0.476	21
Alvijan	1.810	0.533	15	Koryan	1.629	0.479	20
Bazarjan	1.762	0.519	17	Kandej	1.959	0.577	11
Joftan	1.755	0.516	18	Kangaran	2.085	0.614	9
Joraqin	1.601	0.471	23	Kahak	1.912	0.563	13
Khanak	2.402	0.707	2	Kolousofla	1.907	0.561	14
Dinjerd	1.003	0.295	28	Kolouolya	1.702	0.501	19
Zarchin	2.202	0.648	6	Koukan	3.156	0.929	1
Shahrab	1.604	0.472	22	Kouhin	1.779	0.524	16
Azadin	1.916	0.564	12	Gazavand	1.101	0.324	27
Fark	2.160	0.636	7	Naqousan	2.331	0.686	3
Fesengan	1.295	0.381	26	Nobahar	2.214	0.652	5
Qarajaqieh	2.158	0.635	8	Haftanolya	2.021	0.595	10

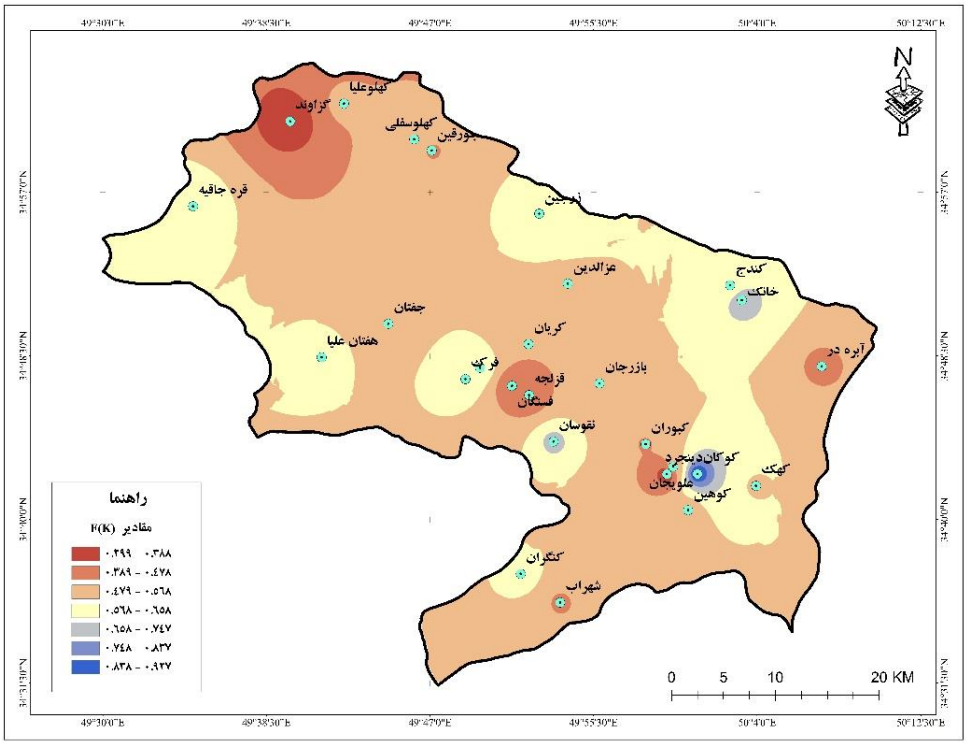

Figure 2. Changes in the impact of smart tourism on rural business development

The results obtained from ranking studied villages show that, there is not much difference between them in terms of the impact of smart tourism on the sustainable development of rural businesses. According to table (6), villages of Koukan, Khanak, and Naqousan with f(k) values of 0.93, 0.71, and 0.69 are ranked first to third, respectively, indicating that, smart tourism had the greatest impact on the sustainability of rural businesses in these villages. Dinjerd, Gazavand, and Fesengan villages with f(k) values of 0.29, 0.32, and 0.38 are ranked in the last places respectively. Compared to other villages, the villages that are placed in the last ranks, require more serious planning to provide infrastructure and allocating public and private capital for the development of smart tourism and as a result sustainable development of rural tourism.

5. Discussion and Conclusion

The present study has been conducted to examine the impact of smart tourism on the development of rural businesses. In such manner, in order to evaluate the impact of smart tourism on the

sustainability of rural tourism in Tafresh County, 42 effective factors were identified based on previous studies. The mentioned factors were reduced to 29 factors after conducting exploratory factor analysis and the remained factors were placed in 5 categories and were labeled as social factor, infrastructural factor, administrative institutional factor, tourism potential factor and finally, economic factor. Among these five factors, social and infrastructural factors of smart tourism had the highest impact on the sustainability of rural businesses. The results of one sample t-test indicated that, infrastructural and tourism potential factors with means of 2.39 and 2.36 were the most important dimensions of sustainability of rural businesses. The results obtained from spatial analysis of studied villages, using MARCOS decision making model, indicated that, among 28 villages under study, the villages of Koukan, Khanak, and Naqousan with values of 0.93, 0.71, and 0.69 were ranked first to third, respectively and the lowest scores belonged to Dinjerd, Gazavand, and Fesengan villages with values of 0.29, 0.32, and 0.38, respectively. According to research findings, it can be concluded that, for the sustainability of rural businesses, it is essential to pay special attention to the social and infrastructural factors of smart tourism. Informing, educating, and building trust regarding the use of online platforms to access tourism services and develop rural businesses, as well as training people on how to utilize these online platforms, can play a remarkable role in the development of rural enterprises. Furthermore, to achieve this goal, necessary infrastructure and suitable electronic facilities in villages, having a smart guide system in place, and ensuring access to high-quality internet with adequate bandwidth are the most important factors influencing the sustainability of rural businesses. In this regard, the results of this study are consistent with the results of the research conducted by Li & Zhang (2022). It is also in line with the results of the study conducted by Moradi et al., (2023) in terms of infrastructural factor.

In general, according to the results, smartization is one of the most important factors influencing the sustainability of rural businesses in tourist destination villages; smartening tourist villages requires adequate infrastructure and most importantly, villagers' acceptance and their trust in modern technologies and finally, educating them on how to use these technologies have great impact on the sustainability of rural businesses. Hence, significant planning is necessary to apply technology in tourism industry.

Based on the research findings, the following suggestions are provided to strengthen the smart tourism infrastructure in order to ensure the sustainability of businesses in the tourist destination villages of Tafresh County:

- Increasing people's awareness about capabilities and benefits of utilizing modern technologies and online platforms to develop tourist businesses;
- Eliminating existing restrictions to access virtual and online networks;
- Holding training classes on how to use online platforms for marketing and advertising village products;
- Developing required infrastructure to smarten rural businesses in tourist villages including access to high quality internet;
- The effort of local institutions such as district municipality to create smart tourism platform in the village.

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Authors' contributions

The authors equally contributed to the preparation of this article .

Conflict of interest

The authors declare no conflict of interest.

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Original Article

تحلیل تأثیر گردشگری هوشمند بر توسعه پایدار کسب‌وکارهای روستایی در شهرستان تفرش، ایران

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چکیده مبسوط

۱.مقدمه

از آنجایی¬که در عصر حاضر گردشگری روستایی نیازمند هوشمندسازی و توسعه زیرساخت¬های گردشگری می¬باشد، بر این اساس توسعه گردشگری روستایی بدون توجه به مبحث هوشمند سازی و استفاده از فناوری¬های جدید جهت توسعه کسب¬و¬کارهای گردشگری امری موقتی و ناپایدار است در حالی¬که آنچه در پایداری گردشگری روستایی حائز اهمیت است، پایداری کسب وکارها و بالطبع آن پایداری اشتغال، درآمد روستاییان می¬باشد؛ بنابراین با توجه به اینکه شهرستان تفرش دارای منابع متنوع از حیث منابع طبیعی و انسانی می¬باشد رویکرد توسعه گردشگری هوشمند روستایی باعث تنوع بخشیدن به فعالیت¬های اقتصادی از طریق توسعه کسب¬و¬کارهای گردشگری در سطح روستاها گردیده و آثار مفیدی در ارتقا شغل و درآمد روستانشینان خواهد داشت. بر این اساس هدف تحقیق حاضر، بررسی نقش و تاثیر گردشگری هوشمند در توسعه کسب و کارهای روستایی و اقتصاد منطقه می¬باشد؛ لذا این هدف می¬تواند در راستای توسعه گردشگری هوشمند روستایی و بهبود وضعیت اقتصادی، اجتماعی و زیست¬محیطی روستاییان شهرستان تفرش موثر واقع شود.

۲.مبانی‌نظری تحقیق

گردشگری هوشمند حاصل توسعه اطلاعات و فناوری‌های به‌روزی است که امروزه با آن‌ها در ارتباط هستیم و باعث افزایش مزیت رقابتی یک مقصد در مقایسه با سایر مقصدهای گردشگری می‌شود. در گردشگری هوشمند، فناوری اطلاعات نقش بسیار مهمی دارد که موجب یکپارچگی خدمات ارائه‌شده به گردشگر می‌شود. در این راستا توسعه گردشگری هوشمند شامل بهره‌گیری از فناوری‌های هوشمند برای تقویت نوآوری‌های تجاری و در نهایت ارائه تجربیات برتر به گردشگران و ساکنان است. گردشگری هوشمند به عنوان یک رویکرد به مقاصد کمک می‌کند تا در زمینه تعاملات خود با گردشگران و ساکنان، مشارکت‌های خود در داخل و خارج از گردشگری، و محیط تجاری و فیزیکی خود و فعالیت‌های گردشگری تسهیل و حمایت کنند. هسته اصلی فلسفه گردشگری هوشمند، استفاده نوآورانه از فناوری و جمع‌آوری و مدیریت استراتژیک اطلاعات است. بگونه‌ای که برای گردشگری هوشمند چهار مشخصه اصلی را ذکر نموده‌اند که عبارتند از پایداری، مشارکت، بهبود رفاه و پیاده‌سازی فناوری اطلاعات و ارتباطات. گردشگری هوشمند روستایی نیز بر پایه همین مفاهیم گردشگری هوشمند شکل گرفته است.

۳. روش تحقیق

پژوهش حاضر از نظر هدف از نوع کاربردی و از لحاظ روش از نوع توصیفی تحلیلی است. جهت گردآوری داده‌ها از روش کتابخانه‌ای برای اطلاعات مربوط به ادبیات تحقیق و از روش میدانی و ابزار پرسشنامه محقق ساخته بهره گرفته شد. جامعه آماری تحقیق شامل ۲۸ روستای نمونه در شهرستان تفرش که براساس سرشماری سال ۱۳۹۵ جمعیت خانوارها در روستاهای موردمطالعه ۲۲۳۱ خانوار بوده است. جهت تعیین حجم نمونه از فرمول کوکران تعداد ۲۱۶ خانوار و جهت انتخاب خانوارهای نمونه از روش نمونه‌گیری تصادفی ساده استفاده شد. روایی پرسشنامه با استفاده از نظر ۵ تن از اساتید و جهت تعیین پایایی از روش آلفای کرونباخ استفاده شد و مقدار آن ۰/۹۶ محاسبه شد که بیانگر پایایی بسیار بالای ابزار پژوهش می‌باشد. برای بررسی ویژگی‌های فردی از آمار توصیفی مانند میانگین، فراوانی و درصد فراوانی استفاده شد. جهت بررسی تاثیر گردشگری هوشمند بر توسعه کسب‌وکارهای روستایی از تحلیل عاملی اکتشافی، آزمون T

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تک نمونه‌ای استفاده شد و در نهایت از مدل تصمیم‌گیری MARCOS برای انجام تحلیل فضایی و رتبه‌بندی روستاهای مورد مطالعه بهره گرفته شد.

۴. یافته‌های تحقیق

برای ارزیابی میزان تاثیر گردشگری هوشمند بر پایداری کسب¬و¬کارهای روستایی در شهرستان تفرش ۴۲ عامل موثر براساس مطالعات پیشین شناسایی شدند. عوامل مذکور بعد از انجام تحلیل عاملی اکتشافی به ۵ دسته تقسیم و به نام عامل اجتماعی، عامل زیرساختی، عامل نهادی مدیریتی، عامل پتانسیل¬های گردشگری و در نهایت عامل اقتصادی نام¬گذاری شدند. در بین ۵ عامل، عامل اجتماعی و عامل زیرساختی گردشگری هوشمند بیشترین تاثیر را در پایداری کسب¬و¬کارهای روستایی دارد. نتایج آزمون T تک نمونه¬ای نشان داد که از میان ابعاد گردشگری هوشمند که در پایداری کسب¬و¬کارهای روستایی موثرند ابعاد زیرساختی و پتانسیل¬های گردشگری با میانگین¬های ۲/۳۹ و ۲/۳۶ مهم¬ترین ابعاد پایداری کسب¬و¬کارهای روستایی می¬باشند. نتایج حاصل از تحلیل فضایی روستاهای موردمطالعه که با استفاده از مدل تصمیم-گیری MARCOS انجام گرفت، نتایج نشان داد از میان ۲۸ روستای موردمطالعه روستاهای کوکان، خانک و نقوسان به ترتیب با امتیازهای ۰/۹۳، ۰/ ۷۱ و ۰/۶۹ در رتبه اول تا سوم قرار گرفتند و کمترین امتیاز (به ترتیب با امتیازهای ۰/۲۹، ۰/۳۲ و ۰/۳۸) به روستاهای دینجرد، گزاوند و فسنگان اختصاص دارد.

۵. بحث و نتیجه‌گیری

به طور کلی براساس نتایج تحقیق می‌توان بیان کرد یکی از عوامل بسیار موثر در زمینه پایداری کسب‌وکارهای روستایی در روستاهای مقصد گردشگری این است که در بخش گردشگری هوشمندسازی صورت پذیرد و جهت هوشمندسازی روستاهای گردشگری بایستی زیرساخت‌های کافی وجود داشته باشد و از همه مهم‌تر نیز پذیرش روستاییان، اعتماد آنان به فناوری‌های نوین و در نهایت آموزش آنان در زمینه استفاده از فناوری‌های نوین تاثیر زیادی در پایداری کسب‌وکارهای روستایی دارد. بنابراین ضروریست برنامه‌ریزی قابل توجه‌ای در جهت به کارگیری فناوری در صنعت گردشگری صورت گیرد. براساس نتایج تحقیق پیشنهادهایی جهت تقویت بستر هوشمند گردشگری در راستای پایداری کسب‌وکارهای روستاهای مقصد گردشگری شهرستان تفرش به شرح ذیل ارائه می‌گردد:

- ✓ افزایش آگاهی مردم روستایی از قابلیت‌ها و مزایای استفاده از فناوری‌های نوین و بسترهای آنلاین در جهت توسعه کسب و کارهای گردشگری؛
- ✓ از بین بردن محدودیت‌های موجود در جهت دسترسی به شبکه‌های مجازی و آنلاین؛
- ✓ و غیره.

کلیدواژه‌ها: گردشگری هوشمند، کسب‌وکارهای روستایی، تحلیل عاملی اکتشافی، عامل زیرساختی، شهرستان تفرش.

تشکر و قدردانی

پژوهش حاضر برگرفته از رساله دکتری نویسنده دوم (یحیی درمانلو)، گروه جغرافیای انسانی و آمایش، دانشکده علوم زمین، دانشگاه شهید بهشتی، تهران است.

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*. نویسندهٔ مسئول:
دکتر علی‌اکبر عنابستانی
آدرس: گروه جغرافیای انسانی و آمایش، دانشکده علوم زمین، دانشگاه شهید بهشتی، تهران، ایران.
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فهرست مندرجات

عنوان	صفحه
■ تحلیل کیفی موانع موثر بر توسعه گردشگری کشاورزی در نواحی روستایی محور تالاب زریوار شهرستان مریوان سعدی محمدی - سروه یعقوبی‌نیا	(۲۱-۱)
■ تعیین‌کننده‌های گرایش کارآفرینانه زنان روستایی عضو صندوق‌های اعتبارات خرد: مطالعه‌ای در غرب ایران مهتاب ولی‌زاده- فرحناز رستمی - نعمت اله شیری - مژگان خوش‌مرام	(۳۹-۲۳)
■ هوش هیجانی و تأثیر روانشناختی آن بر عملکرد کارکنان در بخش بهداشت نیجریه آگوستین چیبوئز ایهروبیم - امانوئل اونیکاچی ایهروبیم - گلوریا چیاماکا ایهروبیم	(۵۰-۴۱)
■ عوامل موثر بر رفتارهای پیشگیرانه مستمر گوسفندداران در برابر شیوع کووید-۱۹ بیژن ابدی - امیر علم بیگی	(۷۲-۵۱)
■ پیامدهای آب بدون درآمد بر هزینه‌های عملیاتی سازمان و رضایت مشتری: مطالعه موردی شرکت آب و فاضلاب شهری موسوما سیریل کالمبانا کومبا	(۸۱-۷۳)
■ تحلیل تأثیر گردشگری هوشمند بر توسعه پایدار کسب‌وکارهای روستایی در شهرستان تفرش، ایران علی اکبر عنابستانی - یحیی درمانلو - بیژن رحمانی	(۹۹-۸۳)

داوران این شماره به ترتیب حروف الفبا

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دکتر مجتبی قدیری معصوم (استاد جغرافیا وبرنامۀ ریزی روستایی دانشگاه تهران)

دکتر سعید کامیابی (دانشیار مدیریت گردشگری دانشگاه سمنان)

دکتر حوریه مرادی (استادیار جغرافیا و برنامه‌ریزی روستایی دانشگاه لرستان)

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دکتر زهرا یکتامهر (استادیار جغرافیا و برنامه‌ریزی شهری دانشگاه آزاد اسلامی مشهد)

۹. ۳. انواع نقل قول‌ها (مستقیم و غیر مستقیم)، نقل به مضمون و مطالب به دست آمده از منابع و مآخذ، با حروف نازک و استفاده از نشانه‌گذاری‌های مرسوم، مشخص شود و نام صاحبان آثار، تاریخ و شماره صفحات منابع و مآخذ، بلافاصله در میان پرانتز نوشته شود.

۱۰. مقالات برگرفته از رساله و پایان‌نامه دانشجویان با نام استاد راهنما، مشاوران و دانشجو به صورت توأمان و با مسؤولیت استاد راهنما منتشر می‌شود.

۱۱ . چنانچه مخارج تحقیق یا تهیه مقاله توسط مؤسسه‌ای تأمین مالی شده باشد، باید در بخش تشکر و قدردانی مشخص گردد.

۱۲ . شیوه ارزیابی مقالات: مقالات ارسالی که شرایط پذیرش را احراز کنند، برای داوران خبره در آن موضوع ارسال می‌شوند. داوران محترم، جدای از ارزشیابی کیفی مقالات، راهبردهای سازنده‌ای پیشنهاد می‌کنند. پیشنهادهای داوران محترم به طور کامل، اما بدون نام و نشان داور، برای نویسنده مقاله ارسال خواهد شد.

۱۳ . مجله حق رد یا قبول و نیز ویراستاری مقالات را برای خود محفوظ می‌دارد و مقالات مسترد نمی‌گردد. اصل مقالات رد یا انصراف داده شده پس از سه ماه از مجموعه آرشیو مجله خارج خواهد شد و مجله پژوهش و برنامه‌ریزی روستایی هیچ مسئولیتی در این ارتباط نخواهد داشت.

۱۴ . مسؤولیت ارائه صحیح مطالب مقاله بر عهده‌ی نویسندگان مقاله است. از این‌رو، نسخه‌ای از مقاله آماده چاپ برای انجام آخرین تصحیحات احتمالی به نشانی الکترونیکی نویسنده ارسال خواهد شد. چنانچه ظرف مدت یک هفته پاسخی از سوی نویسندگان واصل نگردید به معنای موافقت آنها با اصلاحات انجام شده تلقی و نسبت به چاپ آن اقدام می‌شود.

۱۵. دریافت مقاله صرفاً از طریق سامانه مجله (http://jrrp.um.ac.ir) خواهد بود و مجله از پذیرش مقالات دستی یا پستی معذور خواهد بود.

۱۶. نویسندگان گرامی، مقالاتی که مطابق فرمت مجله تهیه نشده باشند به نویسنده بازگردانده شده و در فرآیند ارزیابی قرار نخواهد گرفت.

۱۷. فایل های ضروری برای ارسال از طریق سامانه عبارتند از:

الف) فایل مشخصات نویسندگان: در محیط word شامل اسامی و مشخصات نویسندگان به فارسی و انگلیسی.

ب) فایل اصلی مقاله بدون مشخصات: در محیط word شامل متن اصلی مقاله بدون اسامی و مشخصات نویسندگان.

ج) فایل چکیده مبسوط (مکمل) مقاله: شامل چکیده مبسوط فارسی در قالب یک فایل در محیط Word.

۱۸. شرایط جزئی تر و دقیق تر نیز در فایل راهنمای نگارش و ارسال مقاله توسط نویسندگان ارائه شده است.

۱۹. مقاله پس از ارزیابی علمی به زبان انگلیسی برگردانده شده و نویسنده(گان) موظف به ترجمه آن در مراکز ویراستاری معتبر خواهند بود و تا قبل از انجام ترجمه، امکان ارسال گواهی پذیرش مقدور نمی‌باشد. لذا پیشنهاد می‌شود فارسی زبانان مقاله خود را به زبان فارسی تهیه و ارسال نموده و پس از طی فرایند ارزیابی علمی و پذیرش نسبت به ترجمه آن اقدام شود.

آدرس پستی: مشهد- میدان آزادی- پردیس دانشگاه فردوسی مشهد- دانشکده ادبیات و علوم انسانی- دفتر مجلهٔ پژوهش و برنامه‌ریزی روستایی.

کد پستی: ۹۱۷۷۹۴۸۸۸۳ تلفن و نمابر: ۰۵۱-۳۸۷۹۶۸۴۰ پست الکترونیکی Rplanning@um.ac.ir

وب سایت: http://jrrp.um.ac.ir/

فرم اشتراک (یک ساله/ دوشماره) **مجلهٔ پژوهش و برنامه‌ریزی روستایی**

این جانب ..... شغل ..... با ارسال فیش بانکی به مبلغ ..... ریال به حساب جاری شماره **۴۲۵۲۹۹۶۳۸** بانک تجارت شعبه دانشگاه مشهد کد ۴۲۵۰ به نام عواید اختصاصی دانشکده ادبیات و علوم انسانی، متقاضی اشتراک فصلنامه از شماره .....هستم. چنانچه صاحبان مقالات منتشر شده متقاضی دریافت مجلّه و تیراژه‌ی آن از طریق پست پیشتاز باشند، باید هزینه‌ی آن را به شماره حساب مذکور واریز و اصل فیش پرداختی را به نشانی دفتر مجلّه ارسال کنند.

نشانی: ..... کدپستی: .....

شرایط پذیرش مقاله

برای سرعت بخشیدن به امر داوری و چاپ مقالات، از همهٔ پژوهشگرانی که مایل به چاپ مقالات علمی خود در این نشریه هستند، درخواست می‌شود به نکات زیر توجه کافی داشته باشند:

۱ . مقالهٔ ارسال شده نباید قبلاً در هیچ نشریهٔ داخلی یا خارجی چاپ شده باشد. هیئت تحریریه انتظار دارد نویسندگان محترم تا هنگامی‌که جواب پذیرش از نشریه نرسیده است، مقالهٔ خود را به مجلهٔ دیگری برای چاپ ارسال نفرمایند.

۲ . مقالات انگلیسی با قلم نازک Times New Roman11 با نرم افزار Word تهیه شود. مقالات، روی کاغذ A4 (با حاشیه از بالا ۳ و پایین ۲ و راست ۲ و چپ ۲ سانتی‌متر) تایپ شود. متن به صورت دو ستونی با رعایت فاصله ۱ سانتی‌متر بین دو ستون و فواصل بین خطوط به صورت single باشد. ۳ . حجم مقاله نباید ازحدود ۹۵۰۰ کلمه و یا حداکثر ۱۵ صفحهٔ چاپی به قطع نشریه بیشتر باشد (با در نظر گرفتن محل جداول، اشکال، خلاصه فارسی و فهرست منابع).

۴ . عنوان مقاله با در نظرگرفتن فواصل بین کلمات نباید از ۶۰ حرف تجاوز کند و با قلم Times New Roman14 سیاه تایپ شود.

۵ . نام نویسندهٔ مقاله با قلم سیاه Times New Roman10 عنوان علمی یا شغلی او با قلم Times New Roman10 در زیر عنوان مقاله ذکر شود. ضمناً آدرس الکترونیکی و شماره تلفن نویسندهٔ مسؤول در پاورقی آورده شود.

۶ . چکیدهٔ مقاله ساختاریافته با قلم نازک Times New Roman 11 به صورت تک ستونی باشد.

۷ . شکل‌ها و نمودارهای مقاله حتماً اصل و دارای کیفیت مطلوب باشد. فایل اصلی اشکال (تحت PDF، Word،Excel) و با دقت ۳۰۰ dpi ارائه شود. اندازهٔ قلم‌ها خصوصاً در مورد منحنی‌ها (legend) به گونه‌ای انتخاب شوند که پس از کوچک‌شدن مقیاس شکل برای چاپ نیز خوانا باشند.

۸ . ساختار مقاله شامل عناصر زیر است:

۸. ۱ صفحهٔ عنوان: در صفحهٔ شناسنامه باید عنوان مقاله، نام و نام خانوادگی نویسنده (نویسندگان)، درجهٔ علمی، نشانی دقیق (کد پستی، تلفن، دورنگار و پست الکترونیکی)، محل انجام پژوهش، مسؤول مقاله و تاریخ ارسال) درج شود. عهده‌دار مکاتبات باید با علامت ستاره مشخص شود.

۸. ۲ چکیده: شامل چکیده‌های فارسی ساختار یافته (شامل هدف؛ روش؛ یافته‌ها؛ محدودیت‌ها؛ راهکارهای عملی؛ اصالت و ارزش و واژگان کلیدی (۳ تا ۶ کلمه)) است. تا حد امکان چکیدهٔ مقاله از ۳۰۰ کلمه تجاوز نکند . علاوه بر چکیده ساختار یافته، لازم است چکیدهٔ مبسوط فارسی بین ۷۵۰ تا ۱۰۰۰ کلمه نیز حاوی مقدمه، مبانی نظری، روش، نتایج و بحث، نتیجه‌گیری و کلیدواژه‌های مقاله تهیه شود، به طوری که حاوی اطلاعاتی از کل مقاله باشد و بتوان جداگانه آن را چاپ کرد. با توجه به این که مقاله بعدا به صورت کامل به انگلیسی برگردانده خواهد شد، نیازی به ترجمه چکیده مبسوط به انگلیسی نیست.

۸. ۳ مقدمه: شامل ۱- طرح مسئله؛ ۲- اهمیت و ضرورت؛ ۳- اهداف و سوالات اصلی تحقیق.

۸. ۴ ادبیات نظری تحقیق: شامل ۱- تعاریف و مفاهیم؛ ۲- دیدگاه‌ها و مبانی نظری؛ ۳- پیشینه نظری تحقیق و ... .

۸. ۵ روش‌شناسی تحقیق: در برگیرندهٔ ۱- محدوده و قلمرو پژوهش؛ ۲- روش تحقیق و مراحل آن (روش تحقیق، جامعهٔ آماری، روش نمونه‌گیری، حجم نمونه و روش تعیین آن، ابزار گردآوری داده‌ها و اعتبارسنجی آن‌ها)؛ ۳- سؤال‌ها و فرضیه‌ها؛ ۴- معرفی متغیرها و شاخص‌ها؛ ۵- کاربرد روش‌ها و فنون.

۸. ۶ یافته‌های تحقیق: ارائهٔ نتایج دقیق یافته‌های مهم با رعایت اصول علمی و با استفاده از جداول و نمودارهای لازم.

۸. ۷ بحث و نتیجه‌گیری: شامل آثار و اهمیت یافته‌های پژوهش و یافته‌های پژوهش‌های مشابه دیگر با تأکید بر مغایرت‌ها و علل آن، توضیح قابلیت تعمیم‌پذیری و کاربرد علمی یافته‌ها و ارائهٔ رهنمودهای لازم برای ادامهٔ پژوهش در ارتباط با موضوع، نتیجه‌گیری و توصیه‌ها و پیشنهادهای احتمالی.

۸. ۸ تشکر و قدردانی: قبل از منابع مورد استفاده ارائه شود و از ذکر عناوین دکتر و مهندس خودداری شود.

۹. نحوهٔ ارجاعات: منابع و مآخذ باید به صورت درون‌متنی و همچنین در پایان مقاله ذکر شود.

۹. ۱ ارجاعات در متن مقاله باید به شیوهٔ داخل پرانتز (APA) نسخه ۶ باشد؛ به گونه‌ای که ابتدا نام مؤلف یا مؤلفان، سال انتشار و صفحه ذکر شود. شایان ذکر است که ارجاع به کارهای چاپ شده فقط به زبان فارسی بوده و در اسامی لاتین معادل آن در زیر نویس همان صفحه ارائه شود. به عنوان نمونه: (شکوئی، ۱۳۸۷، ص. ۵۰) یا (وودز، ۲۰۰۵، ص. ۲۷).

۹. ۲ در پایان مقاله، منابع مورد استفاده در متن مقاله، به ترتیب الفبایِ نام خانوادگی نویسنده بر اساس الگوی فهرست نویسی APA تنظیم گردد.

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بسم الله الرحمن الرحيم

دانشکده ادبیات و علوم انسانی

مجلّهٔ پژوهش و برنامه‌ریزی روستایی

سال سیزدهم، شمارهٔ ۳، تابستان ۱۴۰۳، شمارهٔ پیاپی ۴۶

صاحب امتیاز: دانشگاه فردوسی مشهد
مدیر مسئول: دکتر حمید شایان
سردبیر: دکتر علی‌اکبر عنابستانی

هیئت تحریریه (به ترتیب حروف الفبا) :

کریستوفر برایانت	استاد برنامه‌ریزی روستایی و توسعه (دانشگاه مونترال کانادا)
خدیجه بوزرجمهری	دانشیار جغرافیا و برنامه‌ریزی روستایی (دانشگاه فردوسی مشهد)
سعید پیراسته	دانشیار جغرافیا و مدیریت محیطی (دانشگاه واترلو کانادا)
جعفر جوان	استاد جغرافیای روستایی (دانشگاه فردوسی مشهد)
محمدرضا رضوانی	استاد جغرافیا و برنامه‌ریزی روستایی (دانشگاه تهران)
عبدالرضا رکن‌الدین افتخاری	استاد جغرافیا و برنامه‌ریزی روستایی (دانشگاه تربیت مدرس)
عباس سعیدی	استاد جغرافیای روستایی (دانشگاه شهید بهشتی)
حمید شایان	استاد جغرافیای روستایی (دانشگاه فردوسی مشهد)
سید اسکندر صیدایی	دانشیار جغرافیا و برنامه‌ریزی روستایی (دانشگاه اصفهان)
علی عسگری	استاد مدیریت بحران (دانشگاه یورک کانادا)
علی‌اکبر عنابستانی	استاد جغرافیا و برنامه‌ریزی روستایی (دانشگاه شهید بهشتی)
آنا فرمینو	استاد جغرافیا و برنامه‌ریزی منطقه‌ای (دانشگاه لیسبون جدید پرتغال)
مجتبی قدیری معصوم	استاد جغرافیای روستایی (دانشگاه تهران)
دو–چول کیم	استاد مدیریت محیط زیست روستایی (دانشگاه اوکایاما ژاپن)
سیدحسن مطیعی لنگرودی	استاد جغرافیای روستایی (دانشگاه تهران)

مقالات نمودار آرای نویسندگان است و به ترتیب وصول و تصویب درج می‌شود.

دستیار سردبیر: مهدی جوانشیری
مدیر اجرایی: زهرا بنی‌اسد
ویراستار انگلیسی: مرکز ویراستاری ادبیات
حروف‌نگاری و صفحه‌آرایی : الهه تجویدی
شمارگان: ۵۰ نسخه

نشانی: مشهد، دانشگاه فردوسی مشهد، دانشکدهٔ ادبیّات و علوم انسانی دکتر علی شریعتی، کد پستی ۹۱۷۷۹۴۸۸۸۳ ، نمابر: ۳۸۷۹۶۸۴۰ (۰۵۱)
بها: داخل کشور: ۲۰۰۰۰۰ ریال (تک‌شماره) خارج کشور: ۲۵ دلار (آمریکا– سالانه)، ۲۰ دلار (سایر کشورها– سالانه)
درگاه الکترونیکی: http://jrrp.um.ac.ir/ E-mail:Rplanning@um.ac.ir

*** این مجله در جلسهٔ کمیسیون بررسی نشریات علمی کشور مورخ ۱۳۹۲/۲/۲۵ رتبهٔ علمی– پژوهشی دریافت و طی نامهٔ شمارهٔ ۳/۱۸/۳۵۷۲۸ در تاریخ ۱۳۹۲/۳/۱۳ ابلاغ گردیده است.**

این مجلّه در پایگاه های زیر نمایه می‌شود:

- **پایگاه استنادی علوم جهان اسلام (ISC)**
- **پایگاه اطلاعات علمی جهاد دانشگاهی (SID)**
- **پایگاه بانک اطلاعات نشریات کشور (Magiran)**
- **فهرست دسترسی آزاد مجلات (Doaj)**
- **Index Copernicus- RICeST- ISI-Noormags- Googlescholar- Civilica- Oaji**

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مجله پژوهش و برنامه ریزی روستایی

سال سیزدهم، شماره ۳، تابستان ۱۴۰۳، شماره پیاپی ۴۶

■ **تحلیل کیفی موانع موثر بر توسعه گردشگری کشاورزی در نواحی روستایی محور تالاب زریوار شهرستان مریوان** ۱

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بیژن ابدی - امیر علم بیگی

■ **پیامدهای آب بدون درآمد بر هزینه‌های عملیاتی سازمان و رضایت مشتری: مطالعه موردی شرکت آب و فاضلاب شهری موسوما** ۷۳

سیریل کالمبانا کومبا

■ **تحلیل تأثیر گردشگری هوشمند بر توسعه پایدار کسب‌وکارهای روستایی در شهرستان تفرش، ایران** ۸۳

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شاپا: ۲۷۹۱-۲۷۸۳