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Guided discussion or immersive play? Influence of on-site presentation platform on visitor satisfaction in a heritage attraction

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ABSTRACT

Extensive research has been conducted on visitor experience and visitor satisfaction at tourist attractions. Few studies have addressed the influence of different types of on-site factors on visitor satisfaction at heritage sites. This study combined observation, in-depth interview, and a survey to examine the underlying factors of visitors' perceptions of on-site attributes and their effects on overall visitor satisfaction while considering the influence of visitors' interest and visitor type at Iron Age Farm in Stavanger, Norway.

The findings suggest four sub-categories of visitors' perceptions of the presentation platform (technology, immersive play, guided discussion, and autonomy), in addition to one support service platform category. Guided discussion, autonomy orientation, and support service platforms have a significant influence on visitor satisfaction. The findings suggest that visitors' perceptions of the on-site factors do not differ significantly by visitors' interest or type. The results only partly confirmed previous research and provided a different perspective on the role of on-site presentation attributes in heritage attractions. Knowledge of presentation platforms can function as a practical framework to analyze heritage sites based on visitors' experiences and expectations.

Introduction

Museums and managed heritage sites are essential agencies for interpreting and accessing knowledge and cultural heritage. Visits to museums and heritage sites create awareness, interest, and education about the past (Timoney, 2020). Heritage visitor attractions serve as recreational spaces for the visiting public of various age groups at local, national, and international levels. A major challenge in heritage attractions still resides in exploiting the potential of different on-site presentation platforms (Kempiak, Hollywood, Bolan, & McMahon-Beattie, 2017).

While a wide range of activities can be performed at managed heritage sites because of the tools and facilities developed by managers, visitors will often choose one of the

activities depending on their preferences (Navarro-Ruiz & McKercher, 2020). Therefore, managers must know about specific attributes of on-site presentation to design suitable activities within the managed heritage site context. Research (e.g. Jensen, Li, & Uysal, 2017; Uysal & Noe, 2003); has shown that expressive indicators (interpretation of programmes offered, recreation activities, and exhibits) significantly predict visitor satisfaction with managed visitor attractions. A recent meta-analysis (Faerber, Hofmann, Ahrholdt, & Schnittka, 2021) also confirmed that content presentation at managed heritage attractions is an important driver of visitor satisfaction.

Although many studies have looked at visitors' experience of managed heritage attractions (Hernández-Rojas, del Río, Fernández, & Vergara-Romero, 2021; Timoney, 2020), only a few aimed to identify the structure and components of the site that influence visitors' satisfaction (Crespi-Vallbona, 2021). Further, visitors' perceptions of the presentation platform differ significantly from their perceptions of the support services platform, depending on the type of the site and the type of visitors' visit (Jensen et al., 2017). Previous research, however, has mainly focused on identifying general preferences for interpretation among heritage visitors (Yaniv Poria, Biran, & Reichel, 2009) rather than analysing the influence of different on-site presentation platform attributes on visitor satisfaction. To date, and to the best of our knowledge, the different attributes of on-site presentation platforms have not been investigated in an outdoor heritage attraction context. This study provides an insight into the on-site factors (presentation platform and support service) and the effect of different attributes of these on-site factors on visitor satisfaction in an outdoor heritage site in the southwest of Norway, the Iron Age Farm. Extending previous research on presentation (Jensen et al., 2017), this study also examined whether visitor type and interest significantly influence perceptions of on-site factors and overall satisfaction with an open-air heritage attraction.

Literature review

The exact proportion of global tourism that can be attributed to heritage tourism is unknown (Hall, 2016). However, the UNWTO (2005) have claimed that cultural tourism accounts for between 35% and 40% of all tourism worldwide and that it is growing much faster than the rate of growth for general tourism. Several definitions of heritage tourism exist (Smed, Dressler, & Have, 2016), but heritage tourism is here defined as "the provision of goods and services that come from or relate to a past in some way" (Graham, Ashworth, & Tunbridge, 2000, pp. 1-2). Heritage tourism uses the element of culture, both tangible and intangible past, as a tourism resource (Timothy & Nyaupane, 2009). This resource includes sites with historical importance, such as ancient monuments, rural and agricultural landscape, and various locations where interesting, significant, and historic events occurred (Timothy & Boyd, 2006). One of the most dominant scholarly debates in heritage tourism studies in recent years concerns itself with conflicts arising from, on the one hand, the need for a growing number of sites to pay their own "upkeep" and thus maintain a broad and popular appeal, and on the other hand, community and scholarly interest in preservation, education, and interpretation of the site as unspoilt and accurate as possible (Thomsen & Vester, 2016). A related discussion carries on regarding the emphasis on the visitor experience in museums and heritage sites, in

contrast to a former concentration on the objects themselves (Williams, 2013). There have also been substantial changes in the management of heritage attractions (Mijnheer & Gamble, 2019). The focus has been on the improvement of visitor services, changing the general management orientation from the curatorial approach to a more open and hospitable management approach, and focusing on visitor engagement (Calver & Page, 2013).

Heritage visitor attractions and experience

Heritage sites as visitor attractions play an important role in the creation and reinforcing of identities through individual visitor experiences (Timoney, 2020). Traditionally, researchers and practitioners conceptualized visits to heritage sites (including museums) as activities undertaken with learning as the central objective of both organizations and visitors (Falk & Dierking, 1992; Hooper-Greenhill, 2007). Later on, the predominance of the learning approach towards the visitor experience has been criticized for ignoring or rejecting other ways visitors may use heritage sites (Bagnall, 2003; Palmer, 2005; Smith, 2015). The visit to a heritage site can be an opportunity for visitors to reaffirm cultural identities and belonging (Timoney, 2020). The visit may hence be more about "feeling", creating an emotional attachment to place, rather than "learning" for many visitors (Poria et al., 2003).

Essential components of heritage sites are interpretation and presentation, i.e. the means of enhancing public appreciation and understanding of cultural heritage and heritage conservation efforts (ICOMOS-Ename Charter for the Interpretation of Cultural Heritage Sites, 2006). While interpretation refers to the full range of potential activities intended to heighten public awareness and enhance understanding of cultural heritage site, presentation more specifically denotes planned communication of interpretive content through the arrangement of interpretive information, physical access, and interpretive infrastructure at a cultural heritage site (ibid). Interpretation can include print and electronic publications, public lectures, on-site and directly related off-site installations, educational programmes, community activities, and ongoing research, training, and evaluation of the interpretation process itself (Moscardo & Ballantyne, 2008). Presentation of interpretive content can be conveyed through a variety of approaches, e.g. informational panels, exhibition displays, lectures, guided tours, games, multimedia applications and websites. A key means of interpretation for the heritage site is through the production of experience which attempts to give a sense of "being there" in the past and to understand what it was like to live then (Williams, 2013). This shift towards the experiential influences the presentation of interpretive content at heritage sites and the management of the visitor experience.

On-site presentation attributes and visitor satisfaction

Visitor satisfaction is a recurring issue for the managers and developers of tourism products (Crespi-Vallbona, 2021). Most researchers have focused on the motivations and interests that visitors look to satisfy through visits, and fewer academics have analyzed the structure and components of the site that determine that perception of satisfaction (Crespi-Vallbona, 2021).

Heritage visitor attractions typically consist of two main attributes, the main experience or presentation platform and the supporting service platform (Jensen et al., 2017). The experience platform refers to the main attraction, for instance, the exhibition part in the museum. The supporting service platform refers to a museum facility that supports and completes visitors' experience, such as a cafeteria, museum shop, and other facilities. Several studies have identified similar division in on-site attributes: Žabkar, Brenčič, and Dmitrović (2010) report on six attributes (accessibility, amenities, attraction, available packages, activities, and ancillary services) which may further be categorized into support service platform (ancillary services, accessibility, amenities) and experience platform (attraction, activities and available packages). Pre-visit information, opening times, parking facilities, accessibility of the site, signage museum websites and information available before the visit also contribute to visitor expectations and experiences at the site (Kempiak et al., 2017).

Different presentation tools are needed to create experiences in various stages of the visit Navarro-Ruiz and McKercher (2020). While contemplation stage is characterized by low intensity, interpretation (medium intensity), and participation (high intensity) need different approaches to management of the experience. On-site attributes of the experience presentation platform have been categorized into dramaturgical game orientation, technological orientation, oral/traditional orientation, and independence orientation (Jensen et al., 2017). In the experience creation stage "participation", role-playing, task solving, and discussion with experts are presentation tools that might create a high experience intensity and demand active involvement.

Visitor type and visitor motivation at heritage sites

In the context of heritage tourism, researchers make a distinction between visitors who perceive a site as a part of their own heritage; and visitors with no personal connection to a place, but who visit through a desire to learn (Poria, Butler, & Airey, 2003). Heritage museum visitors can also be categorized based on visitors' needs, which fall into five categories: explorer, facilitator, experience seeker, professional/hobbyist, and recharger (Falk, 2016). Many people visit heritage sites, but not all can be categorized as heritage tourists or cultural tourists. Heritage tourists differ in their level of previous knowledge and a specific level of interest in heritage or cultural factors of the sites or destination (Staiff, Bushell, & Watson, 2013).

Previous studies of heritage visitor experiences also found that demographic as well as geographical factors influence the preferences of heritage tourists (Katahenggam, 2020). Hence, understanding the perceptions and preferences of visitors to heritage sites in terms of their interest and demographical characteristics would aid in creating a more sustainable environment for on-site presentation at heritage sites.

Research aims and hypotheses

This study had two objectives. The first aim was to identify sub-categories of different on-site factors (presentation platform and supporting service platform) and examine whether these factors have discriminating effects on visitors' perception and evaluation of overall visitor satisfaction. The second aim was to investigate whether the
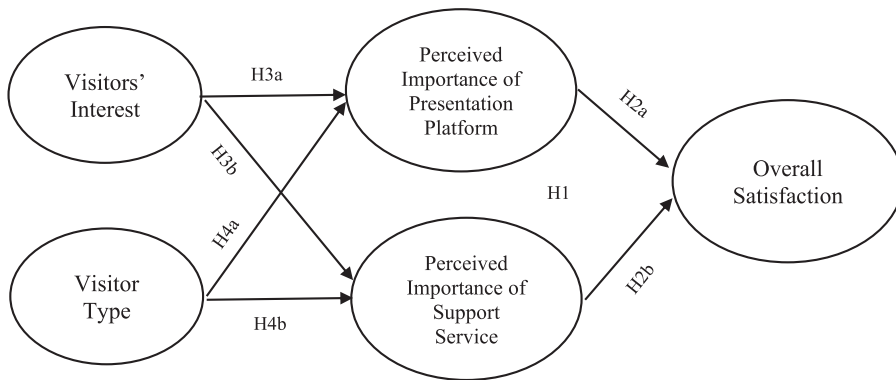
Figure 1. Research model.

visitors' interest and visitor type influence their evaluation of the on-site attributes. (Figure 1)

To achieve these objectives, four research hypotheses were formulated.

H1: Visitors distinguish between perceived importance of the presentation platform and support service factors.

H2: Visitors' perceived importance of the presentation platform and support service platform affects overall visitor satisfaction.

H3: Visitors' interests affect visitors' perceived importance of the presentation platform and support services platform.

H4: Visitor type affects visitors' perceived importance of presentation platform and support service platform.

The intended contribution of this study was to provide knowledge on managing both presentation and support services platforms in a specific tourism site.

Method

Heritage site "The Iron Age Farm"

The Iron Age Farm at Ullandhaug in Stavanger, Norway is a reconstructed farmstead from the Migration Period (350-550 AD). The farm is located around three kilometers from the city centre, with a view of the Northern Jæren region and Hafrsfjord.[1] As the only one of its kind in Norway, the Iron Age Farm has been rebuilt on the original remains and ruins of a farm that dates back to the Migration Period. The farm consists of three houses furnished with equipment and household utensils, and there are open fires burning in the original fireplaces. As part of the commemoration of the 1100-year anniversary of the battle of Hafrsfjord, King Olav V officially opened the Iron Age Farm in 1972 (Iron Age Farm Official Website, 2022). While the attraction was established in 1972, the visitor centre only opened in 2018, and the third and the biggest longhouse was renewed and opened for visitation in 2019. The visitor centre is constructed into the side of the hill, in an attempt to minimize the impact of the centre on the remains of the farm. A small exhibition displays artefacts found at the farm and tells about the excavations that took place in the 1960s. In the visitor centre

lobby, big screens show a short film about the farm's origins, development, and eventual destruction. In terms of interpretation, the farm area and the longhouses are kept free of any signs, name plaques, or information boards; visitors are encouraged to participate in guided walks accompanied by the "Lady of the farm".

The Iron Age Farm is one of major tourist attractions in Stavanger region. The farm-stead appears on the TripAdvisor' "Top attractions in Stavanger" list (as number 10 of 15 for 2021).[2] It is also featured on the official website of both the regional destination marketing organization Greater Stavanger, and the official travel guide to Norway, "Visit-norway.no", as Viking heritage.[3] The site is part of Museum of Archeology in Stavanger, which received 62.000 visitors in 2019 (Næss, 2021).

Data collection and sample

This study adopted a mix-method approach that involved three-staged research data collection: participant observations at the heritage site; an in-depth interview with the general manager; and a questionnaire survey of visitors. The first author conducted the observations while visiting the Iron Age Farm and participating in guided walks together with regular visitors. Emphasis was on how the visitors interacted with the site, i.e. what kind of activities were available at the site, whether visitors chose to walk around on their own or with a guide, where they went, how long they stayed at different parts of the site and at the visitor centre. The observations served three purposes: to contextualize different on-site presentation platforms, to prepare for in-depth interview with the site manager, and to enable the researchers to adopt the survey questionnaire to use at the site. Following the observations, a semi-structured face-to-face in-depth interview with the site manager, who also works as guide and the "Lady of the Farm", was conducted by the first author. The results of the interview were used to adopt the questionnaire. The questionnaire items were based on Jensen et al.'s (2017) study but modified for the use at the Iron Age Farm. The data were collected during the low season when the Iron Age Farm is open on Sundays and visited mainly by local visitors, except for group bookings when the museum is opened exclusively for the group, mainly for cruise passenger groups.

Therefore, this study employed a non-probability, intentionally stratified sampling technique, combining convenience and purposive sampling methods. The convenience sampling method was used to collect data from local visitors, while the purposive sampling method was used to target foreign visitors coming from cruise ships. This process lasted for about six weeks, starting from the last two weeks of March 2019 until the second week of May 2019.

Measures

Presentation platform. The presentation platform was evaluated using a set of 12 attributes measured on a 5-point Likert scale (1 = not at all important to 5 = extremely important), adopted from Jensen et al. (2017). Examples of attributes are "oral presentation by a guide," "traditional theme-specific displays at the attraction," and "participating in task-solving games." One item from the original study by Jensen et al. (2017), "organizing a thrilling event," was deleted following the recommendations from the site manager during the in-depth interview.

Support service platform. The support service platform was assessed by visitor evaluation of 9 items measured on a 5-point Likert scale (1 = not at all important to 5 = extremely important), following Jensen et al. 2017. Sample items were: "Information boards, signs, and direction," "The handling of queueing," and "Having sufficient time in hand for the tour of the site." One item from Jensen et al. 2017 was changed from "the location of museum shop" to "the location of visitor centre". One additional item ("the food in the museum café") was added to the questionnaire. A complete list of items is available in the Appendix.

A single item measured *overall visitor satisfaction*, "As a visitor, how satisfied were you with the overall experience at this site?" on a 5-point Likert scale ranging from 1 = not at all important to 5 = extremely important.

Visitors' Interest was measured with a single item, "How interested were you in the theme or topic associated with this attraction before the visit," on a 5-point Likert scale (1 = not at all interested to 5 = very interested).

Visitor Type was measured in three different ways. First, visitors were categorized based on whether they were local or foreign visitors. Second, visitors were categorized by the attraction of the overall experience, the main goal of the visit, important stops, or recreational experience. Third, visitors were categorized by whom they were visiting, either a single visitor, family/friends with children, or family/friends without children.

The questionnaire also contained two open-ended questions: "Which of the above-mentioned platforms contributed mostly to a positive visitor experience for you at the site today?" and "Which of the above-mentioned platforms did you miss the most or perceive as poorly executed?".

Data analysis

The data were analysed using SPSS Statistical Package for the Social Science. The data analysis consisted of four main steps: descriptive analysis, exploratory factor analysis, multivariate analysis of variance (MANOVA), and regression. First, a descriptive analysis was conducted to summarize respondents' characteristics, such as age, gender, nationality, occupation, type of visitor, and other visiting characteristics (see Table 1).

Second, exploratory factor analysis (principal component analyses with Varimax rotation) was conducted to explore the interrelation of two sets of variables, the experience platform and the support service platform.

In the next step, multivariate analysis of variance (MANOVA) was performed to examine whether visitors' interest and type significantly affect visitors' perceived importance of two on-site factors. Finally, the study regressed the level of satisfaction (dependent variable) on the on-site factors (independent variables). Multiple regression was run to test the relationships between presentation platform, support services, and overall satisfaction.

Results

Profile of respondents

The descriptive analysis showed that 52.6% of the respondents identified as female (see Table 1). The age of the respondents ranged from under 20 to over 60 years old, with the majority being between 20–39 years old (42,9%). Most respondents (59%) were

Table 1. Demographics of respondents.

	Total (N = 86)	
	N	Percentage (%)
Gender		
Male	37	47,4
Female	41	52,6
Age		
Less than 20	1	1,2
20–39	36	42,9
40–59	27	32,1
more than 60	20	23,8
Nationality		
Norwegian	45	59,0
European	13	17,0
American	10	13,0
Others	8	11,0
Main Occupation		
Student	11	13,1
Working in the public sector	14	16,7
Working in the private sector	28	33,3
Other	31	36,9
Type of visitor		
Single	7	8,2
Family and/or friends with children	44	51,8
Family and/or friends without children	34	40,0
Visitor origin		
Local	64	74,4
Foreign	22	25,6

Norwegian, followed by 17% from other countries in Europe, including Austrian, British, Danish, Dutch, French, German, Russian, and Spanish. The remaining respondents were 13% American, and 11% were from other countries like Argentina, Australia, Canada, and Peru. Most respondents reported their occupation as "other" (37%), mainly not specifying their occupation; however, some reported they were retired or unemployed. The Iron Age Farm's visitors mainly visited the site with friends and/or family, 52% with children, and 40% without children. Most of them (74% of the respondents, representing 64 visitors) were local visitors, whereas 26% (representing 22 respondents) were foreign visitors, mainly cruise ship passengers.

Furthermore, the descriptive analysis showed that 76% of foreign visitors visited the Iron Age Farm because it was included in their travel package (Table 2), regardless of whether the attraction was non-optional (38%) or optional (38%). Most visitors visited the attraction without the "group tour package" (78.5%), used the guide assistance (64.9%), and preferred both guided and unguided tours to enjoy and explore the attraction by themselves as well (56.5%). As for the local visitors, most were returning visitors who had visited the attraction before (57.8%).

Presentation platform dimensions and support service attributes

Exploratory factor analysis with Varimax Rotation was conducted to determine the underlying dimensions of the scales representing presentation platform and support services platform attributes. This procedure extracted factors with an eigenvalue greater than one. The results showed that 12 items measuring presentation platform attributes loaded on four factors (Table 3). The first factor explained 28% of the variance with

Table 2. Visit characteristics of respondents.

	Foreigners (N = 22)	Both (N = 86)	Locals (N = 64)
Visit Type			
Part of a travel package in which the attraction is included	38%		
Part of a travel package in which you chose the attraction	38%		
Part of the self-organized tour	19%		
Part of a longer stay at this destination	4.8%		
Group Tour Package			
Visited with "group tour package"		21.5%	
Visited without "group tour package"		78.5%	
Guide Assistance			
Visited with guide assistance		64.9%	
Visited without guide assistance		35.1%	
Visit Preference			
Using guide at the site		25.9%	
Walking alone at the site without a guide		17.6%	
Both		56.5%	
Returning Visitor			
Have visited the site before			57.8%
Have not visited the site before			42.2%

eigenvalue 3.415. It contained three items, including technology to create a visual experience, portable audio guides, and interactive technology to access information. These items emphasized the importance of technology in the museum experience; therefore, the first factor was labeled as "Technological Orientation." The reliability alpha of this factor was 0.803, which is rated as "excellent" based on Ponterotto and Ruckdeschel's considerations of sample size smaller than 100 and less than six items per subscale.'

The second factor found in the presentation platform scale was labeled "Immersive Play Orientation" since it includes three items stressing the opportunity to participate in a dramatized performance, task solving games, and dramatized storytelling. This second factor explained approximately 16% of the variance, with an eigenvalue of 1.869 and a reliability alpha of 0.712, which is considered "good" reliability. The third factor had an eigenvalue of 1.474 and explained 12% of the variance with a "good" reliability alpha of 0.711. This factor included three items assessing autonomy in visitor experience, including the opportunity to carry out self-initiated activities, enjoy a relaxed/pleasant environment, and use all senses. Based on the characteristics of this factor, it was labeled as "Autonomy Orientation."

The fourth factor with an eigenvalue greater than one was labeled "Guided Discussion Orientation" because the items accentuated the importance of guided assistance and the traditional layout of the attraction site. This factor explained almost 11% of the variance, with an eigenvalue of 1.301 and reliability alpha of 0.612, which is acceptable and rated as "fair" based on Ponterotto and Ruckdeschel's suggestions. Three items underlying this factor included an oral presentation by guides, traditional theme-specific displays at the attraction, and the opportunity to discuss with skilled/educated experts. All four factors extracted from the factor analysis of the presentation platform explained approximately 68% of the total variance.

Contrary to Jensen et al. (2017), our study did not discriminate between different factors underlying support service platforms. The analysis yielded one factor labeled as "Overall Support Service." This factor contained all nine items assessing the visitors' evaluation of support service attributes at Iron Age Farm (see Table 4).

Table 3. Result of exploratory factor analysis (presentation platform attributes).

Perceived Importance of Presentation Platform Attributes	Factor Loading	Eigenvalue	Variance Explained	Cronbach's α
Presentation Platform 1: Technological Orientation				.803
Use of modern high-technology to create a visually intriguing experience	0.851	3.415	28.461	
Portable audio-guides	0.842			
Information accessed by interactive technology at the site	0.793			
Presentation Platform 2: Immersive Play Orientation				.712
The opportunity of playing roles yourself in dramatized performance	0.825	1.869	15.577	
Participating in task-solving games	0.776			
Dramatized storytelling	0.664			
Presentation Platform 3: Autonomy Orientation				.711
Opportunity to carry out self-initiated activities	0.810	1.474	12.283	
Opportunity to enjoy a relaxed and pleasant environment	0.763			
Opportunity to use all senses	0.722			
Presentation Platform 4: Guided Discussion Orientation				.612
Oral presentation by guides	0.858	1.301	10.843	
«Traditional» theme-specific displays at the attraction	0.677			
Opportunity to discuss with skilled/educated experts	0.636			
Total Variance			67.615	

Note. KMO = 0.594, Bartlett's Test of Sphericity = 299.394, *df* = 78, *p* < 0.001

Following the factor analysis, a correlation analysis was conducted to investigate the relationship between the factors and overall visitor satisfaction. Visitors to the Iron Age Farm were generally satisfied with the attraction (4.25 on a 5-point scale, SD = 0.771). The respondents also rated the overall support service in Iron Age Farm as high (4.04, SD = 0.706). Among all factors in the presentation platform, most respondents perceived presentation platform 4 ("Guided Discussion Orientation") as the most important aspect of the different presentation platforms, while presentation platform 2 ("Immersive Play Orientation") was perceived as the least important (M = 2.73, SD = 0.945). Presentation platform 3 "Autonomy Orientation" was rated as the second most important factor (M

Table 4. Result of exploratory factor analysis (support service attributes).

Evaluation of Support Services Attributes	Factor Loading	Eigenvalue	Variance Explained
Support Services 1: Overall Support Services			
The location of the visitor centre	0.847	5.040	56.000
The maintenance of the site	0.827		
The physical layout of the attraction	0.819		
The service of the staffs	0.770		
Information boards, signs, and directions	0.754		
Collection in the souvenir shop	0.703		
Having sufficient time in hand for the tour of the site	0.670		
The handling of queueing	0.667		
Food in the café	0.647		
Cronbach's alpha = 0.903			
Total variance			56.000

Note. KMO = 0.877, Bartlett's Test of Sphericity = 312.803, *df* = 35, *p* < 0.001

Table 5. Means, standard deviation, and correlation between constructs (N = 86).

Variables	M	SD	1	2	3	4	5
1. Technology	2.90	1.039	–				
2. Immersive Play	2.73	0.945	0.345**	–			
3. Autonomy	3.77	0.768	0.175	0.290*	–		
4. Guided Discussion	3.80	0.834	0.200	0.290*	0.228*	–	
5. Support services	4.04	0.706	0.224	0.218	0.474**	0.473**	–
6. Overall visitor satisfaction	4.25	0.771	0.184	0.214	0.208	0.460**	0.706**

Note. *$p < 0.05$, **$p < 0.01$

= 3.77, SD = 0.768), and presentation platform 1 "Technological Orientation" was perceived as the second least important factor (M = 2.90, SD = 1.039).

In contrast with previous research in traditional museum settings (Jensen et al., 2017), only two out of four presentation platforms correlated significantly with overall visitor satisfaction, guided discussion orientation ($r = 0.460$, $p < 0.01$) and overall support service ($r = 0.706$, $p < 0.01$). Other significant correlations between constructs are presented in Table 5.

Perceptions of on-site factors by visitors' interest and visitor type

Visitors' interest and type were hypothesized to influence visitors' perceived importance of the presentation platform and support service platform attributes. The results of MANOVA analysis showed that visitors' interest in the attraction or visitor type did not significantly affect their perception of the importance of both presentation and service platform.

However, the main effect of visitors' guide assistance preference was significant, Wilks' $\lambda = 0.709$, $F(10, 106) = 1.988$, $p < 0.05$, partial $\eta^2 = 0.158$. Furthermore, the guide assistance preference, that is, whether visitors preferred guided, unguided, or both types of tours, had a significant effect on the perceived importance of the "Guided Discussion Orientation", $F(2, 57) = 5.736$, $p < 0.01$, which included different aspects of the presentation platform (guide presentation, traditional theme-specific display, and the opportunity to discuss with expert on-site) at the attraction site. In addition, the actual usage of guide, i.e. whether or not they visited the Iron Age Farm with guide assistance, had a significant effect on visitors' perceived importance of the oral aspect of the "Guided Discussion Orientation" presentation platform on-site, $F(1, 52) = 5.816$, $p < 0.05$, see Table 6.

Table 6. MANOVA results for presentation platform and support service platform factors.

Source (Independent Variables)	PP1 (F)	PP2 (F)	PP3 (F)	PP4 (F)	SS (F)	Wilks' λ (F)
Visitor Interest	0.805	0.961	2.074	2.733	1.247	0.953
Visitor Type						
Main goal/important stop/recreational	2.462	1.801	0.100	1.974	0.115	1.233
Locals/foreigners	0.009	0.385	0.003	0.350	1.071	0.679
Single visitor/group with kids/group without kids	0.219	0.305	0.022	0.064	0.341	0.206
Gender	0.222	0.241	1.449	1.960	3.818	2.111
Guide Assistance						
Visited with/without guide	0.001	0.398	1.039	5.816*	2.780	1.991
Preferred with guide/explore independently/both	0.535	1.078	0.297	5.736**	2.330	1.988*

Note. PP = presentation platform, SS = support service, *$p < 0.05$, **$p < 0.01$

Table 7. Influence of on-site factors on visitor satisfaction.

Independent Variable	Std. β	Std. error	Adj. R^2	F
1. Technological Orientation	0.004	0.074	0.502	12.873***
2. Immersive Play Orientation	0.069	0.084		
3. Autonomy Orientation	−0.181**	0.107		
4. Guided Discussion Orientation	0.146	0.099		
5. Overall Support Service	0.707***	0.127		

Note. **$p < 0.01$, ***$p < 0.001$

The effect of attraction attributes on overall satisfaction

Since the results of MANOVA showed no significant effect of visitors' interest on visitors' perceived importance of on-site factors, a standard multiple regression analysis was conducted to investigate the relationship between attraction attributes and overall satisfaction without controlling for the effect of visitors' interest and visitor type. All presentation platform and support service attributes were the independent variables, and overall satisfaction was the dependent variable. The result of the regression analysis (Table 7) showed a significant effect of on-site factors on visitor satisfaction, $F = 12.873$, $p < 0.001$, which explained approximately 50% of the variance in overall visitor satisfaction ($R^2 = 0.502$). Furthermore, the regression analysis revealed that the overall support service factor had the highest association with visitor satisfaction ($\beta = 0.707$, $p < 0.001$). In addition, there is a significant effect of the "Autonomy Orientation" presentation platform on visitor satisfaction, which assesses the opportunity to enjoy a relaxed environment, carry out self-initiated activities, and use all senses. The result showed presentation platform 3 had a negative association with overall visitor satisfaction ($\beta = −0.181$, $p < 0.01$). Hence, the increase in visitors' perceived importance of autonomy attributes could lower visitor satisfaction. In addition, regression analyses revealed no significant direct associations of visitors' interest and type with overall satisfaction.

Discussion

The current study tested the relationship between presentation platform, support service, overall satisfaction, visitors' interest, and type of visitor in an outdoor heritage attraction, The Iron Age Farm. The results suggested that visitors' perception of the "Autonomy Orientation" presentation platform and overall support services platform contribute to their overall satisfaction regardless of visitors' interest and type.

Our findings extend previous research (Jensen et al., 2017) and identify four factors underlying the perceived importance of the on-site presentation platform: technological attributes, immersive play attributes, autonomy attributes, and guided discussion attributes in addition to the support service platform. Further, our study examined both visitors' interest and type as potential determinants of visitor satisfaction, which showed no significant effect on visitors' perceptions of the presentation and support service platforms.

A significant association was observed between guide assistance and visitors' perception of the importance of on-site factors. This can be explained by the fact that the Iron Age Farm relies heavily on guided tours in creating the visitor experience. The heritage site is designed to depict and explain to the visitors the life of common people during the Iron Age. In doing so, the attraction depends on the presentation and storytelling

skills of a guide. Based on observation at the attraction site, Iron Age Farm does not use advanced technology applications or immersive play attributes in the museum. However, research on immersive experiences in tourism has shown that by performing a "guide plus role," guides can facilitate visitor immersion in the experience (Hansen & Mossberg, 2013). Our findings clearly distinguished between guided discussion attributes and immersive play attributes in how they influence visitor satisfaction, contributing to the research on mediated tourism experiences.

Interestingly, the "Autonomy Orientation" presentation platform had a negative association with overall visitor satisfaction. Those who considered autonomy more important when walking around the sight scored lower on satisfaction. One possible explanation is that individuals who valued autonomy were more likely to express their desire to explore the farm freely without guided assistance, which was strongly related to visitor satisfaction in Iron Age Farm. Thus, the limited information boards at the site could have decreased their satisfaction. This argument is also backed up by a visitor's comment in the questionnaire that the attraction "needs further development with information signs."

Low levels of involvement in the experience seemed to correspond with autonomy orientation, while high levels of involvement and engagement in the experience depended on the presentation platform's ability to engage visitors and create a secure, enclaved, and thematic frame around the experience (Blumenthal & Gjerald, 2022). In the case of Iron Age Farm, guides provided a secure and themed frame around the experience, ultimately influencing visitor satisfaction.

The third step of the analysis showed an association between visitors' perceived importance of on-site factors and overall satisfaction. Visitors' perceived importance of on-site factors explained 50% or half of the variance in their overall satisfaction. In contrast to Jensen et al. (2017), our study found no significant difference between local visitors and foreign visitors in their perception of the relative importance of site attributes.

Content analysis of the open-ended comment section of the questionnaire provided some additional insights into attributes that can be included in future studies of heritage sites: better parking facility (support service platform), improved on-site navigation and interpretation and more activities for small kids (experience presentation platform).

Our results partially contradict previous research (e.g. Calver & Page, 2013) in that visitors' interest did not significantly influence visitors' perceived importance of heritage site attributes. This might be explained by the nature of the attraction, the time of the data collection, or both. Furthermore, visitor interest was operationalized with a single item, as the main focus of our study was to investigate the on-site attributes and their relative influence on visitor satisfaction. Future studies can use other methods to assess visitors' interest, following, for example, Moss and Esson (2010), who recommended measuring the proportion of visitors who stopped at the viewing area and the length of time they spent there.

Managerial implications

The current study explored different attributes of the presentation platform and support service of one heritage site in Norway. The results indicated that the Guided Discussion was perceived as the most important aspect of Iron Age Farm's presentation platform. The results also showed that most respondents were highly satisfied by the attraction.

Support service attributes were perceived as the most important aspect contributing to visitor satisfaction. Promoting to use guided assistance once the visitor is there may help increase overall satisfaction. Visitors also perceived technology and immersive play as important aspects of the presentation; therefore, heritage sites should carefully consider those aspects to enhance overall satisfaction and visitor experience.

The present study offers important implications for attraction operators, interpreters of cultural heritage sites, and destination management organizations. First, knowledge about different presentation platforms and how visitors evaluate their importance creates an awareness of a plurality of presentation approaches that these practical actors may not otherwise have considered (Thomsen & Vester, 2016). Consequently, the results of this study may allow destination management organizations, attraction managers, and interpreters to think in terms of various interpretations and experiences, thus catering better to different segments of visitors. Further, knowledge of various presentation platforms provided in this research can function as a practical analytical framework to analyze a heritage site for possible interpretations based on visitors' experiences and expectations.

Limitations and future research

The most important limitation concerns the design of the study. A cross-sectional survey does not allow making causal statements due to the lack of temporal order and non-spuriousness. Non-probability sampling and a small sample may have affected the generalizability of the study. Further limitations stem from the data (a) being merely correlational, (b) self-reported, and (c) collected during the low season. Our study offers an initial but important validation of the four-dimensional measurement of on-site presentation platforms in the context of open-air heritage attractions. However, future studies could consider adding attributes to the measurement of both experience presentation platform and support service platform.

From other studies that look at the relationship between visitor behaviour and visitor satisfaction in managed visitor attractions, we know that emotions play an important role in mediating the relationships between perceptions of the conditions at the site (e.g. crowding) and satisfaction with the visit (Stemmer, Gjerald, & Øgaard, 2022). Future research should therefore investigate how emotions mediate the relationship between visitors' perceptions of presentation platforms, satisfaction with the visit and their intentions to return.

An interesting path of research is to investigate how perceptions of different on-site presentation platforms relate to interactive and emotional authenticity (Jin, Xiao, & Shen, 2020). While original authenticity represents cognition in which visitors come to understand the preservation of heritage objects, interactive authenticity is evaluated in relation to on-site interpretation. Emotional authenticity further arises from visitors' insights into the exhibited heritage and the local community's affective connection to the heritage site. The results of our study may suggest that various presentation platforms may drive different authenticity attributes. On one hand, "Immersive play" is related to the use of modern technology and thus may influence interactive authenticity. "Guided discussion", on the other hand, represents the affective connection of the local community to the heritage site and thus may influence emotional authenticity.

Our findings revealed several other potential on-site attributes that contribute to overall visitor satisfaction, and future studies should explore those aspects. The concept and practice of hospitality is extending into new areas (Gjerald, Dagsland, & Furunes, 2021), including museum curatorship (Calver & Page, 2013), and future research should explore hospitality aspects of the visitor experience in museums and heritage sites. Lastly, an alternative method of collecting data from visitors (for example, a post-visit online questionnaire, an open-ended online essay, or short voice memos) could potentially add to our results.

Notes

1. Geoposition 58.94124195007101, 5.694025703779336 or https://goo.gl/maps/UBQhd3dwij44zSJt8
2. https://www.tripadvisor.com/Attraction_Review-g190511-d3492243-Reviews-Iron_Age_Farm-Stavanger_Stavanger_Municipality_Rogaland_Western_Norway.html
3. https://www.visitnorway.com/places-to-go/fjord-norway/the-stavanger-region/listings-stavanger/iron-age-farm/10929/

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Declarations of interest

None

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APPENDIX

List of measures

Presentation platform

Which of the following platforms are important to make your visit to this type of attraction successful?

a) Oral personations by guides
b) "Traditional" theme-specific displays at the attraction
c) Dramatized storytelling
d) Use of modern high technology for the purpose of creating a visually intriguing experience
e) Opportunity of playing roles yourself in dramatized performance
f) Participating in task-solving games
g) Opportunity to discuss with skilled /educated experts
h) Information accessed by interactive technology at the site
i) Portable audio-guides
j) Opportunity to use all senses
k) Opportunity to carry out self-initiated activities

l) Opportunity to enjoy a relaxed and pleasant environment
m) Any other option? … "

Support service platform

How would you evaluate the following aspects of the site?

1. Information boards, signs, and direction
2. The handling of queueing
3. Having sufficient time in hand for the tour of the site
4. The maintenance of the site
5. The physical layout of the attraction
6. The location of the visitor center
7. Collection in the souvenir shop
8. Food in the café
9. The service of the staff
10. Any other option? …

Visitor interest

How interested were you in the theme or topic associated with this attraction before the visit?

Visitor type

1) What type of visitor are you?
   Single visitor
   Family and/or friends with children
   Family and/or friends without children
2) Are you travelling in a "group tour package"?
3) Did you take the assistance of a guide at the site?
4) Have you visited Iron Age Farm previously before?

Visitor satisfaction

As a visitor, how satisfied were you with overall experience at this site?