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The Effect of Augmented Reality Experience on Loyalty and Purchasing Intent: An Application on the Retail Sector

Oya ERU *(https://orcid.org/0000-0002-6678-0156), Bolu Abant İzzet Baysal University, Turkey; oyaeru@ibu.edu.tr*

Yusuf Volkan TOPUZ *(https://orcid.org/0000-0003-4005-2916), Bolu Abant İzzet Baysal University, Turkey; topuz_y@ibu.edu.tr*

Ruziye COP *(https://orcid.org/0000-0002-2053-2157), Bolu Abant İzzet Baysal University, Turkey; ruziyecop@hotmail.com*

Artırılmış Gerçeklik Deneyiminin Sadakat ve Satın Alma Niyetine Etkisi: Perakende Sektöründe Bir Uygulama

Abstract

Due to mobile applications have become popular in marketing activities, many retail businesses have begun to launch their Augmented Reality (AR) applications. The application of AR technology to marketing is a very new process. When businesses create interactive channels through which they can reach consumers, they can influence the purchasing decision processes of consumers. In addition, companies aim to provide consumers with an unforgettable shopping experience. The study's research question was, "How do consumers' innovativeness and AR experiences affect their loyalty and purchase intentions? Also, innovativeness has a significant effect on their AR application use intentions. This study investigates the impact of innovativeness and AR experience on consumer loyalty and purchase intention. Based on the assumption that the importance of AR applications in marketing activities will gradually increase, it can be said that examining the effects of AR applications on consumer attitudes and behaviours is gaining reputation. Studies investigating the impact of augmented reality applications are very limited in the consumer behaviour literature. This situation shows the original value of the study. In the application part of the study, a quantitative research design was used. In this context, the convenience sampling method was selected. Data were collected from 319 participants via an online questionnaire, and the responses obtained were analysed using a structural equation model. The results showed that the AR experience had been affected positively by the innovation dimension, while consumer loyalty was affected positively by the AR experience.

Keywords : Marketing, Augmented Reality, Structural Equation Model, Innovation, Loyalty, Purchase Intention.

JEL Classification Codes : M30, M31.

Öz

Pazarlama faaliyetlerinde mobil uygulamaların kullanımını popüler hale gelmesiyle birlikte günümüzde birçok perakende işletme, kendi AR uygulamasını piyasaya sürmeye başlamıştır. AR teknolojisinin pazarlama alanına uygulanması oldukça yeni bir sürecin başlangıcını ifade etmektedir. İşletmeler, tüketicilere ulaşabilecekleri interaktif kanallar yarattıklarında, tüketicilerin satın alma karar süreçlerini etkileyebilmektedir. Ayrıca, işletmeler, tüketicilere unutulmaz bir alışveriş deneyimi sağlamayı hedeflemektedir. Buradan yola çıkıldığında çalışmanın araştırma sorusu, "Tüketicilerin yenilikçilikleri ve AR deneyimleri, tüketici sadakatini ve satın alma niyetini nasıl etkileyecektir?" olarak belirlenmiştir. Tüketicilerin yenilikçilik merakı da AR uygulaması kullanım niyetleri üzerinde önemli bir etkiye sahiptir. Dolayısıyla çalışmanın amacı, yenilikçiliğin artırılmış gerçeklik deneyimine

ve AR deneyiminin de tüketici sadakatine ve satın alma niyetine etkisini incelenmek olarak belirlenmiştir. Pazarlama faaliyetlerinde AR uygulamalarının öneminin giderek artacağı varsayımından hareketle, AR uygulamalarının tüketici tutum ve davranışları üzerindeki etkilerinin incelenmesinin önem kazandığı söylenebilir. Tüketici davranışları literatüründe artırılmış gerçeklik uygulamalarının etkilerini araştıran çalışmalar oldukça sınırlıdır. Bu durum, çalışmanın özgün değerini göstermektedir. Çalışmada, nicel araştırma tasarımı kullanılmıştır. Bu kapsamda kolayda örneklem yöntemi ile 319 katılımcıdan online anket yoluyla veri toplanmış ve elde edilen yanıtlar çalışmanın amacı doğrultusunda faktör analizi ve yapısal eşitlik modeli kullanarak incelenmiştir. Sonuçlar yenilikçiliğin ve AR deneyiminin ürün ve eğlence boyutlarını pozitif yönlü etkilediğini, bununla birlikte AR deneyiminin ürün ve eğlence boyutlarının da tüketici sadakatini pozitif yönde etkilediği göstermiştir.

Anahtar Sözcükler : Pazarlama, Artırılmış Gerçeklik, Yapısal Eşitlik Modeli, Yenilikçilik, Sadakat, Satın Alma Niyeti.

1. Introduction

Developments in communication technologies have brought many novel concepts and applications into our lives. The increase in the number and use of smart devices and mobile internet connections have caused new dimensions to emerge in businesses' outlook on marketing activities.

When the digital transformation in marketing activities is evaluated from the perspective of both businesses and customers, it reveals the following research opportunities for researchers and businesses (Rauschnabel et al., 2019).

- How can brands use existing technologies with new technologies such as AR, AI, chatbots, voice-activated assistants, and wearables?
- Can innovative behaviours be developed in individuals and the broader consumer community?
- Which digital marketing and social media technologies-related strategies, activities, or initiatives can improve the way customers engage in innovation-related behaviours?
- What are the interactions between customer characteristics such as innovation, brand engagement, technology readiness, and the features of technological platforms?
- What are business capabilities required to capture, manage, and gain a deeper understanding of customer innovation opportunities?

While seeking answers to these research questions, it is observed that businesses increasingly include mobile applications in their digital marketing activities.

With smartphones and mobile internet connections becoming an indispensable part of consumers' daily lives, businesses have needed to respond by incorporating several marketing applications in their marketing activities. As a result, mobile applications

developed by businesses have turned into essential tools for interacting with consumers. These mobile applications form an attachment between consumers and businesses and create brand awareness.

Using these mobile applications of businesses/brands may also enable consumers to experience the product they wish to purchase. Augmented Reality (AR) is one of the most recent mobile applications businesses have begun to employ. Businesses aim to draw consumers' attention through virtual showrooms, changing rooms, makeup applications, virtual tours developed using AR, and advertising campaigns integrating AR.

Businesses try to give consumers the best experience, especially in online shopping experiences. In addition, nowadays, it is extremely important to establish interactive communication with consumers to develop sustainable relationships with consumers. For consumers interested in and want to experience technological innovations, innovations such as AR applications can influence consumers' purchasing decisions.

Within the context of AR applications in marketing, which constitute a dimension of experiential marketing, the present study aimed to determine the effects of businesses' marketing campaigns employing AR applications on consumer loyalty and purchasing intention. This study is considered necessary because relatively few studies in the relevant literature. This subject has been predicted to be crucial for AR applications of businesses related to consumers' purchasing experiences (Gaudiosi, 2015).

2. Literature Review

People have begun to carry out many of their daily processes through smartphones, and people use mobile applications such as augmented reality more commonly. Developing more creative, innovative strategies than competitors has become essential for building strong and effective customer relationships. Such marketing strategies are assumed to give the consumers a more positive experience. Augmented reality marketing, which could be considered a dimension of experiential marketing, has taken the foremost rank in the most innovative marketing strategies practices.

2.1. Experiential Marketing

In terms of marketing, the experience can be defined as the whole range of pleasant feelings businesses create for consumers (Verhoef et al., 2009). On the other hand, experiential marketing gives consumers unforgettable experiences with a holistic marketing approach, with constituents supporting each other (Schmitt, 1999). Experiential marketing offers businesses a competitive edge, and a positive consumer experience is strategically important for a business (Schmitt, 1999; Maklan & Klaus, 2011; Luigi et al., 2012). In experiential marketing, consumers are provided with experiences before, during, or after the purchase (Schmitt, 1999). Experiential marketing is the set of values that give pleasure to consumers and appeal to their senses used to improve brand loyalty (Batı, 2013). Experiential marketing aims to influence customer satisfaction while at the same time

ensuring the continuation of customer loyalty (Brakus et al., 2009; Garg et al., 2010; Klaus & Maklan, 2013). Experiential marketing creates an emotional relationship between the brand and the consumer (Küçüksaraç & Sayımer, 2016). According to Nasermoadeli et al. (2013), emotional and social experiences positively affect purchase intention.

The augmented reality experience can be described as an element of experiential marketing. Hence, businesses incorporate AR applications into their marketing activities as experiential marketing to increase interactions with consumers, create a different product/brand experience, and increase consumer satisfaction and loyalty.

2.2. Augmented Reality

There is an upper term - XR - which represents the concepts of AR and VR. There is no agreement as to whether "X" stands for "extended," "extended," or simply serves as a variable X for "anything" about new and innovative forms of reality. Accordingly, XR is a general term with two independent subcategories, AR and VR. AR is a general term for a continuum from Aided Reality to Mixed Reality (Dwivedi et al., 2021).

Augmented Reality (AR) is a kind of virtual media or virtual reality, as it is commonly called. The main difference between Augmented Reality and virtual reality is that the latter is detached from the real world, while the former combines virtual objects with the real world (Azuma, 1997).

Augmented Reality (AR) can be defined as "an environment in which digital information, which is both spatially and temporally registered with the physical world and interacts in time, is placed on the physical world" (Craig, 2013).

Augmented reality provides users with real-time visual experiences integrated into a place or object they are looking at in the real world without any delay (Gervautz & Schmalstieg, 2012). AR systems integrate virtual data into the physical environment of individuals, enabling them to perceive that data in their environments (Höllerer & Feiner, 2004). Virtual reality aims to bring the user into a different world by creating a digital experience in a simulated or imaginary world. However, augmented reality seeks to overlap data or content and the real world. Augmented reality aims to add to, rather than replace, what is happening (www.mdgadvertising.com, 2017). Applications such as video games, interactive marketing and advertising apps, medical apps, educational apps, and navigation apps can be given as examples of important AR applications (Gervautz & Schmalstieg, 2012).

The reason why AR applications are regarded as a dimension of experiential marketing may be that they enable individuals to experience products. Thanks to AR applications, users can have experiences such as examining, discovering, interacting with, and sharing their opinions on the products. Aside from using AR applications for entertainment purposes or games, businesses can create a brand, product, or marketing campaign by employing such applications in other ways. For instance, an eyewear company

lets its customers experience its products using a smartphone camera through its developed virtual mirror. Moreover, several brands have AR applications that help their consumers with interior design. With AR apps downloaded onto smart devices, consumers can instantly and easily see how an object or a wall paint they have chosen for their home might look in the room. Businesses also employ AR applications to create interactive advertisements and package designs, increase retail experiences, and develop exciting games. Such applications facilitate the spread of engrossing brand stories and make it possible for consumers to experience the products in novel ways (Scholz & Smith, 2016).

Considerable consumer interest in these applications has given rise to the idea that businesses could benefit from AR applications in their marketing activities to differentiate themselves from their competitors.

AR applications are making their way from laboratories into consumer markets. AR applications such as smart mirrors or virtual makeup apps have been treated as crucial potential marketing tools in the retail sector to create experiences for consumers, draw their attention, and influence their purchasing decisions (Pantano & Naccarato, 2010; Demirkan & Spohrer, 2014; Pantano, 2014; Daponte et al., 2014).

2.3. AR Marketing

The term "AR Marketing" was coined in response to the utilisation of AR applications in experiential marketing. Although an increasing number of companies are integrating Augmented reality into their marketing campaigns (Dacko, 2017), and previous academic research points to the potential for AR for marketing purposes, it is still in the process of developing a working definition of AR marketing (Yaoyuneyong et al., 2016).

Although there is no clear definition of AR marketing, when Augmented Reality is used in marketing, it is called "Augmented Reality Marketing" AR marketing is a strategically driven marketing act generally used with other media tools that combine digital information or objects with the perceived physical world in a way that could help businesses achieve their aims and to provide benefits to the consumer (Rauschnabel et al., 2019).

Marketing is becoming more and more digital day by day is an indicator of digital transformation in marketing activities. Marketing activities such as e-commerce, online brand communities, digital advertising tactics, live chat services, and mobile services can be given as examples (Lamberton & Stephen, 2016).

Studies have found that digital marketing and social media marketing have a positive effect on customer retention and purchase intention (Hanaysha, 2018; Alansari et al., 2018; Morra et al., 2018; Wong et al., 2018). Social media marketing also has a positive effect on brand-related issues such as brand equity and brand loyalty (Tarnovskaya & Biedenbach, 2018; Stojanovic, 2018; Mishra, 2019; Shanahan et al., 2019).

Businesses use various tools to analyse data on social media, extract data and manage multi-channel communication. However, many organisations seem to have low adoption and use of analytical tools such as AR or Machine Learning and do not know enough about emerging technologies such as Artificial Intelligence (AI) (Duan et al., 2019; Gil González et al., 2018; Miklosik et al., 2019).

But the technologies listed above are used by companies to improve brand-related social media images automatically, set more effective sales promotion targets, suggest personalised incentives for users, and identify relevant eWOM communications (Tous et al., 2018; Vermeer et al., 2019; Takahashi, 2019; Ballestar et al., 2019). Studies in the literature primarily provided information about AR's mechanisms (Huang & Hsu Liu, 2014).

Within the concept of experiential marketing, brands turn smart devices, packages, and printed media into interactive promotion tools through AR applications. Therefore, AR applications as part of marketing strategies can start making significant contributions to businesses wishing to interact with their consumers in producing innovative and creative campaigns that are different from their competitors. Using AR applications in marketing activities forms one part of the multi-channel marketing strategies for businesses (Bodhani, 2013). Augmented reality applications emerge as a new means of marketing communication, with relatively little research carried out on the aspects of marketing and consumer behaviour (Yadav & Pavlou, 2014).

AR marketing is a strategic company capability that can bring different perspectives to user behaviour. AR marketing is an open and flexible marketing activity that encompasses many AR techniques and technologies, emphasising the integration of different types of digital and physical content without specifying requirements for interaction or levels of realism. The goal of AR marketing is to achieve corporate goals. AR marketing can be used in commercial, profit-oriented, non-profit, or, more generally, ideas marketing. AR Marketing can also enhance and extend established marketing approaches ranging from advertising to content marketing to storytelling. In this sense, AR marketing can be applied to company-provided (e.g., virtual mirrors in stores) or user-provided technologies (e.g., mobile devices such as tablets and smart glasses) (Rauschnabel et al., 2019).

AR Marketing can address multiple goals throughout the customer journey, such as branding customers, triggering purchases, and improving after-sales service (BCG, 2018). While some existing branded AR apps are linked to pre-purchase activities (e.g., furniture purchase planning), others provide post-purchase value. Some everyday AR marketing activities use AR alone (for example, a virtual mirror), while others use it in combination with other media (Yaoyuneyong et al., 2016).

Marketing campaigns carried out through AR applications also bring new insights into consumers' purchasing behaviour. Stores have turned into exclusive places combining real and digital, thanks to developments in communication technologies. AR applications present information to consumers' senses at various levels. It could therefore be suggested

that augmented reality has reshaped commercial activities. Online content created through social networks has turned individuals from testers to buyers and buyers to advertisers, giving more excellent value to experiences and increasing sales (Cuomo et al., 2014).

Among the studies carried out on the subject is Bulerca et al.'s (2010) descriptive work, which showed three themes of AR applications that influence users: creating a brand attitude, perceived benefits of AR marketing, and perceived negativity. Regarding the benefits of AR marketing, the study participants above suggested that they found the application time-saving, practical, convenient, and entertaining. Regarding brand attitude, the participants stated that they found the brand honest and trustworthy as they could experience the products in the application when they used it. On the other hand, perceived negativity was that participants could experience the products only in the virtual environment. Eyüboğlu's (2011) study showed that participants found the AR application entertaining and exciting.

Studies on virtual trials used in marketing campaigns have shown the significant role of hedonic and pragmatic viewpoints on user experience (Cho et al., 2012; Merle et al., 2012). According to Schwartz (2011), traditionally, exposure to a product has been categorised as direct or indirect. Seeing the product in an advertisement is an indirect experience while trying the product in the store means a direct experience. However, experiencing the product virtually with AR applications is among my indirect and direct experiences in the spectrum of experience. Also, Schwartz (2011) stated that individuals have an indirect experience of the products when they see them in conventional advertisements and a direct experience of them in stores. AR applications allowed individuals to experience the effects of these two extremes. In other words, consumers can experience the product/brand without going to a store or being exposed to a conventional advertising message, thanks to AR applications. The study above found that incorporating AR applications in marketing activities influenced consumers' purchasing intention, with a direct and significant relationship between participants' attitudes and purchase intentions.

Krieger (2013) found that AR marketing positively changes consumer behaviour, brand value, and customer retention. In the study, users reported that they liked and found the AR application entertaining, and they would share the product they saw through the application with their friends and acquaintances. The study above found that participants had positive attitudes towards the product and the brand after they had experienced the AR application. It also revealed that AR marketing had a relatively significant effect on purchasing, loyalty, and customer satisfaction. The participants stated that the AR marketing application made it possible to interact with the business, and they liked this kind of marketing.

AR applications provide users with several cognitive and emotional benefits such as knowledge, awareness, satisfaction, and stimulating experiences. Two main characteristics of AR applications are that they provide additional information about the product/store and enable consumers to have pleasant experiences by stimulating them (Olsson et al., 2013).

Poncin and Mimoun (2014) conducted a retail field study and found that AR positively affects the store atmosphere. Spreer and Kallweit (2014) also examined shopping experiences associating AR Marketing with hedonic and utilitarian gratifications.

Chang et al. (2014) suggested that works of art enriched with AR applications increased memorability of information on the work of art and the appreciation of the paintings. Characteristic traits of early adopters, such as openness to new ideas, are among the factors influencing the perceived value of AR applications (Javornik, 2014).

Huang and Hsu Liu (2014) showed that allowing users to place furniture in their rooms through AR visualisation created a strong experiential value when integrated into consumers' shopping journeys. Chang et al. (2014) suggested that the entertainment factor rather than the application's functionality is more important in adapting users to such technologies.

Kourouthanassis et al. (2015) investigated the role of emotions in adapting mobile applications in personalised tourism advice. They found that functional properties of AR applications, such as impact and stimuli, have a profound effect on users' voluntary use of the application. In their study, Javornik et al. (2016) looked into the effects of a make-up application placed in a store that allows users to try makeup virtually on user experience. The study participants stated that they were greatly amused, excited, and surprised by their experience with the application. The study also suggested that AR apps allow low virtual try-on in cinemas, theatres, and museums. AR applications can provide an exhilarating experience when their uninterrupted integration is ensured due to their complex structure involving utility, reality, enjoyment, and amusement. The study's findings showed that participants responded positively to the AR application. Scholl and Smith (2016) developed an eight-factor model for businesses to efficiently utilise AR applications in their marketing activities, namely experience, nourishing engagements, target audience, integrating AR application into the marketing program, neutralising threats, defining marketing targets, benefiting from the brand name, and attracting consumers' attention. Rauschnabel et al. (2017) showed that flow, social image, and social norms drive consumers to buy through AR applications. Kös (2017) suggested that users found advertisements with AR applications exciting and entertaining and increased customer satisfaction. Participants stated that the AR application was interesting because it made shopping easier, helped users spend less time shopping, and facilitated better time management. Hilken et al. (2017) found that AR applications can affect hedonic and utilitarian gratification and purchasing and word-of-mouth behaviours by increasing decision comfort. Comparing conventional e-commerce and AR applications, Yim et al. (2017) and Yim and Park (2018) suggested that AR applications are more often associated with utility, pleasure, and innovativeness. Adam and Pecorelli (2018) found that online recommendations influenced customers' online purchasing intention and their choice of products. They also suggested that the effects of consumer recommendations in AR settings are similar to those on conventional online marketplaces. Customers' suggestions on AR applications decrease others' product uncertainty and positively influence purchasing intention and choice of products.

Holopainen et al. (2018) stated that enriched reality applications could present new opportunities for different emotional influences, enhanced social interactions, and long-term customer experiences between customers and between businesses and their customers. Their study also found that enriched reality applications positively impact word-of-mouth marketing communication activities. The interaction rate of an individual having experienced an enriched reality application with the store selling the product/service tends to increase.

Rauschnabel (2018) has shown that basic human needs (belonging, relationship, or social connection) can be addressed through AR technologies. Dieck and Jung (2018) reported similar findings in the context of tourism. According to the results of their research, information quality, system quality, usage costs, recommendations, personal innovativeness, risk, and facilitating conditions affect the perceived ease of use and usefulness of AR applications.

Rauschnabel et al. (2018) determined that Augmented Reality Smart Glasses provide hedonic, utilitarian, and symbolic benefits. Using a branded AR application positively affects the participant's attitudes towards the brand. Augmented Reality can also be used to expand core products and services ("products"). For example, companies can use AR components to expand their services or physical products.

Retailers can use Augmented Reality to enable their customers to virtually try out products from multiple vendors (Rauschnabel et al., 2019).

When investigating how and where Augmented Reality can affect the marketing mix, it can be said that Augmented reality can further improve and expand the supply chain channels. Augmented Reality can be used in B2B marketing activities as an effective tool to market products or services to other companies as an advertising or sales tool. Augmented Reality can create direct interactions between manufacturers and consumers in B2C marketing, thus opening up new opportunities for communication ("promotion") and selling ("place") Dwivedi et al. (2021).

2.4. Innovativeness

Innovation takes a vital role in the development of technologies nowadays. In terms of technology, innovation; is defined as people's willingness to try new technologies. Innovation plays an important role in the development of technology. Functions such as innovation, attitudes, needs, and experiences ensure home shopping methods. Therefore, consumers who embrace innovation may be more likely to perceive AR apps as practical, easy, and fun. Consumers who are open to innovations and consumers who are eager and curious to try innovations attach importance to the functional features of AR applications (Midgley & Grahame, 1978; Shim & Drake, 1990; Flynn & Goldsmith, 1993; Agarwal & Prasad, 1998; Robinson et al., 2004: Huang & Liao, 2015).

Attitudes towards technology also explain the adoption of technology. Therefore, it can be said that an individual's use of new technology is a function of an individual's attitude towards technology use. TAM (Technology Acceptance Model) is based on the reasoned action theory. The model states that having a positive attitude to perform a behaviour increases the probability of performing that action. Therefore, it can be said that consumers who have positive attitudes about AR applications will be more likely to use AR applications in online shopping (Ajzen & Fishbein, 1980; Moore & Benbasat, 1991; LaRose & Atkin, 1992; Kim & Forsythe, 2010).

2.5. Purchase Intention

Purchasing intention is closely related to consumers' interest in and the possibility of buying a given product and future purchasing act (Peter & Olson, 2010; Hung et al., 2011; Kim & Ko, 2012).

There have been many studies highlighting the predictor role of positive mental state regarding the working mechanisms of experiential retailing factors (Baker et al., 1992; Donovan & Rossiter, 1994; Menon & Kahn, 2000; Eroğlu et al., 2001; Chang et al., 2011; Huang, 2012). The relevant literature suggests that positive mental states such as stimulation, pleasure, and satisfaction can increase purchasing intention and behaviour. It has been recommended that consumers with positive emotional experiences have stronger purchasing intentions.

Baier et al. (2015) stated that retailers could incorporate AR applications in their marketing activities, particularly to enhance customer experience and interact with customers by enabling them to experience the products in virtual settings and gain knowledge of the product. Also, according to Beck and Crie (2016), augmented reality applications have a significant effect on purchasing intention as it enables the consumer to experiment and visualise the product.

Similarly, Abrar (2018) showed that augmented reality applications in the retail sector influenced the brand's interaction with the consumers and consumers' purchasing intention. The study above also stressed that AR applications and devices could be creative tools for drawing consumers and promoting brand awareness.

2.6. Loyalty

Loyalty can be defined as a behavioural expression of a person's attitudes towards a brand (Cha et al., 2016). Loyal consumers love a particular brand, repurchase a product or service, make suggestions to others, and recommend the brand they buy. Loyal consumers are not affected by the marketing activities of rival brands (Kim et al., 2015).

Loyalty refers to the level of interest and product/service user experience for a particular brand (Liu et al., 2012). Loyal Consumers tend to make repetitive purchases from the same brand compared to those who are not loyal. They are less sensitive to price.

Therefore, loyalty is extremely important in businesses' relationships with consumers (Murray, 2015).

The more loyal consumers businesses have, the longer their sustainable profitability will be (Reichheld & Sasser, 1990). In some studies in the literature, a direct relationship has been found between innovation and loyalty (Eisingerich & Rubera).

3. Research Methodology

3.1. Hypotheses Development

Consumers with high cognitive innovativeness adopt innovations more easily. Furthermore, having an innovation perspective will not have an impact on the consumer, even if the use of products is complex (Venkatraman & Price, 1990). With AR applications, the products can be experienced virtually, evokes innovation in consumers, and affects businesses' relationships with customers (Prahalad & Ramaswamy, 2000). While building beliefs about new technology such as AR, consumers with higher levels of innovation use multiple sources of information and are more open to new experiences (Kim & Forsythe, 2010). Therefore, the first hypothesis of the research was determined as follows:

> H1: "Consumers with a high level of innovativeness would positively affect AR Entertainment experience".

With the developments and innovations in communication technologies and the latest version of the internet, consumers have the opportunity to examine products in 3D, thanks to AR applications. Consumers also can examine some product features as if the product was in front of them, thanks to AR applications (Kim, & Forsythe, 2010). Therefore, the second hypothesis of the research was determined as follows:

> H2: "Consumers with a high level of innovativeness would positively affect AR product information".

Entertainment is one of the main links between experiential marketing outputs and customer satisfaction (Chou, 2009; Yuan & Wu, 2008). When consumers have more enjoyable experiences through technology, their willingness to try new technologies increases. Therefore, consumers who experience online shopping with AR applications find shopping enjoyable affects their purchase intentions (Igbaria et al., 1996). It is stated in the studies above that AR applications create a pleasant experience. The visual appeal and entertainment value of the AR experience are important factors that further encourage the sustainable use of AR apps. Visual appeal in the AR experience affects the purchasing decisions of consumers (Huang & Liao, 2015). Hence the third hypothesis of the study is:

> H3a: "AR Entertainment affects consumer loyalty".
>
> H3b: "AR Entertainment affects purchase intention".

Retailers are turning to AR applications to help consumers learn more about the product and enjoy the shopping experience. Consumers have a high level of control over products while having a direct product experience with AR applications, deciding what to touch and in what order. This situation eliminates the limited interaction in traditional marketing activities (Klein, 2003). According to Li et al. (2008), the AR experience enables consumers to experience more and more interesting than the indirect experience. According to the results they obtained from their studies, consumers gained more information with their virtual experience than when they were directly exposed to the product. The product knowledge they acquired through virtual expertise, on the other hand, had a positive effect on their purchase intentions. Also, Lu and Smith (2007) stated that the AR experience provides informational value more than traditional e-commerce does. Hence, the fourth hypothesis of the study is that:

H4a: "AR product information affects consumer loyalty".

H4b: "AR product information affects purchase intention".

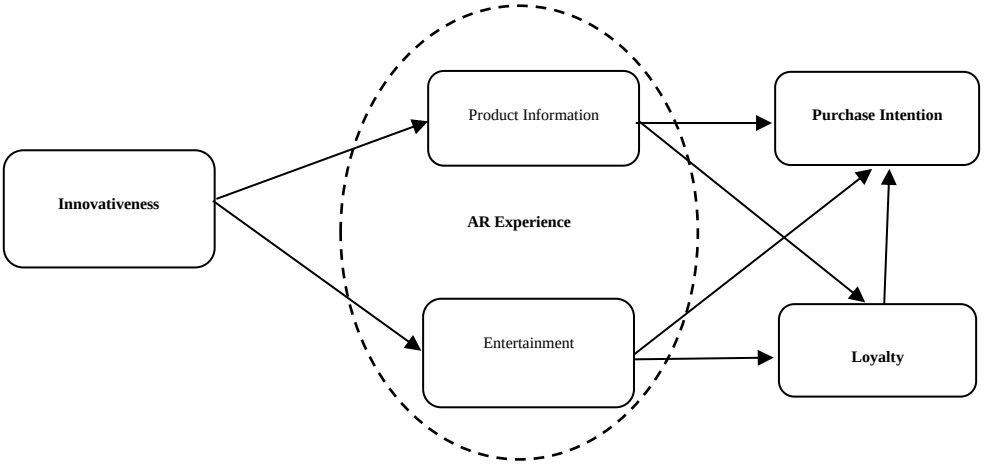
Loyalty can be defined as the tendency of consumers to buy one brand's products constantly. When consumers develop a relationship of trust with the brands they are loyal to, they continue to buy the same branded products (Noorlitaria et al., 2020). Hence, the fifth hypothesis of the study is that:

H5: "Loyalty positively affects purchase intention".

3.2. The Reasons Behind the Need for an Advisory Committee for SSI

Based on previous studies in the literature and hypotheses, this study proposes an integrated research model (see Figure 1).

Figure: 1
Research Model



3.3. Data Collection

The limited amount of research on AR marketing in the relevant literature and the prediction that the AR market will remain important indicates this study's importance. Data were collected through an online survey from 319 convenience-sampled participants for the present study. The survey form drew on the scales of Goldsmith and Holfacker (1991), Bulearca and Tamarjan (2010), Schwartz (2011), and Krieger (2013) and was composed of 37 items, including the demographics of participants. Following questions on participants' demographics, a 31-second-long video from the retailing sector (furniture and accessories products) that included an AR application was shown to participants to let them have the AR experience. They were asked to respond to questions prepared in a five-item Likert scale about innovativeness, AR experience, loyalty, and purchasing intention. The survey form was pilot tested for conformity on 30 subjects, and the final form of the survey was loaded online. The items were measured using a 5-point Likert scale, ranging from "completely disagree" to "completely agree".

Table 1 shows the demographical profile of respondents who participated in this study.

Table: 1
The Demographical Distributions of Participants

Gender	**Frequency**	**%**	**Age**	**Frequency**	**%**
Female	182	57,1	18-25	179	56,1
Male	129	40,4	26-35	90	28,2
Total	311	97,5	36-45	31	9,7
Missing	8	2,5	46-55	9	2,8
Total	**319**	**100**	Over 56	3	,9
Literate	5	1,6	Total	312	97,8
Primary School	15	4,7	Missing	7	2,2
Middle School	5	1,6	**Total**	**319**	**100**
High School	30	9,4	**Income (Month/TL)**	**Frequency**	**%**
College	22	6,9	<1600	154	48,3
Graduate	175	54,9	1601-2600	51	16,0
Postgraduate	61	19,1	2601-3600	31	9,7
Total	313	98,1	3601-4600	18	5,6
Missing	6	1,9	>4601	55	17,2
Total	**319**	**100**	Total	309	96,9
			Missing	10	3,1
			Total	**319**	**100**

It can be seen in Table 1 that 57.1% of the participants were female, and 40.4% were male, with eight participants (2.5%) choosing not to respond to this question. 54.9% of the participants had a Graduate degree, 19.1% had a postgraduate degree, 9.4% were high school graduates, 6.9% had a college degree, 1.6% were primary school graduates, and 1.6% stated that they were only literate. There were only six participants that did not answer this question. 56.1% of the study participants were between 18-25, 28.2% were aged 26-35, 9.7% were 36-45 years old, and 2.8% were aged 46-55. In addition, nearly 1% of the participants were aged 56 or older, with 2.2% not responding to this question. 48.3% of participants earned below TL 1,600, and 17.2% had incomes above TL 4,600 monthly. In addition, the monthly income of 16% of participants was between TL 1,601-2,600, 9.7% of participants earned between TL 2,601-3,600, and those with monthly incomes between TL 3,601-4,600 comprised 5.6% of the study sample.

3.4. Findings

The data obtained were analysed through exploratory and confirmatory factor analysis and path analysis methodology on SPSS and STATA package software. This was followed by the findings of exploratory factor analysis, reliability analysis, and confirmatory factor analysis on the study variables. Finally, the path analysis results will be concisely explained based on the study model's structural equation model.

3.5. Exploratory Factor Analysis

Exploratory factor analysis was employed to purify the items. Before establishing the factor structure, the correlation matrix was initially checked to find its suitability for factor analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy determined the sample size adequacy. The value of the KMO measure of sampling adequacy for factor analysis was min. 0.700, which was deemed to be appropriate. Also, Bartlett's test of sphericity was found significant to big be enough (see Table 2).

The factor loads derived from the exploratory factor analysis of the latent variables, total variance, and the reliability coefficients are given in Table 2.

Table: 2
Results of the Exploratory Factor Analysis

Factors (Cronbach's alpha) and Items	**Standardised Factor Loadings**	**Total Variance %**	**Kaiser-Meyer -Olkin Measure of Sampling Adequacy**	**Barlett Test (sig.)**
Innovativeness α=0.817	-	73,277	.700	328.3(.000)
I1: I tend to be the first to try new technologies among my peers.	.889	-	-	-
I2: When I hear about new technology, I look forward to being able to use it.	.853	-	-	-
I3: I learn about new technologies before others.	.825	-	-	-
AR Experience α=0.889	-	70,687	0,881	1263.4(.000)
AR Product Information (1)	-			
ARP1: I have gained enough information on the product(s) advertised in the Augmented Reality application.	.841	-	-	-
ARP2: I liked the product(s) in the video in the Augmented Reality Application very much.	.812	-	-	-
ARP3: I felt emotionally drawn to the product(s) advertised in the Augmented Reality application.	.737	-	-	-
ARP4: I felt detached from the real world while viewing the product(s) Advertised in the Augmented Reality application.	.734	-	-	-
ARP5: I lost track of time while viewing the product(s) advertised in the Augmented Reality application.	.714	-	-	-
AR Entertainment (2)	-	-	-	-
ARE1: I found the use of augmented reality in the video enjoyable.	.883	-	-	-
ARE2: I think that, compared to other advertisements, the use of augmented reality applications in the video provides more information on the product(s).	.850	-	-	-
ARE3: I liked the video prepared by the Augmented Reality application very much.	.765	-	-	-
Loyalty α=.888	-	75,009	.837	685.2(.000)
L1: I recommend the product (s) in the video prepared with the Augmented Reality application to my friends and relatives.	.896	-	-	-
L2: After watching this video about Augmented Reality, I will use this and similar augmented reality applications in the future.	.877	-	-	-
L3: The products in the video prepared with the Augmented Reality application had a positive effect on me.	.846	-	-	-
L4: The video I watched about the Augmented Reality application had a positive effect on the brand.	.843	-	-	-
Purchase Intention α=.868	-	71,709	.830	563.1(.000)
PI1: I would like to buy this product (s) promoted by Augmented Reality application.	.875	-	-	-
PI2: I would like to try this product (s) introduced with Augmented Reality application.	.851	-	-	-
PI3: I would like to try this product (s) introduced with Augmented Reality application.	.840	-	-	-
PI4: Augmented Reality application facilitates my purchasing decision.	.820	-	-	-

As a result of the exploratory factor analysis of innovativeness, three statements showed that they were collected under a single factor, with a total explained variance of 73%. The reliability coefficient (Cronbach Alpha) of innovativeness was 0.888.

The factor loads derived from the exploratory factor analysis of the variable of AR consisting of a total of 8 statements, and the reliability coefficients of its sub-factors are given in Table 4. Cronbach's alpha score for the latent variables of experiential marketing experience was 0,889. The eight statements were collected under two factors, with a total explained variance of 70,689%. The two factors were called "AR product information" and "AR entertainment", respectively, according to the contents of the statements.

The reliability coefficient (Cronbach Alpha) and total explained variance of the latent variable of loyalty were calculated at 0.888 and 75%.

3.6. Measurement Model (CFA) and Validity

A measurement model specifies how latent variables or hypothetical constructs are assessed in terms of observed variables and represents the validity and reliability of the observed variables' responses for the latent variables (Bagozzi & Yi, 1988; Hair et al., 2010). Following the exploratory factor analyses, the "innovativeness" factor consisted of three statements, the "AR product information" factor of five statements, the "AR entertainment", the factor of three, loyalty", and "purchasing intention" factors each made up of four statements were analysed through confirmatory factor analysis on STATA package software to determine their validity, the findings of which are summarised in Table 3.

Table: 3
Results of the Measurement Model

Factors (Cronbach's alpha) and Items	Standardised Factor Loadings	AVE	CR	Mean	sd
Innovativeness (α=,817)	-	0,60	0,817	-	-
I1:	0.83***	-	-	3,07	1,11
I2:	0.78***	-	-	3,32	1,12
I3:	0,71***	-	-	3,24	1,09
AR Product Information(α=,869)	-	0,59	0,879	-	-
ARP1:	0.76***	-	-	3,28	1,15
ARP2:	0.72***	-	-	3,32	1,17
ARP3:	0.78***	-	-	3,39	1,07
ARP4:	0.82***	-	-	3,38	1,14
ARP5:	0.77***	-	-	3,18	1,17
AR Entertainment(α=,858)	-	0,61	0,826	-	-
ARE1:	0.75***	-	-	3,80	1,18
ARE2:	0.68***	-	-	3,73	1,10
ARE3:	0.91***	-	-	3,68	1,14
Loyalty(α=,888)	-	-	-	-	-
L1:	0.82***	-	-	3,27	1,09
L2:	0.77***	-	-	3,59	1,12
L3:	0.86***	-	-	3,49	1,05
L4:	0.82***	-	-	3,39	1,09
Purchase Intention(α=,868)	-	0,62	0,867	-	-
PI1:	0.83***	-	-	3,30	1,12
PI2:	0.83***	-	-	3,51	1,05
PI3:	0.75***	-	-	3,53	1,10
PI4:	0.74***	-	-	3,62	1,06

*** $p < 0,001$.

The reliability coefficient (Cronbach Alpha) and total explained variance of the latent variable of purchasing intention, which consisted of four statements collected under a single factor, were 0.71 and 71%, respectively.

The reliability coefficient (Cronbach Alpha) and total explained variance of the latent variable of purchasing intention, which consisted of four statements collected under a single factor, were 0.71 and 71%, respectively.

Table 3 shows the standardised factor loadings (p-values) for each item, average variance extracted (AVE), composite reliability (CR), mean, and standard deviation for the latent variables. The average variance extracted (AVE) and composite reliability (CR) was

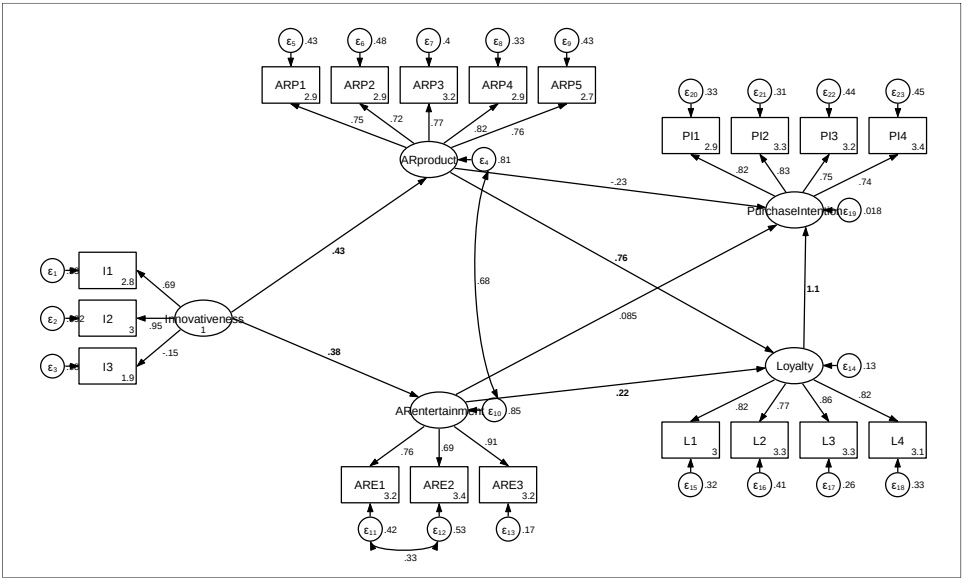
calculated manually to measure convergent validity and construct reliability. The composite reliability values exceeded 0.8, thus demonstrating a high internal consistency of latent variables (Hair et al., 2010). Furthermore, all factor loadings exceeded 0.70 and were significant ($p < 0.05$), evidence of convergent validity. Cronbach alphas ranged from 0.817 to 0.888, exceeding the 0.70 thresholds. Convergent and discriminant validity was evaluated using the AVE. The test criterion was that the AVE should exceed 0.5 (Fornell & Larcker, 1981). In this study, all of the AVEs for the Innovativeness, AR Product Information, AR Entertainment, loyalty, and purchase intention exceeded the threshold of 0.6, indicating that this study had adequate convergent and discriminant validity.

As a result of the confirmatory factor analysis, the goodness-of-fit values were found to be Chi2(141)=315.397 (0.000), RMSEA 0.066, CFI=0.953, TLI=0.943, and SRMR=0,041. Since the goodness-of-fit values were within acceptable limits (Carmines & Mclver, 1981; Browne & Cudeck, 1993), a model was created that formed linear relationships between the factors of innovativeness and AR product information and AR entertainment, and the variables of loyalty and purchasing intention. Figure 2 shows the path diagram for these causal relationships

3.7. Structural Model (Hypotheses Testing)

The findings of the path analyses conducted are shown in Figure 2.

Figure: 2
Structural Equation Model (SEM) Path Analysis



The goodness-of-fit values of the model were found to be Chi2(143)=346.939 (0.000), RMSEA 0.070, CFI=0.943, TLI=0.932 and SRMR=0.046. All indicate an acceptable model fitness for the structural model.

To test hypotheses in the research model using SEM, the results are given in Table 3.

Table: 3
Hypothesis Test Results

Hypothesised path	Standardised estimates	t-value	Hypothesis supported
H1: Innovativeness → AR entertainment	0,38***	6,16	Yes
H2: Innovativeness → AR product	0,43***	6,35	Yes
H3a: AR entertainment → Loyalty	0,22***	3,38	Yes
H3b: AR entertainment → Purchase intention	0,08	1,15	No
H4a: AR product → Loyalty	0,76***	13,29	Yes
H4b: AR product → Purchase intention	-0,23	-1,34	No
H5: Loyalty → Purchase intention	1,13***	6,44	Yes

*** $p < 0,001$.

The findings suggest that the innovativeness dimension has significant positive effects on both the AR entertainment dimension (β=0.38; $p<0.05$) and the AR product information dimension (β=0.43; $p<0.05$); thus, H1 and H2 were supported. In addition, the AR entertainment (β=0.22; $p<0.05$) and AR product information has significant positive effects on loyalty (β=0.76; $p<0.05$), the same being true between loyalty (β=1,13; $p<0.05$) and purchasing intention; thus, H3a, H4a, and H5 were supported.

4. Conclusion

In recent years, technological developments have increased the use of smartphones, and mobile applications associated with these smart devices are becoming increasingly popular tools in online retailing activities. The latest trend in such applications is the integration of AR. Many retail businesses have launched their AR-integrated mobile applications. This study was conducted because AR applications will maintain their importance by becoming more complex and integrated into commercial activities. The present study investigated the effects of innovativeness on AR experience and how AR experience influenced consumer loyalty and purchasing intention. To this end, data were gathered through an online survey from 319 participants and were examined through reliability analysis, exploratory and confirmatory factor analyses, and path analysis.

The findings revealed that innovativeness had positive correlations with AR entertainment and AR product information, positively influencing consumer loyalty. Increased consumer loyalty was associated with increased purchasing intention. Therefore, based on the study sample and limitations, it could be suggested that AR applications increase consumer loyalty.

Consumers tend to adapt to and use technological innovations in the retail sector (Pantano, 2014). Bonetti et al. (2018) showed that consumers' cognitive innovativeness levels played a vital role in their acceptance and use of AR applications, which is in line with

the findings of the present study suggesting that level of innovativeness positively correlated with the dimensions of product knowledge and entertainment of AR applications, and that innovativeness influenced purchasing intention.

Marketing-oriented AR applications fill a gap consumers cannot have in online shopping. Thanks to the AR experience, consumers can experience information they cannot obtain from the online store. There is no direct interaction and experience with the online store's website products. Therefore, when sufficient information about the product is not available, consumers give up purchasing the product. Thanks to AR applications, they can access more information about the products. For example, thanks to the AR application, they can experience how a seat they intend to purchase will look in their living room, which colour seat will be more appropriate, or which model of sunglasses will look better on their faces.

Thanks to its simulation effect, AR applications provide a virtual experience. With this experience, consumers can experience the functional aspects of the products. With AR experience, the risk perceived by consumers is also reduced. In this way, consumers have a more enjoyable shopping experience. From this point of view, it can be said that the web traffic of the businesses that will use AR applications in their marketing campaigns will increase, their basket abandonment rates will decrease, and therefore their sales, profit, and competitive advantage will increase. The most important limitation of the study is that the AR application was not supervised individually by the participants. Participants saw the application in the video showing them and answered the questions according to this video. Another limitation of the research is that the data used in the study are determined by the convenience sampling method. Based on this constraint, research results cannot be generalised to the main population. The time constraint could be the other crucial limitation of the present study, preventing it from carrying out a larger sample. Another limitation of the study was that it was confined to investigating an AR application in the retailing sector.

AR applications add a new dimension to consumers' product experience. This aids businesses and marketing managers in gaining flexibility in reaching their consumers. Customer satisfaction has been shown to constitute one of the most crucial factors encouraging consumers to revisit the same websites in their online purchases. It is also among the most important factors in creating loyalty to mobile services. Customer satisfaction increases profitability and consumers' visit rates (Wang & Chen, 2011; Luarn & Lin, 2003; Vranakis et al., 2012).

Digital marketing activities enriched with AR applications can, therefore, bring businesses a competitive advantage by increasing consumer satisfaction and contributing to loyalty and the success of businesses. Jung et al. (2015) found that the content and quality of AR applications influence customer satisfaction. The same study also showed that participants satisfied with using innovative mobile applications tended to use AR applications designed to promote tourism destinations. Participants satisfied with the AR application were also inclined to word-of-mouth marketing. Similarly, Hilken et al. (2017)

showed that AR applications influence word-of-mouth marketing and purchasing. Hence, it can be suggested that businesses could benefit from mobile applications such as AR apps to reach innovative consumers and get them to talk about the product/brand.

When consumers are satisfied with their experiences, they tend to be more loyal to businesses and pay higher prices, meaning that integrating AR applications into marketing activities may bring several benefits to businesses (Krieger, 2013). Irshad et al. (2018) suggested that AR applications could be employed as effective tools for promoting and marketing almost every product. Businesses need to pay attention to several factors to benefit from AR applications. Firstly, they need to define their target audience and ways to reach them, such as determining the campaign's targets. Next, they need to determine how the AR application can be used and what contents it could have. Later, they need to integrate the AR applications into the social and physical environment (Scholz & Smith, 2016). Early adopters of new technologies may be a suitable target audience for businesses wishing to use AR applications; as such, consumers tend to try new applications (Yim & Chu, 2013). Hence, companies can gain a significant competitive edge from using AR applications as part of marketing activities to create effective interaction with consumers with tech-intensive lifestyles and turn it into consumer loyalty.

Businesses can organise customised campaigns specific to the target audience by taking advantage of the interactive feature of AR applications.

Future studies could concentrate on other variations of AR applications in different sectors. Other suggestions for future studies can be listed as follows:

In this study, an AR application was used to show the participants how their furniture and accessories would look in the home environment. Researchers may start from a different application type in future studies, like wearable technologies.

The research model can be designed using random sampling methods in future studies. In addition, different age groups, different personality traits, or different cultural groups can be determined as a sample.

AR applications increase consumers' product knowledge and provide a more enjoyable shopping experience. So, businesses can take advantage of AR apps, especially when they want to interact more with consumers.

In addition, businesses should classify consumers according to their adoption of innovations and direct the right message to the right consumers to benefit from AR applications effectively.

In future research, the relationships of AR applications with variables such as customer satisfaction, post-purchase behaviour, and customer satisfaction can be examined.

It could be suggested that, with the right content and target audience, businesses wishing to integrate AR applications into their marketing activities can succeed. It is hoped that the present study's findings could serve as examples for such enterprises and contribute to the literature on the subject.

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