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Developing and Validating a Scale to Measure Residents' Perceptions and Support for World Heritage Site Conservation: Evidence from Fasil Ghebbi, Ethiopia

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Abstract

Notwithstanding, there are studies on residents' perceptions, factors influencing their perceptions, and support for the conservation of World Heritage Sites; discrepancies continue in the identified factors and their measurement across earlier studies. Moreover, validated measurement scales specifically addressing residents' perceptions of the impacts of World Heritage Sites are lacking. Underscoring this gap, this study intended to validate items measuring residents' perceptions, the factors affecting their perceptions, and support for World Heritage Site conservation in the setting of Fasil Ghebbi World Heritage Sites. The study used an explanatory design with a mixed-method approach. Qualitative data were collected from 14 purposively selected participants, while quantitative data were collected from 100 purposively selected participants. Qualitative data were analysed thematically, while Statistical Package for the Social Sciences (SPSS) version 25 was used for exploratory factor analysis of quantitative data. The resul revealed that out of 90 initial items, 67 were validated across diverse factors, including perceived socio-cultural (8), economic (5), and environmental benefits (3); socio-cultural (5), economic (4), and environmental costs (4); place attachment (5), cultural attitude (4), knowledge of World Heritage Site (4), community involvement (3), personal benefits (5), community gain (3), trust in government (6); and support for World Heritage Site conservation (8). The study provides valuable insights for viability assessment, preventing redundant efforts, and allowing decision-makers to design custom-made strategies that foster perceived benefits, diminish costs, and strengthen inclusive community involvement in World Heritage Site conservation.

Keywords: Conservation support, Fasil Ghebbi, Resident perceptions, Scale Validation, World Heritage Sites.

[1]1. Introduction

Recently, heritage conservation has shifted from traditional physical intrusion to an all-inclusive approach

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that embraces every aspect of heritage. Considering community desires in heritage and preservation of traditional skills and experiences are among the fundamental shifts substantial for contemporary heritage conservation (Ephrem, 2018). Hence, community participation in WHS conservation, which ranges from engagement in decision-making to economic benefits (Rasoolimanesh & Jaafar, 2016), is an essential dimension of the long-term success of any heritage conservation, in general, and World Heritage Sites (WHS) conservation, in particular (Nicholas et al., 2009).

Consulting local communities and sharing the values of the sites are considerable for a non-conflictive approach to heritage conservation and to plan an attainable strategy for any change (Sánchez, 2012). Therefore, community involvement is imperative for effective and long-lasting WHS conservation (Vázquez-Villa et al., 2020). This is because residents possess a devolved curiosity in heritage sites (Han et al., 2016), can care and mobilize protection, and support concerned stakeholders (Avrami et al., 2000). Their support is, in turn, substantially shaped by perceptions of the impacts (Bennett & Dearden, 2014). As a result, influenced by positive local attitudes (Mohamed et al., 2014), meaningful and helpful integration between heritage sites and residents can endorse their protection (Han et al., 2016). On the contrary, lack of support can lead to conflicts and damage to heritage properties (Mohamed et al., 2014). Thus, exploring how residents perceive the impacts of the WHS inscription is substantial for appropriate WHS management (Han et al., 2019).

Perceived impacts of WHSs and residents' support for WHS conservation are shaped by different factors (Nicholas et al., 2009). Framed by social exchange theory (SET) or Weber's Theory of Formal and Substantive Rationality (WTFSR), prior studies have identified factors such as environmental attitude, cultural attitude, personal benefits, community benefits, community attachment, and status consistency (e.g., Noor et al., 2019; Rasoolimanesh, Jaafar, Kock, et al., 2017). However, previous studies have typically considered a limited number of factors. Furthermore, the effect of these factors varies across settings, due to alterations in residents' socio-cultural backgrounds, resulting in inconsistent empirical findings (Rasoolimanesh, Jaafar, Kock, et al., 2017). Therefore, as it is recommended by prior studies (e.g., Noor et al., 2019; Rasoolimanesh, Jaafar, Kock, et al., 2017), it is imperative to identify, integrate, and validate the context-definite predictors of residents' perceptions and support for heritage conservation.

Survey validation approach is the development of tools, mainly questionnaires, for accurately measuring their corresponding constructs of interest (Hair et al., 2019; Norton, 2018). It is one of the crucial components in conducting any empirical research (Lamm et al., 2020) and for developing new scales or advancing earlier scales (Boateng et al., 2018). Therefore, an appropriate scale validation can help to confirm precise research results (Mocorro, 2017). However, there remain inconsistent approaches and scales for generating vigorous scales capable of capturing both valid and reliable data (Lamm et al., 2020). Earlier studies on residents' perceptions and support of WHS conservation are not unique. Therefore, this research aimed to develop and validate measurement scales to assess residents' perceptions of WHS inscription, the factors influencing those perceptions, and their support for conservation of such sites. The researchers chose Fasil Ghebbi WHS as a study area, considering that it is one of the flag heritage sites of Ethiopia, and given its long-standing pursuit of a WHS status, which will result in residents having experienced the impacts of this designation.

2. Literature Review

2.1 Theoretical Framework

As heritages in general and WHSs in particular have been adversely impacted by a variety of hazards conveyed by anthropogenic and natural factors (Hasan et al., 2022; Singh, 2019), recognizing residents' perceptions and their intentions for supporting heritage conservation has become crucial (Rajangam, 2022). In this regard, prior studies (e.g., Brown & Hay-Edie, 2014; Rasoolimanesh & Jaafar, 2016) claimed that successful heritage conservation demands technical expertise along with substantive community involvement and support.

This study used three theories. First, SET is used to enlighten the association between residents' perceptions, determinant factors, and their intention to support heritage conservation. SET suggests that residents evaluate their support based on a cost-benefit analysis (Emerson, 1976). However, SET has been criticized for its views of the intergroup relationship in terms of financial exchange, without considering non-economic factors determining the relationship (Woosnam et al., 2009). Furthermore, SET justifies the effects of various factors from the perspectives of exchange among groups (Rasoolimanesh, Jaafar, & Barghi, 2017). To counterbalance these limitations, this study used a revised SET with exchange rules: rationality, reciprocity, altruism, group gain, and competition (Cropanzano & Mitchell, 2005). Using this revised framework helps to determine the association between the factors influencing residents' perceptions and their intention to support heritage conservation (Rasoolimanesh et al., 2015). Second, this study applied WTFSR to understand the effects of both economic and non-economic factors (Boley et al., 2014). WTFSR rationalizes economic factors by formal rationality and non-economic factors by substantive rationality (Andereck et al., 2005). It also explains the effects of these factors according to personal features (Rasoolimanesh, Jaafar, & Barghi, 2017). Third, this study applied the Theory of Planned Behavior (TPB) to clarify how residents' cultural attitudes relate to their intentions to conserve heritage. TPB postulates that behavioral intentions are determined by one's attitude toward the behavior (Ajzen, 1991). Empirical evidence by Xie et al. (2024) also indicated that people with promising attitudes are more likely to exhibit strong conservation intentions.

All the above three theories are crucial frameworks in identifying the residents' perceptions of WHS inscription, factors affecting their perceptions, and support for WHS conservation initiatives. These theories have been used by numerous prior heritage conservation and tourism researchers (e.g., Noor et al., 2019; Rasoolimanesh, Jaafar, & Barghi, 2017) and strongly align with each other (Boley et al., 2014). Therefore, to counterbalance the weaknesses of using a single theory and to get a comprehensive and substantial outcome, the aforementioned theories were applied in this study.

2.2. Residents' Perceptions of WHS Inscription, Factors Affecting Their Perceptions, and Support for Conservation

In the heritage and tourism setting, inhabitants are persuaded to participate in an exchange when they gain or expect to gain more benefits than costs (Stylidis, 2017). In this regard, studies (e.g., Nian et al., 2023; Rasoolimanesh, Jaafar, Kock, et al., 2017) have recognized that residents' perceptions affect their support for WHS conservation. Residents support conservation efforts when they perceive that the benefits offset the costs (Hanafiah et al., 2020). Sets of factors affect residents' perceptions of the impact of WHS inscription. For this study, we identified place attachment, cultural attitude, community involvement, community gain, personal benefits, residents' knowledge of the WHS, and residents' trust in government as predictors of residents' perceptions of a WHS inscription and their support for WHS conservation. These are briefly presented below.

Place attachment, also known as community attachment, is the sentimental ties between humans and their place (Cao et al., 2021). Since place attachment is a cognitive attachment to a place resulting from people's collective experiences, social ties, and symbolic meanings, it increases the sense of responsibility and readiness to support conservation actions (Scannell & Gifford, 2010). Previous studies (e.g., Mohamed et al., 2017; Rasoolimanesh et al., 2015) confirmed that residents' place attachment has a significant effect on the positive perceptions of residents toward WHS inscription. Furthermore, it has a positive influence on residents' conservation support behaviors (Nicholas et al., 2009). Inconsistent with these findings, Rasoolimanesh, Jaafar, Kock, et al. (2017) identified that community attachment has no significant effect on positive perceptions, but it has a significant effect on residents' negative perceptions.

Cultural attitude toward heritage reflects values, norms, and dispositions regarding the preservation, transmission, and use of cultural assets (Park, 2014). According to the substantive rationality of WTSFR and the rationality rule of SET, residents' values and beliefs impact their perception. Residents who desired to preserve their culture were more inclined to perceive positive impacts of WHS inscription (Rasoolimanesh, Jaafar, Kock, et al., 2017). Furthermore, results asserted that cultural attitudes have a significant effect on the positive perceptions of residents toward WHS inscription (Noor et al., 2019). Therefore, since cultural meanings are site-specific, scale items must be locally grounded (Park, 2014).

Community involvement is the process by which members of a community build relationships with one another that enable their active and cooperative participation in decision-making toward common goals (Moghavvemi et al., 2021) and collective accountability for the duties and benefits (Li et al., 2015). Meaningful participations, starting from planning to decision-making, enhance residents' perceptions of benefits from tourism and conservation, thereby increasing support (Yutong & Rahman, 2024). Empirically, community involvement has a significant effect on residents' positive perceptions toward the impact of a WHS inscription (Rasoolimanesh, Jaafar, Kock, et al., 2017). Consistent with this finding, Nunkoo & Ramkissoon (2012) affirmed that perceived participation depth predicts support more strongly than formal participation. However, according to Alsaloum et al. (2024), community involvement has no significant relationship with their perception.

Underscoring SET and WTFSR, into account, prior studies identified that perceived community gain and personal economic benefits are predictors of residents' perceptions (Noor et al., 2019; Rasoolimanesh, Jaafar, Kock, et al., 2017). Community gain has a positive effect on residents' perceived benefits and costs toward the inscription of heritage as a WHS (Rasoolimanesh, Jaafar, Kock, et al., 2017). Based on formal rationality, community members who acquire more benefits from tourism have positive perceptions of tourism (Noor et al., 2019), thereby supporting its growth (Hanafiah et al., 2020). Walpole & Goodwin (2001) asserted that economic gain had a significant effect on the positive perceptions of residents toward tourism development. However, according to Rasoolimanesh et al. (2015), economic gain also has a significant effect on residents' negative perceptions toward tourism, albeit to a lesser extent than its effect on positive perceptions. On top of the above results, Ward & Berno (2011) summarized that the symmetric effects of economic benefits on residents' perceptions are determined by the fair distribution of benefits.

From a tourism perspective, knowledge is the residents' understanding of any issues related to tourism development and the responsibility of concerned stakeholders to manage it (Gutiérrez-Taño et al., 2019). Residents' knowledge and consciousness of the impacts of tourism development can encourage or discourage their support and active involvement in tourism development (Látková & Vogt, 2012).

Empirical results confirmed that knowledge has positive effects on residents' perceived benefits; however, as residents become more conscious of the influences of tourism, they become more concerned about the negative impacts of tourism development (Rasoolimanesh, Jaafar, & Barghi, 2017). Furthermore, Rasoolimanesh, Jaafar, Ahmad, et al. (2017) confirmed that residents with better knowledge of WHS conservation were more concerned about decisions regarding the WHS.

Residents' trust in government, which is a subjective belief or expected qualities from individuals and organizations for future communities' benefits (Gursoy et al., 2017), shapes residents' readiness to support conservation initiatives (Yutong & Rahman, 2024). When residents perceive that the government can keep community interests, provide policies for heritage conservation, and foster community benefits, they will trust the government, thereby supporting conservation (Anh & Kim, 2016). Earlier studies revealed that the relationship between residents' trust in government and their positive perceptions toward heritage conservation is significant (Nunkoo & So, 2016). Furthermore, residents' trust in government positively predicts their support of heritage conservation (Nunkoo & Smith, 2013).

3. Methodology

3.1. Paradigm

This study used a pragmatist research paradigm to support its objective of developing and validating a scale to measure residents' perceptions, factors affecting their perceptions, and support of WHS conservation. It is supposed that, depending on the inquiry's questions, knowledge can be derived from measurable facts and subjective understanding. Moreover, it defines inquiries as a procedure where notions and meanings are derived by generalizing from prior actions and experiences, and environmental interaction (Sekaran & Bougie, 2016). It guides research decisions, for instance, data collection, analysis, and logical presentation of research outcomes (Saunders et al., 2023). It is explained in terms of ontology, epistemology, and axiology (Aliyu et al., 2015). From an ontological view, research on human experience tends to believe in the multiple views of reality or truth. From the epistemological view, the researchers believe that acceptable knowledge can be grasped from both observable phenomena and subjective meanings. As a result, qualitative data, which were collected from experts, were considered subjective meanings embedded in respondents' experiences, whereas quantitative data, which were derived from theories and prior empirical studies, were understood through objective observation and measurement.

3.2. Research Design

An explanatory research design was used to achieve the study's goal. It enables the researcher to determine the cause-and-effect relationship between or among the research's variables (Saunders et al., 2012). Therefore, an explanatory design embedded with a mixed approach was an appropriate design for this study.

3.3. Study Population

The participants of this study were selected from among academic staff and doctoral candidates in tourism and related disciplines at various Universities, and from households living in and around Fasil Ghebbi WHS, as well as Gondar city residents engaged in tourism and related businesses.

3.4. Sampling Technique and Sample Size

Considering the number of items, variables, the complexity of the research, budget, and time constraints (Rahman, 2023), the sample size for the study was determined through a purposive sampling method. Though there is no single rule for minimum sample size determination method (Hair et al., 2021), the recommended sample size for expert panels typically ranges from 12 (Julious, 2005) to 30 participants (Sekayi & Kennedy, 2017). Hence, 14 participants were purposively selected for qualitative data based on their knowledge and experience of the subject matter and the research topic (Sekayi & Kennedy, 2017). Regarding quantitative data collection, 100 cases were purposively selected from households found around Fasil Ghebbi WHS and from Gondar city residents engaged in tourism and related businesses. This sample size is consistent with the recommendations of Hair et al. (2019) and Winter et al. (2009) that the sample size should not be less than 50 observations for factor analysis.

3.5. Data Collection and Scale Development Procedures

3.5.1. Determining Instrument

Determining each construct, which was widely used and consistent with earlier research, was the first stage in carrying out this study. A thorough literature review of earlier theoretical and empirical studies, as consulted by Mackenzie et al. (2011), guided this stage. Under this approach, the researcher must be exact in delineating the construct (Churchill, 1979). Following the conceptual definition and delineations of the construct, the next step was the generation of items for each construct. The primary aim of the item generation process is to develop a pool of items that comprehensively reflects the key dimensions of the target construct's domain, while reducing the likelihood of measuring concepts beyond that domain (Mackenzie et al., 2011). Therefore, through an extensive review of empirical research, theories, and prior scales, 106 items were developed for the next validation process, for the pre-test.

3.5.2. Pre-test

By recognizing the advantage of multiple sources to ensure content validity (Lamm et al., 2020), a pre-test was conducted. Pre-test helps to ensure the understandability of the survey questionnaire to the target respondents before the commencement of the actual data collection (Boateng et al., 2018). It also enables researchers to minimize errors and come up with valid research outcomes (Hashim et al., 2022). This approach was conducted with experienced subject matter experts and survey professionals knowledgeable in survey design, data collection, and data analysis, as recommended by Czaja (1998). An expert panel could offer extra perspectives and triangulate the idea that would not have been thought of otherwise (Lamm et al., 2020).

In this stage, experts are requested to address basic questionnaire issues such as the understandability of words and concepts, simplicity of the sentence structure of the items, logical flow of parts of the questionnaire and questions within the section, and recommend any items that might be considered. Respondents were requested to deliver their feedback on questions and suggestions for improvement in the comment box of the Word document attached via their email. To assess the face and content validity, 14 tourism and related experts were contacted. From the 14 experts, 2 were from Bahir Dar University, 6 from the University of Gondar, 2 from the Tour Guide Association of Gondar city, and 4 were PhD candidates at the University of Gondar. The questionnaire was sent to the participants via email or distributed in person. The electronic distribution allows the researchers to entirely access the targeted respondents (Sekaran & Bougie, 2016), enables the respondents to reply on time (Czaja, 1998), and aids the researcher in having a high response rate. As a result, of 106 pre-tested items, 16 items, with a low

content validity ratio (< 0.50) and based on expert comments, were eliminated, and the remaining 90 questions were retained for the pilot study.

3.5.3. Pilot Study

After a thorough review of the literature and prior scales, and a pre-test, the next step of the study was a pilot study. It is crucial for developing and testing the adequacy of research instruments (Mocorro, 2017), increasing the researcher's experience with the study methods (Anupama et al., 2023), providing ideas on how to improve the scale, and evaluating the feasibility of the full-scale survey (Mocorro, 2017). As a result, out of 90 initial items, 67 were validated for the full-scale survey across 14 factors.

3.6. Data Analysis Methods

Qualitative data collected from experts were analyzed thematically. To analyze quantitative data, the researchers first need to prepare and organize sets of data and enter them into a spreadsheet or statistical software program (Leavy, 2017). Accordingly, the quantitative data were analyzed using Statistical Package for the Social Sciences (SPSS) version 25, which was used for reliability and validity tests, and for descriptive analysis.

To fix the factorial validity of the measure, an exploratory factor analysis (EFA) was used (Costello & Osborne, 2005). Principal component analysis and varimax rotation were used in its execution. To make predictions, principal component analysis is employed when the goal is to reduce the majority of the original data to a small number of variables (Hair et al., 2019). On the other hand, varimax rotation was employed due to its widespread use, advantages over alternative orthogonal factor rotation techniques, and its applications in simplifying the columns of a factor matrix (Hair et al., 2019).

To determine the suitability of the data for factor analysis, researchers evaluated the correlation value, sample size, multicollinearity, and singularity (Sürücü et al., 2024) and internal consistency of the scale. The scale's reliability and the consistency among scale items were determined by computing the coefficient alpha (Sekaran & Bougie, 2016). The alpha coefficient has a value between 0 and 1, and it is considered acceptable if it is at least 0.70 (Hashim et al., 2022).

To determine construct validity of the scale, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy with the threshold value higher than 0.60 (Shrestha, 2021) and Bartlett's Sphericity Test with the significance level of $p < 0.05$ (Hair et al., 2019) were conducted. To verify the sampling adequacy of each item (Sürücü et al., 2024), the researchers also considered the diagonal elements of the Anti-image correlation matrix with a recommended cutoff point greater than 0.50 (Dhakal et al., 2017).

To test the multicollinearity issue, the determinant score above the rule of thumb of 0.00001 was also considered (Shrestha, 2021). To decide whether the items should be retained or eliminated in the analysis, the researchers also took into account the communalities with a cut-off point higher than 0.25 (Alubel et al., 2025) and factor loadings of variables with a minimum value of 0.40 (Kim, 2010). In this stage, cross-loadings were taken into account, as an item loads higher than 0.32 on two or more factors (Costello & Osborne, 2005). The eigenvalues and scree test were used to determine how many factors to retain (Yong & Pearce, 2013). The eigenvalue represents the amount of information captured by a factor (Amornpipat, 2019), and any factor with an eigenvalue less than 1 should be removed from the scale.

4. Results and Discussion

4.1. Socio-demographic Profile of the Study Participants

As shown in Table 1, nearly three-quarters of the respondents (72%) were men. Concerning the age range of the respondents, the majority (68%) were 25-34 years old. Regarding education status, more than half (56%) were bachelor's degree holders. About half of the respondents (52%) were born and raised in Gondar City. Concerning job type, there was an equal proportion of those engaged in tourism and non-tourism jobs. For about two-thirds (62%) of the respondents, their home distance from the nearby WHS was 5 km or less. Finally, nearly half (54%) of the respondents had 4 to 6 family members.

Table 1: Socio-demographic Profile of the Study Participants (N=100)

Demographic Variables	Category	Frequency (%)
Gender	Female	28 (28)
	Male	72 (72)
Age	18-24	22 (22)
	25-34	68 (68)
	35-44	8 (8)
	45-55	2 (2)
Education status	Reading and writing	2 (2)
	Secondary school	14 (14)
	Certificate	4 (4)
	Diploma	14 (14)
	Bachelor's	56 (56)
	Master's or above	10 (10)
Birth place	Born in Gondar City	52 (52)
	Born out of Gondar City	48 (48)
The length of residence in Gondar city	8-15 years	17 (17)
	16-20years	22 (22)
	21-25 years	24 (24)
	Over 25 years	37 (37)
Job type	Related to tourism	50 (50)
	Not related to tourism	50 (50)
The resident's home distance from the nearby WHS	< 2 km	26 (26)
	2 -5 km	36 (36)
	6- 10 km	22 (22)
	>10 km	16 (16)
Family size	1–3	34 (34)
	4-6	54 (54)
	7-10	10 (10)
	>10	2 (2)

4.2. Exploratory Factor Analysis (EFA) of Residents' Positive Perception Dimensions of the Study

The components of residents' positive perceptions identified through factor analysis were categorized under three sub-dimensions: economic, socio-cultural, and environmental benefits. Within this dimensional structure, the EFA reduced 26 items to 16 (Table 2) by eliminating three economic benefit items, six socio-cultural benefit items, and one environmental benefit item. These removals were due to seven items being theoretically unrelated to their corresponding constructs, one item showing low communality, and two items exhibiting high cross-loadings. Consequently, 16 items, five representing economic benefits, eight representing socio-cultural benefits, and three representing environmental benefits, were retained for further analysis in the context of the Fasil Ghebbi WHS. However, prior inquiries applied an inconsistent type and number of items. For instance, Su & Wall (2014) and Rasoolimanesh, Roldán, et al. (2017) used four items, Mohamed, et al. (2014) adopted nine, while Rasoolimanesh, Jaafar, & Barghi (2017) used five items to measure perceived benefits with a five-point Likert scale.

Following the removal of the abovementioned items in each component, various statistical measures were calculated as follows to ensure the dataset's factorability and to decide which items to retain from the analysis. The Bartlett's test result of economic benefits ($x2 = 77.774$, $df = 10$, $p < 0.001$), socio-cultural benefits ($x2 = 139.439$, $df = 28$, $p < 0.001$), and environmental benefits dimensionality ($x2 = 27.059$, $df = 3$, $p < 0.001$) were all significant, indicating the correlation matrix's fitness for factor analysis. The KMO scores of the three dimensions ranged from 0.63 to 0.85, which are greater than the tolerable threshold of 0.60 (Shrestha, 2021), indicating that the data were pertinent for factor analysis. The diagonal element of the anti-image correlation matrix of items of economic benefits (0.63 to 0.80), socio-cultural benefits (0.81 to 0.88), and environmental benefits dimensionality (0.60 to 0.76) exceeded 0.50 (Sürücü et al., 2024), indicating the sampling adequacy of each item.

There was no multicollinearity issue in the dataset, as indicated by the determinant scores of the economic benefits (0.19), socio-cultural benefits (0.05), and environmental benefits (0.56) components, which are above the rule of thumb of 0.00001 (Shrestha, 2021). The internal consistency of the scale is shown by Cronbach's Alpha coefficient, ranging from 0.702 to 0.85, which is higher than the permissible value of 0.70 (Hair, Jr et al., 2019).

The economic benefits construct explained 54.85 % of the variance, and items' communalities varied from 49.40% to 72.80%, exceeding 25% of the minimum threshold (Alubel et al., 2025). The factor loadings of items ranged from 0.65 to 0.85, which is greater than the threshold of 0.40 (Kim, 2010), indicating that each item should be retained in the final questionnaire. The socio-cultural benefits dimensionality's communalities of the items ranged from 34.50% to 70%, which is acceptable in factor analysis, and the factor loading of the items ranged from 0.59 to 0.84 > 0.40, ensuring the retention of items in the analysis. A construct accounted for 50.11 % of the variation with the eigenvalue of 4.009 > 1 (Kaiser, 1991). On the other hand, the environmental benefits construct explained 62.19 % of the variation, and the communalities of the items ranged between 47.10 % and 70.20 %, which is acceptable in the factor analysis. Furthermore, the factor loadings of items range from 0.69 to 0 > 0.40 (Kim, 2010), indicating that the items will be retained in the questionnaire.

Table 2: EFA of Positive Perception Dimensionality of the Study

Items and Components	Anti-Image Correlation	Communality	Factor Loading
Economic Benefits (E.V = 2.742, Variance = 54.85%, α = 0.784)			
Has increased tourism development	0.630	0.606	0.778
Has created more jobs for my community	0.674	0.728	0.854
Has attracted more investment to the community	0.748	0.494	0.703
Has increased the standard of living of my community	0.796	0.416	0.645
Has generated extra funds for the heritage site	0.750	0.499	0.706
Socio-Cultural Benefits (E.V = 4.009, Variance = 50.11%, α = 0.851)			
Has encouraged a variety of cultural activities	0.852	0.345	0.587
Has attracted the attention of various actors	0.844	0.472	0.687
Has increased the inspiration for art, photos, advertising design, national symbols, architecture, and more	0.826	0.556	0.745
Has promoted residents' cognition of their local culture	0.859	0.581	0.762
Has enhanced the community's sense of identity	0.814	0.700	0.837
Has enhanced the destination's image	0.867	0.394	0.628
Has increased the community's interest in entertaining at the heritage site	0.883	0.552	0.743
Has facilitated residents' social interaction	0.887	0.408	0.639
Environmental Benefits (E.V = 1.87, Variance = 62.19%, α = 0.702)			
Has increased its attractive features, which provide visual enjoyment for the residents	0.762	0.471	0.687
Has improved the landscape of the heritage site	0.604	0.692	0.832
Has increased the standards of public infrastructure	0.600	0.702	0.838

4.3. Exploratory Factor Analysis of Residents' Negative Perception Components of the Study

The negative perception components identified through factor analysis were categorized under the economic, socio-cultural, and environmental cost dimensions within the context of the Fasil Ghebbi World Heritage Site (FGWHS). In this dimensionality, of the initial 18 items, five items were removed due to three with their theoretical unrelatedness to the corresponding component, one with low communalities and component loadings, and one with high cross-loadings. Hence, in this dimensionality, 13 (Table 3) items were retained for further analysis. However, previous studies, such as Kim (2016), employed

ten items, whereas Mohamed et al. (2014) and Rasoolimanesh, Jaafar, Kock, et al. (2017) used five, and Rasoolimanesh, Roldán, et al. (2017) utilized four items to measure perceived costs on a five-point Likert scale.

In the EFA, the Bartlett's test result of perceived economic cost ($x2 = 63.182$, $df = 6$, $p < 0.001$), socio-cultural cost ($x2 = 113.196$, $df = 10$, $p < 0.001$), and environmental cost cots ($x2 = 93.630$, $df = 6$, $p < 0.001$), were all significant, indicated that the correlation matrices met the requirements for conducting factor analysis. Furthermore, the KMO scores of the three dimensions ranged from 0.61 to 0.69, all above the threshold of 0.60 (Shrestha, 2021), indicating that the sample was adequate for factor analysis. The diagonal element of the anti-image correlation matrix of items of economic costs (0.57 to 0.69), socio-cultural costs (0.55 to 0.85), and environmental costs dimensionality (0.63 to 0.84) exceeded the minimum value of 0.50 (Sürücü et al., 2024), indicating the sampling adequacy of each item.

There was no multicollinearity issue in the dataset, as indicated by the determinant scores of the economic costs (0.26), socio-cultural costs (0.09), and environmental costs (0.14), which are above the rule of thumb of 0.00001(Yong & Pearce, 2013). The internal consistency of the scale is shown by the α coefficient, which ranged from 0.75 to 0.81, which is higher than the permissible value of 0.70 (Hair, Jr et al., 2019).

Economic costs explained 58.06 % of the variance, and items' communalities varied from 32.50% to 85.10%, exceeding 25% of the minimum threshold. The factor loading of economic cost items ranged from 0.57 to 0.92 > 0.40, indicating that each item should be retained in the final questionnaire. The socio-cultural costs explained 59.43 % of the variance, and items' communalities varied from 37.80% to 83.90%, exceeding 25% of the minimum threshold. The factor loading of the socio-cultural cost items ranged from 0.61 to 0.92 > 0.40, indicating that each item should be retained in the final questionnaire. Furthermore, perceived environmental costs explained 64.68% of the variance, and item communalities varied from 30% to 83.30%, exceeding the threshold of 25%, indicating the retention of items. The factor loadings of the items ranged between 0.59 and 0.91, exceeding the 0.40 threshold suggested by Kim (2010), indicating that all items were suitable for retention in the final questionnaire.

. Table 3: EFA of Residents' Negative Perception Dimensionality of the Study

Items and components	Anti-image correlation	Communality	Factor loading
Economic costs (E.V=2.322, Variance=58.06%, & α=0.750)			
Has increased the cost of living	0.686	0.325	0.570
Has restricted future development potentials	0.572	0.555	0.745
Has increased the price of land and housing	0.568	0.851	0.923
Has increased competition for land with other economic uses	0.690	0.591	0.769
Socio-cultural costs (E.V= 2.971, Variance=59.428, & α=0.804)			
Has led to the erosion of local cultural traditions	0.553	0.378	0.615
Has resulted in the commercialization of Sacred places	0.833	0.424	0.651
Has increased the rate of crime	0.845	0.572	0.756
The FGWHS has created problems in my life	0.638	0.758	0.870

Has resulted in overcrowding and loss of convenience for residents	0.669	0.839	0.916
Environmental costs (E.V= 2.587,variance= 64.68& α= 0.782)			
Has resulted in noise pollution	0.633	0.757	0.870
Has resulted in environmental pollution	0.648	0.833	0.913
Has resulted in the construction of hotels and other tourist facilities, which destroy the environment	0.835	0.697	0.835
FGWHS is too large and takes up too much land space	0.670	0.300	0.548

4.4. Exploratory Factor Analysis of Community Factors of the Study

Through the EFA of community factors, five components, namely place attachment, community cultural attitude, community involvement, community gain, and personal benefits, were extracted. The specific details of each are discussed in the following section.

In the palace attachment component of the study, of the eight items, three were eliminated from the analysis due to their unrelated nature to the factor and low communalities and factor loadings. However, previous studies, such as Cao et al. (2021) and Woosnam et al. (2018), employed twelve items, Rasoolimanesh et al. (2015) adopted seven, Rasoolimanesh, Roldán, et al. (2017) used four items, whereas Stylidis (2017) utilized three items to measure residents' place attachment on a five-point scale.

During the EFA of the study's cultural attitude dimension, one item was eliminated from the analysis because it showed a low communality value. Consequently, the remaining four items (Table 4) were retained for the final version of the questionnaire. Nonetheless, prior inquiries, for example, Rasoolimanesh, Jaafar, Kock, et al. (2017) employed three items to measure residents' cultural attitude using a five-point scale.

In the EFA of this study's community involvement dimension, one item with low communality was excluded, resulting in three items being retained in the final version of the questionnaire. Conversely, previous studies showed variations: Nicholas et al. (2009) applied two items, Rasoolimanesh, Jaafar, Ahmad, et al. (2017) used three, while Rasoolimanesh et al. (2015) utilized four items.

Within the community gain dimension of the study, one of the four items was removed from the analysis due to being unrelated. Conversely, Rasoolimanesh, Jaafar, Kock, et al. (2017) used two items to assess the same construct. Finally, all five items of the personal benefits dimension in the EFA of the pilot study were retained, as all statistical measures satisfied the required standards for factor analysis. However, previous studies (e.g., Rasoolimanesh, Jaafar, & Barghi, 2017; Rasoolimanesh et al., 2015; Rasoolimanesh, Roldán, et al., 2017) applied three items to measure this construct using a five-point scale.

Following the removal of items in each corresponding factor, the significance levels, the sampling adequacy, the multicollinearity test, communalities, and factor loadings were calculated as follows. In the EFA, the KMO scores of the five dimensions ranged from 0.602 to 0.82, all above the threshold of 0.60 (Sürücü et al., 2024), indicating that the sample size was adequate for factor analysis. Furthermore, the Bartlett's test result of place attachment ($x2=122.780$, $df = 10$, $p < 0.001$), cultural attitude ($x2 =177.937$, $df = 6$, $p < 0.001$), community involvement ($x2 = 45.826$, $df = 3$, $p < 0.001$), community gain ($x2 =$

32.173, df = 3, $p < 0.001$), and personal benefits components ($x2 = 99.624$, df = 10, $p < 0.001$), were all significant, indicating that the correlation matrices met the requirements for conducting factor analysis. In addition, the diagonal element of the anti-image correlation matrix of items of place attachment (0.68 to 0.85), cultural attitude (0.78to 0.86), community involvement (0.66 to 0.73), community gain (0.54 to 0.60), and personal benefits (0.57 to 0.78), which all exceeded the minimum value of 0.50 (Sürücü et al., 2024), indicates the sampling adequacy of each item.

There was no multicollinearity issue in the dataset, as indicated by the determinant scores of the place attachment (0.071), cultural attitude (0.022), community involvement (0.38), community gain (0.506), and personal benefits (0.117), which were all above the rule of thumb of 0.00001(Yong & Pearce, 2013). Moreover, the alpha coefficient value of the aforementioned components ranged from 0.71 to 0.94, which was higher than the permissible value of 0.70 (Hair, Jr et al., 2019), showing the scale's reliability.

Place attachment construct explained 51.237 % of the variance, and item communalities varied from 43.30% to 73.80%. The factor loading of items ranged from 0.66 to 0.86 > 0.40, indicating that each item should be retained. Cultural attitude construct explained 84.18 % of the variance, and item communalities varied from 76.90% to 89.20%. Factor loading ranged between 0.88 and 0.95 > 0.40, indicating the retention of items of a factor. Community involvement explained 71.63 % of the variance, and item communalities varied from 0.69 to 0.77. Factor loading 0.83 to 0.88 > 0.40, indicating the retention of items of a factor. Community gain construct explained 62.94 % of the variance, and item communalities varied from 0.50 to 0.79. Factor loading ranged from 0.71 to 0.89 > 0.40, indicating the retention of items. Moreover, 58.13 % of the variance was explained by the community member's gain construct, and item communalities varied from 0.30 to 0.76. Factors loading ranging from 0.55 to 0.87 > 0.40, indicating the retention of items.

Table 4: EFA of Community Factors Components of the Study

Items & components	**Anti-image correlation**	**Communality**	**Factor loading**
Place Attachment (E.V = 3.15, Variance = 63.006, & α = 0.834)			
I feel FGWHS is a part of me	0.683	0.680	0.824
FGWHS means a lot to me	0.691	0.738	0.859
The FGWHS is the best place for what I like to do	0.768	0.433	0.658
I miss FGWHS when I'm away from it for too long	0.744	0.659	0.812
I am willing to invest my talent or time in FGWHS	0.847	0.641	0.801
Cultural attitude (E.V=3.366, Variance = 84.14, & α = 0.936)			
My cultural heritage is an important part of my identity	0.861	0.769	0.877
I am proud of the cultural traditions of my community	0.845	0.866	0.931
I believe that preserving my community's culture is essential for future generations	0.780	0.892	0.945
I feel that cultural heritage should be promoted	0.797	0.839	0.916

Community involvement (E.V = 2.149, Variance = 71.627, & α = 0.801)			
The residents have been involved in the management of FGWHS	0.726	0.685	0.828
The residents have been involved in the decision-making about FGWHS	0.656	0.773	0.879
The residents' opinions regarding the FGWHS conservation have been requested	0.720	0.691	0.831
Community gain (E.V = 1.888, Variance = 62.94%, & α = 0.705)			
The infrastructure and public facilities have improved since Fasil Ghebbi was inscribed as a WHS	0.541	0.794	0.891
Community security and safety have improved since Fasil Ghebbi was inscribed as a WHS	0.572	0.596	0.772
The inscription of Fasil Ghebbi as a WHS contributed to reviving the communities' religious and traditional events	0.603	0.499	0.706
Personal benefits (E.V = 2.907, Variance = 58.13% , & α = 0.815)			
Raising visitor numbers to FGWHS has generated extra income for me	0.686	0.587	0.766
Raising visitor numbers to FGWHS has created new jobs for me	0.693	0.711	0.843
Because of FGWHS, my quality of life has improved	0.776	0.755	0.869
I have gotten an extra facility resulting from the increasing number of visitors to FGWHS	0.762	0.556	0.745
Because of FGWHS, I have gotten an extra recreation opportunity	0.566	0.297	0.545

4.4.1. Exploratory Factor Analysis of Residents' Knowledge of the World Heritage Site Component

In the EFA of this study for this construct, one of the five items was removed from the analysis because it had low communality. Subsequently, four items (Table 5) were retained for the final questionnaire. It is consistent with Xie et al. (2024), who used a similar number of items to measure this construct. However, prior studies have employed varying numbers of items depending on context. For example, Rasoolimanesh, Jaafar, Ahmad, et al. (2017) utilized three items, while Alsaloum et al. (2024) applied five items to measure the same construct.

The KMO coefficient value of 0.66 and Bartlett's test of sphericity ($x2 = 76.561$, $df = 6$, $p < 0.001$) confirmed the fitness of the data for factor analysis. There was no multicollinearity issue in the dataset, as indicated by this dimension's determinant score of $0.195 > 0.00001$. The homogeneity of the scale is shown by the alpha coefficient value of 0.79, which is higher than the permissible value of 0.70 (Ba & Ekici, 2014). The diagonal element of the anti-image correlation matrix of items ranging from 0.63 to $0.77 > 0.50$, showing the sampling adequacy of each item. A construct explained 63.17 % of the variance, and item communalities varied from 47.50% to 75.80%, exceeding 25% of the threshold. The factor loading of items ranged from 0.69 to $0.87 > 0.40$, indicating that each item should be retained in the final questionnaire.

Table 5: EFA of Residents' knowledge of the WHS component of the Study

Items and components	Anti-image correlation	Communality	Factor loading
Residents' knowledge of the WHS (E.V = 2.527, Variance = 63.168, & a = 0.791)			
I know a lot about WHS conservation and tourism in my community	0.631	0.758	0.871
I know the meaning of the inscription of a heritage site as a WHS	0.616	0.716	0.846
I know the possible impact of the inscription of a heritage as a WHS	0.699	0.475	0.689
I know how to participate in WHS conservation and tourism development	0.770	0.578	0.760

4.4.2. Exploratory Factor Analysis of Trust in Government Component

In this component, no item was eliminated from the analysis because all statistical measures met the minimum requirement of factor analysis. Consequently, six items (Table 6) were used to measure this construct at Fasil Gehbbi WHS. However, Anh & Kim (2016) used five items, while Yutong & Rahman (2024) adopted three items to measure the same construct. With a KMO score of 0.86 > 0.60 and Bartlett's test of sphericity of the overall significance ($x2 = 142.175$, $df = 15$, $p < 0.001$), the data were suitable for factor analysis. As indicated by the determinant score of 0.046, which exceeded the threshold value of 0.00001, multicollinearity was not an issue in this study. As shown by the alpha coefficient of 0.88, which is higher than the permissible value of 0.70 (Ba & Ekici, 2014), the scale was reliable.62.89 % of the variance was explained by a construct, and item communalities varied from 0.55 to 0.70.

Table 6: EFA of Trust in Government Component of the Study

Items and components	Anti-image correlation	Communality	Factor Loading
Trust in government (E.V.= 3.773, Variance = 62.887, and α = 0.881)			
Decisions on the conservation of FGWHS	0.885	0.633	0.796
Looks after the interests of the community in FGWHS	0.847	0.554	0.744
Listens to community concerns about the FGWHS	0.860	0.701	0.837
Has incorporated residents into the FGWHS planning	0.870	0.616	0.785
Provides accurate and timely information about FGWHS	0.897	0.597	0.773
Respects local culture and traditions in FGWHS conservation	0.831	0.672	0.820

4.5. Exploratory Analysis of Residents' Support for the WHS Conservation Component of the Study

In this component, of the nine initial items, one item was eliminated from the analysis due to its being conceptually unrelated to the corresponding construct. Therefore, eight items (Table 7) were retained and

used to measure residents' intention to support WHS conservation in the context of Fasil Ghebbi. While previous studies in different contexts adopted different items in both type and number. For example, Nicholas et al. (2009) used three items, Rasoolimanesh, Jaafar, Kock, et al. (2017) used seven, whereas Tianjie & Shan (2024) adopted ten items using a five-point scale.

With a KMO score of sufficiency of sample of 0.879 > 0.60 and Bartlett's test ($\chi^2 = 307.842$, df = 28, $p < 0.001$), the data were satisfactory for factor analysis. There was no multicollinearity issue in the dataset, as indicated by the residents' support dimension's determinant score of 0.001, which is above the rule of thumb of 0.00001. The alpha (α) coefficient of 0.92, which is higher than the permissible value of 0.70 (Ba & Ekici, 2014), has shown the coherence of the scale items. 67.076 % of the variance was explained by a construct, and item communalities varied from 37.50% to 80.90% > 25%. Factor loading ranged from 0.612 to 0.901 > 0.40, indicating the retention of items of a factor.

Table 7: EFA of the Residents' Support for WHS Conservation Component of the Study

Items and components	Anti-image correlation	Communality	Factor Loading
Support for WHS conservation (E.V=5.37, variance = 67.08%, and α = 0.92)			
The inscription of the Fasil Ghebbi as a WHS	0.890	0.687	0.829
The rules that should maintain FGWHS	0.872	0.738	0.859
The promotion of the FGWHS	0.915	0.809	0.899
The conservation programs of FGWHS	0.895	0.811	0.901
The strategic plan for the conservation of FGWHS	0.856	0.608	0.780
Spend their money to FGWHS conservation	0.900	0.375	0.612
Others to learn about the value of FGWHS	0.837	0.680	0.824
The report of any unsympathetic activity on the FGWHS	0.866	0.659	0.812

5. Conclusions

Through an extensive review of empirical research, theories, and prior scales, 106 items were initially enrolled and pre-tested. Following the pre-test, 16 items with a low content validity ratio and highlighted by experts were eliminated, leaving 90 for the pilot study. During the pilot study, 23 items were eliminated due to their low communalities and factor loadings, high cross-loadings, and unrelated nature with the corresponding factor; thereby, 67 items across 14 factors were validated for the main survey.

The results of this inquiry offer foundational insights into the theoretical, methodological, and practical aspects. Theoretically, the validation of measurement scales enhances the development and testing of models related to residents' perceptions and support for heritage conservation. By confirming the reliability and validity of instruments measuring residents' perceptions, factors affecting residents' perceptions, and their intentions of WHS conservation, the study provides a foundation for diagnosing the complex relationship between perception, factors, and support; ultimately, proceeding theoretical frameworks in heritage studies.

Methodologically, the study plugs a recurring gap, where prior inquiries often adopt existing measurement

tools without considering contextual and time-based variations. Validating scales specifically within the context of this study demonstrates the importance of tailoring instruments to fit unique cultural and geographic settings. This methodological rigor augments the accuracy and relevance of future research findings in similar contexts.

Practically, the validated measurement scales offer valuable insights for WHS managers and policymakers. The results highlighted how residents view both the benefits and costs of WHS designation, identify the main factors shaping their perceptions, and assess the extent of community support. Such insights should enable decision-makers to design custom-made strategies that enhance perceived benefits, reduce perceived costs, and reinforce inclusive community involvement in WHS conservation initiatives.

6. Limitations and the Way Forward

Even though the study has incredible contributions, it has some limitations that require thoughtful attention. First, the scope of this study was delimited solely to WHSs found in Gondar city, which may limit the practicality of these findings to other settings. Second, to ensure the quality of the data, quantitative data were collected through purposive sampling guided by pre-defined criteria. This may limit the generalizability of the results. Future studies ought to focus on mounting diverse geographical delimitations of studies with diverse social and cultural backgrounds, thereby fostering the generalizability of findings.

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