Community-based model of tourism development in a biosphere reserve context

Mahlagha Darvishmotevalli, S. Mostafa Rasoolimanesh and Mazdak Dorbeiki

Abstract

Purpose — This study aims to introduce and evaluate a model of host community support for sustainable tourism development (SSTD) based on the influential factors contributing to community support in a biosphere reserve.

Design/methodology/approach — Partial least squares structural equation modeling using SmartPLS 3 software is applied to analyze data collected from 473 residents of the Miankaleh Biosphere Reserve, Iran.

Findings — The findings reveal that the locals’ community support is affected by their level of environmental awareness, opportunity and attitudes toward SSTD. However, the results do not reveal an influence of environmental knowledge and community attachment on SSTD. The findings enrich the existing literature on community attitude predictors by showing that locals’ SSTD level is not consistently based on common predictors. Such support strongly depends on host communities’ attitudes toward supporting tourism, which is definitely not the same among residents. It is imperative to know whether people’s attitudes arise from a desire to protect the area or for reasons of self-interest.

Originality/value — The findings provide further support for the tenets of the segmentation approach and challenge existing knowledge on host communities’ attitudes about factors influencing residents toward SSTD. The findings have several practical implications regarding community participation for regional and national authorities and destination policymakers.

Keywords Community-based tourism, Sustainable development, Awareness and knowledge, Attachment, Opportunity, Attitude, Biosphere reserve

Paper type Research paper

生物圈保护区背景下旅游发展的社区支持模式

摘要

目的：本研究旨在介绍和评估影响生物圈保护区社区支持的可持续旅游发展（SSTD）的社区支持模型。

研究设计结果：结果显示，本地社区的环境意识水平、机会和对SSTD的态度影响着社区支持。然而，研究结果并没有揭示环境意识和社区支持的SSTD的影响。

创新/价值：这一发现丰富现有的关于社区态度预测因子的研究，表明当地人的SSTD并不一致基于共同的预测因子。这种支持很大程度上取决于东道社区支持旅游的意愿。这在居民中是不一样的。有必要了解人们的态度是出于保护该地区的需要还是出于自身利益的原因。此外，研究结果为细分方法的库则提供了进一步的支持，并挑战了关于东道社区支持SSTD的意愿的现有认知。

关键词 社区，可持旅游发展，意识及知识，依恋及机会，态度，生物圈保护

文章类型 研究型论文

Modelo comunitario de desarrollo turístico en el contexto de una reserva de la biosfera

Resumen

Diseño/metodología/enfoque: Se aplica un modelo de ecuaciones estructurales por mínimos cuadrados parciales con el programa SmartPLS 3 para analizar los datos recogidos de 473 residentes de la reserva de la biosfera de Miankaleh (Irán).

Objetivo: Esta investigación pretende introducir y evaluar un modelo de apoyo de la comunidad anfitriona al desarrollo del turismo sostenible (SSTD) basado en los factores que contribuyen al apoyo de la comunidad en una reserva de la biosfera.

Conclusiones: Los resultados revelan que el apoyo de la comunidad local se ve afectado por su nivel de concienciación medioambiental, sus oportunidades y sus actitudes hacia el desarrollo del turismo sostenible. Sin embargo, los resultados no muestran una influencia del conocimiento medioambiental y el apego de la comunidad sobre el desarrollo turístico sostenible.

Originalidad/valor: Los resultados enriquecen la literatura existente sobre predictores de la actitud de la comunidad al mostrar que el nivel de desarrollo turístico sostenible de los autóctonos no se basa únicamente en factores tradicionales. Dicho apoyo depende en gran medida de las actitudes de las comunidades anfitrionas hacia el apoyo al turismo y éste no es el mismo entre los residentes. Es necesario conocer si la actitud de los individuos surge de un deseo de proteger la zona o por razones de interés propio. Además, los resultados corroboran los principios del enfoque de segmentación y retan los conocimientos existentes sobre las actitudes de las comunidades anfitrionas acerca de los factores de los residentes sobre el desarrollo turístico sostenible.

Palabras clave Comunidad, Desarrollo turístico sostenible, Conciencia y conocimiento, Apego y oportunidad, Actitud, Reserva de la biosfera

Tipo de papel Trabajo de investigación

1. Introduction

Biosphere reserves are places in which people can learn about sustainable development (UNESCO, 2022). They also serve as sites for testing interdisciplinary approaches to understand, control and manage changes and interactions between social and environmental systems, including conflict prevention and biodiversity management. Considering the importance of sustainable development, which plays an essential role in fulfilling the functions of biosphere reserves, part of the management focus of such reserves comprises examining approaches to tourism development (Behzadnia and Dorbeiki, 2020). One of the main zones of biosphere reserves is the transition area (UNESCO, 2022), where communities, through human activities (e.g. tourism), may enhance sociocultural, environmental and economic sustainability or vice versa (Figure 1 is adapted from https://en.unesco.org/biosphere/about).

Therefore, it is crucial to understand communities’ perceptions regarding support for sustainable tourism development (SSTD) in biosphere reserves (Behzadnia and Dorbeiki, 2020; Obradović et al., 2021; Ohadi et al., 2013).

Research on SSTD has grown, with a particular focus on community support (Cheng et al., 2019; Eslami et al., 2019; Qin et al., 2021; Rasoolimanesh et al., 2017b; Zaman and Aktan, 2021). However, in the tourism literature, only a small number of previous works have provided detailed information about the characteristics of residents and their perceptions
with respect to supporting the development of sustainable tourism based on a community-based approach, particularly in the biosphere reserve context (Dolezal and Novelli, 2020; Obradović et al., 2021). Sinclair-Maragh et al. (2015) believe that despite the number of studies examining tourism development, only a few have evaluated and classified residents according to their perceptions and attitudes. While some previous studies have evaluated sustainable tourism from the perspective of locals, it remains an intensely debated subject that requires further research (Cheng et al., 2019; Dolezal and Novelli, 2020; Liang et al., 2021). The emphasis on studying residents’ perceptions refers to the scholars’ consensus that the success or failure of any tourism development in the destination community largely depends on residents’ understanding of its effects and subsequent attitudes toward tourism (Almeida-García et al., 2016). Gursoy et al., 2019; Lee and Jan, 2019; Rasoolimanesh and Seyfi, 2021). As highlighted by Gannon et al. (2021), further research is needed on the role of residents’ perceptions and relevant characteristics with respect to supporting SSTD on different types of tourism destinations. In light of this gap in the literature, the current study uses existing theories and models to examine the effects of environmental awareness (ENA), environmental knowledge (ENK), community attachment (CAC) and community opportunity (COP) on community support of tourism management and development in the context of the Miankaleh Biosphere Reserve in Iran. These structures were selected to facilitate assessment of local communities’ internal and external factors that may significantly affect SSDT. The literature considers ENA, ENK and CAC as internal factors (Sharpley and Telfer, 2015), and COP as an external factor (i.e. locals’ opportunity to express their ideas and participate in decision-making) (Holden, 2016).

Several authors call for further research into destination management, sustainable development and the underlying process of tourism development and improving local communities’ SSTD (Eslami et al., 2019; Ganji et al., 2021; Gannon et al., 2021; Zaman and Aktan, 2021). This study strives to test and interpret the process by which the abovementioned antecedents affect SSDT through impacting locals’ attitudes (Bajrami et al., 2020; Obradović et al., 2021). Community attitude (CAT) refers to viewpoints, tendencies, opinions and sentiments held by groups of individuals that live in a specified area with respect to their behavioral and psychological potential to support sustainable development (Gursoy et al., 2019). Assessing the attitude of residents toward tourism development comprises an early stage of tourism development program planning and implementation (Gursoy et al., 2019). Cheng et al. (2019) stated that for successful development planning in an area, tourism policymakers should focus on the local community’s attitudes, ethical values and humanity and direct the community’s attitude toward accepting new people in their environment and respecting cultural diversity and religions.

2. Biosphere reserves and their importance

One of UNESCO’s strategic and effective programs for environmental protection is the protection program known as “Biosphere Reserve”. Biosphere reserves are places with ecosystem value and genetic richness of plants and animals. This program combines human activities, research, conservation of natural environments and sustainable tourism development. The importance of biosphere reserves refers to their three functions: biodiversity conservation, sustainable development and capacity building.

One of the main objectives of establishing biosphere reserves has been to benefit from nature while protecting them. Biosphere reserves are critical in the management and sustainable development because of local communities and their collaborative role. They differ from other protected areas regarding their proper planning and management methods as they are effectively “learning places for sustainable development”. These places are designed based on multipurpose uses and play a fundamental and constructive
role to local communities. Attention is paid to the interrelationship of humans, natural resources and their sustainable use.

3. Theoretical framework and hypotheses

ENA means being aware of the natural environment and making choices that benefit – rather than hurt – the earth (Holden, 2016). This is related to various psychological factors, which are determined by individuals’ desire for sustainable developing plans, activities and behaviors. Scholars believe that responses aimed at the prevention or reduction of environmental problems via ENA involve environmental attitudes (Cheng et al., 2019; Essien and Ushie, 2018; Gursoy et al., 2019). Environmental attitudes refer to people’s emotional and behavioral reactions to environmental problems and issues, where these responses may lead to positive and constructive action for the environment (Gursoy et al., 2019).

The norm activation model (Schwartz, 1977) suggests that an individual’s particular behavior (e.g. pro-environmental and sustainable development attitudes or actions) results from activating personal norms that reflect a sense of moral obligation to perform or refrain from certain actions. According to this theory, one critical factor in activating a personal norm is problem awareness (or awareness of need). Notably, personal norms become stronger when people are aware of the environmental issues resulting from their behavior and feel personally responsible for these issues. Few researchers in the tourism literature have studied the need for informed locals’ participation in sustainable development (Khalid et al., 2019; Lee and Jan, 2019). Limited research has explored communities’ ENA of sustainable tourism for tourism development projects. Essien and Ushie (2018) asserted that ENA plays an essential role in shaping individuals’ attitudes and should be repeatedly carried out in similar studies to better understand and change the attitudes of community members toward environmental management.

ENA reflects local citizens’ general ability and intention toward a sustainable community and environment, which deserves further scientific attention. Therefore, this study develops the following hypotheses:

\[ H1. \] Environmental awareness among the local community has a positive relationship with their attitude toward Miankaleh Biosphere Reserve.

\[ H2. \] Environmental awareness among the local community has a positive relationship with SSTD regarding Miankaleh Biosphere Reserve.

Based on social cognitive theory, an individual’s knowledge acquisition can be directly related to their experiences and education and the influence of external factors (Bandura, 2001). An individual’s amount of knowledge regarding a specific area impacts their capacity to intentionally choose, execute and manage their actions to fulfill expected outcomes. Through the lens of social cognitive theory, individuals with ENK better understand the environment and its importance for the survival of all creatures in the world. Most importantly, environmentally aware and knowledgeable people are more capable of involving themselves in environmental issues, protection and sustainable development plans (Amoah and Addoah, 2021).

While experts have long considered ENK in environmental discourse (Amoah and Addoah, 2021; Kim and Stepchenkova, 2020), there are few published studies about the impacts of this critical component of environmental management in community-based studies (Rasoolimanesh et al., 2017a). Most existing environmental problems are rooted in the lack of knowledge on the human–environment relationship (Hall, 2019). Hall (2019) believes that locals’ ecological knowledge pushes them toward positive environmental conservation and their attitudes regarding the environment differ significantly from those who are not environmentally knowledgeable. For this reason, assessing individuals’ knowledge and understanding of their environment, its current status and its change process has become a
topic of concern (Amoah and Addoah, 2021; Rasoolimanesh et al., 2017a; Wan and Du, 2022). Although some studies have reported a positive impact of ENK on locals' behaviors (Kim and Stepchenkova, 2020; Wan and Du, 2022), the role of ENK in determining the necessary changes in locals' attitudes toward SSTD has not been studied in sufficient depth (Rasoolimanesh et al., 2017a). Therefore, this study addresses the following hypotheses:

**H3.** Environmental knowledge among the local community has a positive relationship with their attitude toward Miankaleh Biosphere Reserve.

**H4.** Environmental knowledge among the local community has a positive relationship with SSTD regarding Miankaleh Biosphere Reserve.

CAC is considered a critical construct in destination policy and planning (Talò, 2018). It is defined as a sensory and emotional connection to the place of residence (Ma, 2021). CAC also refers to the degree of an individual's commitment (sense of belonging) to the place of residence (Eslami et al., 2019). Woosnam et al. (2018) argue that community-attached individuals are more concerned about their environment, and their attachment impacts their attitudes toward environmental issues because of their social bonds and sentiments toward the place of residence. Gannon et al. (2021) believe that residents' sense of belonging to the community can predict their attitudes toward tourism development projects, as locals who are strongly committed to their community are more motivated to support tourism development plans.

According to place theory (Cohen, 1972), CAC is different for each person, such that those with high sense of place form emotional feelings toward their place of residence and care about relevant decisions and changes impacting it. However, the sense of place could be weak if it is associated with low CAC among residents. Consistent with this theory, Eslami et al. (2019) assert that locals' high CAC influences their perception of tourism's economic, sociocultural and environmental impacts, which in turn affects their life satisfaction, leading to locals' SSTD. Other findings show minor or insignificant effects of CAC on residents' environmental attitudes or support for tourism in a destination (Rasoolimanesh et al., 2017b; Wang et al., 2006). As the origins, beliefs and lifestyle of people living in the same community vary, their relations may be complex (Cohen, 1972); therefore, scholars believe that this area requires more research with respect to various destinations to gain further insight into the relationship between CAC and residents' attitudes toward SSTD (Gannon et al., 2021; Talò, 2018). Thus, this study proposes the following hypotheses:

**H5.** Community attachment of locals has a positive relationship with their attitude toward Miankaleh Biosphere Reserve.

**H6.** Community attachment of locals has a positive relationship with SSTD regarding Miankaleh Biosphere Reserve.

Sustainable tourism cannot be achieved until community members actively support tourism development (Cheng et al., 2019). Community opportunities to participate in development activities strongly depend on the destination conditions, such as the political atmosphere, government rules and policies regarding development plans, and the existence of dedicated channels that make the participation of locals in tourism development plans possible (Rasoolimanesh et al., 2017a). In the context of a participatory development approach, local communities determine tourism policies; thus, locals are the main actors of development in a destination. Giving them a chance to participate can therefore be considered a tourism development strategy. This people-oriented development approach emphasizes increasing the opportunities for, and quality of, participation in local societies' development plans, which is a step toward realizing self-reliant, sustainable development and social justice. Studies have proposed that if locals have more opportunities to get involved in developing plans for the destination, they show more positive environmental involvement and attitudes (Lee and Jan, 2019).
COP allows local communities to participate in the decision-making process at various levels of tourism development, including sharing the benefits of tourism development and determining the type and scale of tourism development in their localities (Cheng et al., 2019). Therefore, communities that are given opportunities to participate in decisions are more empowered; they can benefit from tourism development opportunities and effectively use those opportunities. Khalid et al. (2019) believe that community members’ equal voice and chances to be involved in the local development process are necessary for any tourism development plans. This study examines the degree to which locals have the opportunity to participate in tourism development plans, and the extent to which this opportunity impacts their attitudes toward the environment and their place of residence. Thus, the study addresses the following hypotheses:

H7. Community opportunity of locals has a positive relationship with their attitude toward Miankaleh Biosphere Reserve.

H8. Community opportunity of locals has a positive relationship with SSTD regarding Miankaleh Biosphere Reserve.

According to social exchange theory, locals are likely to support tourism development as long as they believe the expected benefits – including economic, social, cultural and environmental benefits – exceed the costs. Understanding how residents interact with tourism development is crucial for governments, policymakers and businesses. Several recent studies have examined the relationship between residents’ attitudes toward SSTD in rural and urban areas (Cheng et al., 2019; Eslami et al., 2019). However, to the best of our knowledge, no studies have examined the relationship between CATs and support for tourism development with respect to biosphere reserves. The study of CATs regarding tourism development in biosphere reserves is critical from the perspective of demonstrating a balanced relationship between people and nature to encourage sustainable development (Behzadnia and Dorbeiki, 2020; Obradović et al., 2021; Ohadi et al., 2013). Therefore, it is essential to further examine communities’ attitudes toward tourism development to develop insights and solutions to reconcile the conservation of biodiversity with its sustainable use. Thus, this study evaluates the attitudes of Miankaleh Biosphere Reserve’s local communities regarding SSTD:

H9. Community attitude of locals has a positive relationship with SSTD regarding Miankaleh Biosphere Reserve.

The study applies the segmentation approach to evaluate the mediating effect of CAT (Rasoolimanesh et al., 2021). It also provides well-reasoned and theoretical support for two categories of direct effects leading to direct hypotheses on four predictor constructs – ENA, ENK, CAC and COP – on CATs (independent variables on the mediator). Theoretical insights are provided on the direct effect of the community’s attitude on SSTD (mediator on dependent variable). According to the segmentation approach, there is a mediating impact of CAT on the relationship between the predictors and SSTD:

H10. Environmental awareness has a positive indirect effect on SSTD through community attitude.

H11. Environmental knowledge has a positive indirect effect on SSTD through community attitude.

H13. Community attachment has a positive indirect effect on SSTD through community attitude.

H14. Community opportunities have a positive indirect effect on SSTD through community attitude.

The research model (see Figure 2 by authors) shows a community-based conceptual framework for SSTD.
4. Methodology

4.1 Research context

The Caspian Sea and its coastlines comprise one of the top-rated tourist destinations in Iran, with several national parks and protected areas (Behzadnia and Dorbeiki, 2020). One of these areas, Miankaleh, was designated as a biosphere reserve by UNESCO in 1976 (Figure 3 is adapted from http://alborztour.com/information/290).
Miankaleh is a habitat for a wide range of migratory waterfowl species, such as flamingos and gray pelicans; therefore, the importance of the reserve is not only summarized at a national level but has also attracted the attention of UNESCO and international organizations. Due to its unique natural attractions, cultural heritage, aesthetics and easy access, the biosphere reserve is considered a popular regional tourist destination, with the potential to attract many national and international visitors (Behzadnia and Dorbeiki, 2020).

The launch of mass tourism projects in Miankaleh has raised many concerns for environmental activists because they believe that the excessive entry of tourists disrupts the region’s ecosystem. As Miankaleh has been preserved so far by the efforts of Iran’s Department of Environment, non-governmental organizations and activists in this field, it should not have suffered damage due to the hasty implementation of tourism projects. The present study aims to introduce and evaluate a community-based tourism model for SSTD to contribute to preserving the biosphere reserve and simultaneously promote responsible tourism.

### 4.2 Measurement

ENA and ENK were each measured using three statements from Jepson et al. (2014) and also used by Rasoolimanesh et al. (2017). Sample items are: “I keep up with the news regarding Miankaleh conservation programs and tourism development” and “I know a lot about Miankaleh conservation programs and tourism in my community”. CAC was measured using eight statements adopted from Kyle et al. (2004) and Yuksel et al. (2010) and also used by Olya et al. (2018). Sample items are: “I prefer living in this community over other communities” and “I feel that this community is a part of me”. Opportunities to participate were measured by four statements adopted from Aas et al. (2005) and also used by Hung et al. (2011). A sample item is: “Local authorities and state government officials are interested in hearing my opinions regarding Miankaleh environmental conservation programs and tourism development”. CATs were measured by six statements from Wang and Pfister (2008) and also used by Hanafiah et al. (2021). Sample items are: “The benefits of tourism to the community outweigh its costs” and “Tourism helps to improve the economic situation for many local people in the community”. Local community support for tourism development was assessed using six statements adapted from Carmichael et al. (1996) and Nicholas et al. (2009) and also used by Olya et al. (2018). Sample items are: “I support the development of community-based sustainable tourism initiatives” and “I support and participate in sustainable tourism-related plans and development”.

A professional English–Persian translator translated the English versions of the items into the Persian language. All items were then translated back into English to check comparability. All items were assessed based on a five-point Likert scale. The construction of items ensured that vague, incomprehensible, or unfamiliar phrases were not included. The language was kept simple, fluent, clear and understandable as possible. To reduce the likelihood of respondents “guessing” the answer, the order of statements was balanced. A pilot study was conducted using 40 items before administering the questionnaire in the field. The outcome was satisfactory, and all items were clear and understandable.

### 4.3 Sample and procedure

The statistical population included 11 villages in the Miankaleh district of Behshahr City in Mazandaran Province, Iran. Based on interviews with several experts and residents of the area, we found that the activities of the population of five villages – Yacob-Lengeh, Namak Chal, Hossein Abad, Qarehtappeh and Lalehmarz – directly affect the tourism industry of Miankaleh Biosphere Reserve and vice versa; that is, any tourism development also affects their lives. Five villages were purposely selected for the data collection. Data collection was conducted in 2021 through a letter from the Department of Environment of Iran
(Mazandaran Province) in partnership with one local in each village. Through a non-probability convenience sampling method, surveyors approached the locals in the villages mentioned above, explained the aims of our research and then asked them to complete the survey. After completing the questionnaire, the participants returned the questionnaires onsite. The surveyors checked whether there were any missing responses. In total, 650 questionnaires were distributed among residents, of which 477 were retrieved. Among them, 473 were usable and included in the analysis (representing a response rate of 73.38%).

The results of descriptive statistics regarding the demographic information showed that approximately half \( (n = 230, 48.6\%) \) of respondents were aged 28–37 years, and the smallest group of respondents (only two) were in the age group 58 years and above (0.4%). A majority of respondents were female \( (n = 311, 65.8\%) \). Concerning the total length of residency, the findings show that the largest group \( (n = 182, 38.5\%) \) had lived in the Miankaleh biosphere between 10 and 19 years. A small group of participants \( (n = 9, 1.9\%) \) had resided in the biosphere for less than one year. Regarding education level, about 33\% \( (n = 154) \) had a high school diploma and a quarter \( (n = 119) \) had completed a vocational program.

Two methods that are recommended for partial least squares structural equation modeling (PLS-SEM) were applied to assess common method variance (CMV): Harman’s single-factor test and the full collinearity variance inflation factor (VIF) (Kock, 2015). To assess CMV using Harman’s single-factor test, we ran a factor analysis; the results revealed explained variance of 17.42\% for the first component. The results of the full collinearity VIF for all constructs showed a VIF value lower than 3.3, indicating that the data were free from the CMV issue.

### 4.4 Data analysis

To analyze the data, we applied PLS-SEM using the SmartPLS 3 software package. PLS-SEM is an appropriate analysis technique when the research model is complex and involves a mediation hypothesis (Hair et al., 2019; Rasoolimanesh et al., 2021). To check the adequacy of data for this study, we employed G*Power. The results of G*Power analysis showed that a sample of 119 was required to achieve a power of 0.95 (Faul et al., 2009), indicating that the sample size of 477 for this study is sufficient to analyze the model and test the hypotheses.

### 5. Analysis and findings

#### 5.1 Assessment of measurement model using partial least squares structural equation modeling

To establish the reliability and convergent validity the outer loadings, composite reliability and rho_A should be greater than 0.5, 0.7 and 0.7, respectively, and the average variance extracted (AVE) should be higher than 0.5 (Hair et al., 2019). Table 1 (developed by authors) demonstrates acceptable reliability and convergent validity for all constructs.

This study applied two approaches to establish discriminant validity, namely, the Fornell–Larcker criterion and the heterotrait-monotrait (HTMT) ratio (Hair et al., 2019; Henseler et al., 2015). Using the Fornell–Larcker criterion, the square root of the AVE of each construct should be greater than the correlation with any other construct in the model, and to establish the discriminant validity using the HTMT ratio, the HTMT value should be lower than either 0.85 or 0.9 (Hair et al., 2019; Henseler et al., 2015). Table 2 (developed by authors) show acceptable discriminant validity using both approaches.
5.2 Assessment of structural model using partial least squares structural equation modeling

To test direct and indirect hypotheses, this study assesses the significance of path coefficients using 95% bias-corrected confidence intervals. The product of coefficient approach using bootstrapping was used to test indirect effects and mediation hypotheses.
(Rasoolimanesh et al., 2021). Table 3 and Figure 4 (developed by authors) show the hypotheses and the results of testing the constructs’ relationships based on the proposed model. The results showed the positive and significant effects of ENA on CAT (H1), and SSTD directly (H2) and indirectly (H10). However, the results could not support the positive effect of ENK and CAC on CAT (H3 and H5) and on SSTD directly (H4 and H6) and indirectly (H11 and H12). The results also identified the strong and positive effects of COP on CAT (H7) and direct effect on SSTD (H8). This study supports the indirect effect of COP on SSTD through CAT (H13). These results showed the importance of ENA and COP to enhance positive CAT toward SSTD in a biosphere context.

**Table 3** Results of hypothesis testing

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Direct/Indirect effect</th>
<th>CI_{0.95}</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 ENA (\rightarrow) CAT</td>
<td>0.174</td>
<td>[0.08, 0.254]</td>
<td>Yes</td>
</tr>
<tr>
<td>H2 ENA (\rightarrow) SSTD</td>
<td>0.168</td>
<td>[0.02, 0.241]</td>
<td>Yes</td>
</tr>
<tr>
<td>H3 ENK (\rightarrow) CAT</td>
<td>-0.057</td>
<td>[-0.120, 0.039]</td>
<td>No</td>
</tr>
<tr>
<td>H4 ENK (\rightarrow) SSTD</td>
<td>0.007</td>
<td>[-0.083, 0.082]</td>
<td>No</td>
</tr>
<tr>
<td>H5 CAC (\rightarrow) CAT</td>
<td>0.087</td>
<td>[-0.119, 0.150]</td>
<td>No</td>
</tr>
<tr>
<td>H6 CAC (\rightarrow) SSTD</td>
<td>0.070</td>
<td>[-0.055, 0.140]</td>
<td>No</td>
</tr>
<tr>
<td>H7 COP (\rightarrow) CAT</td>
<td>0.183</td>
<td>[0.090, 0.268]</td>
<td>Yes</td>
</tr>
<tr>
<td>H8 COP (\rightarrow) SSTD</td>
<td>0.229</td>
<td>[0.134, 0.319]</td>
<td>Yes</td>
</tr>
<tr>
<td>H9 CAT (\rightarrow) SSTD</td>
<td>-0.111</td>
<td>[0.024, 0.198]</td>
<td>Yes</td>
</tr>
<tr>
<td>H10 ENA (\rightarrow) CAT (\rightarrow) SSTD</td>
<td>0.019</td>
<td>[0.005, 0.042]</td>
<td>Yes</td>
</tr>
<tr>
<td>H11 ENK (\rightarrow) CAT (\rightarrow) SSTD</td>
<td>-0.006</td>
<td>[-0.20, 0.002]</td>
<td>No</td>
</tr>
<tr>
<td>H12 CAC (\rightarrow) CAT (\rightarrow) SSTD</td>
<td>0.010</td>
<td>[-0.002, 0.025]</td>
<td>No</td>
</tr>
<tr>
<td>H13 COP (\rightarrow) CAT (\rightarrow) SSTD</td>
<td>0.020</td>
<td>[0.005, 0.045]</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Notes:** ENK = environmental knowledge; ENA = environmental awareness; CAC = community attachment; COP = community opportunity; CAT = community attitude; SSTD = support for sustainable tourism development

**Source:** Developed by authors

**Figure 4** Results of assessment of structural model
6. Discussion

The findings reveal that ENA had a significant relationship with regard to predicting residents’ attitudes toward and support for tourism development programs, supporting \( H1 \) and \( H2 \). The results are in line with those of Lee and Jan (2019) and Essien and Ushie (2018), which assert that the host community’s ENA leads to a sense of responsibility, impacting locals’ environmental attitudes toward the conservation of natural resources. These studies indicate that having ENA is a prerequisite for positive environmental attitudes, and these two variables are strong predictors of environmental behaviors. Local communities’ awareness of the benefits of tourism development in the destination may reduce the barriers and develop locals’ attitudes toward support for tourism development. The results support the proposed mediating role of CAT, linking ENA and SSTD (\( H10 \)). Previous research (Eslami et al., 2019; Gannon et al., 2021) has shown that behavioral variables are influenced by external and internal factors and are key factors influencing the support or nonsupport of sustainable development programs. In any geographical area, the past research has shown that SSTD programs are not possible without considering the level of ENA and tourism development attitudes of the residents of that area.

The findings do not support \( H3 \), \( H4 \) and \( H11 \), according to which ENK has a positive effect on CATs and SSTD, and the mediating mechanism between them. Based on social cognitive theory, it seems that knowledge about the environment and sustainable tourism development plans effectively enhance people’s attitudes toward the environment and its protection. However, the content of this knowledge is highly critical. Individuals can only claim to have sufficient knowledge about the environment and any development plans if they have enough information to consider all aspects of SSTD. Individuals may believe that they have sufficient knowledge about the environment, society and development plan; however, in reality this may not be true (Kim and Stepchenkova, 2020). Another reason that locals’ knowledge is not significantly related to attitudes toward SSTD may lie in their beliefs regarding gaining financial benefits rather than protecting the environment. They may not support inclusively sustainable development plans if aspects of these type of plans impact their financial benefits.

The findings do not support \( H5 \), \( H6 \) and \( H12 \), according to which CAC has a positive effect on CATs and SSTD, and the mediating mechanism between them. This result is consistent with previous studies’ findings (Rasoolimanesh et al., 2017b; Wang et al., 2006), which demonstrate that CAC cannot be considered a strong predictor of residents’ attitudes toward tourism development programs in a destination. However, most inhabitants of the villages in the Miankaleh region are not natives of this region but are immigrants from the Western and Southeastern parts of Iran. Perhaps this indicates because they are not native and have businesses that do not depend to any great extent on the Miankaleh Biosphere Reserve, they do not consider themselves to belong to this region and have little interest in environmental issues and SSTD programs.

The findings confirm that COP had a significant relationship with residents’ attitudes and SSTD directly and indirectly (\( H7 \), \( H8 \) and \( H13 \)). The results support Lee and Jan’s (2019) claim that when more locals have the opportunity to be involved in developing plans in the destination, they will show more supportive attitudes. Rasoolimanesh et al. (2017a) express that if residents believe that local and state government officials are interested in hearing their voices and providing opportunities for them to participate in the decision-making process, they will be encouraged to participate in destination development plans.

7. Conclusion

7.1 Theoretical contributions

The primary aim of the current study was to evaluate a theoretical framework of critical predictors of SSTD from the host community’s perspective in the biosphere reserve context, using behavioral and psychological theories.
The importance of the present study lies in the fact that it pays attention to destination development and tourism sustainability, especially in situations that directly and indirectly affect and are affected by tourism development, such as the biosphere reserve (Obradović et al., 2021). Researchers have conducted several studies in the field of tourism development and environmental protection (Ganji et al., 2021). This study is the first to examine critical internal and external elements as predictors of SSTD in an important biosphere reserve contexts as listed by UNESCO. The findings theoretically enrich the existing body of literature on predictors of CATs by showing that the locals’ SSTD level is not consistently based on common predictors. Such support strongly depends on the attitude of the host communities toward the support of tourism, which is certainly not the same among residents. It is imperative to know whether people’s attitudes arise from a desire to protect the area or for reasons of self-interest.

To elucidate the mediating process by which locals’ ENA and knowledge and their level of attachment and opportunity impact SSTD through affecting residents’ attitudes toward tourism development, the research model draws on the segmentation approach (Rasoolimanesh et al., 2021). Theoretical findings from mediation analysis provide further support for the tenets of the segmentation approach, and also challenge existing knowledge about the attitude of host communities between the residents’ influencing factors and SSTD. Previous studies have been limited in terms of the mediating mechanism between predictors (internal and external factors), CATs and SSTD – the present study aimed to fill this gap (Bajrami et al., 2020; Obradović et al., 2021). According to the results, studying the attitude of residents toward supporting tourism is not sufficient to identify their level of SSTD; however, understanding the attitudes of locals and their orientations is critical.

### 7.2 Practical implications

The findings of this study are empirically critical for local authorities, developers and local policymakers in tourism projects. Governments should provide general environmental education and training programs for the host community to increase its ENA and knowledge. Environmental education for different segments of society is a crucial solution to address environmental issues and plans. This is key because environmental education impacts residents’ insights and attitudes toward recognizing and describing environmental issues, and finding solutions to environmental problems and to increase the utilization of natural and environmental resources in the field of tourism while causing the least environmental damage. To empower the local community, increasing locals’ awareness and knowledge about the ecological and economic value of the destination should be a priority.

Outsourcing some tourism development activities to local people strengthens locals’ social capital, including trust, social cohesion and solidarity, which in turn enhances their sense of belonging and attachment to the region. Holden (2016) states that human integrity can solve any environmental problems created by development. Using a bottom-up approach by inviting the local community to participate in tourism development decisions and activities may change their attitudes toward the environment and improve their willingness to cooperate and provide support.

Due to the environmental importance of biosphere reserves, decision-makers can offer environmentally friendly tourism options (e.g. eco-tourism, agro-tourism and walking/cycling tourism). They can establish local markets to promote local products and services. Such initiatives will improve people’s perceptions of the positive economic impacts of tourism, preserve residents’ traditional artifacts and traditions, create a sense of pride and, more importantly, lead to their SSTD.

SSTD is very important for the quality of life of local people. Quality of life focuses on life satisfaction in four domains – mental, physical, social and environmental – and plays a vital role in ensuring that all individuals’ efforts sustain and manage success. Usually, the local community gets involved in tourism activities when it is convinced of their economic benefits. It is essential that locals understand that SSDT could not only financially support their quality of life.
life but also contribute to their life in several other ways. Through interactions with locals, tourism can improve the social health dimension for locals. Living in an area with environmental policy considerations can create a feeling of pride for locals, which will impact the environmental and mental dimensions of their quality of life.

Finally, the findings of this study may help policymakers in other geographical areas which are environmentally sensitive but rich in tourism attractions, such as tourism and development zones of protected areas. One of the aims of the conservation of nature is to support economic activities, especially in the potential regions for tourism. Therefore, the findings and recommendations would be helpful and practiced in rural contexts and also in poor urban settings such as slums, favelas and townships.

7.3 Limitations and recommendation for future research

This study sought to evaluate four important community factors for SSTD in a biosphere reserve. Further research is needed to identify more appropriate predictors of biosphere reserve residents’ characteristics associated with SSTD (e.g. host community participation, engagement and patriotism). Prospective studies should focus on the consequences of SSTD for local communities. One of the most critical consequences would be the locals’ quality of life and welfare. Future studies can examine different dimensions of locals’ quality of life (e.g. environment or social health) after implementing sustainable tourism development plans in their regions. Although this study was conducted in a specific area, the effects of predictors on residents’ perceptions of tourism developments and their support for such projects may vary depending on the context and on host communities with different cultures, which could produce different results. Further research is needed in other contexts and areas to support and generalize the findings. Future research can use a qualitative approach to gain in-depth information regarding predictors and their contribution to SSTD.

References


Corresponding author
Mahlagha Darvishmotevali can be contacted at: mahlaghadarvish@gmail.com

For instructions on how to order reprints of this article, please visit our website: www.emeraldgrouppublishing.com/licensing/reprints.htm
Or contact us for further details: permissions@emeraldinsight.com