

Using AI for a new-fashioned museums' positioning. An analysis of Gen Z experience expectations

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Abstract

In the actual museum context, Artificial Intelligence has the potential to enhance the museum experience by making it more relevant to contemporary audiences. In a context where individuals seek meaning and purpose in cultural experiences, museums can offer unique connections through meaningful interactions. Artificial intelligence has the potential to enhance the museum experience by making museums more engaging, inclusive, and relevant to contemporary audiences. This study, with the support of the literature and by means of a regression model, analyses if and how hedonic motivation (Hp1), social influence (Hp2), and anthropomorphism (Hp3) are related to Generation Z' expectancy towards AI-based museum experiences. The results suggest that young individuals who have a hedonic motivation to use AI are those who are more likely to expect an enhancement of the experience related to the visit to a museum in the presence of AI devices, not only in terms of fun associated with the visit but also in terms of customization of the experience, providing valuable insights for a purposeful museums positioning.

Keywords: Artificial Intelligence, positioning, museum marketing, Gen Z

1. Introduction

In an increasingly complex and challenging world, people are seeking deeper connections and purpose in their purchases, to “find new meanings” and contribute to a greater good through their choices (Smith, 2015; Campbell, 2020; Tanrikulu, 2021). This “search for a sense” is particularly relevant to museum marketing. Museums, as institutions dedicated to preserving and interpreting cultural heritage, can offer a unique opportunity for visitors to connect with history, art, and science creating meaningful experiences, highlighting social themes, and promoting welcoming environments for all visitors by leveraging technology (Zollo et al., 2021; Abd El Wareath, 2022; Cesário & Campos, 2024). On this point, Artificial Intelligence (AI) can significantly enhance a museum's positioning, offering more engaging and personalized experiences for visitors (Ioannakis, 2020; Pisoni et al., 2021). The empirical research aimed to analyse how AI based technologies are able to fascinate new museum targets, pushing them to undertake active behaviours and, thus, suggesting to public and private operators new-fashioned positioning strategies.

2. Theoretical background and hypotheses

AI is revolutionizing the way museums operate, offering innovative ways to protect, preserve, and share cultural heritage, as well as in the areas of management and visitor experience (Simone et al., 2021; Pisoni et al., 2021). Digital innovation is changing the role of museums, from artifact repositories to active edutainment agencies (Raimo et al., 2022), modifying their positioning too. From the visitors' perspective, this implies an evaluation of the usefulness and benefits expected from the use of AI technologies, allowing them to create their own meanings and ways of moving within museums (Hume, 2015; Poria et al., 2009), enabling new forms of interactive learning (Solima, 2016), redefining the concept authenticity and substantiating the experience of new hedonic and participatory dimensions. Indeed, understanding how visitors respond or are expected to respond to AI devices becomes pivotal. For several years, cultural organizations have been increasingly paying attention to understanding the factors that guide the acceptance or rejection of technology by visitors (Taherdoost, 2017), using functional models such as the Technology Acceptance Model (TAM, Davis, 1989) and subsequent empowered models (e.g., TAM 2; Venkatesh and Davis, 2000, TAM 3; Venkatesh and Bala, 2008 and UTAUT). However, these models may not fully capture the complexity of AI adoption acceptance, especially when referring to complex services such as tourism and museum services.

A recent study, instead, presents the AI Device Use Acceptance Model (AIDUA; Gursoy et al. 2019) which explains the willingness to accept the use of AI devices, suggesting three appraisal stages: (1) customer assessment of the relevance and importance of using AI devices during service interactions; (2) deliberate appraisal of benefits and costs of using AI devices; (3) determination of the willingness and objection levels for accepting the use of AI devices during service delivery process on the bases of the customers' emotions. The attention reserved by visitors to AI devices contributes to the formation of their expectations towards the experience they are going to live, suggesting interesting insights for museums' positioning strategies.

Interaction with AI, unlike traditional functional technologies, can operate autonomously, often requiring no direct user input or intervention (e.g., AI-guided tours or humanoid museum guides), where the interface mimics human interaction. This interaction generates a multi-phases evaluation process and emotional engagement that mediates the visitor's decision to embrace or not AI for service-related tasks (Gursoy et al., 2019).

In this context, constructs such as ease of use or perceived usefulness lose their prominence, and constructs such as hedonic motivation, social influence and anthropomorphism become relevant, significantly shaping both decision-making processes and final assessments.

Hedonistic motivation plays a pivotal role in the adoption of artificial intelligence (AI) technologies within museum settings. Venkatesh et al. (2012) demonstrated that hedonic motivation is a predictor of new technology adoption. When visitors perceive AI interactions as pleasant, they are more inclined to consider AI as enhancing the museum experience (Ioannakis et al., 2020). The AIDUA model highlights that hedonic motivation has a positive impact on the visitor's overall experience with AI, influencing perceived performance expectancy and perceived effort expectancy (Gursoy et al., 2019).

Social influence, including the opinions of friends, family, and colleagues, positively affects visitor's attitudes toward AI adoption. Visitors who observe members of their social circle embracing AI are more probable to adopt a favourable attitude toward AI use during museum visits (Gursoy et al., 2019). Moreover, AI-driven tools that enhance social interactions, such as AI-guided group tours or collaborative learning through gamified experiences, are emerging as methods to enrich the social dimension of museum experiences (Ioannakis et al., 2020).

Anthropomorphism, or the attribution of human-like characteristics to AI devices, introduces additional complexity. While anthropomorphizing AI can generate more familiar and engaging interactions, it can also lead to discomfort if AI is perceived as overly human-like, increasing the cognitive effort required for interaction (Furferi et al., 2024).

In accordance with the primary appraisal of the AIDUA Model, we consider three critical constructs that may affect perceived performance expectancy of AI devices - hedonic motivation, social influence and anthropomorphism - and we suggest that these factors may influence the expectancy concerning a visit to a museum that offers AI-based experiences. Thus, we pose the following hypotheses:

Hp1: *Hedonic motivation is positively related to museum visitors' expectancy towards AI-based experiences*

Hp2: *Social influence is positively related to museum visitors' expectancy towards AI-based experiences*

Hp3: *Anthropomorphism is negatively related to museum visitors' expectancy towards AI-based experiences*

This study involves the digital native Generation Z (Vitezic and Peric, 2021), with a high propensity to accept innovations, but with an undecided attitude towards AI.

3. Method

In this preliminary phase of our study, we have tested the hypotheses through a survey conducted on a sample of young individuals. Our sample includes 175 individuals born between 1996 and 2004. Given that our dependent variables are dummy variables, logistic regression models were performed. More precisely, we performed three models using three different dependent variables to measure the expectancy of the respondents concerning the benefits potentially associated with the presence of AI and advanced digital tools in a museum. Each of the three dummy variables equals 1 if the respondent perceives that these tools could provide an enhancement of the experience, respectively, enhancing the knowledge of the works and their contextualization (variable *information on works*), adding fun to the visit (*fun*) or allowing the customization of the visit (*customization*); otherwise, the variable equals 0.

The independent variables used to test the hypotheses are *hedonic motivation* (Hp1), *social influence* (Hp2), and *anthropomorphism* (Hp3). They have been measured through scales developed by Gursoy et al. (2019) using items adopted from previous scales (Venkatesh et al., 2012; Lu et al., 2019).

Moreover, we controlled for *familiarity with AI* (proxied by the share of tools that the respondent has tested with a list of AI tools presented in the questionnaire), *gender*

(through a dummy variable that equals 1 if the respondent declared to be a woman and 0 otherwise), and *age*.

4. Results

Table 1 presents the results of the analyses conducted, using as a dependent variable, respectively, the variable *information on works* (Model 1), the variable *fun* (Model 2), and the variable *customization* (Model 3). Results of Model 1 show that the perceived enhancement in terms of better information and contextualization of the works is not significantly related to hedonic motivation, social influence, and anthropomorphism (but is positively related to the respondent's familiarity with AI tools). Results of other models provide evidence that hedonic motivation is positively associated with the perception of the benefits of AI tools in terms of both enhancement of the fun associated with the visit to a museum (Model 2) and the opportunity of customization of the visit (Model 3), offering support for our Hp 1. On the contrary, the social influence and anthropomorphism variables are not significantly associated with the perception of these potential advantages. Hp 2 and 3 are thus rejected.

These results suggest that young individuals who have a hedonic motivation to use AI are those who are more likely to expect an enhancement of the experience related to the visit to a museum in the presence of AI devices, not only in terms of fun associated with the visit but also in terms of customization of the experience.

Table 1. Logistic regression analysis

| | Model 1 <i>Y=information on works</i> | | Model 2 <i>Y = fun</i> | | Model 3 <i>Y = customization</i> | |
|---------------------|--|------------|---------------------------|------------|-------------------------------------|------------|
| | Coeff. | Odds ratio | Coeff. | Odds ratio | Coeff. | Odds ratio |
| Hedonic motivation | 0,32 | 1,37 | 0,41 ** | 1,51 | 0,59*** | 1,81 |
| Social influence | 0,11 | 1,12 | -0,21 | 0,81 | -0,13 | 0,88 |
| Anthropomorphism | -0,11 | 0,90 | 0,26 | 1,29 | -0,05 | 0,95 |
| Familiarity with AI | 4,04** | 56,83 | 2,07 | 7,89 | 1,05 | 2,86 |
| Gender (female) | -0,22 | 0,80 | 0,46 | 1,59 | 0,53 | 1,70 |
| Age | -0,14 | 0,87 | -0,05 | 0,95 | -0,37** | 0,69 |
| Constant | 3,42 | 30,49 | -0,18 | 0,84 | 7,76** | 2354,67 |

N = 175; *p < 0.1; **p < 0.05; ***p < 0.01

5. Conclusions and implications

According to the preliminary results, museums can create a more dynamic, engaging, and inclusive experience for their visitors by leveraging AI. On this stream, they can remain relevant in a rapidly changing world, by fine-tuning with the new generations in terms of purpose, tools and languages and can position themselves as institutions that not only preserve the past but also contribute to a better future

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