

# Effect of Augmented Reality Advertisements on Purchase Intention of Cosmetic Products

**Jha Suchita**, Assistant Professor, Symbiosis Institute of International Business, Symbiosis International (Deemed University), Hinjewadi, Pune, Maharashtra, India.

**Joshi Sujata**, Professor, Symbiosis Institute of Digital and Telecom Management, Symbiosis International (Deemed University), Lavale, Pune, Maharashtra India.

## Article Info

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## Abstract:

Originality/Research need:

Digital transformation is the key for the success of any business today. The marketing function cannot be an exception and we see the adoption of new digital trends in the integrated marketing communication space. Augmented reality (AR) is one such technology which permits the advancement of data in real time by including virtual PC created digital data. This gives marketers a choice for connecting and engaging with consumers at their convenience since augmented reality gives better flexibility and experience in the hand of consumer, makes it fascinating and also enhances brand engagement. Limited research has been done in the area of augmented reality advertising for cosmetic products and if it can enhance the consumers purchase intention influence product information or attitude towards brand (Tetra Pak International S.A., 2016).

Objective of the study: Hence the objective of this study is to determine the impact of Augmented Reality based advertisements on consumer purchase intention for purchasing cosmetic products.

Methodology: The researcher has used mixed research methodology for this study. Experimental research was used wherein the augmented reality based advertisements with respect to Cosmetic products have been shown to the consumers in the experimental group. A structured questionnaire was then circulated to the experimental group in order to gather their opinion and was the source of primary data for the analysis. Data analysis was done using statistical methods.

Implications of the study: The study will prove helpful to academicians, managers and technology manufacturing companies by providing insights into the impact of Augmented Reality based applications for advertising or marketing communication purpose.

**Keywords:** Augmented Reality, Advertisements, Integrated marketing communication.

## Article History

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## I Introduction:

Every industry today has become highly competitive irrespective of the business domain. Moreover the digital transformation has made it imperative for organizations to adopt technologies. Hence organizations are always on the lookout for new

technologies and new methods which can enhance customer engagement, increase customer loyalty towards brands or create a clear distinction of the brand in the mind-set of people. Augmented reality is one such technology which is being viewed at by organizations as a tool for better customer

engagement. Augmented reality is a way to connect in real time, wherein the technology enables organizations to turn the passive print into active use thereby helping them in creating their own media channels to personalize and measure the customer engagement.

Augmented reality (AR) applications have been studied in various industries. Gallayanee et al (2016) have studied the usage of augmented reality in packaging. Kim & Forsythe (2008) have studied the application of AR on clothing retailers. Re & Bordegoni (2014) worked on the packaged food industry and usage of AR in navigation of logistics. Liao, T. (2015) studied how the AR technology is developing, its linkage to marketing and its implications thereof. Pareeratanasomporn, N. (2018) explored use of augmented reality applications for interactive features on food packaging. Yeong & Eunju (2016) studied augmented reality applications for food traceability using the QR coding. Gutiérrez et al (2017) have discussed about the personal health augmented reality assistance and its application for health food recommendation. Rollo et al (2017) studied the impact and usability of a new AR food application ServAR. Stoyanova et al (2015) in their paper tried to explore whether augmented reality application is an added advantage to the product or service. Bonetti et al (2017) worked on application of augmented reality in retail space; they further looked into how augmented reality comes as an overall enhancer for shopping experience.

Augmented reality has a lot of potential in the beauty care industry. Augmented reality in beauty products is used in various ways like QR code, QRH (quick response hypermedia) and ARH (Augmented reality hypermedia). Lu and Smith (2007) mention that "traditional electronic commerce (ecommerce) is limited, because it cannot provide enough direct information about products to online consumers". Brands such as L'Oréal, Ray-Ban use virtual try-on apps to lure the consumers for beauty products. L'Oréal's app "YouCam Makeup" allows the customers to see themselves in real-time on their

smart device and explore, try and purchase different makeup products from the brand. Ray ban's app "Ray-Ban virtual try-on" provides customers a chance to explore various glasses in a real-time setting by actual trial. As most of the beauty brands are selling their products through online medium when products can be tried on from any location and they can check which shade is matching with their skin tone, thus giving customer's information about the products and helps in making the decision easier. Although Augmented Reality has potential in the beauty care industry, not much study has been done in academic literature on the application of AR in beauty products. Hence the objective of this study is to determine the impact of Augmented Reality based advertisements on consumer purchase intention for purchasing cosmetic products.

## II Literature Review:

For this study the researcher intends to study the impact of Augmented Reality based advertisements on consumer purchase intention for purchasing cosmetic products.

### 2.1 Technology Acceptance Model (TAM) Theory

A "Technology Acceptance Model" (TAM) model, proposed in 1989 by Davis, Bagozzi and Warshaw, explores consumers' acceptance and use of technology based innovations. The main two factors that affect the respondent's decision are perceived usefulness and perceived ease of use.

During the adaptation process, the audience wants to learn the benefits of innovation, see if the improvement is necessary and whether or not it meets their needs and demands. They also want to use an effort-free and time-free system (Davis, 1989). As a result, their attitudes, behaviours and intentions towards the innovation shape accordingly. Theory of Technology Acceptance Model (TAM) is originated from Fishbein and Ajzen's (1967) Theory of Reasoned Action (TRA) in the literature. Theory of Reasoned Action (TRA) aims to understand the voluntary behaviour of people and to examine the relationship between attitudes and behaviours with actions.

According to TRA, intention of people to perform behaviour, determines the actual behaviour. Behavioural intention is determined as an outcome of attitudes and subjective norms.

Ajzen extended the TRA in 1985 by adding ' ' Perceived Behavioral Control ' ' to examine his relationship with people's behavioral intent. A new model has been called as ' ' Theory of Planned Behaviour ' ', abbreviated as TPB, and as a counterargument it notes that behavioral intention does not always end up with actual actions due to certain situations where there is volitional influence over the behavioral effects of individuals. By including perceived behavioural control component into TRA model, TPB model covers even non-volitional behaviours and their interaction with behavioural intention and actual behaviour. (Madden et al 1992).

Such models have been applied to other fields such as health care, advertising, sports, public relations, etc. to explain the dynamics between attitudes, behavioral desires and behaviors. According to the research in augmented reality integrated applications, Olsson et al., 2003 proposed that, perceived informativeness and perceived enjoyment are two crucial factors, and this is also in line with the research done for investigating the attitudes of customers on mobile device or website usage. (Hausman and Siepke, 2009; Pantano and Naccarato, 2010). Moreover, those two factors are also in a positive relationship with perceived usefulness of an innovation and eventually all together effect the intention to use or to purchase. (Chen and Tan, 2004). There are also another revised TAM models that have been examined in research by Seddon and Kiew (1996), and Seddon (1997) in which the effect of quality of a product or a service on perceived usefulness and eventually on the intention to reuse of AR for related research, process reliability, data quality, and service quality are modeled as independent variables, where the mediator is usefulness, and the dependent variable is the intention to recycle AR.

## 2.2 Research Constructs:

For this research Purchase Intention has been identified as the dependent variable and entertainment, word of mouth, informativeness, memorability, ease of use, irritability, and time effort were identified as the independent variables

### 2.2.1 Entertainment:

According to Yang and Smith (2009) creative and entertaining advertisements especially the technology aided ads create a significant impact on customer's intention to purchase. As per Tellis, 2004, uninteresting content is the prime reason for the advertisement's ineffectiveness. As per Chandon et al., 2007, sustained attention has a positive impact on persuasion of purchasing and entertaining ads can improve attention span. As per the study of Lee and Chung, 2008, enjoyment factor was a major reason for consumers to react favourably to virtual shopping malls which reinstates the findings of Ducoffe, in 1996 that advertisement value is enhanced due to the presence of enjoyability factor. Moreover the other studies by Mitchell and Olson, 1981; Shimp, 1981; also support the argument in favour of the entertainment or enjoyment value in advertisements as leading to positive consumer behaviour.

Proposition 1: Entertainment factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

### 2.2.2 Word of Mouth (WOM):

Reza Jalilvand, M., & Samiei, N. (2012), in their study discuss the impact of WOM on consumer purchase intention their findings showcase a positive impact between the two constructs. Yadav & Pavlou (2014) studied the factors affecting purchase decision and word of mouth of virtual and digital goods in social app-based communities. Zhang, et al (2010) worked on the impact of review on consumers purchase intention and their study showcased that word of mouth plays an increasingly important role in consumer purchase decisions. Park et al (2007) worked on word of mouth through online medium such as on-line consumer reviews, as

informants and as recommenders. As per Fan & Miao (2012), Electronic word of mouth can be used to help consumers make e-commerce purchasing decisions.

Proposition 2: Word of Mouth (WOM) factor in AR advertisements has a direct significant effect on consumer purchase intention

### 2.2.3 Role of informativeness:

Yaoyuneyong et al (2016) conducted a study on handheld and wearable smart devices which have enabled augmented reality technologies (ART) and as per their informativeness was one of the factors which has a positive effect on ad effectiveness. According to Yoo and Kim, 2007, categorized informativeness as one of the factors which impacts advertising attitude. It has been reported that, the ability to provide information, is seen as the main reason for the approval of advertising by the target audience. Pastirmacı, C. (2018) <sup>studied</sup> the *effect of augmented reality advertising on purchase intention* and they found that informativeness has a direct impact on consumer purchase intention. Soley and Reid (2012) showed that, instead of the quantity of the information, type and the content of the information is the main determinant of perceived informativeness.

Proposition 3: Informativeness factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

### 2.2.4

### 2.2.5 Role of Memorability:

Raska, K., & Richter, T. (2017) studied the application of augmented reality in the retail industry and have concluded that the technology has provided a positive experience and increase in brand retention in the mind of consumers. According to Connolly et al (2016)<sup>1</sup>, since the audience might mainly focus on the interesting environment, they might lose their focus on the products or services and the message that is tried to be given. Therefore, advertisers should not only focus on the memorability of their advertisements, but also the memorability of the

features of their products or services, or their marketing messages. Because, memorability of an advertisement might be evaluated as a success, but if the audience do not remember the features and differences of the product or the service, their purchase intention might not be positive.

Proposition 4: Memorability factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

### 2.2.5 Role of ease of use:

According to Davis (1989), customers want to interact with a system that does not need showing extra effort to use. Dabholkar (1994), Davis et al. (1992), confirmed in their research that ease of use is a crucial factor for predicting the attitudes and behaviours of customers toward technology based ads. In addition, based on Diffusion of Innovation model, Rogers (2003) stated that one of the characteristics of innovation as complexity, which decreases the willingness levels to adoption to a new system. Another research has been conducted on Virtual Try-on technology for online apparel shopping by Kim and Forsythe (2008) which stated that there is a strong relationship between the usability of Virtual Try-on technology and the purchase intention of the respondents.

Proposition 5: Ease of use factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

### 2.2.6 Role of Irritation:

Yaoyuneyong, et al (2016) in their study talked about the use of technology for handheld and wearable smart devices and proposes entertainment value, informativeness and web irritation, along with consumer innovativeness and economic motivation as key factors influencing consumer's preference for augmented reality marketing. The results of the study conducted by Chakrabarty, S., & Yelkur, R. (2006) indicated that ad irritation was not significant in predicting brand attitudes. Respondents' prior brand attitude, ad credibility, ad-

induced feelings and attitude towards the advertiser were significant predictors of brand attitudes.

Proposition 6: Irritation factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

### 2.2.7 Role of Time Effort:

Time-effort is an important and more relevant topic for technology implemented advertisements since; those ads usually require user interaction and so need some time viewing. Augmented reality advertisements, independent of the type of AR technology used, includes some additional steps like reading the QR code or detecting the hidden image/logo in the advertisement by using the camera of a mobile device, and therefore people need to show some effort for viewing those ads. (Yaoyuneyong et al., 2016) Therefore, some people find those types of advertisements as time-wasting and they do not want to spare their time for viewing. Advertisers need to keep in mind those disadvantages and should accordingly design their advertisements.

Proposition 7: Time effort factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

### III Research method:

The paper adopts a quantitative approach in order to arrive at a conceptual model on the basis of evaluation, and analysis of survey. The data for this study has been collected through online questionnaire domain question-pro. The data are analysed for relevance from perspective of the six factors coming out from technology acceptance model. The present study is restricted to millennials because millennial are the largest and most influential generation of consumers in India. They have the exposure to technology and they want to try things related to technology and they usually spend approximately \$600 billion annually. Although definitions of Millennial vary, but it is typically accepted that the term refers to a category of consumers born between 1980 and 2000, Forbes

defines Millennial as consumers aged between 20 and 35.

Since the survey required the AR based advertisements to be shown to the sample consumers, hence convenience sampling was adopted and the sample population was made to view the advertisements in a closed setting. About 156 volunteered for the same and were shown the advertisements after which they were asked to fill in the structured questionnaire. The collected data was analyzed using factor and regression analysis to test the hypotheses.

### IV Conceptual Model:

Based on the literature review the following conceptual model and hypotheses have been proposed.

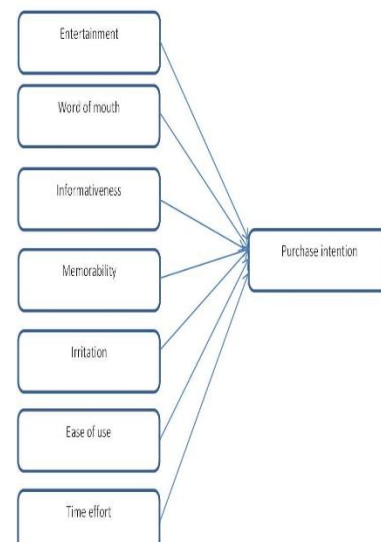


Fig 1: Conceptual model:

H1: Entertainment factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

H2: Word of Mouth factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

H3: Information factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

H4: Memorability factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

- H5: Irritation factor in AR advertisements significantly affects consumer purchase intention for cosmetic products
- H6: Time effort factor in AR significantly affects consumer purchase intention for cosmetic products
- H7: Ease of use factor in AR advertisements significantly affects consumer purchase intention for cosmetic products

Entertainment, Word of mouth, Informativeness, Memorability, Irritation ,Time effort and Ease of use. (Ref Table 2)

Table 2: Factor analysis for identified factors:

	Rotated Component Matrix <sup>a</sup>						
	1	2	3	4	5	6	7
ENT1	.898						
ENT2	.854						
ENT3	.818						
ENT4	.592						
WCOM 1		.849					
WCOM 2		.790					
WCOM 3		.754					
WCOM 4		.617					
INF 1			.546				
INF 2			-.838				
INF 3			.773				
MEM 1				.849			
MEM 2				.841			
MEM 3				-.809			
IRR 1					.710		
IRR 2					.809		
IRR 3					-.904		
IRR 4					-.581		
TE 1						-.721	
TE 2						.710	
TE 3						.524	
EOU 1							.739
EOU 2							-.596
EOU 3							-.525

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
a. Rotation converged in 14 iterations.

### V Data Analysis and findings:

A Likert scale was used to obtain the responses of the customer pertaining to the constructs affecting consumer purchase intention with the use augmented reality in promotion. The Cronbach Alpha test was used to determine the reliability of the scale used. The value for Cronbach Alpha which is 0.63 portraying good internal consistency.

The Kaiser-Meyer-Olkin (KMO) Test was conducted in order to measure how suitable the data was for conducting factor analysis. This test tells us the adequacy of the sample for the different variables and the model as a whole. Table 3 below showcases the results for the KMO test as 0.492 which falls between the standard ranges. (See table 1)

Table 1: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.492
Bartlett's Test of Sphericity	Approx. Chi-Square	1910.692
	df	351
	Sig.	.000

### 5.1 Factor analysis:

The objective of the study was to identify the constructs important for purchase intention of cosmetic products which are promoted by augmented reality advertising. Hence exploratory factor analysis was used to classify parameters affecting purchase intention. The principal component analysis with varimax rotation was used for exploratory factor analysis. 78% of the overall variance in the variables could be explained by the seven factors which resulted after the factor analysis. The seven factors were labelled as and

### 5.2 Regression Analysis:

To identify the relationship between independent and dependent variable regression analysis was conducted. Here we took purchase intention as dependent unit and entertainment, word of mouth, informativeness, memorability, irritation, time effort and ease of use were taken as independent variables. The R value is 0.791 (See table 3) which tells us there's a strong relationship between purchase intention and the 7 factors The R square value here is .626 ((See table 3) which lies between 0 and 1 indicating that 62 per cent of the variation in purchase intention is accounted for through the combined linear effects of the seven factors.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.791 <sup>a</sup>	.626	.593	63786828	.626	18.910	7	79	.000

a. Predictors: (Constant), REGR factor score 5 for analysis 1, REGR factor score 6 for analysis 1, REGR factor score 4 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1, entertaining  
b. Dependent Variable: REGR factor score 7 for analysis 1

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.512	.398		-11.334	.000
	entertaining	1.104	.098	1.193	11.505	.000
	REGR factor score 1 for analysis 1	.685	.091	.685	7.528	.000
	REGR factor score 2 for analysis 1	-.244	.072	-.244	-3.390	.001
	REGR factor score 3 for analysis 1	.116	.070	.116	1.688	.099
	REGR factor score 4 for analysis 1	-.309	.074	-.309	-4.187	.000
	REGR factor score 6 for analysis 1	.332	.075	.332	4.453	.000
	REGR factor score 5 for analysis 1	-.219	.071	-.219	-3.073	.003

a. Dependent Variable: REGR factor score 7 for analysis 1

Table 4: Coefficients

In this research, as independent variables, Entertainment (ENT), Word of mouth (WOM), Informativeness (INF), Memorability (MEM), Irritation (IRR), Time-effort (TEF), and Ease of Use (EOU) have been examined with augmented reality advertisement. As the Table 4 indicates the p values for all the seven factors is significant. The P value for factor 1 (entertainment), factor 4 (memorability), factor 5 (irritation) & factor 6 (Time effort) is .000 indicating 99 % confidence in the value of the estimated coefficient. (See table 4) For factor 2 (word of mouth) the significance value is .001 and for factor 7 (ease of use) the value is .003 which is less than .05 indicating 95 percent confidence in the value of the estimated coefficient and for factor 3 (informativeness) the value is .099 which is less than .1 indicating 90 percent confidence in the value of the estimated coefficient (see table 4). From this it is clear that all the factors are significantly affecting the independent variable.

### VI Managerial Implication:

This study gives a direction to the cosmetic companies trying to implement technology for better acceptability of the products. The results indicate that if marketers formulate advertising strategy by adopting technology like augmented reality it will definitely help in increasing customer intention to purchase. the results indicate that AR ads are more effective as they as customers find them more entertaining to view, they provide requisite information, are easy to remember, have lesser

irritation effect, are worth investing time in watching, easy to use and customers prefer to spread word of mouth with respect to such advertisements.. This study revealed that, people do not feel irritation for AR implemented advertisements, instead they are ready to spare their time for viewing the advertisement, they feel the entertainment, tend to share with their others, and their intention. Hence, advertisers and marketers should keep in mind that with the rise of digital era, usage of innovative ideas and technology in advertisement business will increase and adoption by audience seems promising.

### VII Conclusion:

This study was undertaken with the aim of determining the impact of Augmented Reality based advertisements on consumer purchase intention for purchasing cosmetic products. Based on literature review 24 variable were identified which were further clubbed into 7 factors based on factor analysis. The seven identified factors viz entertainment, word of mouth, informativeness, memorability, irritation, time effort and ease of use were significant at 735 variance and effect customer intention to purchase cosmetic products. Regression analysis was further done to test the hypotheses and results showed that all 7 factors were significant hence all 7 hypotheses stand accepted. (See table 5)

Table 5: Results of the Hypotheses Testing using regression analysis

	Hypotheses	Sig. P value	Result
<b>H1</b>	Entertainment factor in AR advertisements significantly affects consumer purchase intention for cosmetic products	0.000	Accepted
<b>H2</b>	Word of Mouth (WOM) factor in AR advertisements	0.001	Accepted

	significantly affects consumer purchase intention for cosmetic products		
<b>H3</b>	Informativeness factor in AR advertisements significantly affects consumer purchase intention for cosmetic products	0.099	Accepted
<b>H4</b>	Memorability factor in AR advertisements significantly affects consumer purchase intention for cosmetic products	0.000	Accepted
<b>H5</b>	Irritation factor in AR advertisements significantly affects consumer purchase intention for cosmetic products	.000	Accepted
<b>H6</b>	Time effort factor in AR advertisements significantly affects consumer purchase intention for cosmetic products	.000	Accepted
<b>H7</b>	Ease of use factor in AR advertisements significantly affects consumer purchase intention for cosmetic products	.003	Accepted

2. Chakrabarty, S., & Yelkur, R. (2006). The effects of ad irritation on brand attitudes. *Journal of Promotion Management*, 11(2-3), 37-48
3. Chandon, Pierre & Hutchinson, J & Bradlow, Eric & H. Young, Scott. (2007). Measuring the Value of Point-of-Purchase Marketing With Commercial Eye-Tracking Data. INSEAD Working Papers Collection. 46p. 10.2139/ssrn.1032162.
4. Chen, Lei-Da. Tan, Justin (2004). Technology Adaptation in E-commerce: Key Determinants of Virtual Stores Acceptance. *European Management Journal*, 22 (1), 74-86
5. Connolly, P., C. Chambers, E. Eagleson, D. Matthews, and T. Rogers (2010), "Augmented Reality Effectiveness in Advertising," presented at the 65th Midyear Conference on Engineering Design Graphics Division of the American Society of Engineering Education, Houghton, Michigan, and October.
6. Dabholkar, P. (1994). Introducing Choice Criteria into Attitude Models: A Comparative Analysis. *Journal of Consumer Research*, 20, 100- 118.
7. Davis, Fred D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly* Vol. 13, pp. 319-340
8. Ducoffe, R. H., (1996). Advertising Value and Advertising on the Web. *Journal of Advertising Research*, 36(5), 21-35
9. Fan, Y. W., & Miao, Y. F. (2012). Effect of electronic word-of-mouth on consumer purchase intention: The perspective of gender differences. *International Journal of Electronic Business Management*, 10(3), 175.
10. Gallayanee Yaoyuneyong, Jamiye Foster, Erik Johnson, David Johnson (2016). Augmented reality marketing: Consumer preferences and attitudes toward hypermedia print ads. *Journal of Interactive Advertising*, 16 (1), pp: 16-30.
11. Gutierrez, Francisco., Cardoso, Bruno., and Verbert, Katrien., (2017). PHARA: a personal health augmented reality assistant to support decision-making at grocery stores. In *Proceedings of the Second International Workshop on Health*
12. Recommender Systems co-located with ACM RecSys 2017, Como, Italy, August 2017

## REFERENCES

1. Bonetti, F., Wamaby, G., & Quinn, L. (2017). Augmented Reality and Virtual Reality in Physical and Online Retailing: A Review, Synthesis and Research Agenda. In *International Augmented Reality and Virtual Reality Conference 2017 Manchester Metropolitan University*. [https://doi.org/10.1007/978-3-319-64027-3\\_9](https://doi.org/10.1007/978-3-319-64027-3_9)



- (RecSys'17).
13. Hausman Angela V., and Siekpe, Jeffrey. Sam., (2009). Journal of Business Research, vol. 62, issue 1, 5-13
  14. Kim, J. and Forsythe, S. (2008) Adoption of Virtual Try-On Technology for Online Apparel Shopping. Journal of Interactive Marketing, 22(2), 45-59. <http://dx.doi.org/10.1002/dir.20113>
  15. Lee, K. C., & Chung, N. (2008). Empirical analysis of consumer reaction to the virtual reality shopping mall. Computers in Human Behaviour, 24(1), 88-104
  16. Liao, Tony. (2015). Augmented or admented reality? The influence of marketing on augmented reality technologies. Information, Communication & Society, 18(3), 310-326, DOI: 10.1080/1369118X.2014.989252
  17. Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A Comparison of the Theory of Planned Behaviour and the Theory of Reasoned Action. Personality and Social Psychology Bulletin, 18(1), 3-9
  18. Mitchell, A.A., Olson, J.C. (1981), "Are Product Attribute Beliefs the Only Mediator of Advertising Effects on Brand Attitude. Journal of Marketing Research, 18 (3), 318-332.
  19. Pantano, Eleonora & Naccarato, Giuseppe. (2010). Entertainment in retailing: The influences of advanced technologies. Journal of Retailing and Consumer Services. 17 (3). 200-204
  20. Pareeratanasomporn, Nuchjarin. (2018). Consumer Preferences in Food Interactive Packaging. Thesis. Rochester Institute of Technology. Accessed from <https://scholarworks.rit.edu/cgi/viewcontent.cgi?article=10941&context=theses>
  21. Park, D. H., Lee, J., & Han, I. (2007). The effect of on-line consumer reviews on consumer purchasing intention: The moderating role of involvement. International journal of electronic commerce, 11(4), 125-148
  22. Pastirmacı, C. (2018). Effect of augmented reality advertising on purchase intention. Retrieved from <http://openaccess.bilgi.edu.tr:8080/xmlui/bitstream/handle/11411/1347/Effect%20of%20augmented%20reality%20advertising%20on%20purchase%20intention.pdf?sequence=1&isAllowed=y>
  23. Raska, K., & Ritcher, T. (2017). Influence of augmented reality on purchase intention: The IKEA case. (Master Thesis). Jonkoping University.
  24. Re G.M., Bordegoni M. (2014) An Augmented Reality Framework for Supporting and Monitoring Operators during Maintenance Tasks. In: Shumaker R., Lackey S. (eds) Virtual, Augmented and Mixed Reality. Applications of Virtual and Augmented Reality. VAMR 2014. Lecture Notes in Computer Science, vol 8526. Springer, Cham
  25. Reza Jalilvand, M. and Samiei, N. (2012). The effect of electronic word of mouth on brand image and purchase intention. Marketing Intelligence & Planning, 30 (4), 460- 76.
  26. Rogers, E. M. (2003). Diffusion of innovations. New York: Free Press.
  27. Rollo, M. E., Bucher, T., Smith, S. P., & Collins, C. E. (2017). ServAR: An augmented reality tool to guide the serving of food. International Journal of Behavioural Nutrition and Physical Activity, 14(65), 2-10.
  28. Seddon, P.B. and Kiew, M-Y (1996). A Partial Test and Development of DeLone and Mclean's Model of IS Success. Australasian Journal of Information Systems. 4 (1), 379-485.
  29. Seddon, P.B. (1997). A Respecification and Extension of the DeLone and McLean Model of IS Success. Information Systems Research. 8 (3), 240-253
  30. Shimp, T.A., (1981). Attitude toward the Ad as a Mediator of Consumer Brand Choice. Journal of Advertising, 10 (2), 9-48.
  31. Soley, Lawrence C, and Leonard N. Reid. (1983). Satisfaction with the Informational Value of Magazine and Television Advertising. Journal of Advertising. 12 27-31.
  32. Stoyanova, J., Brito, P. Q., Georgieva, P., & Milanova, M. (2015). Comparison of consumer purchase intention between interactive and Augmented Reality shopping platforms through statistical analyses. International Symposium on Innovations in Intelligent Systems and Applications (INISTA), 1-8, 2015. <https://doi.org/10.1109/inista.2015.7276727>
  33. Tellis, G. J. (2004). Effective advertising: Understanding when, how, and why advertising works. Thousand Oaks, Calif: Sage Publications

34. Yang, X. and Smith, E. R. (2009). Beyond Attention Effects: Modeling the Persuasive and Emotional Effects of Advertising Creativity. *Marketing Science*. 28 (5), 935–949
35. Yadav, M. S., & Pavlou, P. A. (2014). Marketing in computer-mediated environments: Research synthesis and new directions. *Journal of Marketing*, 78(1), 20-40.
36. Yaoyuneyong, G., Foster, J., Johnson, E., & Johnson, D. (2016). Augmented reality marketing: Consumer preferences and attitudes toward hypermedia print ads. *Journal of Interactive Advertising*, 16(1), 16-30
37. Yeong, Gug Kim., Eunju, Woo. (2016). Consumer acceptance of a quick response (QR) code for the food traceability system: Application of an extended technology acceptance model (TAM). *Food Research International*. Volume 85, Pages 266-272
38. Yoo, S. J and & Kim, H. J. (2007). Study on Factors Affecting Acceptance Intention of Mobile Advertising. *Korea Society of Management Information System*, vol. 9, no. 1, (2007), pp.1-21
39. Zhang, Z., Ye, Q., Law, R., & Li, Y. (2010). The impact of e-word-of-mouth on the online popularity of restaurants: A comparison of consumer reviews and editor reviews. *International Journal of Hospitality Management*, 29(4), 694-700.