The Use of Augmented Reality in Café’s Interior to Enhance Customer Experience

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Abstract. Immersive media, as a part of digital technology draw interest both in industries and society as well, and Augmented Reality as a part of it getting a wider attention with Pokemon Go phenomenon. The implication of its phenomenon touch marketing business, as industries try to utilize AR technology in their marketing strategy. With the help of smartphone technology, AR can be accessed by common people everywhere, and for a café owner it means change in prioritize, from place's physical aesthetic to visitor experience in visual uniqueness by digital media. AR is used in the café by offering a new alternative to visitor’s experience, who take a selfie by combining interior reality and virtual reality into a single camera shot. The easeto change the design and concept become an advantage of AR usability to utilize by the café’s owner to apply their ideas and create a new concept to appeal visitor and increase visitation number. This study aims to examine perceived hedonic values and customer’s perceived uniqueness towards café’s visit intention, a stimulated self-administered questionnaire used in selected café as a study-case object and interviews is used to deepen the data gathered. This research resulting asignificance of AR technology in improving visitor’s experience and supporting business marketing by support new selfies experience to visitor. This study provides an overview of immersive media utilization in marketing strategy and customer experience in hospitality business.

1. Introduction

In this era where technology has integrating on daily activities, the development of Augmented Reality (AR) is regarded as one of the most world changing technologies of the 21st century(1). By stimulating human senses with Computer Generated Image (CGI), AR enable sight senses to immerse in digital world and experience virtual image as an enhanced version of real surrounding(2). AR is used by creating interactive 3D visual experience for various various fields and purposes, such as for medical, education, architecture, and many more (Guttentag, DA in (1)). In tourism and hospitality industry, AR technology have the ability to enhance tourist experience by making easier to previewing maps, location based-information, or added information in an interactive and simple way simply by using an AR app in a smartphone (1).
The existence of café as a part of hospitality industry shows significant increasing in numbers and lifestyle. Coffee shop transformed into a lifestyle of urban workers, and become a third place where people meet and engage in social interactions (3). Café and restaurants, as a part of hospitality industry, have also started to use AR as a part of their innovation in marketing effort and improvements in consumer experience (4). By this technology phenomenon, the traditional concept of services and marketing in business and hospitality was restructured and redefined in more meaningful ways (Thorpe in (5)) through the interactive, unique experience it can provide to the customers. Nayyar (2018) sums up the impact of the use of AR technology in hospitality and tourism industry that will be related in this paper, which is:
1. AR as virtual attractions at effective cost.
2. Creating virtual dining experience
3. Local attractions
4. Marketing tools

Generally, the use of AR in tourism and hospitality is only limited to add additional information, navigate around the destination, translate written text, or locate next target destination (1). However, later, some museum operators have started to use AR to bring life into their art collections, in order to attract young visitor into their museum, such as the Tate Britain (6). In experiment conducted by Christina (7) in Svevo Museum, resulting in most parameters of visitor experience (i.e. overall satisfaction, novelty of the experiences, aesthetics, interest for the content) received very high score from the users.

To accommodate the needs of AR development in every possible field, smartphone companies starting to infuse their AR apps as bloatware apps, such as Samsung with AR Zone, and social media platforms that adding AR apps, for example: Snapchat and Instagram. In Instagram, AR application are used as photograph filtering style. Considered as express marketing tool that use current internet networking technology, Instagram considered as a popular tool in digital tourism (8). As one of the top most-used picture-based social media applications in the world, Instagram marketing are based on personal impression of experience towards the tourist destination. The photo that had been taken and shared experience in Instagram creates its own impression (8), thus build a destination value and when the impression is good enough to impress, it is usually creating a hype. That is when the term ‘instagrammable’ is started.

With the technological improvements in smartphones nowadays, it has significant implications for society’s behaviour towards their surroundings and communication concept. The lifestyle of selfie and social media sharing drive a change in designing and marketing public to commercial places, from what was originally oriented to customers’ physical and physiological comfort, to focus on visual beauty and uniqueness of the place. By riding the hype of selfies phenomenon, café owners starting to compete whether their place are beautifully visualized enough to creating a hype (9). That is when AR come into business to elevate visitor experience by giving an interactive and unique virtual enhancement into particular destination, such as café.

2. Literature Review

2.1. Augmented Reality

By the maturity of AR technology, creative marketer today can utilize AR to design interactive brand experience, able to create interactive advertising, and offering experience of products and spaces for customer in novel ways. Augmented reality (AR) is a term to describe a practice of layering people’s reality of objects, people, or spaces in physical world with digital information display.

The practice of AR in various industries have become more favoured in hope of creating more innovative strategy to stay competitive, add value (10), as well as develop higher level of engagement with the customers (5). Even when AR become a valuable tool for integrated marketing program,
including those in tourism or hospitality industries, little information is being discover about practice and how to effectively launch AR programs in the marketplace(11).

2.2. Visit Intention

2.3. Experiential Marketing

Experiential marketing is a term to describe the process of identifying and satisfying customer needs and aspirationsto ensure profitability, by factoring their engagement and interactionto liven up brand personalities and adding value to the target audience (12). This will become an advanced marketing strategy that successfully create two way experience-oriented marketing. Providing an integrated live-brand experiences, when it integrated with experiential marketing campaign, AR can be an effective tools to fulfil each of the AIDA stages: Awareness, Interest, Desire, Action.

Researches have showed that everyone who already experiencing the live-brand experience is tend to tell an additional one-and-a-half people, and thus contributes to increasing the effectiveness of a marketing campaign. It utilized the use of word-of-mouth as the most effective marketing tool of all to gain more customers to check the brand out and later get them to engage. Therefore, by taking an experiential marketing approach to customers, it will increase the customer's impression of a brand (12).

2.4. Customer Satisfaction and AR Experience

Customer satisfaction commonly known from two different point-of-view: based of transaction specific and cumulative aspects(13). While the ‘transaction-'specific’ referring to a customer’s value perceiveness that obtained after finishing one specific transaction, the whole experience towards a brand or product in all buying activity stages. The experience of AR as a marketing strategy establish perceived experiential value, in which is contributing to the customer satisfaction development.(13)

If the customer satisfaction has been realized, it will affect the customer engagement (14). The most popular consumer engagement type is called User-Bystander Engagement. This kind of userdevelopsattachment through the connections that exist among clients and spectators. While userattachment expects planning to build the amiability of an AR experience, opening a doors for usercan be more effectively accomplished by provokeuser’scuriosityto create objects they can share in their social media networks.

Digital object become a records of user’s actionwithin AR layer (images, status updates, tweets) that are discernible to spectator who aren’t (currently) partaking in that AR experiences. They educate the spectatorsabout AR experience and may even persuade spectators to participate in the AR experience themselves. Artifacts development is regularlybuilt-in to many AR initiatives. For example in this research, user can share a snapshot of their picture with the digital modelling of the café’s owner. Nonetheless, these sort of artfactare probably not going to bring continued client-bystanderattachment since they don't offer a lot of commonsense or social incentive to either the user or bystander. Exploration on viral showcasing(15)(16)recommends that messages which provide the sender with social currency or identity value are more bound to be shared, and that receivers are bound to investigate messages that offerviable benefit, are surprising, or trigger an emotional response.

3. Methodology

3.1. Object’s Study Case

The research is conducted in selected café as study-case object research. The café is Sivaraja Secret Garden, located in the rooftop of Latarljen Resto & Café, at Jalan BesarIjen No. 79, Malang Town Area. This place is selected as a research object because of its compatibility in customers target market, interior design concept, and willingness of the owner to cooperate in the research. The place’s
targeting young adult, college student, and blue-collar worker in surrounding area. Having a strategic spot in the middle of the town, added with interior concept design that follow current preferred design, this place become a magnet for people that hunt ‘instagrammable’ place for their social media content.

3.2. Participants
The structured questionnaire on Google forms were shared and 118 filled questionnaires got after the 2 weeks sharing periods. This research’ population was those who have visited a well-designed café and felt engaged to its ambience. The reason of choosing the population is the relevance of the research theme to participants habit and they have high familiarity to café’s setting background. To ensure participants perception towards the research stimuli, checking question is asked to the participants. They are required to watch a video about AR implementing in the café’s environment. After the stimuli check, there were 5 participants who failed to give a correct answer, therefore, 113 data were used.

3.3. Measures
Participants were given a stimulus that encourage them to imagine that they are visiting a café they usually visit. They then answer items represent perceived hedonic value, perceived uniqueness, and visit intention towards AR implementing café. To anticipate neutral answer coming from the majority of participants, this research used six-point scales (1 very disagree and 6 very agree). Hedonic value was measured by five items (17) those are “The interior design shown allows me to experience Augmented Reality technology”, “The Augmented Reality shown in the café entertains me”, “The augmented reality shown takes me out into another world”, “The atmosphere of the café with an Augmented Reality facilities makes me feel special”, and “The layout and aesthetic facilities of the café with an augmented reality facilities are fun and unique”.

Perceived uniqueness was measured by three items (18), “I feel that a restaurant with an Augmented reality stands out from other restaurants”, “I think that a restaurant with an Augmented reality is different than other similar restaurants”, “A restaurant with an Augmented reality facilities is unique compared to other similar restaurants”. The visit intention of an AR implementing café then measured by three items (17), including “I would like to visit this restaurant again”, “I would like to share positive feedbacks of this restaurant to others”, and “I would like to recommend this restaurant to others”. As a part descriptive statistic, some demographic items were also collected. To ensure understandability of the questionnaire, before the questionnaire’s distribution, it was pre-tested, and adjustment were done where necessary.

4. Analysis
The data obtained from the survey were analysed using the SPSS program, consist of descriptive statistics, CFA, and regression using SPSS.
These respective values indicated that items and data gathered are sufficiently valid and reliable to use. To prepare the data for hypothesis testing, scores for hedonic value, perceived uniqueness, and visit intention computed by averaging the items for each scale. Regression analyses were used to examine the relationship between hedonic value and perceived uniqueness towards AR Implemented café and the future of Visit intention. The regression model for hedonic value and perceived uniqueness towards AR Implementing café (H1) was significant, with $F = 62.009$, $p < .001$, and $\beta = 0.592$ indicating that 59.2% of the variance in Perceived uniqueness toward AR implemented café was explained by a hedonic value. The regression model for the relationship between perceived uniqueness and visit intention towards AR Implemented café (H2) was also significant, with $F = 141.357$, $p < .001$, and $\beta = 0.748$ indicating that 74.8% of the variance in visit intention toward AR implementing café was explained by a Perceived uniqueness.

Another regression test was done to indicate that perceived uniqueness has the mediating effect between hedonic value and visit intention. The result showed that there is insignificant direct effect between hedonic value and visit intention ($p > .05$). Therefore, the perceived uniqueness become a mediating variable between hedonic value and visit intention towards AR Implementing café. This result is understandable where a place with a unique value would attract more people because it unique and stand out. It can be inferred that the uniqueness of the AR implementing café relates to visit intention. An experimental study about AR application in a museum state enhanced customer experience because it arouse the emotional and sensory engagement, further it enabling them to enjoy their visit to the museum and increase overall satisfaction. AR technology was also recommended to be used in tourism visitor experience, because it is believed as experience enhancement (10), thus further supporting the result of this research.

The other thing also can be considered is there is not only about the visual sensory given but also the positive experience coming from the visitor’s perspective. A well-designed user experience that is fit to the objective, is used to enhance engagement, increase the word-of-mouth, or social media talks, these are important for the business. AR would be able to increase value when it is not just about the technology, but it also the integration of businesses fit with the customers (19) and forming that emotional attachment with the visitors.

The use of AR in café design can be called as futuristic experience illustrates how significantly new technologies and software or hardware transform experiences (Hoyer et al. 2020). The example can be inferring from this research subject that is AR implementing café, the design built for customer is a character from the owner. It can express greeting to the customer, thus will enhance customer engagement and support customer experience.
Altogether with technological usage in the customer visiting journey (the steps of a customer start from searching product until consuming and post consumption) new touchpoint will be emerged or the existing reconfigured. Basically, these touchpoints included the product and its brand identity and service encounters where customer interact with the brand. Thus, invention including AR purposes to create new value for customers and introduce to a new experience area. More companies that concern on business sustainability will enhance this value by regularly and carefully shaping or implement the technological interactions in a customer-centric perspective (Rangaswamy, et al 2020). Furthermore, with the current technology usage in the purpose of increasing interaction, visitors increasingly knowledgeable, empowered and active to seek and create their own experiences or co-creating the business. The AR implementation also increases visitor curiosity, excitement, and fun when trying out the product or entering new design feature.

These new inventions when integrated with interior design café could create entirely new concept of customer experience, change visitor’s interaction with the ambience, their feeling towards other visitor, and perception on the objects inside café. Basically, AR gives additional informational capabilities and enhance experiences to existing real-life experiences inside AR implementing café. AR enabled an additional, interactive, and attractive experience of a real-world café setting through device generated view, so AR can create more interactive and experiences for consumers. Thus, in café setting, it will blend with real environment and ambience and encourage the visitor to visit café and could be stay longer than non-AR implementing café.

Research says that there is other implementation of AR that commonly used in hospitality industry (Café) (Hoyer et al 2020), AR will enhance more experience in the pre-transaction phase, Restaurants introducing a VR integrated menu to consumers in order to reduce their uncertainty in selecting menu, however, it is still not possible to fully implement the transaction into AR enabled technology, because the actual interaction still play a main role in the industry, the AR can enhance experience but still unable to replace human involvement feeling.

5. Conclusion

5.1. Conclusion
This research focused on perceived hedonic values and perceived uniqueness towards AR implementing café and the impacts on customer’s visit intention. One of the main purposes on this study was to figure out whether hedonic value and perceived uniqueness influence visit intention. Generally, this research stated that hedonic value and perceived uniqueness has an impact on visit
intention. These results indicate that when restaurants enhance its interior design by implementing AR, it will increase the visit intention because the hedonic and unique feeling is emerging towards its visitor.

5.2. Future Research
This research proposes the insight to the current trend of the marriage between technology and business sector. The use of AR will provide unique experience to the café’s visitor. However, there is limitation on this research, this study is using a web-based survey instead of field experiment, the participants were only required to imagine their visit experience with the help of stimulus, this scheme could cause bias compared to on-site surveys – field experiment. Secondly, the respondents only use their visiting experience at a cafe to respond to the questions. Even though the online survey method is convenient and commonly used on consumer research, the difficulties may be emerged for participants, thus their response to the questions could be missed interpretation.

Examine the trend of AR still rapidly growing and probably will evolve even more in the future, merely on its device development and integration on various types of businesses, there still opportunities for further research related to the AR development and optimization in general. Further research opportunities may also explore more in on-site experiment to examine the actual impact of AR on the real business environment.

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