







## From Porta Sancta Pilgrimage to Environmental Attitudes

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### ABSTRACT

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This research explores how environmental knowledge, authenticity, environmental concern, and memorable tourism experiences (MTEs) influence visitors' environmental attitudes after their pilgrimage to the Porta Sancta, a significant site of Catholic religious tourism. Using data collected from 160 pilgrims, the analysis was conducted through Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that authenticity is crucial in enhancing environmental knowledge, creating memorable travel experiences, and nurturing pro-environmental attitudes following the pilgrimage. Moreover, pilgrims with higher environmental knowledge tended to show stronger concern for ecological issues, which positively shaped their environmental attitudes after the visit. The results also highlight the key function of MTEs in inspiring visitors to adopt favorable views toward environmental preservation. In essence, destinations that provide authentic and meaningful experiences have the potential to encourage positive behavioral change by raising environmental awareness among tourists. From a managerial standpoint, these insights emphasize the need for destination planners and managers to incorporate authenticity and environmental education elements when developing tourism programs and services.

## 1. INTRODUCTION

Pilgrimage tourism has become a major global phenomenon that blends spiritual, cultural, and environmental dimensions. One meaningful example is the Porta Sancta pilgrimage, a long-standing Catholic tradition observed during Jubilee years. Although this journey is primarily spiritual, it is also a deep cultural experience that can influence pilgrims' perceptions, attitudes, and behaviors.

A key concept in understanding the pilgrimage experience is authenticity, which has been discussed in three distinct forms: objective authenticity, the tangible genuineness of a site or artifact; constructive authenticity, the result of social narratives and individual interpretations; and existential authenticity, the deeply personal and transformative feelings experienced during the journey [1]. Previous studies have shown that the authenticity of Catholic pilgrimage destinations significantly enhances pilgrims' spiritual well-being and overall life satisfaction, strengthening their emotional connection to the place. These findings suggest that religious sites maintaining or improving their sense of authenticity can foster more substantial psychological and emotional benefits for visitors [2].

Beyond authenticity, the idea of memorable tourism experiences (MTEs) adds another critical layer to understanding pilgrimages. MTEs are characterized by uniqueness, novelty, opportunities for learning, emotional

engagement, and a pleasant atmosphere. Within religious settings, such experiences deepen spiritual meaning, create long-lasting memories, and shape future attitudes and behaviors [3]. Authenticity enriches the quality of these memorable experiences, enhancing visitors' sense of attachment to the destination and their intention to return, showing that MTEs mediate between authenticity and post-visit behavioral outcomes [4].

At the same time, environmental knowledge and concern have been widely recognized as crucial factors that encourage pro-environmental behavior. Environmental knowledge refers to an individual's understanding of ecological systems, environmental issues, and the impact of human actions on the natural world [5]. Tourists with greater environmental awareness tend to show more substantial commitments to sustainable practices during and after their travels [6]. Meanwhile, environmental concern represents the emotional care or sense of responsibility toward environmental issues, acting as a motivational force for sustainable behavior [7]. Notably, studies indicate that environmental concern can mediate the link between tourism experiences and pro-environmental behavioral intentions, highlighting the importance of fostering emotional sensitivity and cognitive understanding among visitors [8].

Post-visit environmental attitude describes transforming or strengthening individuals' pro-environmental perspectives after engaging in a tourism activity. This attitude indicates

how willing and motivated visitors are to participate in environmental preservation initiatives. In Thailand's ecotourism sites, factors such as service quality, community participation, and effective environmental governance have been shown to affect visitors' post-visit ecological attitudes strongly. Accordingly, authentic, memorable, and learning-oriented tourism experiences contribute to the development of environmentally responsible attitudes [9].

Despite these insights, there is still a lack of research exploring how authenticity, memorable pilgrimage experiences, environmental knowledge, and environmental concern influence post-visit environmental attitudes within religious tourism. Previous studies have primarily focused on ecotourism and cultural tourism contexts, while religious tourism, especially the Porta Sancta pilgrimage, has received limited academic attention. Yet, combining spiritual, artistic, and environmental aspects could offer a deeper understanding of how religious travel experiences contribute to long-term environmental awareness and behavior.

To address this gap, the present study aims to: (1) investigate the influence of authenticity on memorable pilgrimage experiences; (2) examine how memorable pilgrimage experiences affect environmental knowledge and concern; (3) evaluate the impact of environmental knowledge and concern on post-visit environmental attitudes; and (4) explore the mediating effects among these variables. The outcomes of this study are anticipated to enrich the theoretical discourse on religious tourism and provide practical guidance for destination managers in developing authentic, meaningful, and environmentally sustainable pilgrimage experiences.

Exploring these relationships in the religious pilgrimage setting provides theoretical and practical insights that go beyond the scope of conventional tourism studies. Unlike ecotourism or heritage tourism, religious pilgrimages such as the Porta Sancta embody a holistic form of travel where spiritual reflection, cultural engagement, and moral responsibility come together. This multidimensional character offers a unique perspective for understanding how sacred experiences can influence spiritual and emotional growth and the development of environmentally responsible attitudes. By investigating authenticity and memorable pilgrimage experiences as key factors shaping post-visit environmental attitudes, this study connects the spiritual and environmental dimensions in an intersection that has received limited attention in tourism research. Furthermore, it emphasizes that faith-based motivations and ritual practices can act as powerful catalysts for nurturing environmental awareness and encouraging sustainable behavior among pilgrims, thereby broadening the conceptual scope of sustainable tourism discourse.

## 2. LITERATURE REVIEW

### 2.1 Authenticity

Authenticity has long been a central topic of debate within tourism research. Scholars generally classify authenticity into three main categories [1]:

1. Objective authenticity refers to the genuine nature of physical objects such as artifacts, relics, or historical sites.
2. Constructive authenticity, which emerges through narratives, interpretations, and social perceptions.

3. Existential authenticity, which relates to deeply personal and transformative experiences where tourists feel an authentic sense of self.

In religious tourism settings such as the Porta Sancta pilgrimage, authenticity can be reflected in the sincerity of rituals, the sacred atmosphere, the architectural integrity of churches, and interactions with local religious traditions. Perceived destination authenticity has significantly enhanced MTEs and fostered a sense of place attachment [4]. Specifically, research in Catholic pilgrimage contexts shows that the authenticity of sacred sites can elevate pilgrims' spiritual well-being and emotional connection to the destination [2].

### 2.2 Memorable pilgrimage experience

MTEs leave a strong and lasting emotional or cognitive impression on travelers. The MTE framework includes several key dimensions: novelty, learning, authenticity, emotional involvement, and service quality. Within the context of pilgrimage, memorable experiences may arise through spiritual encounters, reflective moments, and meaningful connections to religious values [3]. Studies conducted in heritage and cultural tourism suggest that memorable experiences enhance visitor satisfaction and encourage positive attitudinal changes, including post-visit pro-environmental orientations [4].

### 2.3 Environmental knowledge

Environmental knowledge refers to an individual's understanding of environmental concepts, facts, and cause-and-effect relationships concerning ecological systems and issues [5]. It is often divided into three categories:

1. Systematic knowledge: understanding how ecosystems and natural processes function.
2. Action-related knowledge: awareness of how to engage in environmentally responsible behaviors.
3. Effect-related knowledge: understanding the consequences of human activities on the environment.

Visitors with a higher level of environmental knowledge are more likely to adopt and maintain pro-environmental practices both during their travels and after returning home [6].

### 2.4 Environmental concern

Environmental concern captures the extent to which individuals feel emotionally involved with and responsible for environmental issues, reflecting their underlying values and beliefs about the importance of ecological preservation [7]. Such concern often serves as a strong motivator for engaging in environmentally responsible actions such as reducing resource consumption, supporting conservation initiatives, and advocating for sustainable policies. Moreover, environmental concern can act as a mediating variable that connects tourism experiences with travelers' future intentions to engage in pro-environmental behavior [8].

### 2.5 Post-visit environmental attitude

Post-visit environmental attitudes represent the pro-environmental perspectives and commitments individuals develop following their tourism experiences. These attitudes are expressed through heightened ecological awareness,

stronger environmental concern, and a greater willingness to engage in sustainable behaviors. Various factors influence their formation, including destination quality, opportunities for community participation, exposure to environmental education, and the overall depth of the visitor experience. In religious tourism contexts, the moral and spiritual insights gained during a pilgrimage can further reinforce these pro-environmental attitudes after the journey concludes [9].

Figure 1 presents the proposed conceptual model grounded in the Experience Economy Theory and the Value-Belief-Norm (VBN) Theory. Authenticity is a key element within this

framework that deepens the pilgrimage experience, allowing pilgrims to engage in meaningful and emotionally rich encounters. These memorable experiences subsequently enhance individuals' environmental knowledge and concern. In line with the VBN theory, this heightened awareness and concern serve as the foundation for activating pro-environmental attitudes. Overall, the model illustrates how authentic and memorable religious experiences can foster lasting environmental awareness and a stronger sense of ecological responsibility among pilgrims.

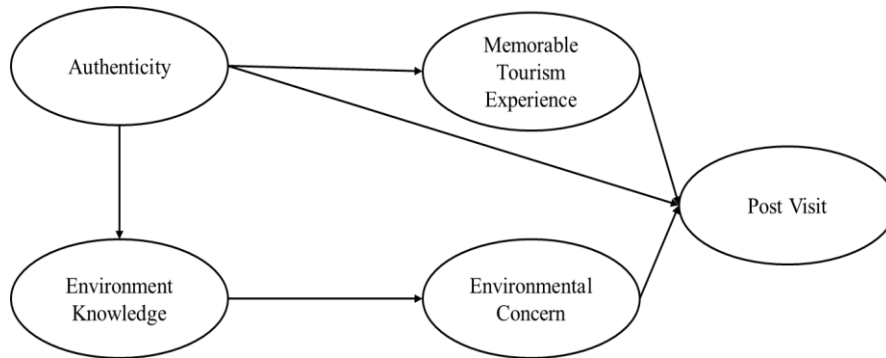


Figure 1. Conceptual framework

### 3. METHODOLOGY

This study employs a quantitative approach to examine the relationships among authenticity, memorable experiences of the Porta Sancta pilgrimage, environmental knowledge, environmental concern, and post-visit environmental attitudes. The research population comprises individuals who participated in the Porta Sancta pilgrimage at the designated

pilgrimage sites during the study period. A purposive sampling method was used, with participants required to be at least 17 years old and to have completed the entire Porta Sancta pilgrimage and its associated rituals. Respondents who did not finish the pilgrimage route or provided incomplete answers were excluded from the analysis to ensure the reliability and validity of the data. Table 1 below explains the measurements used in this study.

Table 1. Measurement

Construct	Indicator	Source
Authenticity	1. I feel that the atmosphere at Porta Sancta truly reflects the authenticity of a sacred worship place.	[10]
	2. I perceive the environment and buildings at Porta Sancta as genuine and not artificial.	
	3. I feel a real connection with religious values during my visit to Porta Sancta.	
	4. I feel free to express my spiritual self during the visit.	
Memorable Tourism Experience (MTE)	1. My visit to Porta Sancta leaves a lasting impression I will hardly forget.	[3]
	2. I experience heart-touching and meaningful moments during my pilgrimage to Porta Sancta.	
	3. I gain new insights about religion or history during my visit.	
	4. My experience at Porta Sancta feels unique and more memorable than other destinations I have visited.	
Environmental Knowledge	1. I understand the importance of maintaining cleanliness during visits to sacred places like Porta Sancta.	[11, 12]
	2. I understand the importance of environmentally friendly behavior when travelling, especially at sacred places.	
	3. Proper waste management around pilgrimage areas helps protect the sacred environment.	
	4. I understand that environmental preservation is part of my moral and spiritual responsibility as a pilgrim at Porta Sancta.	
Environmental Concern	1. I feel worried when visitors fail to maintain environmental cleanliness around Porta Sancta.	[7, 13]
	2. I feel responsible for protecting nature and religious sites during the pilgrimage.	
	3. I believe that sacred places like Porta Sancta must be spiritually and ecologically protected.	
	4. I support environmental conservation activities at religious sites such as Porta Sancta, even after my visit ends.	
Post-Visit Environmental Attitude	1. After visiting Porta Sancta, I realize more that protecting nature is a shared human responsibility.	[6, 13]
	2. My spiritual experience at Porta Sancta increases my concern for environmental conservation.	
	3. I believe that respecting nature is part of respecting God's creation.	
	4. My visit motivates me to participate actively in environmental preservation activities.	
	5. I believe sacred places should be protected spiritually and ecologically for future generations.	
	6. I am now more likely to adopt eco-friendly behaviors daily.	
	7. I feel inspired to educate others about the importance of environmental stewardship.	
	8. My experience at Porta Sancta strengthens my long-term commitment to sustainability.	

In total, 160 valid responses were collected and analyzed. This sample size meets the adequacy standard suggested by Hair [14], which recommends at least 10 respondents for every estimated parameter in Structural Equation Modelling using Partial Least Squares (SEM-PLS). Considering the number of constructs and the overall complexity of the model, the sample exceeds the minimum threshold, providing sufficient statistical power for robust analysis. Moreover, the respondents represented diverse age groups, genders, and educational backgrounds, enhancing the sample's representativeness of the broader Porta Sancta pilgrim population.

Data analysis was conducted using SEM-PLS to assess direct and indirect relationships among the study variables. Although the findings are specific to the Porta Sancta pilgrimage context, the conceptual links, particularly those connecting authenticity, memorable experiences, and environmental attitudes, may also apply to other religious or cultural tourism forms that promote spiritual reflection and environmental consciousness. However, caution is advised when generalizing these results beyond similar Catholic pilgrimage contexts, as differences in religious settings, cultural values, and environmental education may influence visitor perceptions and behavioral outcomes.

## 4. RESULTS

### 4.1 Demographic profile of respondents

The demographic characteristics of the 160 respondents, as presented in Table 2, indicate a balanced and diverse sample. Most respondents were female (60%), aged between 26 and 35 years (26.3%), and held at least a bachelor's degree (46.9%). Most were private employees (30.6%) or entrepreneurs (21.3%). Most participants visited the Porta Sancta for religious pilgrimage purposes (56.9%) and were first-time visitors (64.4%). This demographic composition reflects a representative cross-section of modern pilgrims who participate in Porta Sancta activities, combining spiritual, cultural, and environmental

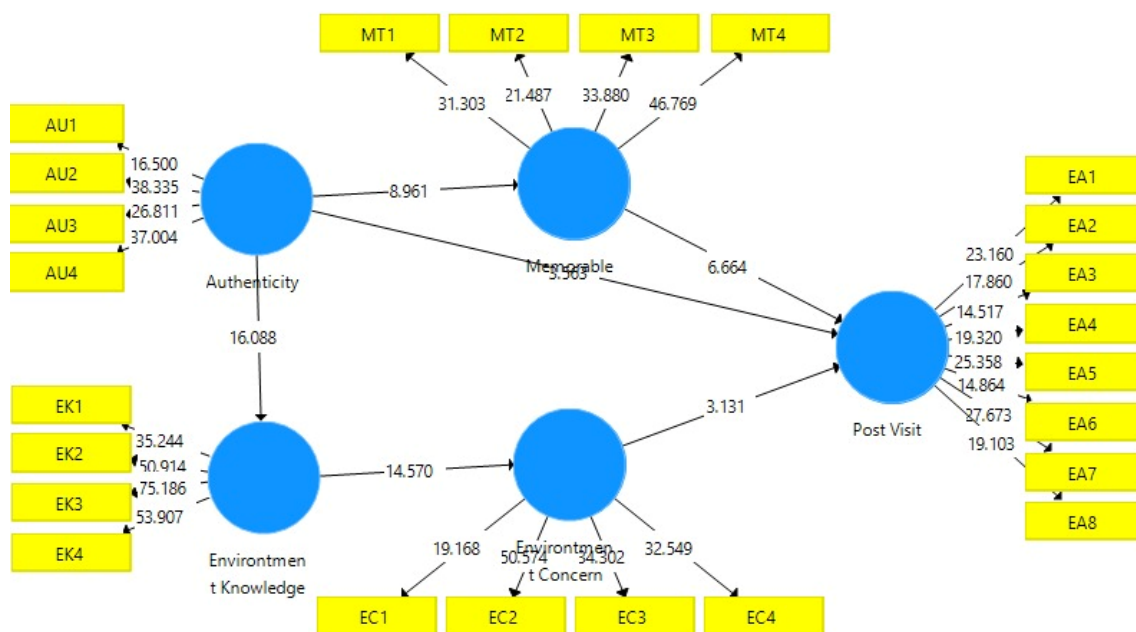
motivations.

### 4.2 Outer loading

Outer loading is the coefficient that indicates the degree of correlation between an indicator (question item) and its corresponding latent construct in the measurement model of Partial Least Squares Structural Equation Modeling (PLS-SEM). This value represents the contribution of each indicator to the formation of the latent construct, as illustrated in the conceptual framework presented in Figure 2. The higher the outer loading value, the better the indicator represents the intended construct. An outer loading value of  $\geq 0.70$  indicates good reliability, as it can explain more than 50% of the construct's variance ( $0.7^2 = 0.49$ ) [15].

**Table 2.** Demographic respondent

Demographic Variable	Category	Frequency (n)
Gender	Male	64
	Female	96
Age	17–25 years	38
	26–35 years	42
	36–45 years	33
	46–55 years	28
	$\geq 56$ years	19
Education Level	High school or equivalent	32
	Diploma	24
	Bachelor's degree	75
	Master's degree or higher	29
Occupation	Student	27
	Private employee	49
	Civil servant	23
	Entrepreneur	34
	Others (housewife, retiree, etc.)	27
Frequency of Visit to Porta Sancta	First-time visitor	103
	Two to three times	41
	More than three times	16



**Figure 2.** Output SmartPLS

Evaluating outer loading is crucial for ensuring convergent validity, which means that the indicators within the same construct share commonality in measuring the same concept. So, Table 3 explains that the outer loading results in this study have a value > 0.07, which means that all indicators are valid [16].

**Table 3.** Outer loading

Variable	Indicator	Outer Loading	Criteria
Authenticity	AU1	0.836	Valid
	AU2	0.909	Valid
	AU3	0.869	Valid
	AU4	0.902	Valid
Environmental Knowledge	EK1	0.915	Valid
	EK2	0.931	Valid
	EK3	0.954	Valid
	EK4	0.936	Valid
MTE	MT1	0.883	Valid
	MT2	0.894	Valid
	MT3	0.898	Valid
	MT4	0.916	Valid
Environmental Concern	EC1	0.864	Valid
	EC2	0.943	Valid
	EC3	0.921	Valid
	EC4	0.916	Valid
Post-Visit Environmental Attitude	EA1	0.859	Valid
	EA2	0.841	Valid
	EA3	0.843	Valid
	EA4	0.864	Valid
Environmental Attitude	EA5	0.895	Valid
	EA6	0.842	Valid
	EA7	0.884	Valid
	EA8	0.841	Valid

### 4.3 Cronbach Alpha, Composite Reliability, and Average Variance Extracted

Based on the results in Table 4, all variables in this study achieved Cronbach's Alpha values exceeding 0.90, reflecting excellent internal consistency among the constructs [17]. Specifically, the Cronbach's Alpha values were recorded as 0.902 for Authenticity, 0.932 for Environmental Concern, 0.951 for Environmental Knowledge, 0.920 for MTE, and 0.949 for Post-Visit Environmental Attitude. Since all values surpass the commonly accepted threshold of 0.70, the internal reliability of these constructs can be categorised as highly robust [18]. Likewise, the Composite Reliability (CR) values were also strong, ranging between 0.932 and 0.965. According to methodological standards, a CR value above 0.70 is deemed satisfactory, and all constructs in this research comfortably exceeded that criterion, confirming high CR. These findings indicate that the indicators effectively represent and measure the intended constructs consistently [17].

In addition, the Average Variance Extracted (AVE) values for all variables were greater than 0.738, with the highest AVE belonging to Environmental Knowledge (0.873) and the lowest to Post-Visit Environmental Attitude (0.738). Since the minimum acceptable AVE value is 0.50, the results demonstrate that each construct explains more than half of the variance in its measurement indicators [19]. Together, these outcomes verify that all constructs satisfy the requirements for convergent validity. Overall, the research instrument exhibits excellent reliability and validity, indicating that all items are consistent and accurately capture the essence of the constructs under investigation.

**Table 4.** Cronbach Alpha, Composite Reliability, and Average Variance Extracted (AVE)

Variable	Cronbach's Alpha	Composite Reliability	AVE
Authenticity	0.902	0.932	0.774
Environmental Concern	0.932	0.952	0.831
Environmental Knowledge	0.951	0.965	0.873
MTE	0.920	0.943	0.806
Post-Visit Environmental Attitude	0.949	0.957	0.738

### 4.4 R-square

The adjusted R<sup>2</sup> values displayed in Table 5 reveal how effectively the exogenous variables explain the variance of the endogenous variables in the research framework [17].

1. The Adjusted R<sup>2</sup> for Environmental Concern is 0.659, suggesting that 65.9% of its variance is accounted for by exogenous factors such as Authenticity and other related constructs. Based on the classification where R<sup>2</sup> values ≥ 0.67 are considered substantial, around 0.33 are moderate, and approximately 0.19 are weak, this result is close to the considerable category, indicating a strong explanatory relationship [20].
2. For Environmental Knowledge, the Adjusted R<sup>2</sup> value of 0.608 implies that external variables explain 60.8% of the variance. This level of explained variance is categorised as moderate to substantial, signifying that the model effectively captures the main factors influencing visitors' environmental understanding.
3. The MTE construct yielded an Adjusted R<sup>2</sup> of 0.429, meaning that exogenous factors account for 42.9% of its variance. This is classified as a moderate level of explanatory power, leaving 57.1% of the variance potentially influenced by unobserved or external variables beyond the model's scope.
4. The highest Adjusted R<sup>2</sup> value was recorded for Post-Visit Environmental Attitude, at 0.808, indicating that 80.8% of its variance can be explained by the combined effects of exogenous variables, including Authenticity, MTE, Environmental Concern, and Environmental Knowledge. This is considered a very high value, reflecting the model's strong predictive capability for this construct.

These findings demonstrate that the research model possesses strong explanatory power, particularly for Post-Visit Environmental Attitude. The results provide empirical evidence that the independent variables examined are crucial in shaping tourists' environmental attitudes following their religious tourism experiences.

**Table 5.** R<sup>2</sup>

Variable	R <sup>2</sup> Adjusted
Environment Concern	0.659
Environment Knowledge	0.608
MTE	0.429
Post-Visit Environmental Attitude	0.808

### 4.5 Path coefficient

Based on the path coefficient analysis results listed in Table

6, all relationships between variables in this research model

have a p-value below 0.05, so they are statistically significant.

**Table 6.** Path coefficient

Hypothesis	Original Sample (O)	Sample Mean (M)	T Statistics	P Values
Authenticity -> Environment Knowledge	0.782	0.779	16.231	0.000
Authenticity -> MTE	0.658	0.646	8.768	0.000
Authenticity -> Post-Visit Environmental Attitude	0.205	0.198	3.706	0.000
Environment Concern -> Post-Visit Environmental Attitude	0.278	0.280	3.325	0.001
Environment Knowledge -> Environment Concern	0.813	0.809	15.262	0.000
MTE -> Post-Visit Environmental Attitude	0.533	0.537	6.714	0.000

## 5. DISCUSSION

### 5.1 The positive influence of authenticity on the memorable Porta Sancta pilgrimage experience

Authenticity is a fundamental determinant of the quality of a tourist experience. Authenticity plays a crucial role in shaping the overall quality of a tourist experience, particularly in religious and pilgrimage contexts. It reflects the degree to which a site, object, or ritual embodies the original spiritual, historical, and cultural values inherent to that destination [10]. Within the Porta Sancta pilgrimage, authenticity is reflected in several dimensions, including the architectural preservation of the church, the sacred act of opening the Holy Door, the maintenance of traditional liturgical practices, and the sincere spiritual atmosphere that permeates the entire journey. Together, these aspects create a sense of sacredness and genuineness that strengthens pilgrims' emotional attachment to the site.

In the case of the Porta Sancta, authenticity extends beyond visual or physical characteristics; it also represents a deeply spiritual and emotional connection that allows pilgrims to engage more profoundly with their faith. When participants perceive the pilgrimage as authentic, they are more likely to experience moments of introspection, emotional depth, and spiritual enrichment. This aligns with experiential consumption theory, which posits that travelers increasingly seek meaningful and emotionally fulfilling experiences that lead to personal or spiritual transformation rather than mere physical pleasure [21].

Empirical studies further demonstrate that authenticity significantly impacts the formation of memorable experiences within religious tourism [22]. Perceptions of authenticity, whether rooted in cultural, historical, or spiritual elements, help create powerful emotional memories tied to the unique characteristics of a destination. Within the context of the Porta Sancta pilgrimage, the authenticity embedded in religious rituals, sacred symbols, and interactions with the local faith community creates experiences that are both unique and deeply personal [23]. Consequently, authenticity enhances emotional resonance and spiritual satisfaction, contributing to stronger and more enduring memories among pilgrims [24, 25].

Moreover, authenticity in religious tourism can be understood through existential authenticity, in which pilgrims feel a sense of freedom to explore and express their spiritual identity within a sacred setting [1]. At Porta Sancta, this experience goes beyond mere observing rituals; it involves deep self-reflection, repentance, and spiritual renewal. Such encounters allow pilgrims to reconnect with their faith more intimately, reinforcing the transformative nature of their

spiritual journey.

From a practical standpoint, preserving and emphasizing authenticity is vital for enhancing the memorability of the Porta Sancta pilgrimage. Destination managers and church authorities can strengthen pilgrims' perceptions of authenticity through accurate historical interpretation, the preservation of sacred architectural elements, and the active involvement of local communities in religious practices. These efforts help ensure that the pilgrimage experience remains a genuine continuation of its long-standing historical and spiritual heritage.

In essence, authenticity is not just an additional component but a core foundation that shapes the depth and meaning of the Porta Sancta pilgrimage experience. The stronger the pilgrims' sense of authenticity, the deeper their emotional and spiritual engagement becomes, ultimately transforming the journey into a truly memorable and spiritually meaningful experience.

### 5.2 The positive influence of authenticity on environmental knowledge

The authenticity of a religious pilgrimage site like the Porta Sancta is crucial in enriching visitors' understanding of environmental values. In religious tourism, authenticity refers to pilgrims' perceptions of how genuine a sacred site's cultural, historical, and spiritual essence truly is [1]. This notion encompasses two key dimensions: objective authenticity, which pertains to tangible aspects such as architecture, relics, and sacred symbols, and existential authenticity, which captures the inner, emotional, and spiritual experiences of the pilgrims during their journey. When pilgrims at the Porta Sancta perceive the sacred sites, rituals, and symbols as genuinely authentic, they are more inclined to delve into the historical narratives, theological significance, and ecological values that form part of the pilgrimage setting.

The positive link between authenticity and environmental knowledge can be interpreted through the VBN Theory, which suggests that authentic experiences strengthen moral and personal values, ultimately motivating individuals to care for and comprehend their environment [26]. In this light, the authenticity of the Porta Sancta pilgrimage provides a meaningful foundation for pilgrims to understand the inherent connection between spirituality and environmental stewardship. For example, visitors to authentic religious sites often encounter stories of the Church's historical commitment to preserving sacred architecture, protecting heritage landscapes, and fostering ecological awareness as part of faith-based responsibility [27].

Empirical findings in heritage and religious tourism also reinforce that authenticity is a key driver of environmental learning. Destinations embodying authentic cultural and

spiritual elements offer more immersive experiences, prompting visitors to develop new insights into the relationship between faith, culture, and the natural world [28]. Pilgrims who perceive a high level of authenticity generally show deeper reflection and cognitive engagement, resulting in enhanced environmental awareness and ecological understanding [29].

Furthermore, interpretation theory in tourism underscores that authentic environments are practical tools for environmental education. Information conveyed within genuinely sacred settings is perceived as trustworthy and spiritually meaningful, thereby improving visitors' ability to retain environmental knowledge [30]. In the Porta Sancta pilgrimage context, pilgrims may learn about the conservation of sacred architecture, community participation in maintaining holy sites, and theological reflections that connect creation, faith, and nature. These experiences expand cognitive comprehension and heighten emotional awareness, fostering a profound spiritual connection with the environment [10].

In conclusion, authenticity within the Porta Sancta pilgrimage experience is pivotal in shaping pilgrims' environmental knowledge. Engaging with an environment perceived as truly authentic deepens spiritual reflection while nurturing ecological consciousness rooted in faith. Thus, authenticity becomes a cornerstone of sustainable pilgrimage practices, where devotion to the sacred harmonizes with caring for the natural and cultural environments.

### **5.3 The positive influence of authenticity on post-visit environmental attitude**

The connection between authenticity and post-visit environmental attitudes has become an increasingly important focus in sustainable pilgrimage studies, especially in religious journeys like the Porta Sancta Pilgrimage. Authenticity, defined as the pilgrims' perception of the genuineness of spiritual experiences, sacred traditions, and the integrity of the environment, plays a central role in shaping environmental awareness and attitudes after the pilgrimage [10, 31]. When pilgrims participate in experiences perceived as truly authentic, they develop stronger emotional, spiritual, and cognitive connections with the sacred site. These connections encourage reflection, empathy, and an increased sense of moral responsibility to preserve both the spiritual and natural environments [32].

In the case of the Porta Sancta pilgrimage, authenticity is not limited to architectural heritage or sacred rituals; it also encompasses meaningful social interactions, rich historical narratives, and the preservation of a spiritual atmosphere that reflects the site's religious essence [29]. This multidimensional sense of authenticity deepens pilgrims' reverence and belonging, nurturing respect for the sacred landscape and surrounding ecological systems. When pilgrims feel emotionally and spiritually connected to an authentic environment, this attachment often translates into stronger environmental concern and pro-conservation attitudes [33].

Empirical evidence suggests that authentic experiences evoke profound emotional and cognitive engagement, embedding sustainability values within pilgrims' post-visit mindsets [34, 35]. A strong perception of authenticity raises environmental awareness and encourages proactive involvement in eco-friendly behaviors, such as participating in conservation initiatives, respecting heritage sites, and embracing sustainable living practices [36]. This finding

aligns with the VBN Theory, which posits that authentic spiritual experiences strengthen personal and moral values, thereby fostering environmental stewardship as an expression of faith and ethical responsibility [26].

Additionally, this relationship can be viewed through experiential learning theory, which asserts that direct engagement with authentic religious and environmental contexts helps individuals internalize ecological values and translate them into lasting behavioral changes [36]. In this sense, authenticity serves as both a spiritual and educational medium. Through authentic encounters at the Porta Sancta, pilgrims learn to connect divine creation with ecological preservation, cultivating a lasting commitment to environmental care beyond the pilgrimage experience.

In summary, authenticity has a profound and enduring impact on post-visit environmental attitudes within the context of religious pilgrimage. The more genuine and authentic the experience perceived by pilgrims, the stronger their inclination to engage in environmentally responsible behaviors afterwards. Therefore, for the management of the Porta Sancta pilgrimage, maintaining and communicating authenticity through the preservation of sacred rituals, heritage conservation, and environmental management is essential for enhancing spiritual fulfillment and fostering a continuous culture of ecological awareness and responsibility.

### **5.4 The positive influence of environmental knowledge on environmental concern**

Environmental knowledge refers to pilgrims' understanding of ecological principles, environmental challenges, and possible solutions, encompassing factual comprehension and a deeper awareness of how human behavior impacts the natural world [37]. In the context of pilgrimage tourism, such as the Porta Sancta Pilgrimage, this knowledge goes beyond simple cognition; it represents an appreciation of how faith, spirituality, and moral responsibility intersect with environmental stewardship. Pilgrims who are well-informed about the ecological implications of their religious practices tend to reflect more deeply on their divine role as caretakers of God's creation, which, in turn, nurtures greater awareness and concern for environmental preservation [38].

Extensive research demonstrates that environmental knowledge strongly influences environmental concern, encompassing awareness, emotional engagement, and a commitment to safeguarding the natural and cultural environment from harm [5]. Pilgrims who comprehend the causes and consequences of ecological degradation, such as waste accumulation or habitat disruption around sacred sites, are more likely to feel a moral responsibility to act in environmentally conscious ways [11]. In this sense, environmental knowledge becomes both a cognitive and spiritual foundation that stimulates moral reflection and empathy toward environmental challenges encountered during pilgrimage.

Drawing from the VBN Theory, environmental knowledge cultivates an ecological worldview that enhances environmental concern. A pilgrim who understands the sacred connection between divine creation and ecological harmony is more likely to internalize pro-environmental beliefs and behaviors as an expression of faith [26]. For instance, when pilgrims realize that keeping the Porta Sancta area clean honors the sanctity of worship and sustains the surrounding ecosystem, their environmental awareness naturally deepens.

Empirical evidence further supports that individuals with higher levels of environmental knowledge, such as students or travelers, tend to express stronger environmental concern than those with lower awareness [39].

Findings from environmental education and sustainable tourism studies also reveal that knowledge enhances cognitive understanding and emotional engagement, particularly empathy and affective concern for nature [40]. In religious or pilgrimage tourism, learning about the environmental sustainability of sacred sites encourages pilgrims to adopt respectful behaviors that preserve the sanctity and longevity of these spaces [33]. Thus, environmental knowledge has a direct and positive effect on environmental concern, as demonstrated in prior empirical studies [41, 42].

In conclusion, environmental knowledge is fundamental in nurturing environmental concern among pilgrims. Within the Porta Sancta pilgrimage experience, visitors who understand the ecological consequences of their actions, such as managing waste responsibly, conserving water, or respecting sacred landscapes, are more inclined to develop genuine environmental awareness and moral responsibility. This synthesis of knowledge, faith, and ethical consciousness highlights the spiritual dimension of ecological care inherent in pilgrimage experiences.

### **5.5 The positive effect of environmental concern on post-visit environmental attitude**

Environmental concern refers to an individual's emotional sensitivity and sense of moral responsibility toward environmental problems and the harmful effects of human actions on the ecological balance [7]. It encompasses an intellectual understanding of environmental issues and an emotional and ethical commitment to safeguarding nature as part of one's moral and spiritual duty. Within religious tourism, particularly in the Porta Sancta Pilgrimage, this concern is expressed through pilgrims' attentiveness to maintaining the purity and cleanliness of sacred spaces, viewing such actions as a form of reverence for divine creation. When this awareness becomes internalized during the pilgrimage, it often endures beyond the visit, shaping a more positive and sustained post-visit environmental attitude [12].

In spiritually inspired journeys like the Porta Sancta pilgrimage, pilgrims demonstrating great environmental concern are more inclined to develop favorable attitudes toward environmental preservation after their visit. Participation in sacred rituals, contemplation of historical and natural surroundings, and interactions with local faith communities foster a profound recognition of the interdependence between spirituality and the environment. This aligns with the VBN Theory [38], which suggests that when moral and spiritual values are strengthened through authentic experiences, they encourage pro-environmental attitudes and behaviors as extensions of personal and religious responsibility [43].

Empirical studies in ecotourism and religious tourism contexts consistently show that individuals with strong environmental concerns are more likely to experience enduring positive shifts in their environmental orientation after travel. These changes often manifest as increased participation in environmental initiatives, more substantial support for conservation efforts, and adoption of sustainable practices that align with one's moral and spiritual values [6,

44]. Hence, environmental concern operates not merely as a reflection of awareness but as a motivational force that reinforces ecological commitment even after the pilgrimage has ended.

From a psychosocial perspective, environmental concern is a catalyst that integrates emotional engagement with reflective learning, shaping pilgrims' post-visit attitudes in meaningful ways. Pilgrims who express genuine care for the environment tend to interpret their pilgrimage experience through the lens of stewardship and gratitude for creation, deepening their sense of ecological responsibility and enhancing their environmental attitudes after returning home [45]. This transformation underscores how religious experiences can inspire long-term behavioral change when interwoven with environmental awareness.

In conclusion, higher levels of environmental concern among Porta Sancta pilgrims play a crucial role in fostering positive post-visit environmental attitudes. This finding highlights the importance of embedding environmental reflection and education within pilgrimage activities. By nurturing environmental concern as an integral element of spiritual practice, pilgrimage destinations can inspire visitors to strengthen their faith and uphold environmental stewardship as a genuine expression of devotion to God and His creation.

### **5.6 The positive effect of the memorable Porta Sancta pilgrimage experience on post-visit environmental attitude**

The positive association between memorable pilgrimage experiences and post-visit environmental attitudes underscores how profound religious encounters can nurture greater environmental awareness and care. Memorable experiences are described as unique, emotionally rich, and spiritually meaningful moments that create lasting impressions on visitors [46]. Within the Porta Sancta pilgrimage, when pilgrims engage in deep spiritual reflection, experience emotional resonance, and interact authentically with sacred spaces, these moments transcend mere recollection; they become internalized as part of one's moral framework and environmental consciousness.

Such meaningful pilgrimage experiences extend beyond individual fulfillment; they often shape pilgrims' long-term attitudes and behaviors, particularly concerning environmental stewardship. Emotional memories formed during sacred journeys are enduring anchors that connect faith-based experiences with sustainable behavior [47]. For example, pilgrims who feel a strong connection to the holiness and purity of the Porta Sancta environment tend to develop a sustained appreciation for the need to preserve both the spiritual and natural aspects of the site. This connection strengthens post-visit attitudes that view ecological conservation as an expression of faith and gratitude for divine creation [48].

Moreover, memorable experiences that engage emotional and cognitive dimensions, such as moments of reflection on humanity's role in nature or participation in environmentally responsible pilgrimage activities, further enhance pro-environmental attitudes after the journey. When pilgrims experience a sense of harmony between spirituality and the natural world, their emotional attachment to the sacred destination deepens, fostering a more substantial commitment to preserving its sanctity and ecological balance [21, 33].

In essence, the positive influence of memorable pilgrimage experiences on post-visit environmental attitudes can be

understood as the result of emotional-spiritual memory formation, internalization of moral and ecological values, and strengthened spiritual attachment to the pilgrimage site. For pilgrimage organizers and destination managers, this finding emphasizes the importance of crafting experiences that are spiritually fulfilling and environmentally conscious. Encouraging reflection on the sacredness of nature, promoting responsible environmental practices, and involving pilgrims in conservation initiatives can transform spiritual encounters into long-lasting commitments to environmental preservation.

## 6. CONCLUSION AND RECOMMENDATION

The results of the path coefficient analysis indicate that all variables tested in this study have positive and significant effects in shaping post-visit environmental attitudes. The analysis reveals that authenticity has a strong influence on both environmental knowledge ( $\beta = 0.782$ ,  $p < 0.000$ ) and memorable experiences ( $\beta = 0.658$ ,  $p < 0.000$ ), while also directly and significantly affecting post-visit environmental attitude ( $\beta = 0.205$ ,  $p < 0.000$ ). Furthermore, environmental concern shows a positive relationship with post-visit environmental attitude ( $\beta = 0.278$ ,  $p = 0.001$ ), suggesting that individuals with higher levels of environmental concern after their pilgrimage tend to adopt more positive pro-environmental attitudes.

The findings also demonstrate that environmental knowledge significantly contributes to the development of environmental concern ( $\beta = 0.813$ ,  $p < 0.000$ ), underscoring the importance of knowledge as a cognitive and moral basis for cultivating ecological awareness. In addition, memorable experiences strongly and significantly positively affect post-visit environmental attitudes ( $\beta = 0.533$ ,  $p < 0.000$ ), showing that emotionally rich and spiritually meaningful tourism experiences can encourage visitors to uphold sustainable values even after returning home.

These findings highlight the interconnected dimensions of the pilgrimage experience: authenticity, memorable engagement, environmental knowledge, and concern that collectively foster visitors' dedication to pro-environmental principles. Genuine and transformative religious experiences enhance spiritual fulfilment and promote lasting ecological consciousness and responsible environmental behavior after the visit.

### 6.1 Suggestions for future research

Future research on post-visit environmental attitudes could be further enriched through several key directions. To begin with, researchers could broaden the current model by adding variables such as Perceived Value, Place Attachment, and Satisfaction, which may uncover indirect influences on post-visit environmental attitudes. Since this study employed a cross-sectional design that captures responses simultaneously, future research could utilize a longitudinal approach to observe how tourists' environmental attitudes develop and change over time. Moreover, adopting qualitative or mixed-method methodologies, such as conducting in-depth interviews, would enable a deeper exploration of the psychological and emotional dimensions that shape visitors' environmental awareness after their trips.

Future studies should also analyses tourist groups based on demographic characteristics like age, education, or travel

experience to understand how different segments respond to pilgrimage journeys. Finally, to strengthen the generalizability of results, future research should extend the study scope to include diverse local, national, and international destinations. Such comparative approaches would provide richer insights into how cultural and environmental contexts influence sustainable behavior and post-visit environmental engagement among tourists.

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