Volume 5 Issue 1 (2025) Pages 380 - 388
Amkop Management Accounting Review (AMAR)
ISSN : 2828-2248 (Online)

Stimulus-Organism-Response Framework in Action: Exploring the Impact of Shopee's AR Features on Prosumer Behaviour in Beauty Products

Kholifah✉
Digital Business, Universitas Putra Bangsa, Indonesia

Abstract
This study aims to analyse the influence of Augmented Reality (AR) technology in the Shopee e-commerce platform, specifically the BeautyCam feature, on consumer behaviour in the beauty product sector. Using the Stimulus-Organism-Response (SOR) model, this study examines how AR technology as an external stimulus affects consumer perceptions and emotions, which in turn impact purchasing decisions and prosumer engagement. The main focus is on the consumer experience in selecting products such as lipstick, foundation, and skincare without physically trying them, as well as the role of AR in enhancing trust and personalisation in shopping. Respondents consist of active Shopee users who have used the AR feature and contributed to reviews or content related to beauty products. The research was conducted through an online questionnaire combining qualitative and quantitative data. The expected results include identifying the positive influence of AR on self-confidence, consumer satisfaction, prosumer engagement, and consumer loyalty. These findings are expected to provide strategic recommendations for Shopee and other e-commerce platforms in optimising the use of AR technology to enhance shopping experiences and the effectiveness of beauty product marketing.

Keywords: *Augmented Reality, Stimulus-Organism-Response, Digital Shopping Experience, Prosumer, Digital Marketing.*

✉ Corresponding author :
Email Address : Ifahupb@gmail.com

INTRODUCTION

Technological developments in e-commerce have changed the way consumers interact with the products and services they buy. One of the biggest innovations in recent years is Augmented Reality (AR), which allows consumers to experience a more interactive and immersive shopping experience (Javornik, 2016). In the beauty product sector, AR makes it easy for consumers to virtually try products before making a purchase, without having to physically try them. For example, features such as Shopee BeautyCam allow users to see how products such as lipstick, foundation, and eyeshadow will look on their faces, by using AR technology to display highly accurate visual simulations (Yim, Chu, & Sauer, 2017).

Along with the increasing use of AR, many e-commerce platforms, including Shopee, are increasingly utilising this technology to enhance the shopping experience (Poushneh, 2018). AR not only serves as a tool to try products but also plays a role in increasing consumers' confidence in choosing products, especially in the beauty category which is often difficult to evaluate without hands-on experience (Huang & Liao, 2017). However, while many believe that AR can change the way consumers shop, there is still much unknown about its effect on consumer behaviour, particularly among prosumer consumers (consumers who are active in creating content and influencing others' decisions) (Nambisan, 2017).

DOI: 10.37531/amar.v5i1.2613

In the context of e-commerce, particularly in Shopee, prosumers play a very important role in influencing others' purchasing decisions. They not only purchase products but also often share their experiences through reviews, videos, or sharing information on social media (Hennig-Thurau et al., 2010). Active prosumers are often an important source of information for other consumers in determining whether or not to purchase a particular product. Therefore, it is important to explore how AR can influence consumers' experiences and their purchasing behaviour, as well as how this technology encourages consumers to be more engaged and share their experiences (Liu et al., 2020).

The use of the Stimulus-Organism-Response (SOR) model can help understand the relationship between AR features (stimulus) and consumer response (organism), which is reflected in purchase decisions and prosumer behaviour (response) (Mehrabian & Russell, 1974). This model explains how external stimuli, such as AR technology, affect consumers' cognitive and emotional processes, which in turn affect their purchasing behaviour. By understanding how AR affects consumers' perceptions of beauty products and their feelings towards the products they try virtually, we can gain deeper insights into the influence of AR technology on purchase decisions (Poushneh & Vasquez-Parraga, 2017).

This research aims to dig deeper into how AR technology in Shopee, particularly in the beauty product category, influences prosumer consumer behaviour. This research also aims to find out whether the use of AR can strengthen consumer engagement, improve purchasing decisions, and encourage active participation of prosumers in sharing their experiences. With increasing competition in the e-commerce market, especially in the beauty product sector, the results of this study can provide valuable insights for Shopee and other e-commerce platforms in designing a more interactive and effective shopping experience (Schindler & Kibbe, 2020).

LITERATURE REVIEW

Augmented Reality (AR)

Augmented reality (AR) is a technology that combines real-world elements with virtual elements in real-time through digital devices, such as smartphones or AR glasses. This technology allows users to view virtual objects interactively and contextually within their physical environment (Azuma, 1997). In this study, AR is viewed from three main dimensions: product visualisation, interactivity, and ease of access.

The product visualisation dimension covers the extent to which AR technology is able to display products clearly, sharply, and realistically, including the user's ability to adjust visual elements such as colour and texture according to preference. Furthermore, the interactivity dimension refers to the convenience of users in interacting with products through AR, such as intuitively changing the viewing angle or shape of the product. Meanwhile, ease of access relates to the technical performance of AR applications, including system responsiveness and speed in loading and processing product displays accurately and efficiently. These three dimensions underlie the effectiveness of user experience towards AR implementation in e-commerce and digital marketing.

Stimulus-Organism-Response (SOR)

The Stimulus-Organism-Response (SOR) model is a theoretical framework that explains how an external stimulus (stimulus) can influence a consumer's internal state (organism), which in turn triggers a certain behaviour (response). This model was first introduced by Dube and Morgan (1996) and is widely used in marketing studies and consumer behaviour psychology. In the context of AR technology, this model explains how AR features as a stimulus can affect consumer perceptions and emotions, which in turn affect purchasing decisions or consumer engagement.

DOI: 10.37531/amar.v5i1.2613

The stimulus component (S) in this study includes external aspects such as the visual quality of AR features, the level of technological innovation, and the ease of use of AR features in digital platforms. Organism (O) includes consumers' internal responses to the stimulus, such as perceptions of product quality, positive emotions towards AR interactions, and the level of satisfaction felt. Finally, response (R) describes the resulting tangible behaviour, including purchase intention, actual purchase, participation in online discussions, and creation of product reviews or testimonials. Thus, the SOR model provides a comprehensive understanding of the pathways of AR influence from the technical side to consumer behaviour.

Prosumer

The concept of prosumer comes from the combination of the words "producer" and "consumer," which was introduced by Toffler (1980) to describe consumers who not only passively receive products but also actively contribute to the production and marketing of products. In today's digital and e-commerce era, the role of prosumers is increasingly important, especially in the form of active participation in creating content, disseminating information, and influencing other consumers.

The first dimension, social engagement, describes how prosumers actively share their experiences through social media, review platforms, or online discussion forums. The second dimension is creativity and participation, which is reflected in the form of content prosumers create, such as review videos, product photos or usage tutorials, demonstrating their contribution to the experiential marketing strategy. The final dimension is reviewing, where prosumers routinely write reviews based on personal experience, providing rich details and sentiments that reflect satisfaction or dissatisfaction with the product. These three dimensions reinforce prosumers' position as opinion leaders and strategic partners in participation-based digital marketing.

METHODOLOGY

Researchers refer to the advice of Hair (2007) who recommends a sample size of between 100 and 200 respondents for quantitative research. This sample size is considered representative enough to produce valid and reliable data in the analysis.

Sample Drawing Technique: The researcher used nonprobability purposive sampling, which is a non-random sampling technique, where respondents are selected based on certain criteria that are relevant to the research objectives. In this case, the respondents selected were those who had used the AR feature in Shopee to try beauty products. The selection of this technique is based on the consideration that only respondents who have direct experience with AR technology in the context of Shopee e-commerce can provide relevant information regarding consumer perceptions and behaviour in using the technology.

Data Collection Methods

Questionnaire: The questionnaire was used to collect quantitative data related to the variables under study, such as stimulus (Shopee AR features), organism (consumer perceptions and emotions), and response (purchase behaviour and prosumer engagement). This questionnaire was prepared using indicators that have been adjusted to assess the influence of AR on purchasing decisions for beauty products.

Interviews: In-depth interviews were conducted to gain further insights into consumers' experiences of using AR in Shopee, as well as how this feature influences their perceptions of beauty products. These interviews provided researchers with a deeper understanding of how AR interacts with internal factors such as consumer emotions and cognition.

DOI: 10.37531/amar.v5i1.2613

Literature Study: The researcher also conducted a literature study to enrich the research with relevant theoretical references regarding Stimulus-Organism-Response (SOR), Augmented Reality, and prosumers in e-commerce. This study aims to strengthen the theoretical basis underlying the research hypothesis and provide a more comprehensive view of the impact of AR on consumer behaviour.

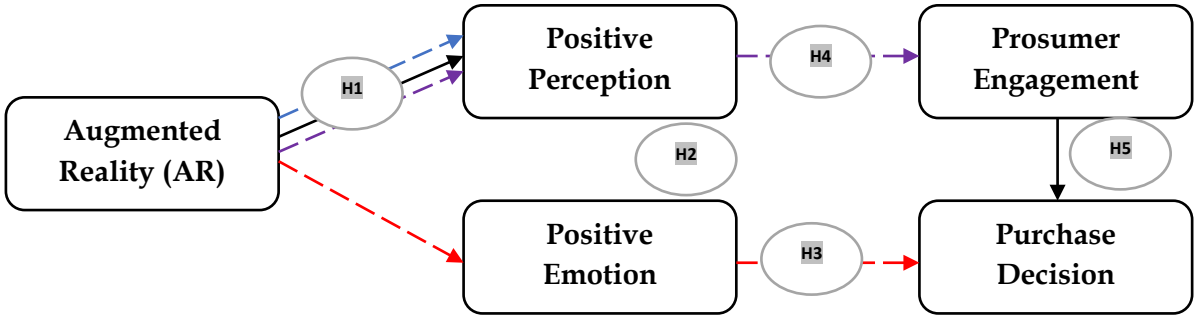

Figure 1. Research Framework

RESULTS AND DISCUSSION

This study aims to analyse the influence of Argumented Reality on Consumer Emotions and Product Perceptions, as well as its impact on Prosumer Engagement and Purchasing Decisions. The results of data analysis were carried out using the Partial Least Square Structural Equation Modeling (PLS-SEM) approach. The following are the results obtained:

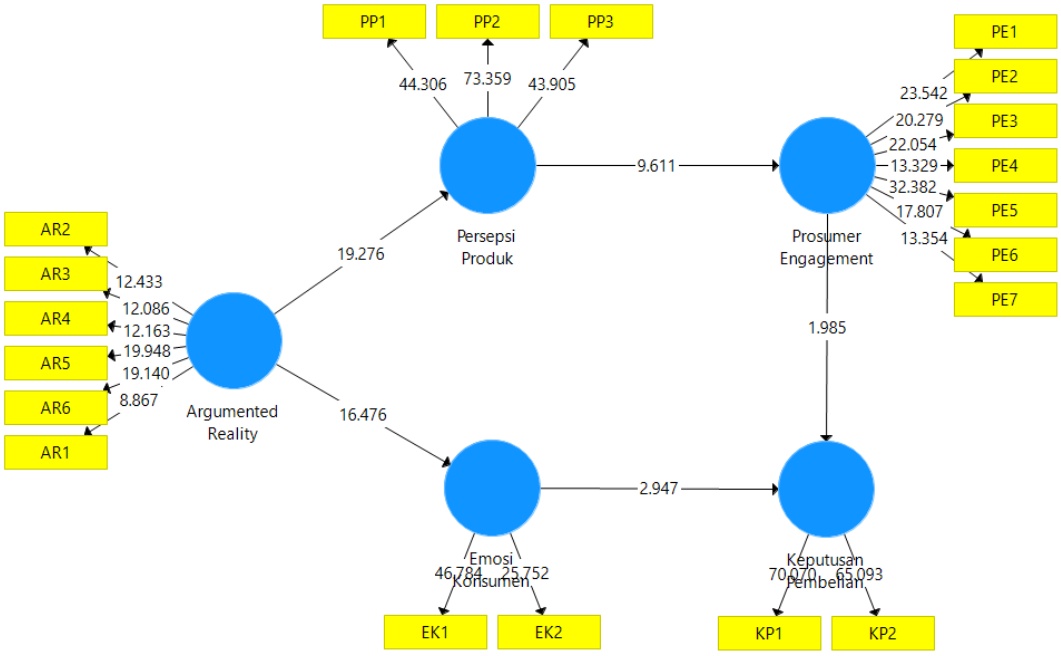

Figure 2. PLS Model Diagram Showing the Relationship Between Latent Variables and Indicators

Source: Data processing with PLS, 2025

Construct Validity and Reliability Test

Based on the results of testing the outer model, all indicators have a loading factor value above 0.7, indicating that these indicators are valid in measuring their constructs. The composite reliability value on all constructs is also above 0.7, and the Average Variance

DOI: 10.37531/amar.v5i1.2613

Extracted (AVE) value is more than 0.5, indicating that the constructs have met convergent validity and internal reliability.

Table 1. Results Validity and Reliability Test

Construct	Cronbach's Alpha	Composite Reliability	AVE
Argumented Reality	0.876	0.905	0.615
Consumer Emotions	0.775	0.899	0.817
Purchase Decision	0.875	0.941	0.889
Product Perception	0.917	0.947	0.857
Prosumer Engagement	0.944	0.955	0.752

Source: Data processing with PLS, 2025

Discriminant validity based on the Fornell-Larcker criterion also shows that the root AVE of each construct is higher than the correlation between constructs, which means that the constructs have good differentiation.

R-Square (R^2) Value

The coefficient of determination (R^2) is used to determine how much variation in endogenous constructs is explained by exogenous constructs.

Table 2. Results Square (R^2) Value

Endogenous Constructs	R Square	Adjusted R Square
Consumer Emotions	0.698	0.695
Product Perception	0.646	0.642
Prosumer Engagement	0.476	0.470
Purchase Decision	0.612	0.604

Source: Data processing with PLS, 2025

These R^2 values indicate that the structural model has a strong explanation of the variables studied.

Direct Effect Test (Path Coefficient)

The results of testing the direct relationship between variables are presented in the following table:

Table 3. Direct Effect Test

Path of Influence	Coefficient	T Statistics	P Value	Description
Argumented Reality → Consumer Emotions	0.835	16.476	0.000	Significant
Argumented Reality → Product Perception	0.804	19.276	0.000	Significant
Consumer Emotions → Purchase Decision	0.472	2.947	0.003	Significant
Product Perception → Prosumer Engagement	0.690	9.611	0.000	Significant
Prosumer Engagement → Purchase Decision	0.333	1.985	0.048	Significant

Source: Data processing with PLS, 2025

All paths of influence show significant relationships with p values <0.05 and t values > 1.96. This suggests that Argumented Reality plays an important role in shaping consumer perceptions and emotions, which ultimately impacts prosumer engagement and purchase decisions.

The results of this study confirm that Augmented Reality (AR) has a significant influence on the formation of consumer emotions and product perceptions, which ultimately influence purchasing decisions and prosumer engagement. This finding corroborates the

DOI: 10.37531/amar.v5i1.2613

Stimulus-Organism-Response (SOR) framework used in the study, as developed by Mehrabian and Russell (1974), which states that an external stimulus such as AR can trigger a consumer's internal response (perception and emotion) and result in the final behaviour (decision and engagement).

Effect of AR on Consumer Emotions and Product Perception

The finding that AR significantly influences consumer emotions ($\beta = 0.835$, $p < 0.001$) and product perception ($\beta = 0.804$, $p < 0.001$) is in line with previous studies (Yim et al., 2017; Poushneh & Vasquez-Parraga, 2017). AR technology provides a more interactive and immersive shopping experience, especially in beauty product categories that are highly visual and sensitive to personal preferences. Features such as Shopee BeautyCam allow consumers to virtually try on products, reduce uncertainty, and increase confidence in choosing products (Javornik, 2016).

Consumer Emotions and Prosumer Engagement in Purchasing Decisions

Consumer emotions have a significant effect on purchasing decisions ($\beta = 0.472$, $p = 0.003$). This suggests that the emotional involvement generated by using AR, such as trust, pleasure, or curiosity, encourages consumers to make purchases. This finding reinforces the theory in experiential marketing (Schmitt, 1999) that emotional experiences are the foundation of consumptive behaviour.

Meanwhile, product perception has a strong influence on prosumer engagement ($\beta = 0.690$, $p < 0.001$), and prosumer engagement itself has an effect on purchase decision ($\beta = 0.333$, $p = 0.048$). This is consistent with previous literature (Hennig-Thurau et al., 2004; Schau et al., 2009) which shows that prosumers are not only users, but also important actors in promoting products through digital content, reviews, and interactions. In the context of Shopee, prosumers are a central element in an e-commerce ecosystem that relies on user-generated content as social references and social proof.

Implications for E-Commerce Strategy

This research shows that the use of AR can be an effective strategy in influencing purchase decisions and driving prosumer engagement. This is particularly relevant in the beauty products industry, which relies on visualisation, and is often difficult to assess objectively without first-hand experience. With AR technology, consumers have a more realistic and enjoyable pre-purchase experience, and are encouraged to share the experience on social platforms (Pantano & Servidio, 2012; Huang & Liao, 2017).

In addition, the presence of active prosumers makes marketing more organic, where consumer-generated content is more trusted by other potential buyers than conventional advertising. Therefore, optimisation of AR features and integration with social features such as reviews, live streaming, or content sharing will further strengthen omni-channel retail strategies (Verhoef et al., 2015).

Theoretical and Practical Contributions

Theoretically, this research extends the application of the SOR model in the context of digital commerce and immersive technology. While practically, these results offer strategic insights for e-commerce platforms such as Shopee to develop AR features that not only enhance the shopping experience, but also create a collaborative environment between consumers and brands.

DOI: 10.37531/amar.v5i1.2613

CONCLUSION

This study aims to understand the influence of Augmented Reality (AR) technology implemented in the Shopee e-commerce platform, specifically in the beauty product category, on consumer behaviour based on the Stimulus-Organism-Response (SOR) model. The analysis results show that AR has a significant influence on emotions and product perceptions, where increased interactivity through AR strengthens emotional attachment and positive perceptions among consumers. Positive emotions after using AR features increase the likelihood of purchase, while product perceptions formed through AR encourage prosumer involvement in creating content, providing reviews, and sharing experiences. This prosumer involvement has a tangible impact on purchasing decisions, as consumers who are active as prosumers tend to be more confident in their purchases and influence other consumers through their digital activities. Thus, AR not only serves as a visual aid but also as a strategic stimulus that shapes consumers' emotions, perceptions, and consumptive and participatory behaviour.

Based on these findings, it is recommended that e-commerce practitioners such as Shopee continue to improve the quality and interactivity of AR features to create immersive and personalised shopping experiences, and integrate them with review systems and social media to encourage prosumer participation. Collaboration with prosumer influencers should also be strengthened to expand the reach of promotions organically. For beauty industry players, AR should be utilised as part of digital marketing strategies, particularly for introducing new products through additional features such as colour recommendations based on skin type, experience-based reviews, and interactive tutorials. Meanwhile, future researchers are advised to include mediating or moderating variables such as brand trust or the influence of online communities, and adopt a longitudinal approach to observe long-term changes in consumer behaviour towards AR usage in e-commerce.

References :

Azuma, R. T. (1997). A Survey of Augmented Reality. Presence: Teleoperators and Virtual Environments, 6(4), 355-385. https://doi.org/10.1162/pres.1997.6.4.355

Barnard, M., & Mitchell, P. (2013). Augmented Reality: Applications and Impacts in Consumer Behaviour. Journal of Interactive Marketing, 27(3), 178-188.

Bitner, M. J. (1992). Servicescapes: The Impact of Physical Surroundings on Customers and Employees. Journal of Marketing, 56(2), 57-71. https://doi.org/10.1177/002224299205600205

Chen, H., & Lin, Y. (2018). The Effect of Augmented Reality in E-commerce on Consumers' Purchase Intentions. Interactive Learning Environments, 26(6), 769-781.

Constantinides, E., & Fountain, S. J. (2008). Web 2.0: Conceptual Foundations and Marketing Issues. Journal of Direct, Data and Digital Marketing Practice, 9(3), 231-244.

Dennis, C., Merrilees, B., Jayawardhena, C., & Wright, L. T. (2009). E-consumer Behaviour. European Journal of Marketing, 43(9/10), 1121-1139.

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. Journal of Marketing Research, 28(3), 307-319.

Dube, L., & Morgan, M. S. (1996). Emotional response models in consumer research: A review and critical analysis. Journal of Business Research, 37(2), 127-143.

Grange, T., & Benbasat, I. (2003). Foundations of Augmented Reality in E-Commerce: Conceptual Framework and Research Directions. MIS Quarterly, 27(1), 1-12.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). Multivariate Data Analysis. Upper Saddle River: Pearson.

Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic word-of-

DOI: 10.37531/amar.v5i1.2613
mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet? Journal of Interactive Marketing, 18(1), 38-52.
Hennig-Thurau, T., Malthouse, E. C., Friege, C., Gensler, S., Lobschat, L., Rangaswamy, A., & Skiera, B. (2010). The impact of new media on customer relationships. Journal of Service Research, 13(3), 311-330.
Hoffman, D. L., & Novak, T. P. (1996). Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations. Journal of Marketing, 60(3), 50-68.
Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer Brand Engagement in Social Media: Conceptualisation, Scale Development, and Validation. Journal of Interactive Marketing, 28(2), 149-165.
Huang, T. L., & Liao, S. (2017). Creating e-shopping multisensory flow experience through augmented- reality interactive technology. Internet Research, 27(2), 449-475.
Javornik, A. (2016). 'It's an illusion, but it looks real!' Consumer affective, cognitive and behavioural responses to augmented reality applications. Journal of Marketing Management, 32(9-10), 987-1011.
Kotler, P., & Keller, K. L. (2016). Marketing Management (15th ed.). Pearson.
Liao, C., Chen, J. L., & Hsieh, W. (2018). Exploring the Impact of Augmented Reality on Consumer Decision Making in E-commerce. International Journal of Retail & Distribution Management, 46(7), 654-674.
Liu, X., Burns, A. C., & Hou, Y. (2020). Examining the role of social media in customer engagement: A SOR perspective. Journal of Retailing and Consumer Services, 55, 102093.
Liu, Y., & Shrum, L. J. (2009). A Dual-Process Model of Interactivity Effects. Journal of Advertising, 38(2), 53-68.
Meuter, M. L., Ostrom, A. L., Roundtree, R. I., & Bitner, M. J. (2000). Self-Service Technologies: Understanding Customer Satisfaction with Technology-Based Service Encounters. Journal of Marketing, 64(3), 50-64.
Nambisan, S. (2017). Digital innovation and digital entrepreneurship: A research agenda. Journal of Business Research, 70, 1-10.
Pantano, E., & Servidio, R. (2012). Modelling Innovative Points of Sales through Virtual and Augmented Reality in E-Commerce. Journal of Retailing and Consumer Services, 19(3), 279-286.
Pine, B. J., & Gilmore, J. H. (1998). Welcome to the Experience Economy. Harvard Business Review, 76(4), 97-105.
Poushneh, A. (2018). Augmented reality in retail: A trade-off between user's control of access to personal information and augmentation quality. Journal of Retailing and Consumer Services, 41, 169-176.
Poushneh, A., & Vasquez-Parraga, A. Z. (2017). Discernible impact of augmented reality on retail customer's experience, satisfaction and willingness to buy. Journal of Retailing and Consumer Services, 34, 229-234.
Schau, H. J., Muñiz, A. M., & Arnould, E. J. (2009). How brand community practices create value. Journal of Marketing, 73(5), 30-51.
Schindler, R. M., & Kibbe, M. R. (2020). Emerging marketing technologies and consumer responses. Marketing Letters, 31, 361-370.
Schmitt, B. (1999). Experiential Marketing. Journal of Marketing Management, 15(1-3), 53-67.
Statista. (2023). E-commerce Market Insights. Retrieved from https://www.statista.com
Steuer, J. (1992). Defining Virtual Reality: Dimensions Determining Telepresence. Journal of Communication, 42(4), 73-93.
Tussyadiah, I. P., Wang, D., Jung, T. H., & Tom Dieck, M. C. (2018). Virtual Reality, Presence, and Attitude Change: Empirical Evidence from Tourism. Tourism Management, 66, 140-154.
Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015). From Multi-Channel Retailing to Omni-

DOI: 10.37531/amar.v5i1.2613

Channel Retailing: Introduction to the Special Issue on Multi-Channel Retailing. Journal of Retailing, 91(2), 174-181.

Wang, Y., Minor, M. S., & Wei, J. (2011). Aesthetics and the Online Shopping Environment: Understanding Consumer Responses. Journal of Retailing, 87(1), 46-58.

Yim, M. Y. C., Chu, S. C., & Sauer, P. L. (2017). Is Augmented Reality Technology an Effective Tool for E-commerce? An Interactivity and Vividness Perspective. Journal of Interactive Marketing, 39, 89-103.

Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. Journal of Marketing, 52(3), 2-22.