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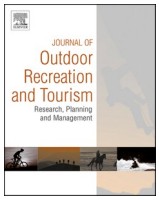

Research Article

Visitor Experience at Viera y Clavijo Botanic Garden: Satisfaction and Loyalty Antecedents

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ABSTRACT

The primary objective of this paper is to study how botanical gardens are experienced. Firstly, the study attempts to demonstrate how the senses shape visitor satisfaction and loyalty to the garden. Secondly, to gain new insights into the visitor experience, the study highlights the importance of information, emotions, social interactions, and behavioural responses. The survey was carried out through a structured questionnaire. The sample for this study included 373 respondents, contacted through non-probabilistic convenience sampling, in Botanical Garden Viera y Clavijo, in Gran Canaria. After checking the scale's validity with confirmatory factor analysis and the Alpha Cronbach test, the study performed a path analysis to test eleven hypotheses on the effect of sensory responses, emotions, information, social interaction and behavioural responses on visitor satisfaction and visitor loyalty as well as the direct relationship between visitor satisfaction and loyalty. The findings provide convincing evidence that satisfaction and loyalty show fundamentally different precursors. While the former relates to behavioural responses, social interactions and low-involvement senses such as hearing, the latter is formed by high-involvement senses such as smell and touch. However, both variables show the same emotional background, and neither is rooted in the information provided about the garden. Therefore, given the practical implications, the study suggests that botanical garden managers enrich peripheral routes of persuasion by emphasising emotional interventions over cognitive strategies.

Management implications:

- Gardens should offer visitors opportunities for free exploration along diverse trails with a variety of flora and fauna, which would encourage a positive attitude in visitors.
- Garden managers should design environments that evoke emotions such as tranquillity, charm and love so that visitors have positive experiences on a deeper level.
- Recognise the importance of social interactions with botanic garden staff, visitors and companies to further enrich the visitor's visit.
- Garden managers must prioritise the sensory experience in the gardens. Visitor satisfaction is highly dependent on sensory factors, especially hearing. Ensure environments are calm, natural and noise-free to optimise satisfaction levels.

1. Introduction

Garden tourism has grown in popularity, particularly since the 20th and 21st centuries, marked by the creation of the National Garden Scheme in England in 1927 (Paiva, Sousa, & Carcaud, 2020). In today's lifestyles, green spaces such as parks, botanical gardens and historic landscapes are increasingly appreciated, offering a much-needed respite from the urban hustle and rush. Benfield (2013) stresses that the motivation for visiting gardens lies in the diverse experiences they bring, whether visiting private gardens, historic gardens, botanic gardens or urban gardens, all offer opportunities for a deep connection with nature. In addition, gardens may feel genuinely natural, even though they are artificially made and, hence, artificial by definition. Trees, plants, and flowers, along with birds, insects and lizards, even though were always

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present, often go unnoticed until explored by people in a garden. Beyond its visual appeal, garden tourism fosters a deep connection with nature, making it a highly valued aspect of leisure travel. In other words, a garden represents a structured natural space with the potential to put people in touch with their senses. For this reason, satisfaction with gardens may take much work to reach. However, this satisfaction evidently may be influenced by the experience of the surroundings because gardens are undeniably material and significantly sensorial.

Botanic gardens are crucial in preserving living plant collections for scientific research, conservation and education (Funsten et al., 2022). Furthermore, Funsten, Borsellino, and Schimmenti (2020) and Crilley (2008) showed that there is no doubt that botanic gardens are always educational and they function as teaching centres for sustainability (Tampoukou, Papafotiou, Koutsouris, & Paraskevopoulou, 2015; Zelenika, Moreau, Lane, & Zhao, 2018). Although one cannot generalise about various gardens, they always provide their visitors with information. These gardens, repositories of natural and cultural heritage, are often accessible to the public or have affordable entrance fees to contribute to their maintenance (Habumuremyi & Habimana, 2023). In a botanic garden, many thoughts are possible and originated. People are transported to themselves if they feel good and, in turn, render particular thoughts possible that might be inconceivable in habitual settings. Satisfaction may be intelligible if a thought or idea refers to the garden space and its elements, such as flowers and trees. Besides, gardens encourage contemplation and meditation, as well as thoughtful reflection. A visit to a botanical garden offers a journey of exploration, reflection and relaxation (Helen & Praise, 2020). Besides, gardens are a social integration space where playing, working and conversing play a role (Hondagneu-Sotelo, 2010). Likewise, urban parks make people emotionally engaged because they function as social support spaces (Mullenbach, Baker, Benfield, Hickerson, & Mowen, 2019).

Moreover, botanic gardens are also important for human well-being (Funsten et al., 2022). Gardens are often likened to ideal dreams; they are achievable but challenging ideals. Gardens serve as organised spaces to contemplate dense ecosystems that bring smells and views into delimited areas where consistency emerges. Colour patterns are associated with specific surroundings and destinations whose congruency determines satisfaction. For example, green relates to the trees, plants and grass of the garden and multiple, vibrant colours to flowers and this coherence is preferred in natural settings (Lee, 2020). This consistency is satisfactory as it overcomes the disconnection between the senses and people's lives. Deep inside the garden, visitors find themselves surrounded by their senses and experience qualities (Yilmaz, Vural, & Yilmaz, 2023).

Despite botanic gardens having unique features compared to other attractions, the predominant literature on leisure and tourism has overlooked the study of botanic gardens (Crilley, 2008). Instead, there should be as much research into garden visits as there is with other attractions, such as museums or national parks (Carvache-Franco, Carrascosa-López, & Carvache-Franco, 2022; Connell, 2004; Fuentes-Moraleda, Lafuente-Ibañez, Fernandez Alvarez, & Villace-Molinero, 2022). Thus, the perception of quality in botanic gardens is still an unexplored area (Crilley, 2008). Moreover, to manage gardens and evaluate them successfully, it is necessary to develop and estimate visitor experience models, something that has not been done so far (Connell & Meyer, 2004; Duarte de Oliveira, de Brito, & Carcaud, 2020). In addition, the study of a garden should apply the tested attraction models (Connell, 2004). This underscores the significance of researching botanic gardens, quality perception, and visitor experience.

Also, there has emerged a relevant interest in tourists visiting botanic gardens, there needs to be more study on the botanic garden visitor experience so it can develop tourism and marketing strategies that align with visitors' preferences and wishes (Catahan & Woodruffe-Burton, 2019; Duarte de Oliveira et al., 2020; Shapoval, Rivera, & Croes, 2021). There are few published research on this topic, and more is needed to know how satisfaction influences loyalty to gardens. More study effort is needed to understand the knowledge, attitudes and behaviours exhibited by visitors to botanic gardens, to provide valuable insights and information for garden managers and tourism experts (Ballantyne, Packer, & Hughes, 2008; Quintal, Lwin, Phau, & Lee, 2018; Funsten et al., 2020). Consequently, there is a lack of robust models regarding satisfaction with gardens (Crilley, Hills, Cairncross, & Moskwa, 2010). Besides, further research into how satisfaction influences future behaviour intentions is needed (Shapoval, Riivera & Croes, 2021). Specifically, it would like, how nature-based experiences determine loyalty is under-researched (Mirzaalian & Halpenny, 2021; Weiler & Chen, 2016).

This paper is about the 'botanic garden visitor experience' and attempts to understand how it forms satisfaction and loyalty. This study aims to investigate how important the senses are in shaping botanic garden visitor satisfaction and loyalty. Specifically, the study intends to examine whether information, emotions, social interactions, and behavioural responses play a role in producing satisfaction and loyalty to the garden. The structure of the paper is divided into four sections. First, the literature on garden experience is reviewed to support and put forward hypotheses. Second, the methodology based on a survey is outlined. Third, the results are analysed to contrast the hypotheses. Fourth, some conclusions are drawn, highlighting the theoretical contributions, practical implications, limitations, and future lines of research.

2. Literature review

According to Crilley (2008), satisfaction with a garden comes when the aesthetics are as sensorial as calm and sane. Ballantyne, Packer, and Hughes (2009) showed that satisfaction is produced as the natural environment stimulates the senses. Additionally, Lu, Chi, and Liu (2015) demonstrated that perceived authenticity stems from the sensory information tourists search for the most because experience determines satisfaction (Shapoval et al., 2021). For example, tangible elements such as walking paths and signposts determine satisfaction (Shapoval et al., 2021). Likewise, Karanikola, Panagopoulos, and Tampakis (2017) showed that if distance mobility is suitable, it generates satisfaction. Moreover, the visual appearance of a garden's infrastructure determines satisfaction; light is valuable because it enables visitors to enjoy a reality, unseen in their everyday environments, so this may be a contribution to a unique experience of the garden. Studies by Vad Andersen, Bruun, and Hyldig (2019) highlight that taste should be recognised as flavour, this sense integrates the perception of aroma and taste. So, the botanic garden's ambient scent embodies visitors' experiences, for instance, if one smells flowers (Błaszak, Rybska, Tsivitanidou, & Constantinou, 2019; Dörtyol, 2020). On this basis, the following hypotheses are put forward.

H1. Sensory responses determine garden visitor satisfaction:

H1.1. Touch determines garden visitors' satisfaction.

H11.2. Smell determines garden visitors' satisfaction.

H1.3. Taste determines garden visitors' satisfaction.

H1.4. Sight determines garden visitors' satisfaction.

H1.5. Hearing determines garden visitors' satisfaction.

Satisfaction in a garden is intricately related to the learning opportunities it offers, alongside the provision of relevant information and appropriate quality labels satisfaction (Crilley, 2008). According to Ballantyne et al. (2009), tourists visiting natural settings express gratitude when they receive information about conservation and sustainability, aligning with their desire for environmental learning and education. Likewise, He and Chen (2012) showed that educational value inherent in botanic gardens, as they serve as repositories of information, facilitators of knowledge-sharing, and conduits for wisdom that

ultimately to visitor satisfaction. Likewise, He and Chen (2012) showed that botanic gardens encompass an educational value insofar as they provide information, share knowledge and impart the wisdom that leads to satisfaction. Moreover, botanic gardens consistently prioritise and are oriented toward disseminating knowledge, offering helpful information, such as how to visit and not get lost, and end knowledge, such as the science of plants and trees, including their origins, names and historical significance. Byun and Jang (2015) reveal that paid-up members of botanic gardens exhibit a heightened sensitivity compared to non-members towards cognitive content related to environmental education, research and sustainability-focused activities.

Undoubtedly, botanic gardens serve as open platforms for environmental conservation, education and historical interpretation, as shown by Wassenberg, Goldenberg, and Soule (2015). Karanikola et al. (2017) demonstrated that dissatisfaction arises when urban park visitors are provided with insufficient or unsuitable information. Nonetheless, it is essential to note that while various gardens may differ in their specifics, they always provide their visitors with information experiences. Visitors' satisfaction levels soar since botanic gardens encourage them to attend environmental education programmes that entail learning opportunities, even when it is not expected. Cruz-Cárdenas and Oleas (2018) showed that awareness of the native plants' properties contributes to satisfaction, with plants' labels enticing gratification, as evidenced by Niemiera, Innis-Smith, and Leda (1993). Additionally, Lee, Phau, and Quintal (2018) demonstrated that botanic gardens show cultural, historical and scientific attributes whose maximisation results in satisfaction. On this basis, the following hypothesis is put forward.

H2. Information determines garden visitors' satisfaction.

However, Crilley et al. (2010) showed that while the most relevant ingredient of garden satisfaction is emotion, the less critical element is information. Specifically, safety and tranquillity are the greatest determining factors for shaping garden satisfaction (Crilley et al., 2010). Nonetheless, emotions are crucial in different forms when the garden is botanical. So, botanic gardens imply quality of life, fun and enjoyment (Wassenberg et al., 2015). Moreover, Byun and Jang (2015) suggest that botanic garden non-members are more sensitive than paid-up members to emotional promotions. Additionally, Cruz-Cárdenas and Oleas (2018) demonstrated that satisfaction is a psychological variable whose nature comes from emotion and combines sensations and perceived benefits (Crilley, 2008). Experiencing something is not utterly different from feeling something new; if these emotions are pleasant, satisfaction results. After analysing user-generated content, it is evident that tourist experience and emotions are related, to determining satisfaction (Liu, Huang, Bao, & Chen, 2019). On this basis, the seventh hypothesis is put forward as follows.

H3. Emotion determines garden visitors' satisfaction.

Niemiera et al. (1993) demonstrated the pivotal role of botanic garden assistance sales workers in ensuring visitor satisfaction, emphasising the crucial importance of their attitudes. Consequently, visiting gardens often takes on a social dimension, constituting an interpersonal experience that involves not only the workers but also friends, family and stakeholders (Connell, 2004). This social context is shaped by the empathy of the staff and their interactions with other visitors (Connell & Meyer, 2004). Utama (2007) highlights the social benefits generated by gardens, underlining how deficiencies in management stem from human capital shortcomings which have public implications (Funsten et al., 2020). For example, it is worth mentioning that Central Park in New York serves as a social space with free political speech (Taylor, 1999). Glover, Parry, and Shinew (2005) showed that creating a conservationist community among garden supporters builds strong ties, the cohesion of which leads to satisfaction.

Furthermore, interactions with garden staff are not the sole determinant of satisfaction; engaging with fellow visitors also plays a crucial role in shaping the social response of guests (Crilley et al., 2010). Consequently, satisfaction with the visit derives from perceptions of the staff as being amiable, responsive and knowledgeable (Karanikola et al., 2017). Additionally, the presence of other visitors in the garden serves as a source of satisfaction, contributing to the overall enjoyment of the experience (Karanikola et al., 2017). According to Cruz-Cárdenas and Oleas (2018), satisfaction with urban gardens is rooted in social and family connections, mainly if they are private gardens. Positive attitudes exhibited by assistant workers further enhance satisfaction with parks and gardens (Helen & Praise, 2020). Equally, activities in natural settings are often social and familiar; this social experience is in search of admiring the countryside in the company of others (Shapoval et al., 2021). Therefore, satisfaction is intrinsically linked to social events and experiences (Izenstark & Middaugh, 2022). On the basis of the integration senses, knowledge, feelings, and social interactions in shaping satisfaction, the study proposes the following hypothesis.

H4. Social interaction determines garden visitors' satisfaction.

Connell and Meyer (2004) illustrated that visiting a garden is a behavioural response since one can choose between walking or sitting down, attending events or doing other activities such as sports, talking, contemplating, etc. To put it simply, satisfaction with botanic gardens is influenced by factors like infrastructure, accessibility and the variety of flora (Utama, 2007). Additionally, Crilley (2008) highlighted that the variety of plants contributes significantly to satisfaction with park visits since visiting natural settings determines life satisfaction (Chang et al., 2020).

Accessibility plays a crucial role in shaping behavioural responses in gardens (Crilley et al., 2010). Consequently, the development of services in gardens hinges on understanding the behavioural responses of visitors (Crilley et al., 2010). Therefore, gaining insight into satisfaction requires an understanding of the behavioural responses developed in botanic gardens (Moskwa & Crilley, 2012). Arowosafe and Ajayi (2018) showed that leisure variety is a determinant of satisfaction since visiting gardens contributes to human wellness because the action is pleasant (Connell, 2004). Thus, the pursuit and attainment of satisfaction are intertwined with engaging in various activities within garden settings (Izenstark & Middaugh, 2022). Hence, the study puts forward the following hypothesis.

H5. Behavioural responses determine garden visitors' satisfaction.

There is a discernible link between visitor loyalty to gardens and the stimulation of their five senses. For example, He and Chen (2012) showed that gardens attract visitors to their beautiful landscapes. Touch, smell, sight, taste and hearing engender loyalty because they refer to physical elements such as flowers, plants, trees and other vivid dimensions that potentially assure devotion to nature and authenticity (Duarte de Oliveira et al., 2020). Moreover, Duarte de Oliveira et al. (2020) demonstrated that the smell and texture of plants and flowers and the sound of autochthonous birds' songs are tangible too when they are perceived with allegiance. This suggests a connection between sensory responses and good perceptions of nature, which may influence visitors' revisits to the garden, as well as their recommendations. According to Lee (2020), gardens' visual impressions are loosely based on colour memories that remind one to stay rooted in fidelity. The garden's visual impressions are driven by 'imagescape', alluding to nature as an alluring object (Shapoval et al., 2021). Authors of Environmental Psychology studies claim that visitors to gardens are attracted to flowers (Yilmaz et al., 2023). Furthermore, Din, Russo, and Liversedge (2023) demonstrated that based on the colour theory, visitors will be more attracted to natural colours such as green, so a garden where visually this colour is predominant may be more attractive than others without it.

Specifically, Connell and Meyer (2004) revealed that the garden visiting experience is inherently physical because distance and weather matter, so the revisit is more likely if the former is shorter, and the latter is more clement. According to Ballantyne et al. (2009) as the natural

environment stimulates the senses, satisfaction is produced and, consequently, loyalty. According to Barnes, Mattsson, and Sørensen (2014) the intention to return and the recommendation as responses to satisfaction, likened to loyalty. Which is a deep intrinsic conviction rather than a behavioural response. A destination can often be repeated many times and still be a routine without implication, known as attitudinal loyalty (Kumar, Govindarajo, & Khen, 2020). Hence, the intention to revisit is influenced and associated loyalty (Lee & Xue, 2020). Therefore, Shapoval et al. (2021) showed that experience determines loyalty because if the experience is of quality, visit frequency is more likely (Shapoval et al., 2021). On this basis, the following hypotheses are put forward.

H6. Sensory responses determine garden visitor loyalty:

H6.1. Touch determines garden visitors' loyalty.

H16.2. Smell determines garden visitors' loyalty.

H6.3. Taste determines garden visitors' loyalty.

H6.4. Sight determines garden visitors' loyalty.

H6.5. Hearing determines garden visitors' loyalty.

Ballantyne et al. (2008) demonstrated that botanic gardens aim to educate and provide environmental information and ecological awareness, whose loyalty configures the revisiting intention. Sustainability does not mean other responses that maintain and uphold certain desired conducts. According to Crilley et al. (2010) searching for information, showing interest in learning and paying attention to signposts are cognitive responses that turn into loyalty when the visitor is satisfied. Loyalty calls to mind a memorable thought whose intelligible link is easily pinned down when visitors claim the place is worth visiting. Although botanic gardens provide educational and recreational services, they are more educational and research-based than recreational (Byun & Jang, 2015; Moskwa & Crilley, 2012). Finally, Connell (2004) showed that gardens help in reflection and contemplation and when they are botanical, show cultural, historical and scientific attributes whose maximisation creates satisfaction and, in turn, loyalty (Lee et al., 2018). On this basis, the following hypothesis is put forward.

H7. Information determines garden visitors' loyalty.

Sensory and emotional responses are hard to distinguish regarding garden experience (Connell, 2004). Visiting gardens is a pleasant experience and, in turn, this tangible pleasure creates loyalty. According to Connell and Meyer (2004), Gardens are distressing insofar as they generate pleasure, admiration and enjoyment stemming from their natural properties. Besides, Collins-Kreiner and Gatrell (2006) showed that visiting gardens produces spiritual emotions and its transcendent response is revisiting and recommending. According to Crilley et al. (2010) tranquillity, safety and pleasantness are the predominant emotional responses in gardens, the sustainable response of which is intention to return. Fun and relaxation are the primary motives when visiting gardens (Helen & Praise, 2020). Furthermore, there are three reasons why loyalty in the garden is derived from the senses. First, Filep and Pearce (2013) demonstrated that the tourism experience comes with happiness, good humour, self-realisation and recovery and visiting gardens fall into leisure. Second, Han (2018) showed that nature exposure brings restauration. Third, this enjoyment, relaxation and escapism favour revisiting (Shapoval et al., 2021). Moreover, Funsten et al. (2020) showed that gardens create positive emotions. On this basis, the following hypothesis is put forward.

H8. Emotion determines garden visitors' loyalty.

There is a genuine satisfaction grounded in social interactions. It seems more natural when it takes place in gardens in the company of relatives, friends and other visitors, along with the staff. Loyalty comes from this natural gratification. Besides, loyalty is a habit or 'personal tradition' when tourists go to visit a destination's parks and gardens. Furthermore, there is a direct connection between those activities developed at the origin and at the destination in that there is an implicit loyalty whose force is inertial (Brey & Lehto, 2007). Finally, loyalty comes from others when one supports sustainability and pays careful attention to environmental problems, sharing their concerns with others. On this basis, we put forward the following hypothesis.

H9. Social interaction determines garden visitors' loyalty.

Crilley et al. (2010) shed light on the multifaceted nature of loyalty, emphasising that being loyal is more than just 'revisiting' — loyalty is truly expressed when 'recommending'. Loyalty, while an internal commitment, its gratified substance is behavioural. Paid-up membership, for instance, reflects a tangible loyalty response, often marked by increased participation in various activities (Byun & Jang, 2015). It's one thing to know the path and another to actively tread it. Gardens are spaces where visitors do sport, take courses, study and research, contemplate nature, develop free speech and enjoy outdoor leisure activities. Satisfaction becomes deeply intertwined with these activities and loyalty emerges as its natural expression. According to Shapoval et al. (2021), there exists a distinction between revisiting and recommending differences in terms of how they express loyalty. On this basis, the following hypothesis is put forward.

H10. Behavioural responses determine garden visitors' loyalty.

Crilley (2008) underscores the crucial role of satisfaction in the context of botanic gardens, one must state that it drives loyalty as it determines revisiting intentions and triggers positive 'word-of-mouth' (Shapoval et al., 2021). Indeed, the quality of service and satisfaction serve as primary determinants of individuals' desire to recommend and revisit the garden (Crilley et al., 2010). In the realm of destination branding, satisfaction precedes loyalty and is manifested through 'revisiting intentions' and glowing recommendations (Barnes et al., 2014). According to Lee, Lee, Choi, Yoon, and Hart (2014), loyalty is indebted to satisfaction, with destination satisfaction serving as the bedrock of loyalty to rural destinations (Phillips, Wolfe, Hodur, & Leistritz, 2013). The destination image, in turn, determines destination loyalty through satisfaction (Dias Lopes Figo, 2019). Studies have demonstrated that a well-structured experience and good quality service give rise to a profound experience with a perceived high value, whose direction is loyalty (Ellis, Lacanienta, Freeman, & Hill, 2019). Kumar et al. (2020) showed that visitors to bird parks exhibit loyalty, driven by the often satisfactory quality of service and experience. However, there is a glaring difference between revisiting intentions and good word-of-mouth as satisfaction determines the former more than the latter (Shapoval et al., 2021). On this basis, the following hypothesis is put forward.

H11. Visitors' satisfaction determine garden visitors' loyalty.

3. Materials and methods

The study took place in Gran Canaria, exactly in the Viera y Clavijo Botanic Garden, also known as Jardín Canario. Located in the northeast of the island. The botanist E. Ragnor Sventenius (1910–1973) followed the work that the Canary historian, biologist, and priest J. Viera y Clavijo (1731–1813) had begun two centuries earlier: the establishment of a garden that would bring together all the flora of the Canary Islands in a single place (Gobierno de Canarias, 2023). In 1952, the botanic garden was inaugurated to preserve and protect the endemic flora of the Canary Islands (Gobierno de Canarias, 2023). Tourists can admire a variety of exotic and indigenous plants in an area of 27ha such as pines, the Drago tree (*dracaena draco)* and more than 2000 specimens of cactus and palm trees, as shown in Fig. 1a and b (Gobierno de Canarias, 2023). The climate is very pleasant, with average temperatures ranging between 20 and 25 °C (68 and 77 °F) throughout the year.

Fig. 1a and b. Viera y Clavijo Botanic Garden and the study area, obtained from the tourism website (holaislascanarias.com).

The study gathers information about garden visiting experience (Table 1). The survey took place between February and March because it is a high season. Also, the survey was performed by seventeen students from the market research course belonging to the tourism degree. They were organised into three teams to cover the opening hours for one week and followed a strict programme of instructions, supervised by this manuscript's authors. 380 visitors were approached in the garden and a total of 373 visitors fully answered the survey. A size considered suitable to ensure a representative sample of visitors to the Viera y Clavijo Botanic Garden. The sampling procedure was non-probabilistic by convenience and took place in the Botanical Garden. Respondents were interviewed ethically, respectfully, and voluntarily to guarantee the transparency and credibility of the study. Additionally, interviewers helped respondents by assisting and encouraging them to respond in the way that best suited them. Hence, it was possible to reach a wide variety of visitors (Table 2).

In this research, the survey instrument used was a carefully designed questionnaire, ten closed questions inspired by the literature are acknowledged but unspecific as shown in Table 3 and aimed at gathering detailed aspects of the visitor experience at the Viera y Clavijo Botanic Garden in Gran Canaria. Exactly, it aims to measure various dimensions related to satisfaction, loyalty, senses, emotions, information, and visitor behaviour.

A survey was developed to measure the items reflected in the research model (Fig. 2). Therefore, the questionnaire has the following structure (see Appendix). Question 1 refers to the five experiential responses related to cognitions (Syme, Fenton, & Coakes, 2001; Han, 2018; Dias Lopes Figo, 2019), emotions (Connell & Meyer, 2004; Crilley et al., 2010; Lee et al., 2014; Liu et al., 2019), four sensory responses (smell, touch, hearing, and sight) (Barnes et al., 2014), social interactions (Ballantyne et al., 2009; Connell, 2004; Connell & Meyer, 2004; Liu et al., 2019), and behavioural responses and activities (Conell, 2004; Brey & Lehto, 2007; Wassenberg et al., 2015; Izenstark & Middaugh, 2022). Question 2 relates to satisfaction (Arowosafe & Ajayi, 2018; Chang et al., 2020; He & Chen, 2012; Lee et al., 2014; Lee et al., 2018; Phillips et al., 2013). Question 3 seeks to determine Gran Canaria's level of destination satisfaction (Barnes, Mattson & Sørensen, 2014; Shapoyal, Rivera & Croes, 2021) and Question 4 its level of destination loyalty (Barnes, Mattson & Sørensen, 2014; Kumar et al., 2020; Lee & Xue, 2020). In addition, there are four questions about socio-demographics, regarding education, nationality, accommodation type and category. The final questions are dedicated to gathering situational information about the survey taker's name and survey time. Table 03 shows a brief overview of what is analysed according to each question.

Table 1
Technical sheet of the research.

Methodological procedure	Survey
Population	Visitors, both tourists and residents, to the Viera y Clavijo Botanic Garden
Geographical scope	Viera y Clavijo Botanic Garden, Gran Canaria, Canary Islands, Spain
Contact form	Performed by seventeen students from the market research course belonging to the tourism degree. They were organised into three teams to cover the opening hours for one week and followed a strict programme of instructions, supervised by this manuscript's author
Sample	373
Sample selection method	Non-probabilistic convenience sampling
Fieldwork date	Two rounds of surveys were organised, one in the morning and one in the afternoon, every weekday during the months of February and March 2017.

Regarding data analysis, Exploratory and Confirmatory Factor Analyses were used to extract significant results and to validate items. Therefore, a two-phase analysis was used to enable a consistent analysis to explore the relations between the different variables. In addition, the scale reliability of the model was tested by Cronbach's alpha test, which guarantees internal consistency as well as reliability for the scales used in the study. Furthermore, the study shows the possible errors and limitations that appear in the study methodology. Therefore, it contributes to the overall transparency and reliability of the results. Also, IBM SPSS Statistics (version 25) was used to analyse the results. This is a widely employed software for statistical analysis, which can efficiently analyse and interpret data, making it a valuable tool for data-based management. It is important to know if there are differences in terms of satisfaction between residents and tourists (nationals and internationals). For this purpose, an ANOVA was carried out between variable 52 (nationality) and the variables of satisfaction with the visit to the Garden (v33-v36), showing that there are no significant statistical differences between the satisfaction of the resident in Gran Canaria and the national or international tourist. The value obtained is 0.06.

4. Results

To evaluate the reliability and validity of the scales, the study performed both exploratory and confirmatory factor analyses; moreover, a Cronbach alpha test for the experience module scale. Consequently, the study extracted separated dimensions regarding cognitions, emotions, behavioural responses, and social interactions (Tables 4–7).

As seen in Table 4, the results of the exploratory factor analysis (EFA) indicate that more than 50% of the variability in the data is explained by the found subfactors. Furthermore, the model's adequacy is supported

Table 2
Sample profile.

Gender	Male	Female			
	159 (42.7%)	213 (57.3%)			
Age	**18–24**	**25–34**	**35–49**	**50–64**	**>65**
	64 (17.2%)	72 (19.4%)	105 (28.2%)	100 (26.9%)	31 (8.3%)
Education	**Without**	**Primary**	**Secondary**	**Graduate**	**Postgraduate**
	6 (1.6%)	31 (8.3%)	126 (33.9%)	160 (43%)	49 (13.2%)
Nationality	**Gran Canaria**	**Spanish**	**Foreign**		
	94 (25.3%)	42 (11.3%)	235 (3.4%)		

Table 3
A brief overview of the questionnaire.

Question	Dimensions
1	Five experiential responses related to cognitions: emotions, four sensory responses, social interactions, and behavioural responses and activities
2	Satisfaction
3	Determination of Gran Canaria's level of destination satisfaction
4	Level of destination loyalty
5	Socio-demographics regarding education
6	Socio-demographics regarding nationality
7	Socio-demographics regarding accommodation type
8	Socio-demographics regarding the accommodation category
9–10	Survey taker's name and survey time

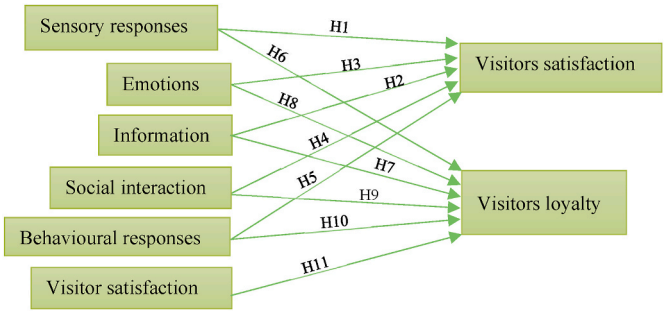


Fig. 2. Research model.

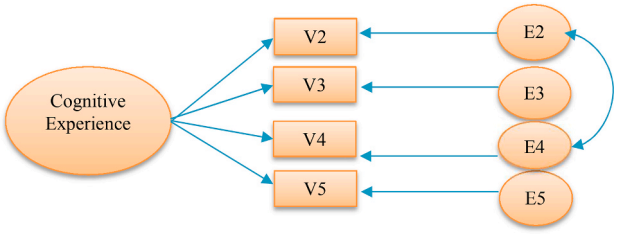
by a KMO of 0.704 and a significant Bartlett's test. On the other hand, Cronbach's alpha coefficient result (0.681) suggests a moderate consistency in the participants' responses. Thus, providing support for the reliability of the scale used to measure cognitive experience. In Confirmatory Factor Analysis (CFA), the data indicate strong concordance between the proposed model and the observed data. Also, the non-significant Chi-square ($p = 0.223$) suggests a well-fitted model. The composite reliability (0.70888609) and the variance extracted (39.83%), reinforce the model's ability to explain the variability of the responses. Therefore, the EFA and CFA both support the validity and reliability of the cognitive experience scale, emphasising the strength of the instrument used in the study.

As can be seen in Table 5, the AFE results for the second set of items indicate that a substantial part of the variance, around 70.28%, is explained by the underlying factors. The KMO result of 0.781 and Bartlett's statistically significant test, corroborate the data's adequacy for factor analysis. Furthermore, Cronbach's alpha coefficient of 0.850 of the AFE suggests internal consistency, which indicates a high degree of reliability of the scale measuring emotional experience. These findings suggest that the emotional experience scale is reliable and able to explain a significant amount of variability in responses. Overall, the EFA as well as the CFA provide strong support for the validity and reliability of the emotional experience scale, reinforcing the credibility of the instrument used in our study.

As seen in Table 6, the exploratory factor analysis (EFA) reveals that

Table 4
Exploratory Factor Analysis (EFA) & Confirmatory Factor Analysis (CFA) on the cognitive experience scale.

ITEMS	EFA	CFA				
	Comp.	Estimate	S.E.	C.R.	P	SRW
The plant's information is interesting (v2)	0.801	0.799	0.096	8.329	***	0.649
The history of Viera y Clavijo Botanic Garden is curious (v3)	0.835	1.000				0.855
Viera y Clavijo Botanic Garden signposting is appropriate (v4)	0.568	0.563	0.103	5.439	***	0.357
I would like to know more about Viera y Clavijo Botanic Garden (v5)	0.692	0.760	0.095	8.006	***	0.560



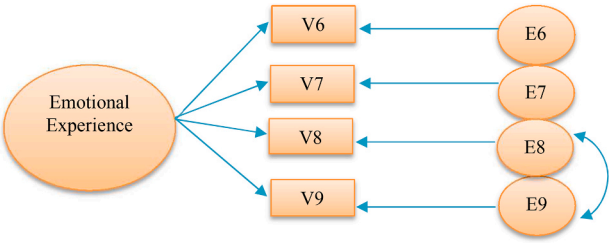
EFA
Explained Variance: 53.526%; KMO: 0.704; Bartlett: 294.480, Degree of Freedom: 6. Sig. 0.000; Crombach's alpha: 0.681
CFA
Chi-square: 1.482; Degree of Freedom: 12; *p*: 0.223; GFI: 0.998; RMSEA: 0.036; AGFI: 0.980; NFI: 0.995; RFI:0.970; IFI: 0.998; TLI: 0.990; CFI: 0.998; CMIN/DF: 1.482; PGFI: 0.100; PNFI: 0.166.
Composite Reliability: 0.70888609; Extracted Variance: 0.39829137

the factors explain a substantial proportion of the variance, approximately 72.47%. The KMO measure of 0.790 and the statistically significant Bartlett's test. Furthermore, the internal consistency of the scale measuring general garden experience, as indicated by Cronbach's alpha (0.871), demonstrates high reliability. Also, the results of the Confirmatory Factor Analysis (CFA) show a good fit of the model to the data, with a non-significant Chi-square ($p = 0.169$) and excellent fit indices on several metrics. Composite Reliability of 0.87380585 and Extracted Variance of 63.66% indicate strong reliability and variability in responses. Therefore, the results of the AFE, as well as the AFC, strongly support the validity and reliability of the scale measuring overall garden experience, underlining the credibility of the assessment instrument in our study.

As shown in Table 7, for the set of variables related to social interactions, the AFE indicates 62.77% of the variance, with a KMO value of 0.625 and a statistically significant Bartlett's test. Meanwhile, Cronbach's alpha scale (0.799) suggests very good reliability. That said, the scale model fits the studied items well as shown by the non-significant Chi-square ($p = 0.721$) as well as the fit indices. Furthermore, the Composite Reliability of 0.78204474 and the Extracted Variance of 50.79% suggest positive reliability and variability in the responses.

Table 5
Exploratory Factor Analysis (EFA) & Confirmatory Factor Analysis (CFA) on the emotional experience scale.

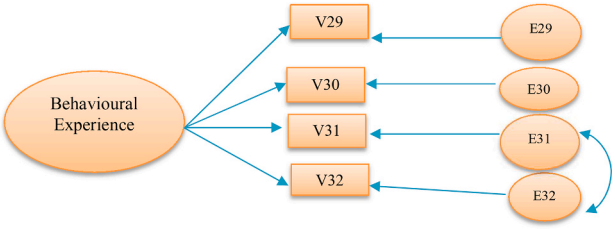
ITEMS	EFA	CFA				
	Comp.	Estimate	S.E.	C.R.	P	SRW
Viera y Clavijo Botanic Garden has been interesting (v6)	0.829	0.740	0.046	16.190	***	0.787
How much I like Viera y Clavijo Botanic Garden (v7)	0.890	1.000				0.934
Viera y Clavijo Botanic Garden has been a surprise (v8)	0.816	0.803	0.061	13.148	***	0.656
I might fall in love with Viera y Clavijo Botanic Garden (v9)	0.816	0.898	0.068	13.284	***	0.661



EFA
Explained Variance: 70.280%; KMO: 0.781; Bartlett: 702.943, Degree of Freedom: 6, Sig. 0.000; Crombach's alpha: 0.850
CFA
Chi-square: 0.367; Degree of Freedom: 1; *p*: 0.544; GFI: 1.000; RMSEA: 0.000; AGFI: 0.995; NFI: 0.999; RFI:0.997; IFI: 1.001; TLI: 1.005; CFI: 1.000; CMIN/DF: 0.367; PGFI: 0.100; PNFI: 0.167.
Composite Reliability: 0.8490402; Extracted Variance: 0.58974815

Table 6
Exploratory Factor Analysis (EFA) & Confirmatory Factor Analysis (CFA) on the behavioural experience scale.

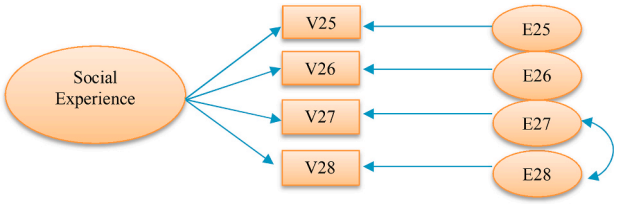
ITEMS	EFA	CFA				
	Comp.	Estimate	S.E.	C.R.	P	SRW
There is a wide variety of plants (v29)	0.856	0.865	0.046	18.932	***	0.837
There is a wide variety of trees (v30)	0.896	1.000				0.919
It has been an amazing and interesting experience (v31)	0.865	0.810	0.049	16.426	***	0.745
I have felt free and comfortable doing what I was wishing (v32)	0.784	0.712	0.056	12.747	***	0.619



EFA
Explained Variance: 72.471%; KMO: 0.790; Bartlett: 791.419, Degree of Freedom: 6, Sig. 0.000; Crombach's alpha: 0.871
CFA
Chi-square: 1.889; Degree of Freedom: 1; *p*: 0.169; GFI: 0.997; RMSEA: 0.045; AGFI: 0.975; NFI: 0.998; RFI:0.986; IFI: 0.999; TLI: 0.993; CFI: 0.999; CMIN/DF: 1.889; PGFI: 0.100; PNFI: 0.166
Composite Reliability: 0.87380585; Extracted Variance: 0.63656387

Table 7
Exploratory Factor Analysis (EFA) & Confirmatory Factor Analysis (CFA) on the social experience scale.

ITEMS	EFA	CFA				
	Comp.	Estimate	S.E.	C.R.	P	SRW
I have shared this experience with somebody else (v25)	0.846	1.000				0.941
I have a good company (v26)	0.836	0.914	0.062	14.773	***	0.897
People at the park look pleasant (v27)	0.777	0.357	0.040	8.883	***	0.463
I think I'll tell my family, relatives, friends or acquaintances about this experience (v28)	0.702	0.287	0.043	6.737	***	0.357



EFA
Explained Variance: 62.771%; KMO: 0.625; Bartlett: 747.921, Degree of Freedom: 6, Sig. 0.000; Crombach's alpha: 0.799
CFA
Chi-square: 0.127; Degree of Freedom: 1; *p*: 0.721; GFI: 1.000; RMSEA: 0.000; AGFI: 0.998; NFI: 1.000; RFI:0.999; IFI: 1.001; TLI: 1.007; CFI: 1.000; CMIN/DF: 0.127; PGFI: 0.100; PNFI: 0.167
Composite Reliability: 0.78204474; Extracted Variance: 0.50786172

Furthermore, four dimensions were extracted regarding hearing, listening, smell and touch responses within the same factor analyses (Table 8). So, for the items related to sensory experiences, the EFA indicates that 84.62% of the variance is explained, with a high internal consistency demonstrated by Cronbach's alpha: 0.796. Furthermore, the Kaiser-Meyer-Olkin measure (0.705) and Bartlett's test (significant at $p < 0.001$) confirm the suitability of the data for factor analysis. Likewise, confirmatory factor analysis reinforces the validity of the sensory experience scale with a non-significant Chi-square ($p = 0.510$). The Composite Reliability of 0.94882017 and the Extracted Variance of 70.07% indicate reliability and variability. So, the AFE and AFC results confirm the validity and reliability of the sensory experience scale.

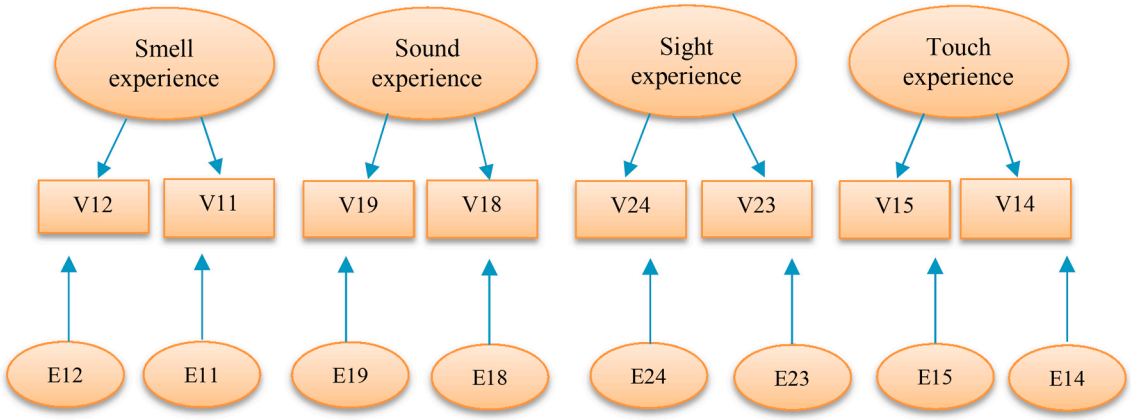
Additionally, one dimension for destination loyalty (Table 9) and another for destination satisfaction (Table 10) were identified after applying the same statistical tests.

As shown below (Table 9), for the items related to overall satisfaction and intention to return, both the EFA and the CFA demonstrate the strength of the scale. Within the AFE, a strong internal consistency is shown with a Cronbach's alpha of 0.804. Furthermore, the KMO measure (0.807) and Bartlett's test (significant at $p < 0.001$) affirm the suitability of the data for the factor analysis. Whereas the CFA supports the validity of the satisfaction and return intention model. The Chi-square shows a non-significant relationship ($p = 0.380$), Composite Reliability of 0.89334799 and Extracted Variance of 68.47% indicating a substantial reliability and variability in the responses. To conclude, findings from AFE and AFC validate the satisfaction and intention to return to the scale, confirming the reliability and validity of the scale in capturing positive experiences.

On the other hand, in Table 10, for the items related to the recommendation of the Canary Island Garden and its impact as a tourist attraction, both the AFE and the AFC demonstrate the reliability and validity of the scale. In the AFE, the variance score is 84.70% and the scale demonstrates high internal consistency with a Cronbach's alpha of 0.830. On the other hand, the KMO measure (0.835) and Bartlett's test

Table 8
Exploratory Factor Analysis (EFA) & Confirmatory Factor Analysis (CFA) on the sensorial experience scale.

ITEMS	EFA				CFA				
	F1	F2	F3	F4	Estimate	S.E.	C.R.	P	SRW
There are smells that invite you to walk and stay in the place (v12)	0.915	0.153	0.154	0.067	1.000				0.873
You can perceive nice smells (v11)	0.904	0.149	0.191	0.055	1.082	0.065	16.602	***	0.907
I like the sounds that sound (v19)	0.153	0.895	0.164	0.211	1.000				0.933
It's not a noisy place (v18)	0.180	0.879	0.142	0.251	0.824	0.091	9.015	***	0.712
There are some fantastic views (v24)	0.138	0.078	0.909	0.053	1.000				0.863
The views of the surroundings are beautiful (v23)	0.203	0.209	0.853	0.082	0.964	0.079	12.220	***	0.896
The walking area is interesting and charming (v15)	0.118	0.132	0.076	0.873	1.000				0.698
The touch of the banks is cosy (v14)	−0.007	0.283	0.051	0.814	1.120	0.136	8.251	***	0.780



EFA
Explained Variance: 84.621%; KMO: 0.705; Bartlett: 1276.113, Degree of Freedom: 28, Sig. 0.000; Crombach's alpha: 0.796
CFA
Chi-square: 13.214; Degree of Freedom: 14; *p*: 0.510; GFI: 0.991; RMSEA: 0.000; AGFI: 0.977; NFI: 0.969; RFI: 0.938; IFI: 1.002; TLI: 1.004; CFI: 1.000; CMIN/DF: 0.944; PGFI: 0.385; PNFI: 0.485
Composite Reliability: 0.94882017; Extracted Variance: 0.70072755

(significant at $p < 0.001$) support the suitability of the data for the factor analysis. Furthermore, the CFA confirms the validity of the construct of the tourism recommendation and impact scale. Likewise, the model fits with a non-significant Chi-square ($p = 0.856$), a Composite Reliability of 0.8507531 and an Extracted Variance of 59.16% indicating that there is a strong likelihood that respondents are likely to recommend the Jardín Canario and that the garden is perceived as a tourist attraction. Therefore, it confirms its strength in terms of capturing visitors' intentions to both recommend and perceive the Garden as a significant tourist attraction.

To contrast the hypotheses, the study carried out a path analysis. Table 11 shows that the model fit data and loyalty are accounted for by several factors, such as satisfaction and emotions, plus two high-involvement senses like touch and smell. In turn, satisfaction is only explained through the sense of hearing and strongly engendered by behavioural responses, emotions, and social interactions. Finally, it is worth pointing out that neither cognitions nor sight demonstrates any significant causal function.

Therefore, the path analysis conducted on the cognitive experiences scale showed several significant relationships. Particularly, social, and behavioural experiences had significant effects on satisfaction, with standardised regression of 0.125 and 0.371, correspondingly. Moreover, emotional experience also had a significant influence on satisfaction, with a significance of 0.365. Furthermore, satisfaction strongly predicted loyalty (SRW = 0.577). Among the sensory experiences, touch and smell had significant effects on loyalty, with scores of 0.080 and 0.108, respectively. In addition, the model demonstrated absolute, incremental and parsimony indicators, which suggests a good adjustment of the proposed associations with the observed data (Chi-square = 8.503, GFI = 0.995, AGFI = 0.950, CFI = 0.998, RMSEA = 0.043). These results highlight the highly complex interaction between sensory experiences, satisfaction, and loyalty in the context of botanical garden visits.

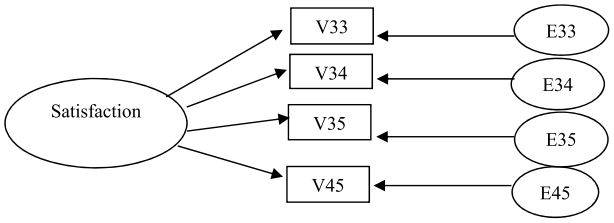
So, as seen in Fig. 3, the path model of the garden experience shows the connection between various factors and their influence on visitor satisfaction and loyalty. The results of the analysis reveal that cognitive, emotional, and behavioural experiences contribute significantly to satisfaction. Specifically, cognitive experiences show a positive impact on satisfaction, with a standardised regression value of 0.044. Meanwhile, emotional and behavioural experiences have a greater influence on satisfaction, with values of 0.365 and 0.371, respectively. Particularly, satisfaction emerges as a crucial predictor of loyalty, with a significant value of 0.577. Overall, this model provides valuable insights into what constitutes visitors' satisfaction and loyalty in the context of the Canary Island Garden experience.

The empirical testing of the hypotheses showed a combined result. Out of the nineteen hypotheses tested, eleven were rejected, which indicates that the specific associations proposed by the hypotheses are not substantiated by the empirical data. However, eight hypotheses were verified, which means that the empirical evidence confirmed the connections that were proposed by the hypotheses analysed. Highlighting the effectiveness and difficulty of the factors that influence the satisfaction and loyalty of visitors within the context of the studied experience.

Meanwhile, the rejected hypotheses provide insight into areas in which theoretical expectations do not coincide with empirical observations, encouraging further exploration and improvement of the conceptual model. Moreover, the accepted hypotheses validate specific features of the proposed model, contributing towards a deeper understanding. So, Table 12 displays information about the empirical contrast of the hypotheses, and while there were eleven hypotheses rejected: $H_{1.1}$ Touch sense determines garden visitor's satisfaction, $H_{1.2}$ Smell sense determines garden visitor's satisfaction, $H_{1.3}$ Taste sense determines garden visitor's satisfaction, $H_{1.4}$ Sight sense determines garden visitor's satisfaction, H_2 Information determines garden visitor's satisfaction,

Table 9
Exploratory Factor Analysis (EFA) & Confirmatory Factor Analysis (CFA) on the satisfaction scale.

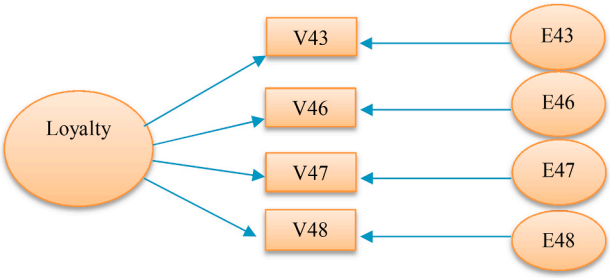
ITEMS	EFA	CFA				
	Comp.	Estimate	S.E.	C.R.	P	SRW
The visit to Viera y Clavijo Botanic Garden has been positive (v33)	0.905	1.000				0.882
I'm satisfied by this visit (v34)	0.937	1.117	0.041	27.065	***	0.948
It has been a charming and interesting visit (v35)	0.909	1.087	0.046	23.659	***	0.873
If I ever return to Gran Canaria, I wouldn't mind visiting again Viera y Clavijo Botanic Garden (v45)	0.680	1.001	0.089	11.240	***	0.547



EFA
Explained Variance: 74.620%; KMO: 0.807; Bartlett: 1012.964, Degree of Freedom: 6, Sig. 0.000; Crombach's alpha: 0.804
CFA
Chi-square: 1.938; Degree of Freedom: 2; *p*: 0.380; GFI: 0.997; RMSEA: 0.000; AGFI: 0.987; NFI: 0.988; RFI:0.965; IFI: 1.000; TLI: 1.001; CFI: 1.000; CMIN/DF: 0.969; PGFI: 0.199; PNFI: 0.329
Composite Reliability: 0.89334799; Extracted Variance: 0.68466849

Table 10
Exploratory Factor Analysis (EFA) & Confirmatory Factor Analysis (CFA) on the loyalty scale.

ITEMS	EFA	CFA				
	Comp.	Estimate	S.E.	C.R.	P	SRW
I will recommend Viera y Clavijo Botanic Garden to my friends (v43)	0.789	1.000				0.690
Viera y Clavijo Botanic Garden is a tourist attraction (v46)	0.896	1.519	0.105	14.481	***	0.900
Viera y Clavijo Botanic Garden would be a reason to return to Gran Canaria (v47)	0.765	1.527	0.134	11.409	***	0.652
I will remember Viera y Clavijo Botanic Garden (v48)	0.858	1.485	0.107	13.825	***	0.809



EFA
Explained Variance: 84.697%; KMO: 0.835; Bartlett: 1363.227, Degree of Freedom: 6, Sig. 0.000; Crombach's alpha: 0.830
CFA
Chi-square: 0.312; Degree of Freedom: 2; *p*: 0.856; GFI: 1.000; RMSEA: 0.000; AGFI: 0.998; NFI: 1.000; RFI:0.999; IFI: 1.003; TLI: 1.008; CFI: 1.000; CMIN/DF: 0.156; PGFI: 0.200; PNFI: 0.333
Composite Reliability: 0.8507531; Extracted Variance: 0.59161574

$H_{6.3}$ Taste sense determines garden visitor's loyalty, $H_{6.4}$ Sight sense determines garden visitor's loyalty, $H_{6.5}$ Hear sense determines garden visitor's loyalty, H_7 Information determines garden visitor's loyalty, H_9 Social interaction determines garden visitor's loyalty, and H_{10} Activities determine garden visitor's loyalty. Meanwhile, 8 hypotheses are verified: $H_{1.5}$ Hear sense determines garden visitor's satisfaction, H_3 Emotion determines garden visitor's satisfaction, H_4 Social interaction determines garden visitor's satisfaction, H_5 Behavioural responses determine garden visitor's satisfaction, $H_{6.1}$ Touch sense determines garden visitor's loyalty, $H_{6.2}$ Smell sense determines garden visitor's loyalty, H_8 Emotion determines garden visitor's loyalty and H_{11} Visitor's satisfaction determines garden visitor's loyalty.

5. Discussion

In light of the obtained evidence, there are four pillars to satisfaction: behavioural responses, emotions, social interactions, and pleasant sounds. These findings are consistent with previous research works. Studies such as those by Schweinsberg, Darcy, and Cheng (2017) and Karanikola et al. (2017), showed that it is widely known that the botanic garden experience combines natural and cultural history rooted in local communities, where social interactions can be meaningful. Specifically, visiting gardens is a historical, social, cultural, natural and physical experience (Benfield, 2013). According to Waliczek, Zajicek, and Lineberger (2005), gardens cause satisfaction because they generate good humour, optimism, and prosocial responses, demonstrating how critical emotional and social components are. Nevertheless, the obtained finding contributes to the literature integrating this quadruple complexity that causes satisfaction. On the other hand, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) have been used and proposed in relevant studies not only in botanical gardens but also in museums and natural parks studies, like Carvache-Franco, Carvache-Franco, Pérez-Orozco, Víquez-Paniagua, and Carvache-Franco (2022), Fuentes-Moraleda et al. (2022), Zeleke and Deniz (2023) and Vasiljević, Vujičić, Stankov, and Dragović (2023).

Loyalty is more sensorial than satisfaction because it originates when trees and plants are associated with distinctive and engaging aromas and those who visit are invited to touch vegetation, furniture and other palpable elements along the way. Loyalty comes from high-involvement senses, rather than those that require less involvement, such as sight and hearing. Similar results have been found in Ban et al. (2021) and Zacharia (2015), suggesting that smell and touch are strongly associated with memory and easily permanent evocation. What differentiates this study is how it addresses a connection between highly involved senses and emotions with loyalty in the context of botanic gardens.

Meanwhile, this study has analysed loyalty based on questions about visitors, such as (1) wishes to return to the garden or the Canary Islands, (2) wishes to tell their friends about the garden, (3) wishes to remember the visit and (4) wishes to recommend the garden to others. However, wishes are not facts, yet they prompt action (Schroeder, 2006). Additionally, Hu and Xu (2022) argue that a major factor in the wish to return to a destination is the pleasant memories and experiences that tourists create in the destination. Thus, wishes are related to tourist satisfaction, a factor that can encourage a return to the destination and its recommendation (Zeng & Yi Man Li, 2021). In addition, some authors such as Antón, Camarero, and Laguna-García (2017) state that the tourist motivation to visit a destination is mostly based on the wishes and needs of tourists. Furthermore, relational marketing emphasises that loyalty is more about attitude than behaviour (Chaudhuri, 1996). The study by Saini and Singh (2020) reveals that attitudinal loyalty drives behavioural loyalty. In this sense, loyalty involves an emotional, and meaningful connection with a brand, which transcends the

Table 11
Path analysis with critical ratios (CR), significances (p) and standardised regression weights (SRW).

			Estimate	S.E.	C.R.	P	SRW
Satisfaction	<—	**Touch experience**	0.038	0.030	1.277	0.202	0.038
Satisfaction	<—	**Audio experience**	0.058	0.031	1.881	0.060	0.058
Satisfaction	<—	**Smell experience**	0.013	0.034	0.374	0.709	0.013
Satisfaction	<—	**Sight experience**	0.037	0.036	1.025	0.306	0.037
Satisfaction	<—	**Social experience**	0.125	0.038	3.322	***	0.125
Satisfaction	<—	**Behavioural experience**	0.371	0.046	8.108	***	0.371
Satisfaction	<—	**Emotional experience**	0.365	0.047	7.852	***	0.365
Satisfaction	<—	**Cognitive experience**	0.044	0.038	1.170	0.242	0.044
Loyalty	<—	**Satisfaction**	0.577	0.047	12.279	***	0.577
Loyalty	<—	**Emotional experience**	0.203	0.050	4.080	***	0.203
Loyalty	<—	**Touch experience**	0.080	0.031	2.564	0.010	0.080
Loyalty	<—	**Smell experience**	0.108	0.034	3.173	0.002	0.108

ABSOLUT INDICATORS: Chi-square = 8.503, D. of free. = 5, Prob L.131, GFI = 0.995, RMSEA = 0.043.
INCREMENTAL INDICATORS: AGFI = 0.950, NFI = 0.996, IFI = 0.998, RFI = 961, CFI = 0.998.
PARSIMONIOUS INDICATORS: PNFI = 0.111, AIC = 108.503.

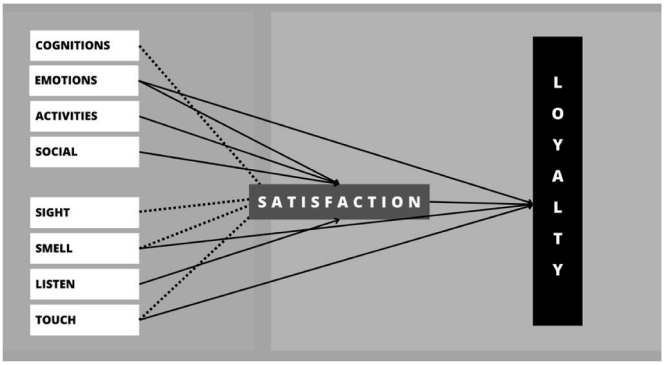


Fig. 3. Path model of the Experience in the Canary Islands Garden to explain satisfaction and loyalty.

Table 12
Empirical contrasted hypotheses.

H_1 Sensory responses determine garden visitor satisfaction:	
$H_{1.1}$ Touch sense determines garden visitor's satisfaction	Rejected
$H_{1.2}$ Smell sense determines garden visitor's satisfaction	Rejected
$H_{1.3}$ Taste sense determines garden visitor's satisfaction	Rejected
$H_{1.4}$ Sight sense determines garden visitor's satisfaction	Rejected
$H_{1.5}$ Hear sense determines garden visitor's satisfaction	Accepted
H_2 Information determines garden visitor's satisfaction	Rejected
H_3 Emotion determines garden visitor's satisfaction	Accepted
H_4 Social interaction determines garden visitor's satisfaction	Accepted
H_5 Behavioural responses determine garden visitor's satisfaction	Accepted
H_6 Sensory responses determine garden visitor loyalty:	
$H_{6.1}$ Touch sense determines garden visitor's loyalty	Accepted
$H_{6.2}$ Smell sense determines garden visitor's loyalty	Accepted
$H_{6.3}$ Taste sense determines garden visitor's loyalty	Rejected
$H_{6.4}$ Sight sense determines garden visitor's loyalty	Rejected
$H_{6.5}$ Hear sense determines garden visitor's loyalty	Rejected
H_7 Information determines garden visitor's loyalty	Rejected
H_8 Emotion determines garden visitor's loyalty	Accepted
H_9 Social interaction determines garden visitor's loyalty	Rejected
H_{10} Activities determine garden visitor's loyalty	Rejected
H_{11} Visitor's satisfaction determines garden visitor's loyalty	Accepted

superficial actions of repetition or repurchase. So, loyalty is rooted in customers' values, and beliefs (Wallström, Hjelm Lidholm, & Sundström, 2023). Likewise, the literature relates wishes to loyalty. This leads to the desire for return visits and, at the same time, increases visitors' loyalty thus increasing the number of visits. (Carvache-Franco, Carvache-Franco, et al., 2022).

Nevertheless, nothing compares to emotional satisfaction because pleasant feelings and favourable attitudinal evaluations significantly influence recommending and revisiting. According to Hui, Wan, and Ho (2007), these findings are also consistent with the literature, notwithstanding that they shine an additional light on how loyalty is generated, tracing it back to the emotional and sensorial antecedent of satisfaction. Contrary to expectations, sight does not affect the visiting experience. Brochado, Stoleriu, and Lupu (2019) demonstrated that this finding differs from previous research. It questions the assumed predominant influence of audiovisual culture, which tends to neglect the other highly involved senses, such as taste, smell and touch. Therefore, visiting a botanic garden is a highly involved sensorial experience; hence, tangible effects are vital.

Finally, this study needs to demonstrate the assumed educational and cognitive importance of the garden visiting experience. In contrast to previous research works like Sanders, Ryken, and Stewart (2018), Funsten et al. (2022) and Speck and Speck (2023), state that botanic gardens have as their mission and objective aspects such as scientific discovery, conservation, and education. Furthermore, according to Demirel, Bingül Bulut, and Aydoğan (2022), the Botanic Gardens Conservation International (BGCI) and Global Strategy on Plant Conservation (GSPC) states that the main criteria for a botanic garden are based on the documentary conservation of living plant collections, underpinned by a scientific foundation for research, conservation, public display, and educational purposes (BGCI, 2023). Otherwise, this study highlights other important dimensions of the garden visiting experience, such as high-involvement senses and emotions. Catahan & Woodruffe (2019) expose that the main motivation of botanic garden visitors is influenced by sensory. In addition, the frequency of social interactions and positive emotions are conducive to learning, for example, cooperative behaviours, in school gardens and urban parks (Pollin & Retzlaff-Fürst, 2021; Xiao, Gao, Lu, Li, & Zhang, 2023).

6. Conclusion

This paper is about the experience of gardens and how it forms satisfaction and, in turn, loyalty. It contributes to the literature by shedding light on the links between the different components of experience that engender satisfaction and loyalty to a botanical garden. It has been demonstrated that the precursors of satisfaction and loyalty are fundamentally different. While satisfaction is mainly rooted in non-sensorial variables such as behavioural responses and interactions, loyalty is a composite output of modular experiences ranging from satisfaction to smell and touch. However, both variables show the same emotional background.

To put it simply, visitor satisfaction factors that relate to loyalty in botanic gardens encompass behavioural responses, emotions, social interactions, and sensory experiences. Findings provide persuasive support that satisfaction and loyalty emerge from different underpinning factors. Satisfaction relates to behavioural responses, and social interactions, along with lowly involved senses like hearing, whereas

loyalty is influenced by highly involved senses such as smell and touch. When visitors demonstrate a deeper level of dedication than mere satisfaction, for example by revisiting the garden and recommending it to others, they demonstrate a greater sense of loyalty. Emotional engagement is also vital, as it reinforces loyalty by generating feelings of pleasure and positivity. Interacting with garden staff and other visitors fosters a sense of community and attachment to the garden. Finally, sensory experiences, especially olfactory and tactile experiences, create lasting impressions that reinforce visitor loyalty. Therefore, to promote visitor satisfaction and foster long-term loyalty to botanic gardens, it is imperative to appreciate and nurture these factors.

The findings presented here may have several important practical applications to enhance the botanic gardens' satisfaction. First, as visitor actions and behavioural responses are crucial variables in determining satisfaction, managers should trigger them. For example, the possibility of freely walking the paths toward a broad diversity of atmospheres rich in flora and fauna is what the visitor values the most. Furthermore, in addition to exploring behavioural responses, visitors search for tranquillity, interesting sensations, charm, and love since their visit is fundamentally emotional. Hence, marketers should craft emotional atmospheres by touching the visitors' hearts. Moreover, it is worth noting that social interactions with the staff, companies and other people are essential in creating a satisfactory experience. Finally, it is demonstrated that satisfaction is only grounded in one sense - that is, hearing; it must be quiet, natural, and as far from noisy as possible.

Contrary to what was expected, cognitions do not play a role in producing satisfaction or loyalty against the presumption of botanical gardens that causes them to emphasise technical and biological contents. Hence, enriching this central approach with peripheral interventions based on music, social interactions, colours and palpable sensations seems advisable. However, just because there is a non-significant relationship between thoughts and satisfaction, it does not necessarily mean that their combination leads to inevitable frustration. Therefore, we suggest some improvements in the educational resources so that the visitor can get in touch with their senses and emotions. Otherwise, satisfaction is not achieved, nor do we reach the visitors' loyalty. Concerning loyalty, different initiatives may be valid for enhancing the visitors' desire to return. Designing an experience can make visitors feel grounded in their highly involved senses of smell and touch if 'loyalty' is the goal and hearing if 'satisfaction' is. As satisfaction and loyalty are emotionally indebted, garden managers should pay careful attention to bringing about positive emotions such as curiosity, tranquillity and comfort. Finally, satisfaction is always crucial for gaining the visitors' loyalty.

There is no research work without limitations and this is not an exception. First, the findings are not necessarily generalizable to other botanic gardens owing to the non-probabilistic sampling procedure. Second, it is worth acknowledging the survey respondents filled in the long questionnaire in the settings and it used to take 10 min. Furthermore, another limitation was to analyse wishes as facts, as the wish to return is not a clear indicator of loyalty. Nevertheless, visitors' satisfaction can positively influence visitors' loyalty towards the destination, allowing them to return and recommend the place to others (Jimber del Río, Hernández-Rojas, Vergara-Romero, & Dancausa Millán, 2020). Certainly, the wish to return to the destination is no longer an indicator of satisfaction but of attitudinal loyalty. Therefore, a minor limitation of the survey is that the questionnaire did not ask if any of these tourists returned to the garden and how often they did so. However, no information was collected in this study as to whether the tourists recommended the botanical garden to their acquaintances or whether they returned to the garden afterwards. Hence, this was also added as a limitation. Third, as it is shown, some scales needed to be restricted with correlated errors and, hence, they are yet to be refined such as the behavioural, emotional, cognitive, and social experiences. Moreover, there are some pitfalls in EFA and CFA, for example, producing too many factors, even some that are not related to theory or its application.

Future research should gain further insight into the mechanism that connects intellectual and emotional responses. Neurosciences might help us understand these vital and intriguing links. For example, it might be interesting to employ virtual and augmented reality tools, eyes and face tracking devices, along with sentiment analysis social media technologies. To our knowledge, there has not been prior research examining the botanical garden visitor's experience in the context of this technological and digital presence. As a significant future direction, it is proposed that the questionnaire could be restructured; combining questions to reduce the number of questions to simplify and speed up the survey.

CRediT authorship contribution statement

Gonzalo Díaz-Meneses: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Maica Amador-Marrero:** Writing – review & editing, Writing – original draft.

Declaration of Competing interest

No conflict of interest.

Data availability

Data will be made available on request.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jort.2024.100778.

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