Journal of Statistics Applications & Probability
An International Journal

http://dx.doi.org/10.18576/jsap/130504

Determinants of Retailers' Adoption Intentions and Attitudes Toward Augmented Reality Marketing: An Empirical Analysis

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Received: 21 Jul. 2024, Revised: 5 Aug. 2024, Accepted: 25 Aug. 2024.
Published online: 1 Sep. 2024.

Abstract: This study investigates the factors influencing user inclinations towards embracing augmented reality (AR) marketing in the retail industry of Saudi Arabia. Data from 558 respondents was gathered through a survey and analyzed using structural equation modeling. The analysis delves into the direct and indirect effects of informativeness, trust, self-efficacy, and perceived benefits on users' attitudes and their willingness to interact with AR marketing. The findings confirm all hypothesized relationships. Informativeness, trust, self-efficacy, and perceived benefits positively impact users' attitudes towards AR marketing, with perceived benefits exerting the most significant influence. Attitude emerges as a key mediator, substantially influencing the adoption intention of AR marketing. Moreover, the indirect effects reveal that the impacts of informativeness, trust, self-efficacy, and perceived benefits on the adoption intention of AR marketing are mediated through attitude. These results underscore the pivotal role of attitude in the acceptance of AR marketing, underscoring its significant positive influence on users' intentions. The study provides insights into the drivers of AR marketing adoption and recommends that retailers in Saudi Arabia enhance the perceived benefits of AR marketing and cultivate positive attitudes by enhancing informativeness, trust, and self-efficacy.

Keywords: Augmented reality, Marketing, Attitude, Intention, Saudi Arabia.

1. Introduction

Augmented Reality (AR) seamlessly integrates computer-generated elements, such as video overlays and images, into the physical environment using devices like eyeglasses, desktops, and smartphones [1,2]. Recognizing the substantial potential of AR, numerous businesses are embracing it to enhance customer interactions dynamically [3]. AR proves particularly beneficial for marketers aiming to showcase products in more imaginative and compelling ways [3]. For instance, AR facilitates virtual product trials, allowing consumers to experience and visualize items through their smartphone cameras, especially in sectors like fashion, home goods, eyewear, and cosmetics.

Prominent organizations such as Sephora leverage AR technology through the Virtual Artist app, empowering customers to virtually try on makeup and learn application techniques without visiting a physical store. In the realm of home and furniture retail, IKEA utilizes an AR app that assists customers in envisioning furniture placement in their living spaces [4]. Similarly, Topology Eyewear offers virtual glasses trials, replicating the in-store try-on experience. Markets and Markets forecasts that the AR shopping market will increase from USD 3.4 billion in 2023 to USD 11.6 billion by 2028, achieving a Compound Annual Growth Rate (CAGR) of 28% [5]. Therefore, businesses should contemplate integrating AR technology into their marketing strategies to ensure they stay at the forefront of customer engagement.

This paradigm shift, blending the physical and digital realms, offers retailers a unique avenue to enhance consumer engagement and redefine shopping experiences [6,7]. However, the decision to adopt AR is a multifaceted one, influenced by a myriad of factors. Technological advancements play a pivotal role, as the maturation and accessibility of AR technologies shape retailers' perceptions of the associated benefits and challenges [8]. Consumer expectations and behavior are equally crucial, with retailers navigating the dynamic landscape of evolving preferences to determine the relevance and appeal of AR-enhanced interactions. Internally, organizational capabilities, encompassing financial resources, technological infrastructure, and workforce skills, weigh heavily on a retailer's ability to implement AR strategies. Additionally, the competitive environment prompts retailers to explore AR as a means of differentiation and staying ahead in the market [9]. The regulatory framework further adds a layer of complexity, with compliance considerations influencing retailers' perceptions and decisions regarding AR adoption [10]. Through a holistic exploration of these interconnected factors, this research aims to unravel the intricate dynamics shaping retailers' attitudes and intentions to embrace AR marketing.

The research is structured into distinct sections. Firstly, the study addresses the current research gap and justifies its objectives. Subsequently, the following section presents the conceptual framework and hypotheses. The third section for methodology and the data analysis methods applied. The fourth section presents the results using structural equation

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modeling. Lastly, the conclusion examines the implications of the findings and their importance.

2. Theoretical Underpinning:

In the digital retail era, the integration of information and communication technology has emerged as a primary focus in researching technology adoption. Various theoretical frameworks have been utilized to investigate this area. Noteworthy models include the “Theory of Reasoned Action (TRA)” [11], the “Diffusion of Innovation Theory” [12], the “DeLone and McLean Model of Information Success” [13], the “Theory of Planned Behavior” [14], “Bailey and Pearson's assessment of computer user satisfaction” [15], the Technology Acceptance Model (TAM) [16,17], and the “Unified Theory of Acceptance and Use of Technology” [18].

Among these theories, the TAM stands out for its significant impact on information systems research [19,20]. TAM, derived from the TRA developed by Fishbein and Ajzen [11] in social psychology, has gained widespread acclaim. While TRA has been applied across various fields, TAM was specifically tailored for information systems by Davis [16]. The model consists of three key components: “attitude”, “perceived ease of use” (PEU), and “perceived usefulness” (PU), which collectively elucidate a user's intention to adopt new technology. Additionally, Davis et al. introduced the concept of behavioral intention (BI), strongly influenced by attitude. Research by Legris et al. [21] demonstrates TAM's effectiveness in predicting system usage, explaining approximately 30% to 40% of the variance. Therefore, this study embraces TAM as its theoretical foundation.

Despite TAM's widespread use, several limitations have been recognized. For instance, TAM may encounter challenges in addressing emerging technologies or services [22]. Garaca [23] has highlighted TAM's restricted ability to forecast and explain outcomes, as well as its practical relevance. Furthermore, some studies applying TAM have yielded inconclusive or conflicting results, underscoring the need to incorporate additional factors into the model [21]. Tarhini et al. [24] advocate for integrating context-specific variables, such as those pertinent to AR marketing, to enhance the explanatory power of TAM. This emphasizes the importance of enriching TAM with industry-specific elements, as depicted in Figure 1.

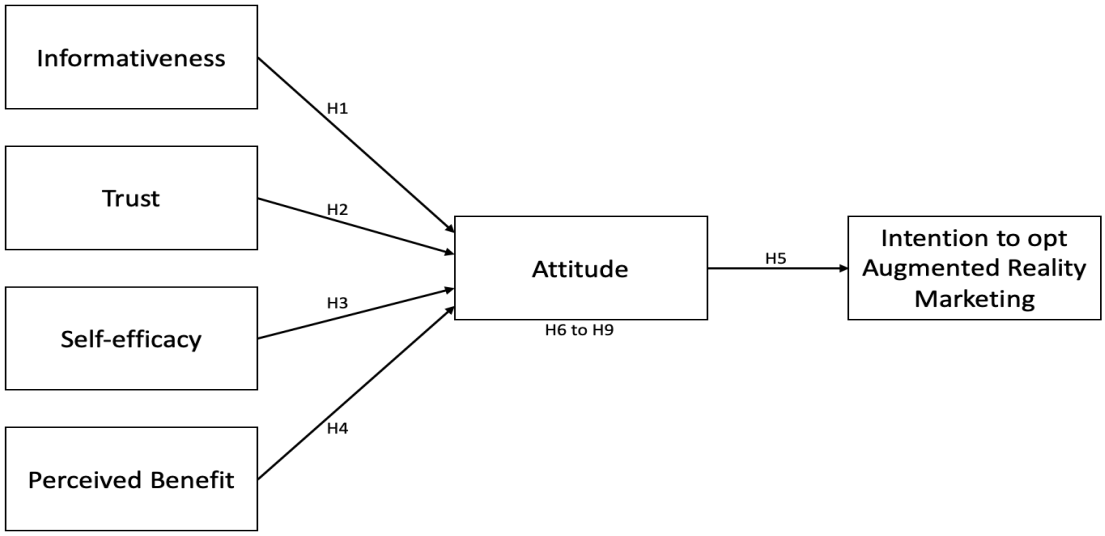

Fig. 1: Research Model.

2.1 Informativeness

The role of virtual reality in conveying information significantly influences how consumers perceive a brand and is crucial for boosting their inclination to make a purchase [25]. Sung and Cho [26] stated that informativeness of AR marketing outperforms traditional advertising, directly impacting how consumers evaluate the efficacy of marketing messages. Yim and Park [27] argue that marketing products with precise and valuable information enhances consumers' practical perspectives and influences their buying choices [28]. These insights are corroborated by scholars like Rauschnabel et al. [29], who propose that the informative nature of AR marketing fosters positive attitudes towards the content. Through AR technology, retailers can offer more detailed and interactive information about their products and services [30]. According to the TAM, the informativeness of AR serves as an external factor influencing consumers' readiness to comprehend product specifics, thereby enhancing their assessments and shaping their attitudes [31]. As a result, this study puts forward the following hypothesis:

H1: Informativeness influences on attitude

2.2 Trust

In the field of business research, trust is widely recognized as a critical element that shapes consumer decisions in the e-commerce industry [32]. Wang and Lin [33] and Fang et al. [34] define trust as "the belief in a service provider's ability to fulfill its commitments to customers," indicating that individuals are more likely to depend on or intend to rely on a specific service provider [35]. In the context of this study, trust in AR applications is characterized by users' readiness to rely on these apps, viewing them as trustworthy and in line with their needs. Trust is established when users' expectations are consistently met, leading to a strong sense of trust in the AR service providers when users perceive that an AR app delivers as expected [36].

Research consistently demonstrates that consumer trust in online retailers positively impacts their willingness to make online purchases [37] and their inclination towards repeat purchases from these retailers [38,39]. Trust influence on the intention to install mobile applications [40]. Wang and Lin [33] discovered a positive association between trust in location-based services and the continued use of such mobile apps. Similarly, Patel et al. [41] established a positive link between perceived trust and the intention to make purchases through shopping apps. These findings confirm the impact of trust on consumer engagement, repeat transactions with online retailers, and the usage of mobile apps [33,37]. Therefore, it is postulated that enhanced trust in AR apps among retailers will enhance their perceptions of AR marketing. Thus, this study presents the following hypothesis:

H2: Trust influences on attitude

2.3 Self-efficacy

Self-efficacy, as described by Pramana [42], pertains to an individual's belief in their capacity and competence to carry out specific tasks. This concept, originating from Bandura's [43] social cognitive theory, was adapted for research in information systems by Compeau and Higgins [44]. Scholars in the field, including Hauser et al. [45], Malliari et al. [46], and John [47], discussed self-efficacy on various computer-related activities. The confidence in one's abilities is pivotal for instigating behavioral intentions and formulating effective action strategies. In the scenario of enrolling in an online course, mere intention alone is insufficient; a strong sense of capability is essential for successful completion. Research consistently underscores the value of self-efficacy in shaping behavioral intentions and its correlation with attitudes, as demonstrated by Budu et al. [48]. Building upon these insights, the following hypothesis is proposed:

H3: Self-efficacy influences on attitude

2.4 Perceived Benefit

Perceived benefit refers to an individual's belief in the advantages they anticipate receiving from downloading a mobile application. These applications offer a range of benefits, such as entertainment from gaming apps, health assistance from medical applications, and improved business productivity from tools designed for efficiency. Retailers who recognize these benefits are likely to witness a higher rate of app installations when the perceived advantages are more substantial. Studies in e-commerce consistently highlight the pivotal role of consumers' perceptions of benefits in influencing their decisions to participate in online transactions [49,50,51,52]. In the realm of AR marketing, retailers stand to gain significantly by embracing this technology, as AR marketing can enhance the consumer experience through engaging and interactive content. For instance, retailers can leverage AR to offer virtual fittings for products like clothing and accessories, allowing customers to preview items before making a purchase [7]. The capability of AR to merge online and physical retail experiences provides retailers with a distinctive approach to showcase their offerings in a virtual environment. Given these potential benefits, this study suggests that the perceived advantages of AR marketing will not only result in favorable outcomes for retailers but also elevate the overall effectiveness and success of their marketing strategies. Therefore, the following hypothesis is presented:

H4: Perceived benefit influences on attitude.

2.5 Attitude

The correlation between attitude and intention has been extensively studied in both consumer behavior and technology adoption research. According to the “Theory of Planned Behavior” [14], attitude is a key predictor of behavioral intention. AR marketing studies have delved into how users' attitudes towards AR impact their willingness to engage in AR-related activities. Research by Davis [16] and Venkatesh et al. [18], within the framework of the TAM, indicates that a positive attitude towards technology significantly influences the intention to use it.

The role of attitude as a mediator between informativeness and intention aligns with broader research in information processing and technology adoption. Early work by Fishbein and Ajzen [11] and Davis et al. [17] underscores the importance of perceived information quality in shaping users' attitudes and subsequent behavioral intentions. Investigations

into the interplay among trust, attitude, and intention have been conducted across various domains, including e-commerce and technology adoption. Studies by McKnight et al. [53] and Gefen [54] demonstrate that trust impact on users' attitudes towards technology, which in turn influences their behavioral intentions.

Moreover, studies on self-efficacy and technology adoption, rooted in Bandura's "Social Cognitive Theory" highlight the significance of users' confidence in their abilities in shaping their attitudes and intentions. Research by Compeau and Higgins [44] and Venkatesh et al. [18] supports the notion that self-efficacy plays a crucial role in determining users' attitudes towards technology. The interconnections among perceived benefit, attitude, and intention align with established theories like the Technology Acceptance Model [16]. Previous research by Moon and Kim [31] and Venkatesh et al. [18] indicates that perceived benefits significantly influence users' attitudes towards technology, thereby impacting their behavioral intentions. Based on these insights, this study posits the following hypotheses:

H5: Attitude influences the intention to adopt AR marketing.

H6: Attitude mediates between informativeness and the intention to adopt AR marketing.

H7: Attitude mediates between trust and the intention to adopt AR marketing.

H8: Attitude mediates between self-efficacy and the intention to adopt AR marketing.

H9: Attitude mediates between perceived benefit and the intention to adopt AR marketing.

3. Methodology

Data collected from retailers in Saudi Arabia. The data collection took place in November 2023. Five-point Likert scale used where 5 indicated strongly agree and 1 for strongly disagree. The questionnaire was translated into Arabic language [55]. The final version of the questionnaire was adapted from a previously published model. To gauge the intention to adopt AR marketing, three items sourced from Alam et al. [7] were included. Attitude was evaluated using three items adapted from Alam et al. [56]. Perceived benefit was measured through three items from Harris et al. [40]. Self-efficacy was assessed with three items adapted from Chao [57]. Trust was evaluated using three items from Harris et al. [40] and Kang et al. [9]. Lastly, informativeness was examined with four items adapted from Moon et al. [31] and Yang [10]. Through a convenience sampling approach, the online questionnaire was circulated, yielding 558 completed responses. The demographics are summarized in Table 1. Among the participants, 68% were female, with the majority (54%) in the age range of 18 to 24 years. A significant portion (67%) held a Bachelor's Degree, and over half (51%) had less than one year of work experience. In terms of employment, 65% were employed in retail companies, while 24% were self-employed. Geographically, 79% of the respondents hailed from the Central region. The analysis of the data was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the SmartPLS 4 software [58-62].

Table 1: Demographic Characteristics (n=558)

	Frequency	**Percent**
Gender		
Male	178	32%
Female	380	68%
Age		
18-24	302	54%
25-34	185	33%
35-44	46	8%
45-54	18	3%
55-64	7	1%
Education		
High School or equivalent	112	20%
Bachelor's Degree	376	67%
Master's Degree	67	12%
Doctoral Degree	3	1%
Experience		
Less than 1 year	286	51%
1-5 years	195	35%

	Frequency	Percent
6-10 years	46	8%
11-15 years	15	3%
16 years or more	16	3%
Employment status		
Employed at retail company	360	65%
Self-employed	132	24%
Founder of retail business	40	7%
Co-founder of retail business	26	5%
Workplace region		
Southern	20	4%
Northern	24	4%
Western	29	5%
Central	443	79%
Eastern	42	8%

4. Results

Table 2 displays the essential metrics for each construct in the measurement model, focusing on their reliability and validity. The "Informativeness" construct exhibits high internal consistency, with a Cronbach's alpha of 0.853, indicating reliable measurements. The composite reliability is 0.903, indicating the construct's overall stability, and the average variance extracted (AVE) is 0.701, showing satisfactory convergent validity. In the case of the "Trust" construct, a Cronbach's alpha of 0.739 suggests strong internal consistency, while a composite reliability of 0.852 indicates adequate reliability. An AVE of 0.657 confirms the construct's convergent validity, ensuring effective measurement of trust. The constructs for "Self-efficacy," "Perceived Benefit," "Attitude," and "Intention to Opt for AR Marketing" all demonstrate solid internal consistency, with Cronbach's alphas ranging from 0.782 to 0.816. Composite reliabilities between 0.873 and 0.891 reflect dependable constructs, and AVE values from 0.696 to 0.732 confirm acceptable convergent validity. Table 3 presents the outcomes of the Fornell-Larcker criterion, utilized to assess the discriminant validity of the constructs. This method ensures that each construct is distinct from others.

Table 2: Measurement model

Items with constructs	Loadings	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Informativeness		0.858	0.903	0.701
INF1: "AR marketing provides clear and understandable information about the products/services"	0.841			
INF2: "AR marketing provides relevant information about the products/services"	0.849			
INF3: "AR marketing provides accurate information about the products/services"	0.828			
INF4: "AR marketing provides valuable information about the products/services"	0.829			
Trust		0.739	0.852	0.657
TRS1: "AR marketing is trustworthy"	0.813			
TRS2: "AR marketing has my best interests in mind"	0.805			
TRS3: "AR marketing has high integrity"	0.813			
Self-efficacy		0.785	0.874	0.699
SEF1: "I am convinced that I will adopt augmented reality in our online sales"	0.833			
SEF2: "I could figure out a way to implement augmented reality in our business"	0.846			
SEF3: "I am confident of using augmented reality if I have never used such a system before"	0.828			
Perceived Benefit		0.782	0.873	0.696

Items with constructs	Loadings	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
PBT1: "AR marketing can make my life easier"	0.832			
PBT2: "AR marketing can save me time"	0.854			
PBT3: "AR marketing can give me enjoyment"	0.816			
Attitude		0.808	0.887	0.725
ATT1: "I like the idea of selling online with augmented reality marketing"	0.885			
ATT2: "I think that it is a good idea to sell online with augmented reality marketing"	0.873			
ATT3: "I have a favorable attitude towards selling online with augmented reality marketing"	0.792			
Intention to opt AR marketing		0.816	0.891	0.732
INT1: "I will consider augmented reality while selling online"	0.835			
INT2: "I think it will be worth it for me to use augmented reality in online selling"	0.884			
INT3: "Regularly, I will use augmented reality in online selling"	0.847			

Table 3: Discriminant validity (Fornell-larcker criterion)

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Attitude	0.851					
(2) Informativeness	0.712	0.837				
(3) Intention to opt AR marketing	0.797	0.677	0.855			
(4) Perceived Benefit	0.748	0.649	0.714	0.834		
(5) Self-efficacy	0.701	0.652	0.699	0.67	0.836	
(6) Trust	0.611	0.6	0.59	0.572	0.644	0.81

The findings presented in Table 4 elucidate the path coefficients and associated statistical indicators representing the direct effects in the study. Beginning with the relationship between Informativeness and Attitude, a positive and statistically significant coefficient of 0.273 ($p < 0.05$) supports Hypothesis 1, affirming that the informativeness of AR positively influences users' attitudes. Similarly, the link between Trust and Attitude reveals a positive and significant coefficient of 0.098 ($p < 0.05$), endorsing Hypothesis 2 and indicating that trust in AR contributes positively to users' attitudes. Moving forward, the association between Self-efficacy and Attitude demonstrates a substantial positive coefficient of 0.209 ($p < 0.05$), supporting Hypothesis 3 and underscoring the impact of users' confidence in their ability to navigate AR on their attitudes. Moreover, the relationship between Perceived Benefit and Attitude exhibits a noteworthy positive coefficient of 0.375 ($p < 0.05$), confirming Hypothesis 4 and emphasizing the influential role of perceived benefits in shaping users' attitudes toward AR. Notably, the path from Attitude to Intention to opt AR marketing emerges as highly significant, with a substantial positive coefficient of 0.797 ($p < 0.05$). This robust support for Hypothesis 5 underscores the pivotal role of users' attitudes in driving their intention to adopt AR marketing strategies. Collectively, these results provide empirical validation for the proposed hypotheses, revealing the significant impact of informativeness, trust, self-efficacy, and perceived benefit on users' attitudes, consequently influencing their intention to opt for AR marketing.

Table 5 illuminates the indirect effects within the study, unveiling the path coefficients and associated statistical metrics that capture the interplay between different constructs. In the context of Informativeness, a substantial and statistically significant coefficient of 0.218 ($p < 0.05$) establishes the indirect impact on users' Intention to opt AR marketing through their Attitude, thereby supporting Hypothesis 6. This indicates that the influence of informativeness on adoption intentions is, in part, mediated by users' attitudes towards AR. Similarly, the pathway from Trust through Attitude to Intention to opt AR marketing is confirmed by a positive and significant coefficient of 0.078 ($p < 0.05$), endorsing Hypothesis 7. This underscores that trust plays an indirect role in shaping users' adoption intentions, mediated by their attitudes towards AR. Furthermore, the indirect effects of Self-efficacy (coefficient: 0.166, $p < 0.05$) and Perceived Benefit (coefficient: 0.299, $p < 0.05$) on Intention to opt AR marketing through users' attitudes both achieve statistical significance, supporting Hypotheses 8 and 9, respectively. In essence, these results highlight the pivotal role of users' attitudes as a mediating factor in the relationships between informativeness, trust, self-efficacy, perceived benefit, and their intention to embrace AR marketing. The nuanced understanding provided by these indirect effects enriches the comprehension of the intricate mechanisms influencing users' adoption intentions within the AR landscape.

Figure 2 presents the R-square (R^2) values for the central constructs in the study, offering insights into the explanatory power of the proposed model. For the construct of Attitude, the R-square value of 0.681 indicates that approximately 68.1% of the variation in users' attitudes toward AR marketing is elucidated by the integrated variables. Similarly, for the construct of Intention to opt AR marketing, the R-square value of 0.635 signifies that around 63.5% of the variance in users' intention to adopt AR marketing is accounted for by the examined variables in the model.

Table 4: Path Coefficients (Direct Effects)

Paths	β	Standard deviation	T statistics	P values	Results
Informativeness -> Attitude	0.273	0.047	5.838	0.00	H1 supported
Trust -> Attitude	0.098	0.038	2.593	0.01	H2 supported
Self-efficacy -> Attitude	0.209	0.042	4.938	0.00	H3 supported
Perceived Benefit -> Attitude	0.375	0.044	8.56	0.00	H4 supported
Attitude -> Intention to opt AR marketing	0.797	0.021	37.131	0.00	H5 supported

Table 5: Path Coefficients (Indirect Effects)

Paths	β	Standard deviation	T statistics	P values	Results
Informativeness -> Attitude -> Intention to opt AR marketing	0.218	0.038	5.793	0	H6 supported
Trust -> Attitude -> Intention to opt AR marketing	0.078	0.03	2.584	0.01	H7 supported
Self-efficacy -> Attitude -> Intention to opt AR marketing	0.166	0.034	4.857	0	H8 supported
Perceived Benefit -> Attitude -> Intention to opt AR marketing	0.299	0.036	8.219	0	H9 supported

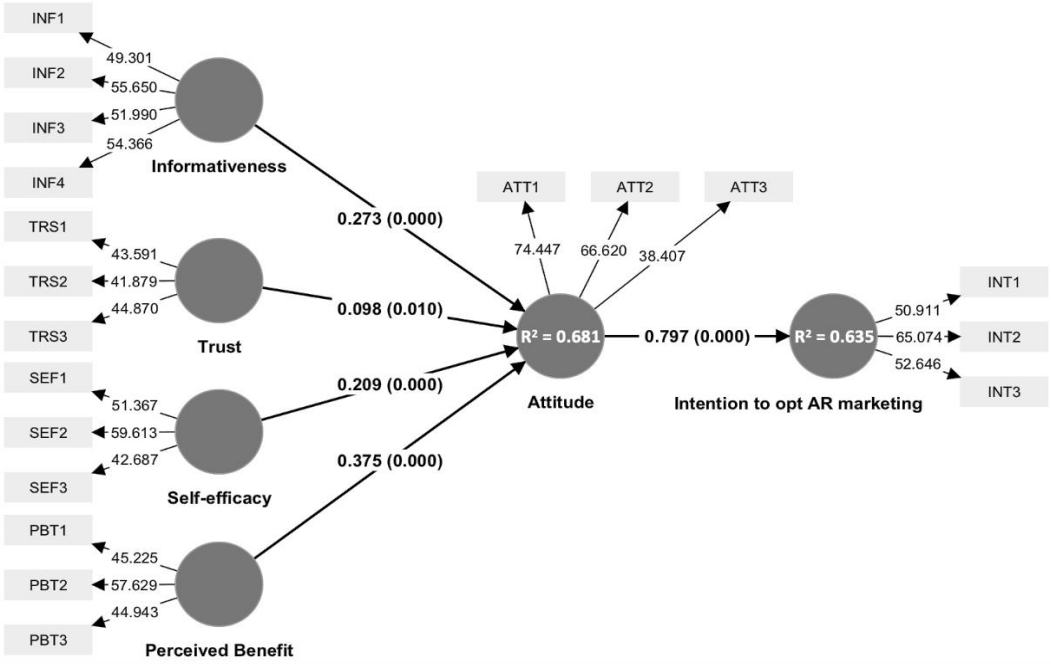

Fig. 2: Model for Intention to opt AR Marketing

5. Discussion

The study's findings reveal key insights into the factors influencing the opt-in for AR marketing among retailers in Saudi Arabia. The robust support for various relationships within the model emphasizes the significance of certain factors in shaping users' attitudes and intentions. The positive impact of informativeness on users' attitudes toward AR marketing underscores the importance of clear and valuable information. Retailers who effectively communicate relevant details through AR strategies are likely to foster positive attitudes among users [29,30]. Similarly, the positive relationship between trust and attitude highlights the crucial role of trustworthiness in AR marketing. Building and maintaining trust

emerge as key determinants for enhancing positive attitudes [39,41]. Users' confidence in their ability to navigate and utilize AR systems, as indicated by the positive link between self-efficacy and attitude, is crucial. Retailers should focus on ensuring users feel confident in their interactions with AR technology, influencing their overall attitudes [46,47]. Additionally, users' perceptions of the benefits offered by AR marketing, such as ease, time savings, and enjoyment, significantly contribute to shaping positive attitudes.

The strong influence of attitude on users' intention to opt for AR marketing indicates that positive attitudes, formed through various factors, strongly drive intentions to embrace AR marketing strategies. Users who hold favorable attitudes are more likely to express an intention to opt for AR marketing [63]. Attitudes play a pivotal mediating role in the relationships between informativeness, trust, self-efficacy, perceived benefit, and users' intention to opt for AR marketing. This highlights the central position of users' attitudes as a bridge connecting various influential factors to their ultimate opt-in intentions [64,65]. Retailers in Saudi Arabia can leverage these insights by prioritizing factors such as providing clear and valuable information, building and maintaining trust, enhancing users' confidence, and emphasizing perceived benefits. Understanding the nuanced dynamics of user perceptions and intentions within the context of AR marketing is crucial for retailers aiming to navigate and succeed in this dynamic landscape [66,67].

Implementing AR marketing strategies in the Saudi Arabian retail landscape necessitates a nuanced approach, considering the cultural and market-specific factors. Retailers can benefit significantly by incorporating the following implications derived from the study's findings. Emphasizing the delivery of clear and valuable information through AR experiences should be a top priority for retailers. Ensuring that product information is not only comprehensive but also easily digestible contributes to fostering positive attitudes among users. Additionally, building and maintaining trust are crucial elements for successful AR marketing [68]. Retailers must prioritize transparent communication, data privacy, and delivering on promises made through AR interactions to establish and sustain trust with users. Enhancing users' confidence in navigating and utilizing AR systems emerges as a key aspect influencing attitudes. Retailers should invest in user-friendly interfaces, coupled with adequate guidance, to create a seamless and enjoyable experience. Moreover, highlighting perceived benefits, such as ease, time savings, and enjoyment, can significantly influence positive attitudes. Retailers should strategically communicate these practical advantages in their AR marketing campaigns. User education and training programs become imperative to enhance users' confidence, providing them with the knowledge and skills to interact effectively with AR technology.

Given the dynamic nature of consumer preferences and technological advancements, continuous monitoring and adaptation are essential. Retailers should regularly assess user feedback, preferences, and experiences to refine their AR strategies for sustained success [69]. Collaborating with AR solution providers becomes a strategic move, offering retailers access to cutting-edge solutions, technical support, and insights into industry best practices [70,71]. The successful adoption of AR marketing in Saudi Arabia requires a strategic and culturally sensitive approach. By embracing these implications, retailers can create immersive and engaging AR experiences tailored to the unique characteristics of the Saudi market, ultimately driving successful adoption and enhancing customer engagement.

6. Conclusion

The study findings offer insights for retailers in Saudi Arabia looking to integrate AR marketing tactics. To begin with, it is paramount for retailers to prioritize the dissemination of precise and comprehensible information to users, ensuring that product specifics and guidelines are readily available. Secondly, establishing trust through transparency, credibility, and robust data privacy practices is fundamental for the successful implementation of AR. Thirdly, retailers should allocate resources towards creating user-friendly interfaces and offering adequate training and support to bolster users' confidence in engaging with AR technology. Lastly, retailers need to underscore the tangible advantages of AR marketing to inspire users and enrich their overall shopping experience.

As Saudi retailers embrace AR technology, the insights from this study offer a valuable roadmap for enhancing customer engagement and maintaining a competitive edge in the dynamic market landscape. By grasping the impact of informativeness, trust, self-efficacy, and perceived benefit on users' attitudes, retailers can strategically implement AR marketing to craft immersive and personalized experiences for their clientele. Through effective incorporation into marketing strategies, ongoing assessment, and collaboration with AR solution providers, retailers can achieve enduring success and thrive in the continually evolving marketplace. While this study sheds light on the factors influencing the adoption of AR marketing among Saudi retailers, it is not without limitations. The research is limited to retailers' perspectives and integrating customers' viewpoints could provide a more comprehensive understanding of AR adoption. Additionally, the study does not address potential regional variations within Saudi Arabia or consider the impact of different market segments. The generalizability of the findings may be restricted due to the focus on a specific demographic, and the results might not be applicable to retailers in other regions or sectors. Future research could

investigate the long-term effects of AR marketing on purchase intentions, customer loyalty, and market share. It would also be beneficial to examine how cultural factors, including Saudi Arabian consumers' attitudes towards technology and their cultural inclinations, affect AR adoption. Lastly, the study's findings may be constrained by the specific methodologies used, and exploring alternative research approaches could offer further insights.

Acknowledgement:

The author extends the appreciation to the Deanship of Postgraduate Studies and Scientific Research at Majmaah University for funding this research work through the project number (R-2024-1319).

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