The Effect of Augmented Reality Mobile Application on Visitor Impact Mediated by Rational Hedonism: Evidence from Subak Museum

Ketut Agustini[1], Dessy Seri Wahyuni[2], I Nengah Eka Mertayasa[3], Ni Made Ratminingsih[4], Gede Ariadi[5]

Department of Informatics and Engineering Education-Faculty of Engineering and Vocational,
Universitas Pendidikan Ganesha, Bali, Indonesia[1, 2, 3]
Department of English Language Education-Faculty of Language and Art, Universitas Pendidikan Ganesha, Bali, Indonesia[4]
Department of Management-Faculty of Economics and Business, Satya Wacana Christian University, Indonesia[5]

Abstract—**This study expands our comprehension of museum visitor impact within a system quality, information quality, and augmented reality (AR) media content quality on mobile applications. Museums meet new defiance of escalating expectancies of their visitors. As a result of the universal mobile phone tool, AR has arisen as the latest technology offered to the museum to increase its visitors. These expectancies are fostered by the improvement of modern technologies like AR on the mobile app. Across an online survey of 241 visitors, the study determines the constructs affecting visitor impact within museum' mobile apps and the consequential results of AR-linked visitor impact. The study proposes a recent set of AR features, explicitly, system quality, information system, and AR media content quality, and establishes their influence on rational hedonism and satisfaction experienced, thus enhancing visitor impact. The findings also show that the rational hedonism and satisfaction experienced are positioned as full mediators for the relationship between system quality & information quality and visitor impact. In contrast, these mediators partially influence the indirect relationship between AR media content quality and visitor impact. Moreover, the results affirm that AR media content quality within the mobile application is the most critical construct to directly enhance visitor impact, whereas the system quality and information quality have no influence yet. From a practical point of view, the importance of AR technology for the museum can support entice new visitors to museums and improve to make more incomes.**

Keywords—System quality; information quality; augmented reality media content quality; rational hedonism; satisfaction experienced

I. INTRODUCTION

The importance of museums as artistic and heritage organizations is established, which have a substantial part in magnetizing new visitors to endpoint. To entice visitors and deliver them with good experiences, museums have begun to embrace modern technologies. Some scholars propose which are still significant alterations among museums based on high-tech tools, determined by the sum of aspects such as museums' size, site, income, and managerial control in where museums in emerging states are a significant burden to foster their technological capabilities [1][2].

Museums meet recent challenges of increasing the prospects of their guests. These outlooks are fostered by improving the latest technologies such as virtual reality and augmented reality on mobile applications [3]. The escalation of information technology and digital forms altered how museums involved their visitors [2]. The improvement of digital media with mobile devices through augmented reality (AR) technology has gained a place in various users' hearts and many supporting applications [4]. AR has distinctive capability features to interlace the virtual and the material, implying museum visitors can suppress themselves in virtually improved experiences touching historical objects such artifacts, lontars, Subak (Balinese irrigation system) via AR apps. This study contends which AR media content provides creative potentials for assigning the unique features of historical objects, influencing satisfaction experienced and the enjoyment of the tour, like hedonism, and consequently increasing visitor impact [5].

Thus far, the recognition of AR mobile still meets several defiances explicitly for customer shopping engagement as the limited quality of media content and low quality of media layout[6]. Additionally, other concerns are linked to using the mobile application, such as lack of information quality and lack of system quality with mobile application because it is difficult to operate the function and content is not interactives [7][8]. These challenges can potentially increase visitors' resistance to using the AR mobile application. Conversely, there has been a lot to assess the influence of AR mobile's quality, system, and information on the acceptance of technology. System quality of the mobile application is essential to a beneficial user experience of mobile applications [9]. Determining the quality of AR mobile application is a multidimensional practice concentrating on several features of a system like system attributes, quality attributes, serviceability elements, and other aspects linked to technical matters [10]. System quality is the degree of easiness of utilizing and conveying out of assignments [11]. It also exhibits the significance of navigability, user-friendliness, organize, graphic logic, and stable mobile systems for enhancing a sound visitor capability and acquiring [12][13]. Some cosmetic, fashion and sports companies have implemented AR media to improve the authentic experience of their objects and assist customers through decision making [14]. Therefore, this paper tries to focus on the research gap by scrutinizing the impact of

the implementation of the AR mobile application on visitors in the Subak museum.

To fulfill the research gap, drawing from collaboration among the theory IS success model, the theory of Unified Theory of Acceptance and Use of Technology (UTAUT2) [13], and pure happiness theory [15][16], we construct and empirically emphasize a composition propositioning which, namely actual rational hedonism and satisfaction experienced respectively mediate the connection among system quality, information quality and AR media content quality, and visitor impact. The objective of this study is three aims. First, to investigate the constructs which affect visitor impact through AR attributes on mobile apps. Second, to evaluate the effect of rational hedonism to bridge the relationship between AR features and visitor impact. Thirdly, to assess the influence of satisfaction experienced as the mediator of the link between AR features and visitor impact.

II.   BASIC THEORY

A. Factors Affecting Adoption of AR Mobile

Furthermore, IS success model draws information quality as an essential element to an information systems accomplishment [17]. A primary function of an AR mobile is to deliver visitors with figures appropriate to the historical objects [18]. Information, which is evident, recent, appropriate, precise, comprehensive, and consistent is trusted to be of excellent quality [19]. The performance of a technological system such as augmented reality is significant in instruction for consumers to implement and utilize such technology [20]. Then, a high-tech system is regarded as simple to utilize, which lets individuals finish duties, foster their output while also improving their performance and productivity [21]. In the context of this study, information quality and system quality extend to a visitor's view of the expectancies of significant others concerning the utilize of AR via mobile app.

Subsequently, UTAUT2 was initiated to comprise human behavior and practice [22]. The enjoyment reflects hedonism that has been considered a critical aspect of technology theory [22]. It is the action of expanding a particular system that is enjoyable in its own right, away from any performance effects ensuing from system use. The empirical study draws which enjoyment can affect mobile app utilization [20]. AR media content is imagined delivering a positive and performing experience [23]. Then, hedonism has converted into a fundamental construct in interpreting the adoption and utilization of the latest technology.

Regarding the pure happiness theory, the characteristic of a person's life is dependent on happiness, that is, the cognitive aspect, the hedonistic aspect, the mood aspect (emotional), and the hybrid aspect [15]. In this study, we try to implement the combination of cognitive and hedonistic views called rational hedonism. Each person is slightly hedonistic modestly because every person desires to experience an enjoyable life [24]. So, rational hedonism involves the pursuit of pleasure, a happy condition regarded on rational principles that create more significant comfort.

As a result, through integrating each theory (IS success model, UTAUT2, and pure happiness), the study encapsulates technology, social and self-correlated constructs in the improvement of the theoretic model, which scrutinizes the part of rational hedonism and satisfaction experienced in enlightening visitors' degree of engagement by AR mobile software.

B. Hypotheses Development

Particularly, virtual portrayals can influentially create the quality and historical objects via the mobile system; an improved configuration of a virtual object with visitor carries a new figure of exclusiveness; the cover of the virtual artifact-linked object on physical environments can generate object proximity and thus in-depth resonance by visitors than looking directly. The previous empiric has recognized how AR encourages sensorial elements and enhances individual performance [25][26]. Thus, the hypothesis is intended:

H1a: Higher system quality has a positive influence on visitor impact.

The magnitude of the system quality establishes a significant effect on the mobile application [27]. The system quality of mobile would interface which discovers new methods for collaboration between real and virtual surroundings simultaneously [28]. Additionally, it would enhance the attentiveness of the visitor. The accessible interface enables more artifact visualizations to their visitors, thus increasing the level of enjoyment. Such a platform enables the user to walk through the virtual museum and indicates the virtual depictions super-imposed on physical environments [29]. Correspondingly, Imaginings generation as augmented reality affordance permitting visitors to visualize 3D object portrayals in contrast to the actual condition [14].

Furthermore, system quality is acknowledged as easiness of learning, easiness of utilizing, the ease of accessibility, the effectiveness of system attributes, system complication, system attributes, and response time of IS [30]. It is as a degree of how well a supplied system meets visitor hopes such as effectual, reliable, adaptable, practical, customized, and fulfills the requirements [8]. Because visitors frequently settle in the comfortable system for longer time, the robust system makes enjoyment to consistently use the app, which aids encourage visitors' experiences [31]. The excellent system frequently causes visitor interfaces, which convey a perception of consistency, receptiveness, assurance, and compassion that can help visitors reach their aims and prospects more knowledgeably or, in this context, achieve hedonism [32]. Some empirical studies have revealed which people with these features positively generate pleasing and enjoyable experiences for visitors [33][32]. Then, the hypothesis is intended:

H1b: Higher system quality has a positive influence on rational hedonism.

System quality contains the required features (e.g., easiness of utilizing, flexible system, and reliable system) of mobile application [34]. Determining the quality of IS is a multi-aspect procedure converging on some attributes of a system like system attributes, quality attributes, usability attributes, and other attributes linked to technical concerns [35]. Characteristic determines system excellence in conventional studies involve response time and robustness [36]. AR mobile system

generates more revelational moments by indicating magnificence features in an immersive and sensory-rich approach. AR features create historical object components proximal and graphicly high-up in physical environments, even though the scenery of the linked experiences varies [29]. Captivating this contextual museum, more excellent system quality is estimated to increase satisfaction experience. Thus, the hypothesis is composed:

H1c: Higher system quality has a positive influence on satisfaction experienced.

Information quality emphasizes the quality of a visitor's mobile's outcome (i.e., the information quality which the mobile delivers) and its helpfulness. It has been exhibited to be a critical success aspect while examining whole information system accomplishment [37]. Rich substance delivers the quality of the content concerning its practicality, comprehensibility, and robustness [38]. Some empirical studies have shown which information quality positively influences the individual impact [39][17][40]. Based on this discussion, information quality enhances the museum visitor impact.

Mobile informativeness positively influences purchase intentions, while information declines the degree of improbability to the products and enhances the possibility of shopping linked decision-making [41]. The information generated by the mobile system is the relative link and significance of a mobile regarded on consumer's requirements and concerns [42]. The mutual interaction and the quantity of information shared online affect cognitive contribution [43][44]. Similar to the museum context, the more informative and AR mobile, the more visitors endeavor to take back information that improves their participation [41]. Then, the following hypothesis is proposed:

H2a: Higher information quality has a positive effect on visitor impact.

The information quality portrays the exactness and precision of the information delivered by the mobile application; rightness is an alternative key indicator of information quality which information must be produced within proper and correct. So, visitors can get the latest adequacy data related to historical objects; adequacy is another attribute of information quality that should be appropriate and should comprise all information needed to the end-user [45]. Understandability is a valuable attribute of information quality, which must be simple to recognize and not be complicated and hard to comprehend. Conciseness is an attribute of information quality generated by the IS [46]. Moreover, information quality shows the outcome features of the mobile app's information, which corroborates the appropriate information toward museum visitors. The essential information is accessible at the exact time to the right man; the info delivered by the information mobile must be clear to the end-users [47].

Moreover, the spending of information related to history and culture can be inferred as a configuration of edutainment since visitors can acquire something and relish it simultaneously [48]. This is aligned with museums' aim of delivering knowledge and amusement, which relates with a dual method to recent visitor conduct where 'cognitive and emotional aspects are concurrently at perform' [49]. It suggests that information generated by mobile enhances the level of psychological developments like enjoyment, hedonism, and affections [50]. The more helpful information generated by mobile applications provides the latest and relevant information; further, it is seen as informative, and visitors have more delight through the collaboration [41]. Thus, the hypothesizes that:

H2b: Higher information quality has a positive effect on rational hedonism.

Information quality can improve to enhance the satisfaction of the experienced visitor in the museum [51]. This empirical matches study from the perspective of museum visitors that exposed collaborative information affects the satisfaction experienced when visiting the museum [52]. Information quality plays a vital part in expanding positively to the advantages of handling a particular information technology (IT) [53]. It is viewed as the primary antecedent of user satisfaction [35]. Also, the increase of visitors' satisfaction due to it encourages them greater than static demonstrations. Visitors have more participated in the display while they can apply interactive displays [54]. Thus, the hypothesis is:

H2c: Higher information quality has a positive influence on satisfaction experience.

The existence of high-tech in museums turns out to be vital and must not be ignored. For instance, the revolution of museum experiences aims to the significance of interactive technology devices that can assist in accomplishing the preferred alters with the aid of explanatory texts and feasible activities [55]. Consistently, which museum experts believe AR technology is a museum instrument whose incorporation into museums generates the foundation for interface via involved entertainment [56]. Using multimedia features such as AR with interactive content can positively affect learning development [57]. Similar to the museum context, virtual object generated by AR app enhances learning progression by sustaining the visitors' engagement. For instance, the implementation of videos and virtual animations can enlighten complicated concepts more effectively rather than concern the text [57]. Regarded above this discussion, the AR media content quality corroboration aspect can act as a vital aspect in leveraging the museum visitor impact. Thus, the hypothesis is:

H3a: High AR media content quality has a positive influence on visitor impact.

AR is the incorporation of digital data with the user's situation. It utilizes the present surrounding and overlays the latest information on top. This technology enhances the digital creation with physical targets, letting a real-domain customer flawlessly interrelate with digital elements [58]. The AR utilization in an art museum has a vital role in the recent improvements linked to acquiring technology that considers the latest high-tech instruments as a proposal to encourage the learning process [58]. Furthermore, AR is present converting human developments by speeding up competencies progress and encouraging guidance.

The amazement of AR is escalating because it carries components of the virtual object into the actual environment,

then augmenting the objects for seen, heard, and perceived. It conveys computer-created objects into the reality surrounding, but the visitor can look at the historical object. When utilizing AR apps, the user imagines a mix of synthetic and natural brightness [59]. Overlaying pictures are projected above historical objects, which allocates the figures and collaborative virtual objects to be on top of the user's interpretation of the natural environment. AR can be very proper for replications, specifically in the museum zone [51].

Furthermore, AR technology integrates aspects of amusement and collaboration into museum propose to entice new visitors, particularly the children and teenager segment[60]. For instance, the Art Museum in the USA utilizes the influence of technology to involve visitors enthusiastically. With the aid of the AR app, visitors can perform a mainly intended museum game. They are encouraged to reconstruct the stances of the sculptures in the museum's gallery. Then they are delivered by information related to the art they are attempting to reconstruct in the game. In this approach, a visitor has amusing and learns together with the support of collaborative technology. By embracing AR media content, interactive installments entice visitors and create them more dynamic for an extended time than standard static displays [54]. Collaborative link technologies create the apparent authenticity of visitors' familiarity in a museum [50]. The museum embraces content entertainment through displays that foster all visitors to absorb more about themselves and others while they go to the museum [51]. So, technologies in museums (AR) can induce visitors' emotional reactions such as enjoyable and hedonism [50][6]. Thus:

H3b: High AR media content quality has a positive influence on rational hedonism.

AR technology delivers objects to improve the visitor tour by expanding magnificence features animatedly through diverse touchpoints crossways the tour itself [29]. AR's virtuality authentically replicates and increases the more excellent quality of objects while covered in the natural realm or lined up with visitors' looks. Moreover, objects can implement AR to certify the easy extension of the tour via facilitating fewer jarring alterations between virtual and physical touchpoints. This study highlights how AR content aids historical objects in delivering high-end facilities through zooming the high resolution for their objects, which satisfaction [61]. So, AR generates more revolution moments by demonstrating magnificent content in an immersive and sensory-rich approach. Its features generate object media proximal and graphicly prominent in physical environments, so that increase satisfaction experience. Thus, the following hypothesis is proposed:

H3c: High AR media content quality has a positive effect on the satisfaction experience.

Regarding the pure happiness theory, the characteristic of a person's life is dependent on happiness, that is, the cognitive aspect, the hedonistic aspect, the mood aspect (emotional), and the hybrid aspect [15]. In this study, we try to implement the combination of cognitive and hedonistic views called rational hedonism. Cognitively evaluating one's life as an entire in a positive approach makes to perceive rationality. Each person is slightly hedonistic modestly because every person desires to experience an enjoyable life [24]. So, rational hedonism involves the pursuit of pleasure simply, which is a happy condition regarded on rational principles that creates more excellent support to comfort.

Rational hedonism is linked with a fun and exciting experience which may ensue in enjoyment. An enjoyable and fun mobile application creates positive hedonic contagion by augmented reality (AR) technology [62]. Since augmented reality (AR) media implements the natural surrounding and overlays recent information above it which appears to augment the digital domain with physical objects, letting a real-world visitor flawlessly interrelate with digital elements [59]. It serves users to avoid tediousness to rest; hedonism can be a vital feature to generate unique sensory emotion [29]. In entirety, hedonic understandings create changes in the users' emotional testifies, making a positive response that enhances their aims to use AR mobile.

Hedonism distributes with the customers' affections (happy and adoring) and has arisen as a vital aspect in influencing social behavior [63][64]. The joyful and ludic part of visiting the shop is that visitors are more involved with the practical part (fun) of relaxation [65]. In the museum context, visiting emphases are considered the hedonic value [66]. Visitors appreciate obtaining engaged in the touring process and are more attracted to the fun aspect of the touring experience [67]. Scholars have discovered which faithfulness of AR app improves if the visitors are satisfied with the visual involvements, i.e., degree of enjoyment [64]. Hedonism has been realized to affect the satisfied visitor positively, then encourage the visitor to revisit [68][6]. Then, the hypothesis is proposed:

H4: Rational hedonism has a positive influence on visitor impact.

The satisfaction experience has a substantial effect on behavioral intentions [69]. The feelings customers create are bound to the aptness of the services obtained (i.e., the contrast between performance and hopes [70]). They construct potential developments of engagements on their level of satisfaction [71]. Satisfaction with a product or service is the essential enthusiasm to persist applying it as satisfaction indicates which advantages originated from visualizing media content by AR application. In the museum context, the satisfaction experience with AR mobile would indicate the achievement of the estimated advantages, improving the visitor impact to use this application to maintain acquiring these advantages [72]. In the AR mobile context, the visitor impact enables acquiring local knowledge "Subak"; to improve the exploring historical object; to makes easier using the application; to improve technological skills. The increased visitor satisfaction experience will consequently influence visitor impact. Then, the hypotheses is:

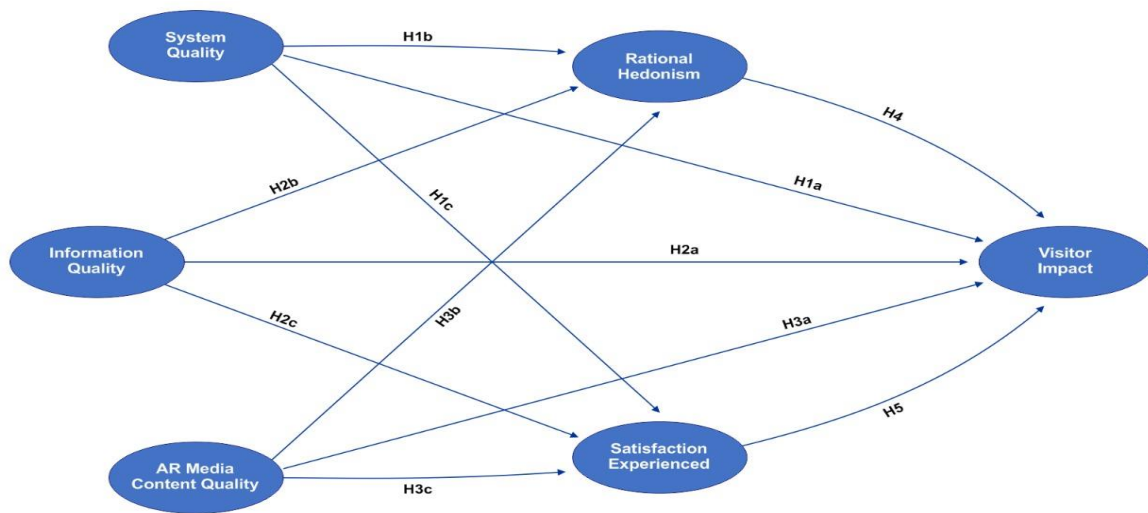H5: High satisfaction experienced has a positive effect on visitor impact.

Fig. 1. Conceptual model.

Based on the above arguments, the satisfaction experienced, and the rational hedonism has a significant role in mediating the total effect of system quality, information quality, and AR media content quality on visitor impact. Thus, the hypotheses proposed are (Fig. 1):

H6a: The rational hedonism mediates the impact of system quality on visitor impact.

H6b: The rational hedonism mediates the impact of information quality on visitor impact.

H6c: The rational hedonism mediates the impact of AR media content quality on visitor impact.

H7a: The satisfaction experienced mediates the impact of system quality on visitor impact.

H7b: The satisfaction experienced mediates the impact of information quality on visitor impact.

H7c: The satisfaction experienced mediates the impact of AR media content quality on visitor impact.

III. METHODOLOGY

A. Data Collection and Sample

The research employed a quantitative approach. Collected information on the critical research was obtained by the visitors of the Subak Museum at Bali Province, Indonesia. The data were gathered employing a survey handled through google form between May 2021 and July 2021. All items were calculated using five-point Likert scales, varying from totally disagree (1) to totally agree (5). A pilot study was performed on a group of 30 museum visitors who were not involved in the primary survey to examine the instrument. An overall of 427 e-mails was disseminated in May 2021, specifying the hyperlink to the survey and requesting its contribution. Two hundred seventy-nine responses were obtained toward the end of July 2021, which relates to a 65.33 percent response rate. Thirty-eight responses were dropped due to inadequate, resting 241 (56.44 percent) with valid and finished responses. In Table I, the resulting data were gathered from 241 visitors that visited Subak Museum in Indonesia.

TABLE I. DEMOGRAPHIC PROFILE OF RESPONDENTS (N=241)

Demographics Respondent Percentage (%)	Frequency	Percentage
Gender		
Male	140	59,29%
Female	101	40,71%
Age-Group		
17-30 years	137	56,85%
31-40 years	86	35,68%
41 years above	18	7,47%
Education		
High School or below	104	43,15%
Undergraduate degree	87	36,09%
Bachelor	37	15,35%
Master's degree or higher	13	5,39%

B. Profile of Subak Museum

The Subak Museum is a museum that displays a collection of traditional agriculture tools utilized in farming and the traditional Balinese irrigation termed as Subak. It is one of the tourist objects for study tours, which many students and travelers from domestic and foreign tourists visit. Subak Museum is one of Bali's icons that stores agricultural tools of Balinese cultural heritage through the concept of Subak network has been recognized by the World Health Organization (WHO) as a World Cultural heritage. Museum is located in Banjar Anyar Village, Kediri District, Tabanan Regency, Bali - Indonesia. The distance from Denpasar City is approximately 21 KM. The number of visitors to Subak Museum from 2016 to 2020 decreased from 28,355 to 21,104 visitors.

History of the Subak Museum was established on August 17, 1975, to preserve the Subak traditional institution

as a noble cultural heritage of the nation and introduce the younger generation and tourists to the unique traditional irrigation system in Bali. Subak is an organization of farming communities in Bali that deals explicitly with the regulation or system of irrigating rice fields/irrigation in a traditional/conventional way.

The Subak Museum provides an experience for visitors to see, recognize and learn all things related to agriculture and traditional equipment commonly used in agriculture in Bali, such as rice cutting and pounding tools, rice plowing tools, etc. Furthermore, here visitors get complete information about how the Subak irrigation system and processing rice fields from start to finish. Such as how to open rice fields, share the water, make water tunnels, measure waterways, and complete the process of religious ritual ceremonies.

C. Instrument Development

Based on previous studies, five constructs have been established by the author for supporting student performance (System Quality; Information Quality; AR media content Quality; Rational Hedonism; Satisfaction experienced; Individual Impact). Four items determined system Quality: AR mobile is simple to navigate; easy to use; admits visitors to search the information; offers proper functionality [73]. Information Quality was measured by four items that information provided by AR mobile is practical, understandable, attractive, reliable [7]. Four items measured AR media content quality: AR mobile desires enhancement of object reality; delivers powerful momentary; creates captivating aesthetic simulations; create real-time interactivity between virtual and physical elements [74][75][29]. Rational hedonism was measured by four items that visitor enjoys their tour through the AR application; have incredible emotion through the AR technology; have exciting times to explore the historical object; have a discovery of local knowledge [76]. The Satisfaction experienced was measured by four items that the visitors feel satisfied with their experience; the experience matches what visitors expect, the experience has succeeded as well as visitor contemplates, the getting auratic from the visual object [6][29]. The visitor impact was measured by four items that museum visitors enable to acquire local knowledge, "Subak", to improve the exploring historical object; to enhance technological skills; to make easier using the application [7]. The questionnaire was obtained from empirical studies which analyzed the variables in an inquiry in the current research.

IV. DATA ANALYSIS AND RESULTS

To recognize the direct and indirect effect of system quality, information quality, and AR media content quality on visitor impact with the mediating impact of rational hedonism and satisfaction experienced at museum visitors in Indonesia. For evaluating the entire measurement model, statistical SmartPLS software was applied, and analyzing for data was utilized by PLS-SEM (Partial Least Square-Structural Equation Modelling).

A. Measurement Model

Convergent validity and discriminant validity have been examined. We have evaluated convergent validity by examining factor loading greater than 0.7, composite reliabilities greater than 0.8, and the average extracted variance (AVE) must greater than 0.5 for all variables (Fornell and Larcker, 1981). All factor charges in our model are greater than 0.7 and measuring objects are removed if their factor loads are less than 0.70. The finding results show that our model meets the standard of convergent validity. With Cronbach α, we examined the internal reliability of scales. Table II states the loading factor, AVE, CR and (C-α) of all constructs.

The latest approach was applied to confirm discriminant validity in the Heterotrait-Monotrait (HTMT) formula, and the HTMT values are displayed in Table III. If the HTMT is greater than 0.90, then the test of discriminant validity is the failure[77]. As all the results of HTMT are lower than the threshold portrayed in Table III, discriminant validity has been confirmed [77]. The measurement of the goodness-of-fit model was revealed to be satisfactory (Standardized Root Mean Square Residual [SRMR]=0.071, and Normal Fit Index [NFI]=0.928) and established the proposed model because of SRMR value < 0.08 and NFI value > 0.9 [78]. Conclusively, we postulate that tests of convergent and discriminant are valid, thus satisfactory to examine the hypothesis for the study.

TABLE II.   CONVERGENT VALIDITY

Constructs	Items	Factor Loadings	Cronbach α	Composite Reliability	AVE
System Quality (SQ)	SQ1 SQ2 SQ3 SQ4	0,897 0,736 0,801 0,879	0,851	0,899	0,690
Information Quality (IQ)	IQ1 IQ2 IQ3 IQ4	0,885 0,712 0,814 0,853	0,722	0,770	0,703
AR Media Content Quality (AR)	AR1 AR2 AR3 AR4	0,689 0,854 0,766 0,787	0,778	0,834	0,605
Rational Hedonism (RH)	RH1 RH2 RH3 RH4	0,908 0,845 0,649 0,826	0,725	0,836	0,645
Satisfaction Experienced (SE)	SE1 SE2 SE3 SE4	0,893 0,812 0,834 0,745	0,802	0,884	0,717
Visitor Impact (VI)	VI1 VI2 VI3 VI4	0,863 0,758 0,848 0,793	0,766	0,864	0,679

TABLE III.   DISCRIMINANT VALIDITY

	SQ	IQ	AR	RH	SE	VI
SQ						
IQ	0,455					
AR	0,284	0,701				
RH	0,509	0,272	0,408			
SE	0,349	0,798	0,759	0,684		
VI	0,509	0,812	0,743	0,351	0,682	

B. *Hypothesis Examining*

The study examines the structural relationships among the variables by investigating the diverse mediation effects accross a path analysis. Path analyses were applied to test hypotheses in the conceptual model employing the Smart-PLS software. The research shown in Table IV depicts path coefficients of the study model. Table IV and Fig. 2 describes which the path values from System Quality to Visitor Impact was positive and non-significant (ß= 0.121; p value > 0.1), in contrary the path values from System Quality to Rational Hedonism was also positive and significant (ß = 0.544; p < 0.01) and the path coefficients from System Quality to Satisfaction Experienced was also positive and significant (ß = 0.278; p < 0.05). Therefore, H_{1a} is not supported but H_{1b} dan H_{1c} are supported. The path coefficient from Information Quality to Visitor Impact was positive and non-significant (ß = 0.095; p > 0.1), whereas the path coefficient from Information Quality to Rational Hedonism was positive and significant (ß = 0.162; p < 0.1), and the path coefficient from Information Quality to Satisfaction Experienced was positive and significant (ß = 0.145; p < 0.1). Then, there is enough evidence to support H_{2b} and H_{2c} but H_{2a} was not supported. The path coefficient from AR Media Content Quality to Visitor Impact was positive and significant (ß = 0.257; p < 0.05), and the path coefficient from

AR Media Content Quality to Rational Hedonism was positive and significant (ß = 0.201; p < 0.05), also the path coefficient from AR Media Content Quality to Satisfaction Experienced was positive and significant (ß = 0.473; p < 0.01). Thus, there is enough evidence to support H_{3a}, H_{3b} and H_{3c}. The path coefficient from Rational Hedonism to Visitor Impact was positive and significant (ß = 0.295; p < 0.01), and the path coefficient from Satisfaction Experienced to Visit or Impact was positive and significant (ß = 0.254; p < 0.05). Therefore, H_4 and H_5 are supported.

Additionally, the indirect relationship of System Quality, Information Quality, and AR Media Content Quality on Visitor Impact through Rational Hedonism as mediator was also positive and significant respectively (ß = 0.161, p < 0.05; ß = 0.048, p < 0.1; ß = 0.059, p < 0.1), that H_{6a}, H_{6b}, and H_{6c} are supported. Then, the indirect effects of System Quality, Information Quality, and AR Media Content Quality on Visitor Impact through Satisfaction Experienced as mediator was also positive and significant (ß = 0.071, p < 0.1; ß = 0.036, p < 0.1; ß = 0.12, p < 0.05), that state H_{7a}, H_{7b}, and H_{7c} are confirmed. Based on the explanation above, we determine that Rational Hedonism and Satisfaction Experienced partially mediate the relationship between System Quality, Information Quality, and AR Media Content Quality and Visitor Impact.

TABLE IV.   HYPOTHESES TESTING

Hypothesis	Relationship	Standard Coefficients	Test Result
H_{1a}	System Quality➔Visitor Impact	0,121	Non-Significant
H_{1b}	System Quality➔Rational Hedonism	0,544*	Significant
H_{1c}	System Quality➔Satisfaction Experienced	0,278 **	Significant
H_{2a}	Information Quality➔Visitor Impact	0,095	Non-Significant
H_{2b}	Information Quality➔Rational Hedonism	0,162***	Significant
H_{2c}	Information Quality➔Satisfaction Experienced	0,145***	Significant
H_{3a}	AR Media Content Quality➔Visitor Impact	0,257 **	Significant
H_{3b}	AR Media Content Quality➔Rational Hedonism	0,201 **	Significant
H_{3c}	AR Media Content Quality➔Satisfaction Experienced	0,473 *	Significant
H_4	Rational Hedonism➔Visitor Impact	0,295 *	Significant
H_5	Satisfaction Experienced➔Visitor Impact	0,254 **	Significant
H_{6a}	System Quality➔Rational Hedonism➔Visitor Impact	0,161 **	Significant
H_{6b}	Information Quality➔Rational Hedonism➔Visitor Impact	0,048***	Significant
H_{6c}	AR Media Content Quality➔Rational Hedonism➔Visitor Impact	0,059 ***	Significant
H_{7a}	System Quality➔Satisfaction Experienced➔Visitor Impact	0,071 ***	Significant
H_{7b}	Information Quality➔Satisfaction Experienced➔Visitor Impact	0,036***	Significant
H_{7c}	AR Media Content Quality➔Satisfaction Experienced➔Visitor Impact	0,12**	Significant

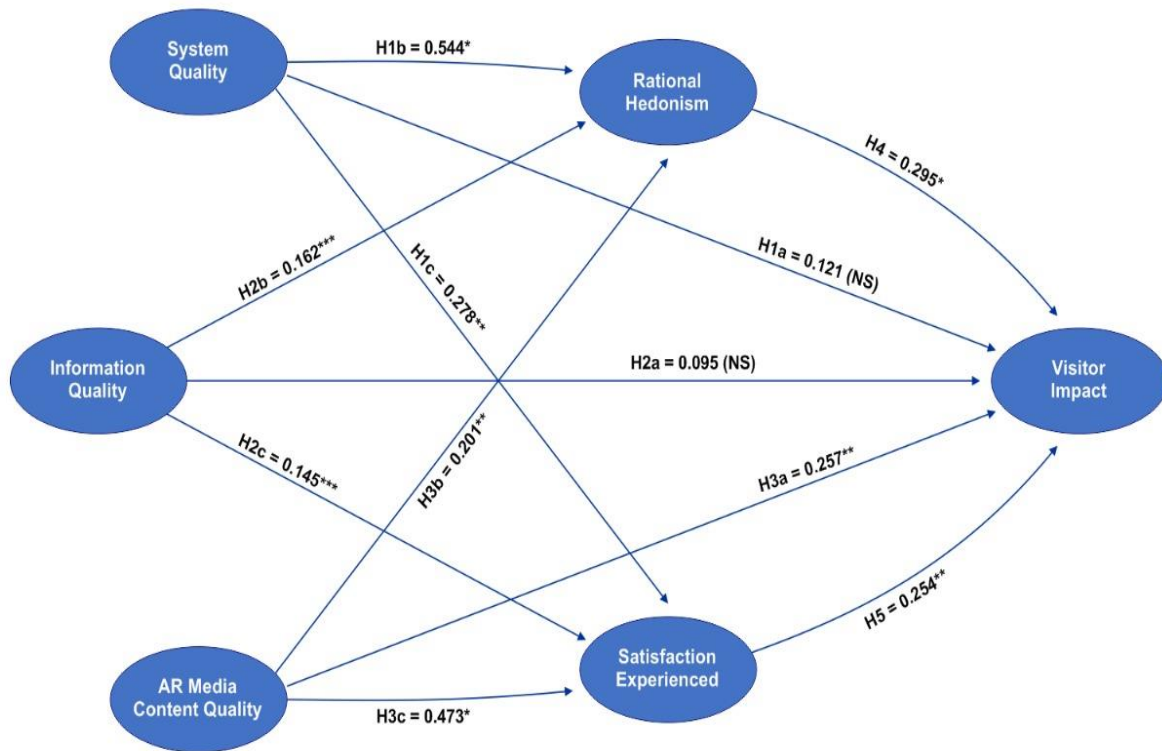Note: Significant at *1%, **5% and ***10% levels

Fig. 2. Results of Path Analysis.

V. DISCUSSION

The current study results establish which the system quality does not influence the visitors' impact in Subak museum, which corroborates the findings [79]. Some museum visitors have difficulty finding information contained in AR mobile, and some of the existing features are still unstable. Concurrently, several visitors suppose technological constraints often obtained in new, inventive technologies, such as arduousness in installing the related software, deficiency of computer literacy, and malfunctioning of the AR applications (e.g., slow response speediness, cartoony object pictures). Then, AR is assumed to be at the growing phase, requiring extra scope to enhance to be adored and utilized by more visitors. On the other hand, another empirical study reveals which system quality has a significant effect on rational hedonism, which aligns with the findings [80][81]. Therefore, the system quality is an essential aspect for hedonic-seeking visitors while they involve in openness services. Some visitors obtain it central for the system delivered to be stable with their hopes. Then, AR applications should endeavor to recognize their visitors' desires and support them in accomplishing their aims also is expected to provide a playful and entertaining experience for visitors. Moreover, the other finding shows that system quality has a significant effect on satisfying experiences, which aligns with the findings [6][79][8]. The system technology's ability enables visitors to cooperate more, handle and suit immersed with objects. Possibly, AR delivers visitors with the most interactive kind of technology accessible, where persons have managed over their manipulation in

joining both the actual object and virtual object environment [82]. The AR capability can create mental figures which reproduce historical objects and experiences, which is the main competency through visitors observing the artifact. Visitors have long tried to visualize the objects at the museum to understand their applicability before looking at the actual objects.

Conversely, the other empirical finding shows that the information quality does not influence visitor impacts in Subak museum, which aligns with [7]. The display of information on the application screen is less reliable with the information in the physical diorama, so that there is a misinterpretation for museum visitors. For this reason, visitors could not fully capture the explanation given from the application, such as information about artifacts with precision. In contrast, another empirical study reveals that information quality positively affects rational hedonism, which aligns with the findings [83][80]. The information generated by AR apps enables visitors to personalize content to their personal preferences and fascinations. Moreover, AR applications could deliver further historical objects information like supplementary video media and text matter comprising the process of Subak irrigation and material information of artifacts. The function that originates from this unique subject is possible to improve a visitor's enjoyment by having exciting times to explore the historical object, obtaining local knowledge, and getting incredible emotion. The following finding shows that the information quality has a positive effect on satisfaction experienced, which aligns with the findings [84][72]. Information is evident, recent, appropriate, precise, comprehensive, and consistent and

is of excellent quality [85]. This paper shows which higher-quality information is a vital aspect in attaining satisfaction with AR mobile. It offers visitors information, which is recent, wide-ranging, simply explicable, and converges the information required to enhance a visitor's degree of satisfaction. Information could air to improve the sensed realism of the museum experienced visitors. They expect AR mobile to offer capable and reliable information which would satisfy their information necessities. This result match by study from the viewpoint of museum visitors that revealed interactive information significantly influences the sensed realism of the museum [50]. So, visitors displayed with more excellent informative object visualizations (i.e., artifacts) indicate a more positive experience.

Furthermore, the other finding demonstrates that the AR media content quality influences visitor impacts in Subak museum, which aligns with the findings [2]. AR technology generates and provides content in an approach that visitors favor using. It could enhance the sensed realism of material objects, which supports museums in describing and interactively showcasing the objects. For example, the Subak Museum applies museum's high-tech facility intensifies with praxis, its capability to transform and explain collections subject improves to generate attractive and impressive museum experiences [82]. Moreover, another empirical study shows that the AR media content quality positively impacts rational hedonism, which aligns with the findings [29][6]. AR content could support improving the sensed enjoyment of the visitor because it involves them more than motionless expositions. Visitors have more participated in the expositions while they have a chance to utilize interactive displays. Virtual reality overlays on or is incorporated as a role, and physical environments can graphicly point out the delicate materials and artifacts. The visitor has the facility to improve the magnificence aura by envisioning object heritage. Application authentically replicates and strengthens the more outstanding quality of historical objects while covered in the natural environment. The development of supporting virtual finest object materials with visitors' emergence attributes is central for fitting visitor necessities and customizing the object trial. Mainly, virtual depictions could realistically imitate the quality and resolution of historical heritages in a way not previously likely through a website; the overlay of virtual object-related content on physical surroundings can create object proximity and, therefore, a deeper resonance with visitors than online browsing. The following finding shows that the AR media content quality positively affects satisfaction experienced, which aligns with the findings [29][6]. Regarding museum experience, this research identifies that AR media content provides an attentiveness of historical object stimuli round detailed dioramas. Specifically, it allows historical objects to induce influential emotions in visitors via AR mobile, short-term faces which are intensively satisfied due to the high-quality resolution and unique content for particular objects. Conversely, auratic magnification provides a new approach to constructing an object's distinctive aura – for example, by envisioning the object's realism artifact and distinction in an immersive method. For essentially encouraged museum visitors, the acquiring experience might be improved by AR media content, which becomes a crucial aspect of the visitor's

experience. It provides visitors with information, which is up-to-date, complete, simply comprehensible, and matches the information requirement enhances a visitor's degree of satisfaction. So, AR technology helps museums obtain attractiveness by facilitating visitors to achieve experiences that are concurrently aesthetically educational and entertainment [86].

The following finding shows that rational hedonism has a positive effect on visitor impact, which aligns with the findings [21][6]. Hence, enjoyment might be caused due to the inventive visualization experience delivered by AR as visitors can manipulate objects and have the possibility to generate themselves a customizable experience. During a customer's experience, enjoyment can be obtained by simulating 3-D virtual objects [18][87]. Thus, a diversity of AR media attributes that deliver interaction and lucidity to visitors via AR might be adept at elevating a visitor's imaginative composition progression through their experience, incorporating their natural surroundings with the virtual environment to acquire a fun experience within the visualization of new objects. The other results reveal that the satisfaction experienced positively influences visitor impact, which aligns with the findings [80][72]. Museum visitors turn into satisfied, delighted, and relaxed with their judgments to utilize in AR mobile while the application could meet their necessities and facility offerings match their hopes. Furthermore, visitors feel a positive appraise while they trust that they have obtained reasonable offers for AR attributes. The visitor felt value could be determined by comparing what they give up (e.g., financial, time, power, and affection) with what they obtain (i.e., auratic experiences when looking at virtual objects). The satisfaction experienced by the visitor is obtained by quality of the museum experience, as well as the level of visitors fascinate, causes to overall museum visitors' satisfaction [88]. The opinion of visitors' satisfaction improves while the worth incorporation progression outcomes in a positive result are naturally more likely to foster positive effect.

VI. THEORETICAL AND MANAGERIAL IMPLICATIONS

Theoretically, this study cooperates the collaboration among the theory IS success model, the theory of Unified Theory of Acceptance and Use of Technology (UTAUT2), and theory of pure happiness, also information quality, system quality, AR media content quality to increase visitor impact through rational hedonism, and satisfaction experienced in Subak Museum. The rational hedonism and satisfaction experienced are positioned as full mediators for the relationship between system quality and information quality and visitor impact. In contrast, these mediators partially influence the indirect relationship between AR media content quality and visitor impact. This exemplifies the new model, which fulfills the research gap among information quality, system quality, and AR media content quality on visitor impact. Additionally, the results affirm that AR media content quality within the mobile application is the most critical construct to directly enhance visitor impact, whereas the system quality and information quality have no influence yet.

From a practical point of view, the paper influences the stream of exploring the magnitude of AR technology for

museums. Introducing AR media content for museum delivery (offline & online) can support entice new visitors coming to museums, and therefore improve make more incomes. In achieving the interactivity of the visitor experience, the museum manager needs to recognize how the media content might be employed in the museum's proposal. The level of satisfaction experienced, and rational hedonism is summarized as a crucial aspect in influencing visitor impact. Then, managers must recognize the vital function AR content performs in improving visitor interactivity as the involvement of their getting satisfaction experienced from utilizing AR app. Lastly, the robust system quality of AR mobile creates perceived enjoyment that is termed as rational hedonism to increase visitor impact.

VII. CONCLUSION AND LIMITATIONS

These empirical outcomes have provided some substantially beneficial shreds of proof of the role of system quality, information quality, and AR media content quality to increase visitor impact in the Subak Museum in Indonesia through rational hedonism and satisfaction experienced. The satisfaction experienced is more influential in the linkage between AR media content quality and visitor impact rather than system quality, and information quality as antecedents, whereas rational hedonism is more influential in the linkage between quality system and visitor impact. Thus, the study suggests which rational hedonism and satisfaction experienced fully mediate the relationship between system quality & information quality and visitor impact. Finally, the indirect relationship between AR media content quality and visitor impact is only bridged by rational hedonism and satisfaction experienced.

There are constraints that propose some future research. This analysis employs a cross-sectional design that will let a longitudinal study be applied for the following research to scrutinize the influences of features AR mobile application on rational hedonism and satisfaction experienced that also increases visitor impact. Lastly, this study is only conveyed by a single type of museum, and it is attractive lead to collect data from other museums to provide more corroboration of results.

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