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Residents' Environmentally Responsible Behavior and Tourists' Sustainable Use of Cultural Heritage: Mediation of Destination Identification and Self-Congruity as a Moderator

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Abstract: In the face of escalating global concerns surrounding environmental sustainability and the preservation of cultural heritage, this research explores the intricate connection between residents' environmentally responsible conduct (ERB) and tourists' sustainable involvement with cultural heritage sites (SU). Highlighting the pivotal importance of destination identification (DI) as a mediator and self-congruity (SC) as a moderator, our study utilizes a quantitative data approach to investigate the nuanced relationships inherent in the domain of tourism destinations. The data were collected from 324 tourists (visiting Luxor heritage city in Egypt) and analyzed by PLS-SEM, and the results showed a positive correlation between residents who strongly identify with their local environment and an increased dedication to environmentally responsible actions. Moreover, tourists who demonstrate elevated levels of self-congruity with the cultural heritage destination are inclined to embrace more sustainable behaviors, thereby making positive contributions to heritage preservation initiatives. This study enriches the evolving domain of sustainable tourism by providing insights into the intricate interactions between residents and tourists, fostering environmentally responsible behavior, and promoting the sustainable utilization of cultural heritage. Practical applications encompass the formulation of community-based interventions, the design of destination marketing strategies, and the proposal of policy recommendations. These initiatives aim to enhance the engagement of both residents and tourists, fostering the long-term preservation of cultural and environmental assets. Ultimately, the research seeks to guide sustainable tourism practices that strike a balance between the economic advantages of tourism and the essential preservation of cultural heritage and natural environments for future generations.

Keywords: resident; responsible behavior; heritage; destination identification; self-congruity; tourists' sustainability



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1. Introduction

In recent years, there has been a noticeable surge in global interest towards sustainable tourism [1–3], driven by escalating concerns surrounding environmental preservation and the safeguarding of cultural heritage [4–7]. At the core of this discourse lies the conduct of residents and tourists within destination locales [6,8]. It is imperative to comprehend how residents engage in environmentally responsible behavior (ERB) and how tourists interact with cultural heritage sites in a sustainable manner to advance sustainable tourism practices. The participation of residents in ERB plays a pivotal role in shaping the overall

sustainability of tourist destinations. Often serving as custodians of their local environment and cultural heritage, residents wield significant influence over tourist experiences and perceptions. Their attitudes and behaviors concerning environmental conservation and cultural preservation can have a profound impact on the sustainable development of tourism destinations [9,10].

Concurrently, the sustainable utilization of cultural heritage sites by tourists is imperative for their enduring preservation and enjoyment. Sustainable tourism entails minimizing adverse impacts on cultural and natural resources while offering meaningful experiences for visitors [11]. Tourists who embrace sustainable practices, such as honoring local traditions, reducing waste, and supporting indigenous communities, play a role in conserving cultural heritage and enhancing the welfare of destination residents [2]. Nevertheless, both the ERB of residents and the sustainable conduct of tourists are shaped by diverse psychological factors. One such factor is destination identification, which denotes the degree to which individuals feel connected to and identify with a specific destination [12]. Robust destination identification fosters a sense of affiliation and attachment, prompting individuals to adopt pro-environmental and pro-cultural preservation attitudes and behaviors [10,12]. Another psychological aspect is self-congruity, which concerns the alignment between an individual's self-image and the image of a destination or activity [13]. When tourists perceive a destination as congruent with their self-concept, they are more inclined to engage in behaviors that mirror the destination's values, including the sustainable use of cultural heritage sites [12,13].

Although these psychological factors are crucial, there has been insufficient research exploring their simultaneous impact on residents' ERB and tourists' sustainable behavior within destination settings. Hence, this study endeavors to explore the correlation between destination identification, self-congruity, residents' ERB, and tourists' sustainable utilization of cultural heritage. Through investigating these connections, this research aims to offer valuable insights into how destination-related psychological factors shape the behaviors of both residents and tourists. Ultimately, this endeavor seeks to advance the development of sustainable tourism practices and the conservation of cultural heritage.

2. Literature Review and Developing Hypotheses

2.1. Resident's Environmentally Responsible Behavior (ERB) and Tourists' Sustainable Use of Cultural Heritage (SU)

Residents, as opposed to visitors, are frequent users of the tourist destination setting and may, as a result, have a more consequential influence on the destination's natural environment and resources [14]. It follows that a sufficient emphasis on creating sustainable tourism destinations cannot be reached without considering the residents' responsible attitudes and actions [8]. While prior research has made a significant contribution to our understanding of tourists' sustainable behavior, few of these studies have specifically examined residents' ERBs [15–17]. Thus, studying the residents' ERB and its role in shaping proactively tourists' sustainable use of destination natural and heritage resources has become a subject worth examining. ERB is defined as behaviors that boost individuals' or groups' sustainable usage of natural and heritage resources [18]. In general, the literature has operationalized ERB as individual or group habits and collective activities that involve gaining knowledge and comprehension of environmental attitudes and responsibilities, which are the primary drivers of sustainable tourism development. Specifically, residents' ERBs refer to any activity residents do on a daily basis to limit harmful effects on their local environment or to preserve and safeguard the environment of destinations [19]. Consequently, residents demonstrating ERB will deliberately save resources and limit ecological harm [20].

On the other hand, research has shown that while trying to make tourism more environmentally sustainable, tourists are the primary target [21]. Tourists may contribute to lessening the adverse effects of tourism by choosing eco-friendly travel options and acting sustainably while at heritage sites and destinations [22]. Accordingly, the literature on the

destination's sustainability focused on two primary topics: residents and tourists [23]. There is an agreement that residents can affect tourists' behavior [24,25]. Residents' ERBs arise due to their high community attachment and involvement [26] and feeling of psychological ownership [27], so they are more likely to protect the community's interest and go above and beyond the accepted societal norm to ensure the values and heritage of their community are undamaged [8]. Similarly, those residents likely act responsibly as ambassadors of the community in marketing its attractions and features to others by supporting sustainable tourism and motivating tourists to use cultural heritage sites sustainably [28,29]. In this context, tourists tend also to follow social norms and behave in the "usual" way because they think this is what "most people do". Therefore, it is arguable that the sustainability of cultural heritage sites greatly relies on the joint efforts of both residents and tourists. In light of the abovementioned literature on the linkage between residents' ERBs and tourists' SU, we can operate the Stimulus–Organism–Response (S–O–R) framework [30] to formulate the hypotheses of this study. The study suggests that residents' ERBs (stimuli) can affect tourists' SU (response) via destination identification (DI) and self-congruity (SC) of tourists (organism). Consequently, the first hypothesis is set for examination:

Hypothesis 1 (H1). *Resident's ERB positively affects tourists' sustainable use of cultural heritage (SU).*

2.2. Resident's ERB and Destination Identification (DI)

The identity concept, according to the social identity theory (SIT) proposed by Tajfel [31], is a person's feeling of belonging to a particular group. This concept has obtained vast concentration from management researchers with the development of this theory [27]. The identity concept was typically employed in consumer research to investigate the connections between people, brands, and associations [32]. Within the interaction framework between tourists and the tourist destination, destination identification serves as a psychological foundation for building a positive and symbolic link between them [33]. Tourists' DI refers to a physiological state in which visitors perceive likenesses between their self-identity and destination identification [34]. In addition to this definition, SIT states that individuals often formulate a social identity in addition to a personal identity in order to express their sense of self [35,36]. Therefore, studies confirmed that visitors may need to create self-identification with the destinations to achieve the requirement for self-identification in the context of tourism destinations [37]. Residents are often seen as the "spokespeople" of tourism destinations; therefore, their ERB activities may be a reference and base from which a visitor can comprehend a destination's values, duties, and positive identities [38]. In line with that, several studies have shown that travelers might strengthen their feeling of self-identification with tourism destinations that exhibit high levels of ERB which aligns with their own values [33,38]. In other words, tourists have a tendency to identify with those destinations whose principles and shared values are parallel to theirs [39]. Accordingly, the following hypothesis was postulated:

Hypothesis 2 (H2). *Residents' ERB positively affects destination identification (DI).*

2.3. Destination Identification (DI) and Tourists' Sustainable Use of Cultural Heritage (SU)

The tourists' psychological adhesive and attachment to a tourism destination are an identification result [40]. Along these same lines, earlier research has confirmed the link between love and destination identification [41,42]. In this regard, the researchers pointed out that the development and enhancement of positive sentiments towards tourism destinations are crucial for encouraging favorable visitor behavior [5,43] and resistance to a harmful attitude [44]. Thus, tourists who have these feelings resulting from destination identification may be more concerned about the destination environment and have favorable attitudes toward preserving this destination environment because they view themselves as part of it [23]. Some research has explicitly indicated that destination identifi-

cation positively affects tourists' environmental concerns [45] and drives them to preserve the destination's environment, fight its degradation [46], and even take action and make endeavors to improve its environmental matters [47]. In the context of this framework, we additionally explore this connection between tourism destination identification and tourists' sustainable use of cultural heritage (SU) as follows:

Hypothesis 3 (H3). *Destination identification (DI) positively affects tourists' sustainable use of cultural heritage (SU).*

2.4. The Mediating Role of Destination Identification (DI)

Drawing on prior research and the arguments mentioned earlier that depict the direct linkages between residents' environmentally responsible behavior (ERB) and tourists' sustainable use of cultural heritage (SU) and destination identification (DI), and between destination identification (DI) and tourists' sustainable use of cultural heritage (SU), and in light of the Stimulus–Organism–Response (S–O–R) framework and the social identity theory (SIT), the following hypothesis of mediating effect is proposed:

Hypothesis 4 (H4). *Destination identification (DI) mediates the linkage between residents' ERB and tourists' sustainable use of cultural heritage (TSU).*

2.5. The Moderating Role of Self-Congruity (SC)

Customers purchase products or services for more than just their usefulness or functionality—they purchase objects with attached symbolic connotations [48]. Therefore, the self-concept, defined as “the totality of the individual's thoughts and feelings with reference to the self as an object” [49] played a crucial role in consumer behavior literature [50]. In research linked to self-concept, “self-congruity” was defined as “the combination or degree of alignment between the image of the product/brand and the self-concept of the consumer” [51]. According to the “self-congruity theory”, customers tend to prefer those brands—tourism destinations—with personalities identical to theirs [52]. As a result, customers' ties, identification, and loyalty to a destination are now predicated on this congruity [53]. In line with that, self-congruity was presented in the tourism framework as the degree to which the destination brand and the customers' self-concept correspond [52]. Elevated self-congruence can potentially improve customers' perceptions of the brand [54] and foster a stronger emotional attachment to it [55]. Therefore, the self-congruity concept was operated as a moderating variable in several investigations on customer attitudes and behaviors in the tourism field [6,56,57]. In relating a customer's self-congruity to sustainability, the tourist compares his personality and values related to sustainability with the destination's personality and values related to sustainability; if compatible, the tourist's destination identification and sustainable behaviors and attitudes towards the destination are likely to be enhanced [56]. Therefore, this study argues that the self-congruity (SC) can strengthen the positive effects of residents' ERB and destination identification (DI) in our proposed model, and, thus, we suggest the following hypotheses:

Hypothesis 5 (H5). *Self-congruity (SC) moderates the linkage between residents' ERB and destination identification (DI).*

Hypothesis 6 (H6). *Self-congruity (SC) moderates the linkage between destination identification (DI) and tourists' sustainable use of cultural heritage (TSU).*

Figure 1 graphically presents the conceptual model of this investigation in light of the previously listed literature and hypotheses.

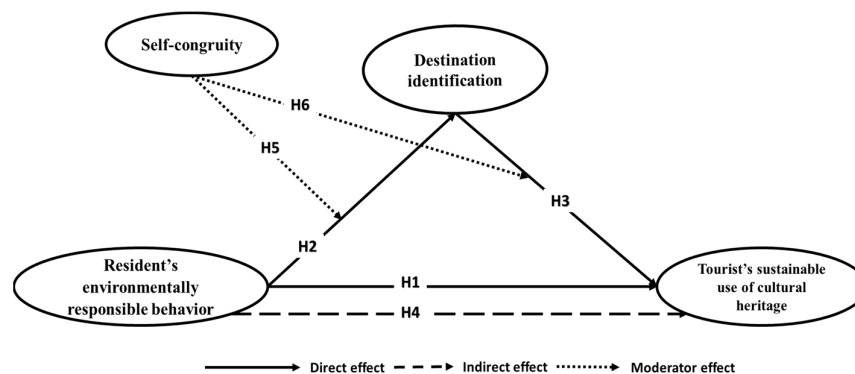


Figure 1. Study hypotheses and conceptual model.

3. Methods

3.1. Measures

All measuring items were adapted from previous literature. Su et al.'s [19] six items were adapted to estimate the residents' ERB variable. The destination identification (DI) was measured by employing a three-item scale developed by Su and Swanson [33]. To assess the construct of tourists' sustainable use of cultural heritage (SU), nine items were adopted from the study of Alazaizeh et al. [4]. Finally, the self-congruity variable was measured by four items from Frias et al. [51] (as shown Appendix A). Twelve academic specialists and ten administrators in cultural heritage tourism evaluated the survey items' validity, and slight changes were made, resulting in paraphrasing some questionnaire statements. Additionally, in order to eliminate the potential for instrument bias, Harman's single-factor test was also employed in this investigation. Given that Harman's single factor value is less than 50%, the result indicates that the single factor retrieved is 24%, suggesting that there are no bias concerns with the current [58].

3.2. Data Collection

The questionnaires were distributed among tourists in Luxor City in Egypt, using convenient samples and drop-off and pick-up approaches. Luxor City offers an exceptional blend of live cultural heritage and archaeological sites, making it a viable choice for our study location. Luxor, in ancient times, called Thebes, was the southern capital of Egypt since the Middle Kingdom. The city is globally renowned for its monuments, which span the Middle and New Kingdoms and include impressive temples, tombs, and towns, as well as archaeological remains from the later Graeco-Roman, Coptic, and Islamic periods [7]. Tourists voluntarily filled out the survey, and their responses were kept private. The surveys were conducted with the assistance of our colleagues registered in our faculty's postgraduate programs and working in Luxor hotels. The data were collected during the winter months (November (2023) to January (2024), during the tourist season in Luxor. The survey was completed by 356 out of 500 targeted tourists, and 324 responses were considered valid after removing 24 unqualified, with a comeback rate of 66.4%. The study sample included 193 males (58.1%) and 139 females (41.9%). The participants' ages ranged between 21 and 56. Also, 269 respondents (81%) had a college degree, followed by 34 respondents (10.4%) with graduate degrees. The questionnaire is structured into five primary sections. The first part focuses on demographic details such as age, gender, and education level. Following this, the second section gathers data on tourists' sustainable practices at heritage sites. The third part addresses inquiries related to residents' environmentally responsible behavior. Subsequently, the fourth section explores aspects of destination identification. Finally, the fifth section comprises items concerning moderating variables, specifically measuring self-congruity. All survey items, except demographic information, were estimated using five-point Likert scales.

3.3. Data Analysis

For a number of reasons, PLS-SEM was carried out using Smart PLS 4 software to evaluate the proposed model. In the first place, this approach facilitates the researchers' assessment of links among factors in the inner model and their associated latent indicators in the outer model. Second, PLS-SEM works well with intricate research models, especially those that include moderation and mediation. Third, PLS features an easier-to-use user graphical interface than other path modelling tools like AMOS. Fourthly, this method is a reliable component-based strategy that has been used widely in earlier research [59]. This method is a two-stage analysis strategy; the measurement (outer) model's validity and reliability are examined in the first stage, and the structural (inner) model is assessed in the second stage to test the proposed hypotheses [60].

4. Results

4.1. The Measurement Model

The measurement (outer) model was evaluated before the hypotheses were tested. Fit indices widely utilized in CB-SEM are unavailable or ill-advised for PLS-SEM because they adopt a different SEM technique [61]. According to Hair et al. [59], the fit of the PLS-SEM model can be evaluated by operating the ensuing standards: loadings of study's items (λ), Cronbach's alpha (α), composite reliability (CR) test, the required cut-offs of all are <0.70 , and the threshold of Average Variance Extracted (AVE) must reach 0.50 to achieve Convergent Validity (CV) of the outer model. Regarding the model discriminant validity, the AVE of each variable must be greater than the squared inter-construct correlations [62].

As depicted in Table 1, the outer model satisfies all thresholds of a good Convergent Validity, validating the internal study model's reliability—that is, the consistency of responses to items belonging to the same factor. The AVEs ranged from 0.667 (Residents' ERB to 0.806 (Destination identification (DI)), exhibiting a strong correlation between the items in each factor, and also confirming the model's Convergent Validity. Additionally, Table 2 supports the recommended model's discriminant validity because all AVEs are higher than their related squared inter-construct correlations (Fornell and Larcker, 1981) [62]. This indicated that every factor stood out independently from the rest. In addition, in response to the numerous criticisms of Fornell and Larcker's criterion, some studies examined the Heterotrait–Monotrait ratio of correlation (HTMT) test to confirm the discriminant validity. Table 2 also shows that the discriminant validity is appropriate because all HTMT values are <0.90 [63]. Also, Table 3 exhibits that an item's loading within its factors is higher than any cross-loadings with other factors, guaranteeing the discriminant validity.

Table 1. Psychometric results.

Factors and Items	Loading λ	(α Value)	(C_R)	(AVE)
Residents'ERB		0.898	0.923	0.667
ERB_1	0.857			
ERB_2	0.839			
ERB_3	0.890			
ERB_4	0.776			
ERB_5	0.841			
ERB_6	0.701			
Tourists' sustainable use of cultural heritage (SU)		0.947	0.956	0.730
TSU_1	0.847			
TSU_2	0.826			
TSU_3	0.874			
TSU_4	0.877			
TSU_5	0.874			

Table 1. Cont.

Factors and Items	Loading λ	(α Value)	(C_R)	(AVE)
TSU_6	0.833			
TSU_7	0.857			
TSU_8	0.844			
Destination identification (DI)		0.920	0.943	0.806
DI_1	0.884			
DI_2	0.903			
DI_3	0.892			
DI_4	0.912			
Self-congruity (SC)		0.896	0.928	0.763
SC_1	0.816			
SC_2	0.893			
SC_3	0.881			
SC_4	0.901			

Table 2. “Fornell–Larcker criterion matrix” and HTMT Matrix.

	Fornell–Larcker Criterion Matrix				HTMT Matrix.			
	DI	ERB	(SC)	SU	DI	ERB	(SC)	SU
Destination identification (DI)	0.898							
Residents’ ERB	0.553	0.817			0.605			
Self-congruity (SC)	0.578	0.583	0.873		0.632	0.646		
Tourists’ SU	0.693	0.587	0.530	0.854	0.736	0.632	0.570	

Note: “Values off the diagonal-line are squared inter-construction-correlations, while values on the diagonal-line are AVEs, and for appropriate DV, all HTMT values need to be <0.90”.

Table 3. Factor cross-loadings.

	Residents’ ERB	Tourists’ SU	Destination Identification (DI)	Self-Congruity (SC)
ERB_1	0.857	0.514	0.527	0.538
ERB_2	0.839	0.550	0.407	0.460
ERB_3	0.890	0.426	0.473	0.469
ERB_4	0.776	0.380	0.459	0.437
ERB_5	0.841	0.442	0.466	0.448
ERB_6	0.682	0.541	0.364	0.491
TSU_1	0.571	0.847	0.600	0.499
TSU_2	0.499	0.826	0.558	0.305
TSU_3	0.459	0.874	0.724	0.458
TSU_4	0.516	0.877	0.644	0.523
TSU_5	0.496	0.874	0.629	0.453
TSU_6	0.452	0.833	0.530	0.363
TSU_7	0.469	0.857	0.491	0.467
TSU_8	0.545	0.844	0.519	0.535
DI_1	0.565	0.612	0.884	0.595
DI_2	0.489	0.624	0.903	0.513
DI_3	0.470	0.637	0.892	0.485
DI_4	0.453	0.613	0.912	0.473
SC_1	0.517	0.426	0.463	0.816
SC_2	0.550	0.475	0.536	0.893
SC_3	0.425	0.422	0.466	0.881
SC_4	0.538	0.520	0.545	0.901

4.2. Structural Model and Testing Hypotheses

Given that PLS-SEM lacks the standard fit criteria that CB-SEM does, an inner model must be evaluated using the Variance Inflation Factor (VIF), R², Q², and standardized path coefficients using Beta value [59]. For the likelihood of “multi-collinearity” among constructs to be ruled out, VIFs must be less than 5.0 for items, R² must fulfill norms for the academic area and study situation, standardized path coefficients (*p*) must be significant, and the Q² scores also fulfilled the suggested point value of 0.0 [61].

As presented in Table 4, VIFs ranged between 1.532 and 4.111, below the cut-off value. Thus, no multi-collinearity issues exist, which allowed the independent variables’ effects on the dependent variables to be separated from one another because there was no substantial correlation between them. As for R² estimates, tourist’s SU displayed a value of 0.562, implying that the remaining constructs in the structural proposed model accounted for 56.0% of the variation in tourist’s SU. Similarly, the destination identification (DI)’s R² was 0.423, satisfying cut-off (0.10 or greater). Q² exceeded the recommended threshold of 0.0. Additionally, at *p* = 0.01 level, all standardized path coefficients were statistically significant (Table 5). When these criteria were considered collectively, it proved how well the structural model suited the data.

Table 4. VIF, R², and Q² outcomes.

Name	VIF	Name	VIF	Name	VIF	Name	VIF	Name	VIF
RER_1	2.951	RER_6	1.532	TSU_5	3.825	DI_2	3.181	SC_3	2.973
RER_2	2.658	TSU_1	3.258	TSU_6	3.516	DI_3	3.296	SC_4	3.047
RER_3	3.701	TSU_2	2.792	TSU_7	4.111	DI_4	3.683		
RER_4	2.819	TSU_3	3.793	TSU_8	3.423	SC_1	1.976		
RER_5	3.088	TSU_4	3.854	DI_1	2.816	SC_2	2.760		
Tourist’s SU				R ²	0.562	Q ²	0.376		
Destination identification (DI)				R ²	0.423	Q ²	0.313		

Table 5. Hypotheses results.

Paths	β Value	t Value	p Value	Result
Direct Paths				
H1—Residents’ ERB → Tourists’ SU	0.207	2.125	0.034	“Supported”
H2—Residents’ ERB → Destination identification (DI)	0.404	5.149	0.000	“Supported”
H3—Destination identification (DI) → Tourists’ SU	0.534	8.756	0.000	“Supported”
Indirect Mediating Paths				
H4—Residents’ ERB → Destination identification (DI) → Tourists’ SU	0.216	3.989	0.000	“Supported”
Moderating Effects				
H5—Residents’ ERB × Self-congruity (SC) → Destination identification (DI)	0.146	2.410	0.016	“Supported”
H6—Destination identification (DI) × Self-congruity → Tourists’ SU	0.150	2.870	0.004	“Supported”

Additionally, according to Tenenhaus et al. [64], the subsequent equation was presented to assess the Goodness of Fit (GoF) of the PLS-SEM model, where values of 0.1, 0.25, and 0.36 represent low, medium, and high GoF levels, respectively. The GoF index for the proposed model is calculated as 0.604, signifying a high level of Goodness of Fit.

$$\text{GoF} = \sqrt{\text{AVE}_{\text{avg}} \times R^2_{\text{avg}}}$$

Using Smart PLS 4, we conducted a bootstrapping procedure with 5000 iterations to test the hypotheses presented in Table 5, following the validation of both the outer and inner models.

The data shown in Table 5 and Figure 2, as extracted from Smart PLS 4.0, indicate that the residents’ ERB positively affected tourist’s SU and destination identification (DI) at

($\beta = 0.376$, $t = 7.918$, $p = 0.034$) and ($\beta = 0.404$, $t = 5.149$, $p = 0.000$), respectively, supporting H1 and H2. The destination identification (DI) positively impacted tourist's SU at $\beta = 0.534$, $t = 8.756$, and $p = 0.000$, thus proving H3. Additionally, at $\beta = 0.216$, $t = 3.989$ and $p = 0.000$, the destination identification (DI) mediates the link between the residents' ERB and tourist's SU, thus proving H4.

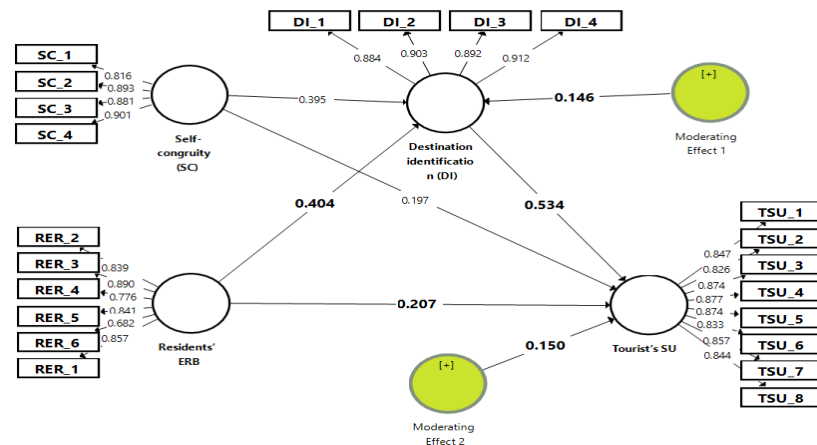


Figure 2. Estimation of structure model.

Regarding moderating effects, Figure 3 illustrates that self-congruity strengthened the impact of the residents' ERB on destination identification, thus proving H5. Similarly, as shown in Figure 4, self-congruity strengthened the impact of the destination identification on Tourist's SU, thus supporting H6.

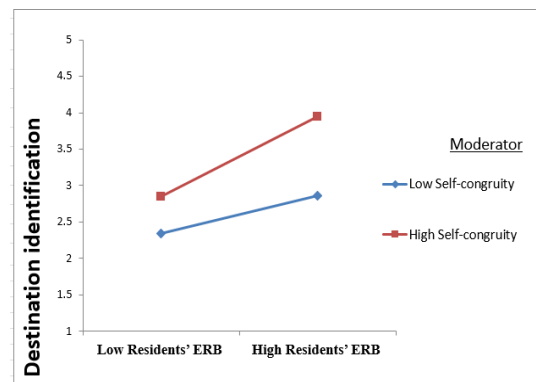


Figure 3. Moderating influence of self-congruity (SC) on residents' ERB toward destination identification (DI).

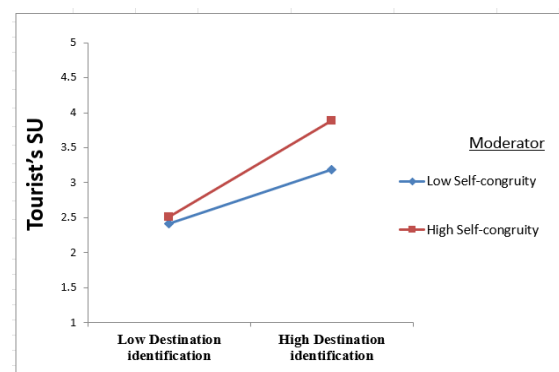


Figure 4. Moderating influence of self-congruity on destination identification (DI) toward Tourists' SU.

5. Discussion and Implication

The discussion section thoroughly explores the implications of the study's discoveries concerning the intricate relationship among residents' ERB, tourists' sustainable utilization of cultural heritage, and the mediating effect of destination identification between residents' ERB and tourists' SU, along with the moderating impact of self-congruity. The study's outcomes unveil noteworthy connections between residents' ERB, tourists' sustainable conduct, destination identification, and self-congruity. The study underscores the importance applications of residents' ERB on tourists' sustainable use of cultural heritage. This result is consistent with [8,22,23,65]. Encouraging residents to participate in decision-making processes and nurturing a feeling of ownership regarding their surroundings enables destination managers to foster a sustainable culture that influences every aspect of the tourism journey. Strategies like community-based tourism endeavors, educational initiatives on environmental matters, and collaborations between local administrations and residents empower communities to actively preserve their cultural heritage while advocating for sustainable tourism. Educational programs and awareness campaigns serve as vital tools in encouraging residents' ERB and promoting tourists' sustainable conduct. By enhancing understanding of the significance of environmental preservation and cultural heritage protection [66–68], destination stakeholders can garner backing from both residents and tourists. These efforts may involve organizing workshops, seminars, and installing interpretive signs at cultural heritage sites to underscore the importance of responsible tourism practices and urge visitors to minimize their environmental footprint. The mediation analysis indicates that residents with a strong identification with their destination are more inclined to practice ERB, thereby influencing tourists to embrace sustainable practices when exploring cultural heritage sites. Furthermore, the moderation analysis suggests that tourists who perceive a strong alignment between themselves and the destination are more likely to demonstrate sustainable behavior at cultural heritage sites.

The results of this study carry significant policy implications for policymakers, and stakeholders in the tourism industry. Implementing policies and regulations that encourage ERB among both residents and tourists can foster the long-term sustainability of tourism destinations. Initiatives such as waste management regulations, carbon offset programs, and eco-certification schemes can serve as incentives for businesses and individuals to embrace sustainable practices. Moreover, sustainable tourism policies should prioritize community involvement, cultural awareness, and environmental stewardship to safeguard cultural heritage for generations to come. The study enhances destination image theory by underscoring the significant role of destination identification in shaping the behaviors of both residents and tourists. It expands our comprehension of self-congruity theory by emphasizing its moderating influence on the relationship between destination identification and tourists' sustainable behavior. These theoretical insights provide valuable understanding of the psychological mechanisms that underpin sustainable tourism and the preservation of cultural heritage. For policymakers, these findings highlight the criticality of nurturing a sense of destination identification among residents through initiatives such as community engagement programs, cultural festivities, and environmental education endeavors. Strengthening residents' attachment to their destination can lead to heightened support for sustainable tourism endeavors and increased participation in ERB. Moreover, destination marketers can capitalize on self-congruity by tailoring promotional messages and experiences to align with tourists' self-perceptions. This approach can bolster tourists' motivation to partake in sustainable practices when visiting cultural heritage sites, thereby fostering a more sustainable tourism environment.

6. Limitations and Future Research

The current study, while providing valuable insights into the correlation between residents' ERB, tourists' sustainable utilization of cultural heritage, and the mediating function of destination identification, along with the moderating impact of self-congruity, is subject to certain limitations. These limitations are crucial to acknowledge as they furnish

context for interpreting the findings and suggest avenues for future research in this domain. Initially, the study relied on self-reported data from both residents and tourists, which could introduce common method bias and social desirability bias. Future investigations could enhance reliability by integrating objective measures or observational data to validate self-reported results. Secondly, the study adopted a cross-sectional design, limiting the ability to establish causality between the variables examined. Longitudinal or experimental designs would enable a more comprehensive examination. Moreover, the study focused on a specific geographic area or destination (Egypt/Luxor city), potentially restricting the generalizability of the findings to other settings. Different destinations may possess unique socio-cultural, economic, and environmental characteristics that influence residents' and tourists' behaviors divergently. Future research endeavors could explore these relationships across various destinations to augment the applicability of the findings. Furthermore, while the study explored the mediating role of destination identification and the moderating influence of self-congruity, additional psychological factors could influence residents' and tourists' behaviors in sustainable tourism contexts. Subsequent research could investigate supplementary variables such as environmental attitudes, perceived behavioral control, and social norms to attain a more holistic understanding of the mechanisms underlying sustainable tourism practices. In addition, future studies, in the context of the variables of the current study, could conduct a comparative study between new visitors and returning visitors, as well as between visitors who have knowledge and those who do not have knowledge about the heritage tourist site.

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Appendix A

Residents' environmentally responsible behavior

- Residents comply with relevant regulations to not destroy the destination's environment.
- Residents are willing to attend environmental cleaning activities.
- Residents try to convince partners to protect the environment of the place.
- Residents try not to disrupt the heritage features of the destination.
- Residents attach importance to environmental protection.
- Residents try to guide tourists to engage in the protection of the place's heritage.

Destination identification

- I am very interested in what others think about the destination.
- The successes of this destination are my successes.
- When someone praises this destination, it feels like a personal compliment.
- When someone criticizes this destination, I feel embarrassed.

Self-congruity

- When someone criticizes this destination, I feel embarrassed.
- The personality of this destination is consistent with how I see myself.

- The personality of this destination is a mirror image of me.
- The personality of this destination is consistent with how I would like to be.
- The personality of this destination is a mirror image of the person I would like to be.

Tourist's sustainable use of cultural heritage

- I accept the control policy not to enter the sensitive sites.
- I comply with the rules so as to not harm the site environment.
- I help to maintain the local environment quality.
- I report to the site administration any environmental pollution or destruction.
- I spend money in the local area.
- I help other tourists to learn about the site.
- I try to convince others to protect the natural and cultural environment at the site.
- Donating money for protection the site

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