International Journal of Instructional Cases
ISSN: 2399-830x

Evaluating the Virtual Anchors in Online Shopping Based on User Behaviour and Sales Using SOR Model

Xinli Lyu

International College of Digital Innovation, Chiangmai University, 239 Nimmanhaemin Road, Suthep, Muang, Chiang Mai, 50200, Thailand.
ORCID: https://orcid.org/0000-0002-4021-9029
Email: xinli_ly@cmu.ac.th

Siva Shankar Ramasamy*
International College of Digital Innovation, Chiangmai University, 239 Nimmanhaemin Road, Suthep, Muang, Chiang Mai, 50200, Thailand.
ORCID: https://orcid.org/0000-0002-6160-5949
Email: sivashankar.r@cmu.ac.th

Fangli Ying
Department of Computer Science and Engineering, East China University of Science and Technology, Shanghai,200237. P.R. China.
ORCID: https://orcid.org/0000-0001-8390-3229
Email: yingfangli2010@gmail.com
*Corresponding Author Email: sivashankar.r@cmu.ac.th

Received Date: 19-07-2024; Accepted Date: 21-12-2024; Publication Date: 31-12-2024

Abstract
The digital transformation of retail has profoundly influenced consumer behaviour, with virtual anchors playing a pivotal role. These anchors are increasingly employed to provide personalised shopping experiences. This study examines the impact of virtual anchors on online purchasing behaviour, utilising the SOR model. Data collected from 98 respondents is primarily analysed through SEM, revealing that the characteristics of virtual anchors enhance credibility and attractiveness, fostering greater interactivity. This, in turn, leads to enhance consumer engagement and purchase intention. Additionally, the flow experience within these relationships underscores the significance of immersive shopping environments. The study offers valuable insights for enhancing digital marketing strategies by integrating virtual anchors to improve

How to cite (APA):
Lyu, X., Ramasamy, S. S., Ying, F. (2024). Evaluating the Virtual Anchors in Online Shopping Based on User Behaviour and Sales Using SOR Model. *International Journal of Instructional Cases*, *8*(2), 367-386.

International Journal of Instructional Cases
ISSN: 2399-830x

customer engagement and boost sales for firms.

Keywords: Virtual Anchors, Online Shopping Behaviour, SOR Model, Consumer Engagement, Flow Experience, Structural Equation Modelling.

Introduction

The digital shift in the retail sector has substantially reshaped marketing strategies and consumer behaviour. Businesses have leveraged high-speed internet, advanced computing technologies, and sophisticated algorithms to refine digital marketing approaches, fostering greater customer engagement and driving sales (Bala & Verma, 2018). In this context, virtual anchors have garnered significant attention. A virtual anchor is an AI-powered, computer-generated digital avatar that presents products and interacts with consumers in real-time on e-commerce platforms. Designed to mimic human behaviour, these avatars often resemble real individuals (e.g., dressed in professional attire) yet remain entirely digital entities powered by AI (Chen, 2023).

These virtual personas are engineered with human-like traits and behaviours to enhance interactivity and personalisation in the shopping experience. They can respond to consumer queries and host live-streamed product demonstrations, providing instant feedback and fostering an interactive engagement akin to in-store shopping while maintaining the convenience of digital platforms. The rising prominence of virtual anchors is particularly evident in East Asia, where they are widely adopted in e-commerce to enhance consumer engagement and drive sales (Yu et al., 2023). Wang et al. (2022) suggest that this fusion of entertainment and commerce is poised to reach unprecedented levels in the global live-streaming commerce market. Not merely software-driven tools, virtual anchors function as digital personas, replicating human presenters within online shopping environments.

The integration of virtual anchors into online shopping platforms represents an innovative shift in digital marketing. Unlike traditional advertisements, virtual anchors are highly dynamic and interactive, effectively capturing and maintaining consumer attention. This aligns with evolving consumer preferences, which increasingly favour interactive and immersive online shopping experiences (Peukert et al., 2019). Virtual anchors are particularly valuable in digital marketing due to their capacity for real-time, personalised interactions. Despite their growing adoption in e-commerce, there remains a limited body of empirical research examining their influence on consumer behaviour. To address this gap, the present study investigates the role of virtual anchors in shaping online shopping behaviour. Specifically, it examines how key attributes of virtual anchors—interactivity, attractiveness, and credibility—affect consumer engagement and purchase intention.

International Journal of Instructional Cases
ISSN: 2399-830x

Research Questions

This study addresses the following research questions:

1. Which user behavioural characteristics towards virtual anchors significantly impact online shopping sales?
2. How do real-time interactions (e.g., comments and live chats) and long-term engagement with virtual anchors influence consumer purchasing decisions?
3. How can the SOR model be applied to explain the relationship between virtual anchor stimuli and user behaviour, ultimately driving increased sales?

Research Objectives

This study's objectives are based on the research questions:

1. To examine user behavioural characteristics towards virtual anchors that significantly influence online shopping sales.
2. To analyse the impact of real-time interactions (e.g., comments and live chats) and long-term engagement with virtual anchors on consumer purchasing decisions.
3. To apply the SOR model to explain how virtual anchor stimuli influence user behaviour, leading to increased sales.

Significance of the Study

This research contributes to existing literature on virtual anchors in e-commerce and digital marketing, enhancing current understanding. It provides insights for developing effective marketing strategies as businesses seek innovative ways to engage consumers. By examining factors driving consumer engagement and purchase intention, it optimises the use of virtual anchors in digital personae. Theoretically, it extends prior work on consumer behaviour and digital marketing by applying the SOR model, offering insights into customers' psychological responses to virtual anchors and enriching the SOR framework. The results suggest actionable insights for marketers and e-commerce platforms, highlighting key characteristics of virtual anchors that influence consumer behaviour. This can improve live-streaming strategies, align with consumer preferences, boost satisfaction, increase engagement, and enhance sales performance.

Literature Review

Virtual anchors in online shopping have gained increasing attention, particularly in the context of sales and usage. Found in live streaming and e-commerce platforms, they serve as key interaction points for consumers. Research indicates that virtual anchors' communication behaviour, credibility, and perceived competence directly

International Journal of Instructional Cases
ISSN: 2399-830x

influence user attentiveness and confidence. Real-time interactions, such as comments and live chats, enhance personalisation, improving the shopping experience (Chen et al., 2020). These interactions foster rapport and create impulse buying opportunities. Long-term consumer engagement, through repeated exposure and continuous patronage, boosts loyalty and sales volume (Wang & Chen, 2012). The SOR model underpins this study, explaining how virtual anchors' actions and communication influence consumers' internal states and purchasing behaviour (Mehrabian & Russell, 1974). This model highlights virtual anchors as stimuli that can enhance customer experience and drive sales in the competitive online shopping market.

Virtual Anchors in Digital Marketing

Virtual anchors represent one of the most disruptive innovations in digital marketing, particularly on live-streaming platforms. These AI-driven personas interact with consumers in real time, seamlessly combining human-like engagement with technological efficiency. According to Fitria (2024), the rapid advancement of virtual anchors is largely driven by improvements in AI, machine learning, and digital graphics. Unlike conventional chatbots or basic avatars, virtual anchors are highly sophisticated digital entities capable of real-time interaction, delivering a human-like experience during live-streamed shopping events. Virtual anchors play a multifaceted role on live-streaming platforms, ranging from product demonstrations to real-time consumer interactions (Figure 1).

Figure 1: AI Integration in Digital Platforms

They are programmed to showcase products, respond to queries, and even provide feedback, thereby creating a personalised shopping experience (Cress & Kimmerle, 2007). Unlike traditional marketing approaches, virtual anchors can simultaneously engage with many consumers, offering a scalable solution for companies seeking to

International Journal of Instructional Cases
ISSN: 2399-830x

enhance customer experience while maximising engagement.

Impact of Virtual Anchor on Consumer Engagement

Research shows virtual anchors effectively boost consumer engagement. Chen et al. (2022) found that consistent, reliable behaviour from virtual anchors builds consumer engagement, supported by their credibility and perceived expertise in product categories. Lee and Wan (2023) added that attractiveness and interactivity and suggest that the effectiveness of virtual anchors in influencing consumer behaviour can be attributed to several key attributes. Credibility is a major factor, as virtual anchors provide detailed product information, reducing consumer uncertainty and boosting confidence in purchase decisions. Additionally, their visual attractiveness plays a significant role; attractive anchors capture attention, create positive first impressions, and increase interest in products. Interactivity is another critical aspect, with features like real-time feedback, personalised recommendations, and answering queries improving the shopping experience and motivating purchases. These attributes collectively make virtual anchors powerful tools for enhancing consumer engagement and driving sales.

The application of virtual anchors is particularly prominent in East Asia, where live-streaming commerce has become a dominant trend. In China, for example, virtual anchors are extensively used on platforms like Taobao Live and Douyin—the Chinese version of TikTok—to engage consumers and drive sales (Li, 2018). These platforms capitalise on the core strengths of virtual anchors, such as interactivity and engagement, to create immersive shopping experiences. This approach has proven highly effective in converting viewers into buyers, showcasing the seamless integration of virtual anchors into the e-commerce ecosystem.

The SOR Model

The SOR model explains how external cues affect consumer behaviour. The Mehrabian and Russell (1974) model states that external stimuli (S) organise an interior state (O) that affects response (R) (Figure 2) (Buxbaum, 2016). In consumer behaviour research, this study uses the SOR model to evaluate how contextual influences affect shopping behaviour. The stimulus component encompasses external factors that elicit a consumer response (Arora, 1982). Virtual anchors serve as such stimuli, embodying characteristics such as credibility, attractiveness, and interactivity. Consumer internal processes are represented by the organism component including emotions, perceptions, and cognitive responses (Arora, 1982). When exposed to virtual anchor stimuli, consumers undergo internal reactions, such as emotional engagement and cognitive evaluation of product information. Finally, the response component reflects the consumer's behavioural reactions to the stimuli (Arora, 1982), which may manifest as purchase intention, actual purchasing behaviour, or other forms of engagement, such as sharing the live stream or providing feedback.

International Journal of Instructional Cases
ISSN: 2399-830x

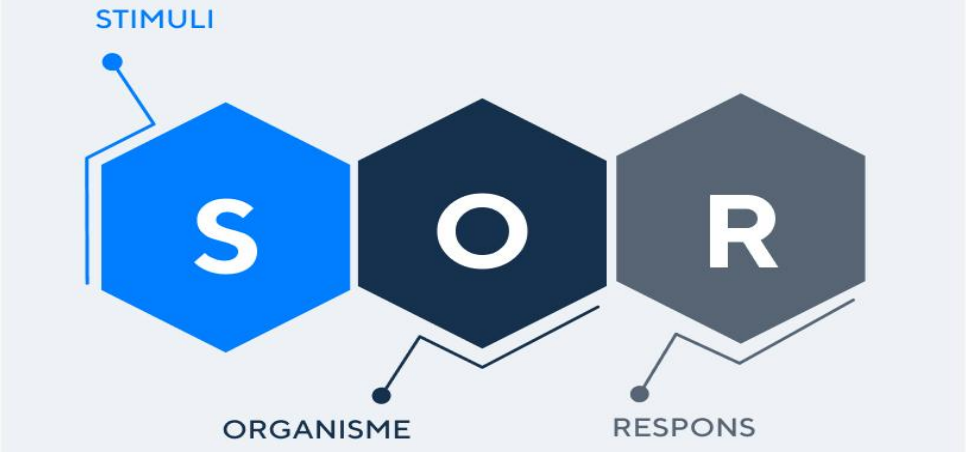

Figure 2: SOR Model

Application of the SOR Model in Consumer Behaviour Research

The SOR model is widely used to study how environmental stimuli influence consumer behaviour. Eroglu et al. (2001) applied it to online retail, showing that website design and layout (stimuli) significantly affect consumer emotions and purchase behaviour. In the context of virtual anchors, the SOR model can explain how their attributes (stimuli) shape consumer perceptions and emotions (organism), leading to outcomes like engagement and purchase intentions (response). Empirical studies, such as Lo et al. (2016), support this, demonstrating how virtual layouts in online retail trigger impulsive buying by influencing consumers' internal states. This highlights the SOR model's utility in linking external stimuli to internal processes and subsequent consumer behaviour.

Flow Experience

Czikszentmihalyi (1990) defined flow experience as profound interest and delight in an activity. Online shopping increases concentration, intrinsic motivation, and enjoyment, which boosts consumer involvement and purchase intention. Consumers in a flow state are fully immersed in the shopping process, directing their complete attention to the task (Czikszentmihalyi, 1990). This intense focus fosters enthusiasm, making the experience more enjoyable. Enjoyment itself is a core component of flow; when consumers find shopping pleasurable, they are more likely to remain engaged and continue exploring products (Czikszentmihalyi, 1990). Additionally, flow is intrinsically motivating, meaning the activity is rewarding, further increasing engagement and purchase likelihood (Czikszentmihalyi, 1990).

The impact of flow in consumer behaviour is well established. Koufaris (2002) found that experiencing flow while shopping online enhances consumer satisfaction and purchase intention. Consumers in a flow state tend to spend more time browsing, leading to higher purchase rates. Flow also mediates the relationship between external stimuli and consumer responses (Figure 3). In the context of virtual anchors, their

International Journal of Instructional Cases
ISSN: 2399-830x

characteristics (stimuli) trigger a consumer's internal state (organism), inducing flow, which in turn leads to positive behavioural outcomes such as increased engagement and purchase intention (response).

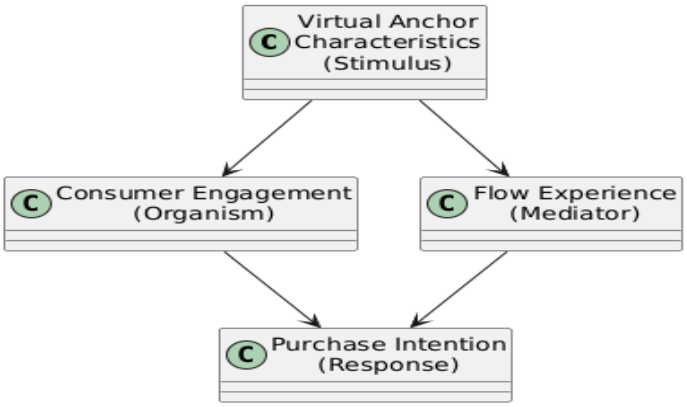

Figure 3: A Visual Representation of the Mediating Role of Flow Experience

Flow experience strongly influences consumer behaviour, according to empirical studies. Novak et al. (1998) found that online flow increases customer involvement and purchase intention. Similarly, Li et al. (2021) demonstrated that flow mediates the relationship between website interactivity and consumer happiness, emphasising its importance in online buying. Flow experience affects digital marketing virtual anchor design and execution. By creating highly interactive and engaging live-streaming environments, virtual anchors can induce a flow state, enhancing consumers' overall shopping experiences. Key features that facilitate this include personalised recommendations, real-time feedback, and interactive product demonstrations, all of which strengthen engagement and purchase intention. Building on these insights, this study establishes a strong theoretical foundation to assess the impact of virtual anchors on online shopping behaviour through the SOR model.

Research Methodology

Research Design and Approach

This quantitative study uses empirical data to evaluate how virtual anchoring affect internet shopping. Quantitative techniques use data and statistical analyses to structure investigations. The study uses the SOR model to examine how virtual anchor qualities affect consumer engagement and purchase intention. This theory claims that virtual anchors' exterior stimuli (S) affect consumers' internal states (O) and behaviour (R), establishing the ground for hypothesis generation. A cross-sectional survey will record consumer views and behaviours at one moment. This method helps reveal variable correlations by collecting data from a large sample. A systematic questionnaire will assess virtual anchor features, consumer engagement, purchase intention, and flow experience. Validated study measurement scales will be used for reliability and validity. SEM will be used to analyse data and test hypotheses about

International Journal of Instructional Cases
ISSN: 2399-830x

complex interactions between variables.

Sample and Data Collection

The study's sample comprises 98 respondents with prior experience in online shopping and interactions with virtual anchors on live-streaming platforms. A brief introduction at the start of the questionnaire informs participants of the study's purpose and their rights, while assurances of confidentiality and anonymity encourage honest responses. The questionnaire is structured into multiple sections, each targeting distinct aspects of the study. The first section gathers demographic data, including age, gender, education level, and online shopping frequency. Subsequent sections assess virtual anchor characteristics, consumer engagement, purchase intention, and flow experience, with all items rated on a five-point Likert scale from "strongly disagree" to "strongly agree." Data collection spans two weeks, with reminders sent to maximise the response rate. Of 120 invitations issued, 98 complete responses are received, yielding a response rate of 81.67%. The collected data is then cleaned, with incomplete or invalid responses removed to ensure accuracy and reliability.

Measurement Instruments

The measurement instruments for this research are adapted from established scales in the literature, ensuring reliability and validity for the constructs. Each construct is measured using multiple items, with responses captured on a five-point Likert scale.

Characteristics of Virtual Anchors

The construct is operationalised using three sub-dimensions: credibility, attractiveness, and interactivity. Credibility is measured using items adapted from Ohanian (1991), attractiveness is based on McCroskey and and McCain (1974), and interactivity is adapted from Liu and Shrum (2002).

Consumer Engagement

Consumer engagement is measured using items adapted from Vivek et al. (2012). This construct reflects the emotional, cognitive, and behavioural dimensions that indicate the depth of a consumer's engagement with the virtual anchor.

Purchase Intention

Purchase intention is assessed using items adapted from Dodds et al. (1991). This measures the likelihood of consumers purchasing products endorsed by the virtual anchor.

International Journal of Instructional Cases
ISSN: 2399-830x

Flow Experience

Flow experience is measured using items adapted from Koufaris (2002). This construct captures the extent to which consumers feel immersed, enjoy themselves, and are intrinsically motivated during interactions with the virtual anchor.

The questionnaire will be pretested on a small sample to ensure clarity and relevance. Based on feedback, minor adjustments will be made to improve readability and comprehensiveness.

Data Analysis Methods

A series of measures are implemented to guarantee the reliability and validity of the findings in the data analysis process. Structural Equation Modelling (SEM) is the principal analytical method utilised, enabling the analysis of intricate interactions among many variables and the evaluation of the offered hypotheses. Descriptive statistics are calculated to summarise sample characteristics and response distribution, encompassing measures of central tendency (mean, median) and variability (standard deviation). Reliability is evaluated by Cronbach's alpha, where a score of 0.7 or above signifies good internal consistency among items assessing the same concept. Confirmatory Factor Analysis (CFA) is used to ascertain validity by analysing factor loadings for each construct and utilising goodness-of-fit indices, such the Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI), to assess model fit. SEM is employed to examine proposed links among components, delineating both direct and indirect effects of virtual anchor attributes on consumer engagement, purchase intention, and flow experience. Path coefficients and significance levels are analysed to ascertain the magnitude and orientation of these associations. Mediation analysis is conducted to evaluate the function of flow experience as a mediator in the link between virtual anchor attributes and consumer responses. The bootstrapping technique is utilised to systematically evaluate the relevance of indirect effects. Data analysis is performed via SPSS and Smart PLS for SEM. The findings are analysed in relation to the current literature, with both theoretical and practical consequences addressed accordingly.

Methodology Diagram

Figure 4 depicts a graphic representation of the research methodology, highlighting the essential phases and processes executed in the study. The methodology section outlines the research design, sample strategy, data collection methods, measurement tools, and data analysis methodologies utilised in this study. This systematic methodology guarantees the dependability and accuracy of results, providing significant insights into the influence of virtual anchoring on online purchasing behaviour.

International Journal of Instructional Cases
ISSN: 2399-830x

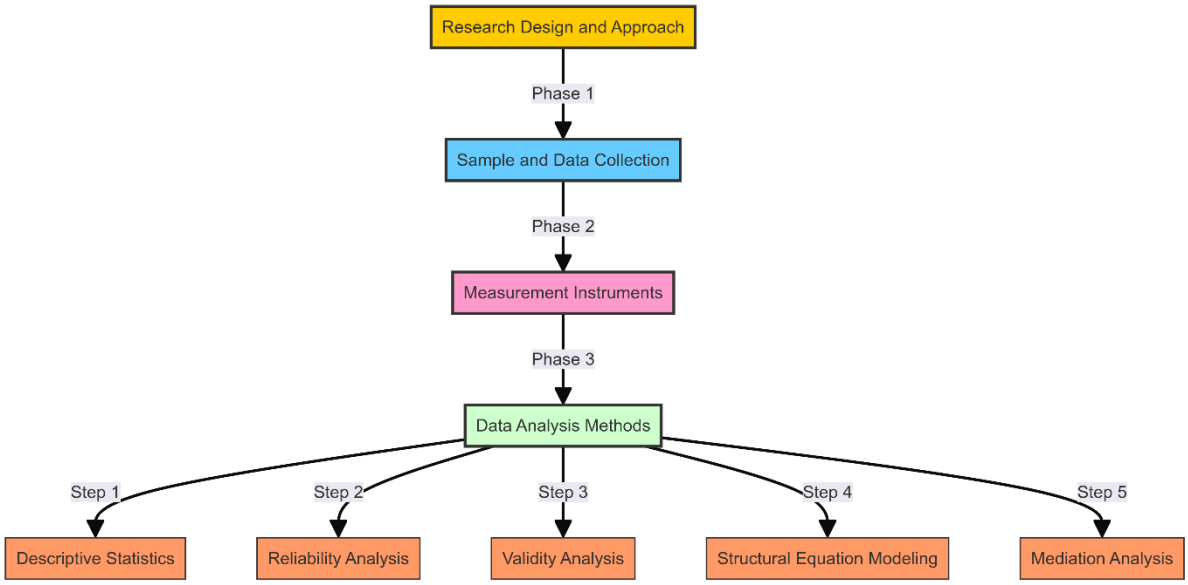

Figure 4: Research Methodology

Results

Descriptive Statistics

The sample comprises 98 respondents who have engaged with virtual anchors on live-streaming platforms. Table 1 presents the demographic profile, revealing that most participants are aged between 18 and 35 (Figure 5), with a balanced gender distribution (Figure 6) and most of them have master's degree (Figure 7). Additionally, a significant proportion frequently shop online, demonstrating substantial familiarity with e-commerce platforms (Figure 8).

Table 1: Demographic Profile of Respondents.

Demographic Variable	Category	Frequency	Percentage
Age	18-25	09	9.2%
	26-35	34	34.7%
	36-45	45	45.9%
	46 and above	10	10.2%
Gender	Male	50	51.0%
	Female	48	49.0%
Education Level	High School	11	11.2%
	Bachelor's Degree	32	32.7%
	Master's Degree	44	44.9%
	Doctorate	11	11.2%
Online Shopping Frequency	Rarely	21	21.4%
	Occasionally	47	48.0%
	Frequently	30	30.6%

International Journal of Instructional Cases
ISSN: 2399-830x

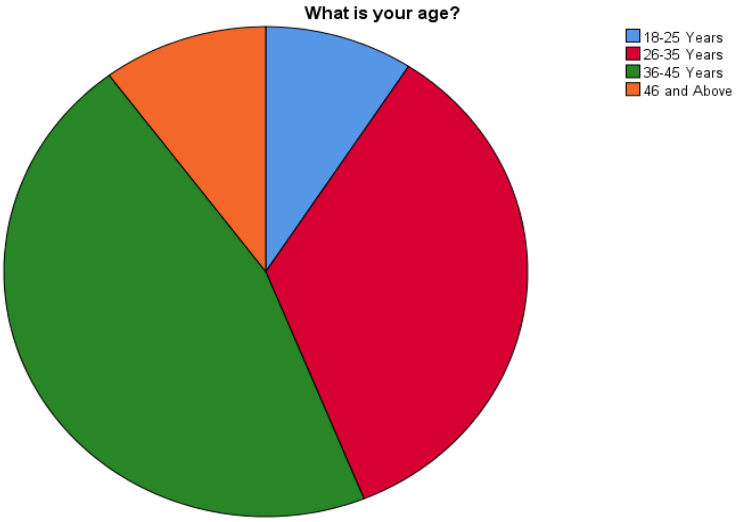

Figure 5: Distribution of Age Categories in a Pie Chart

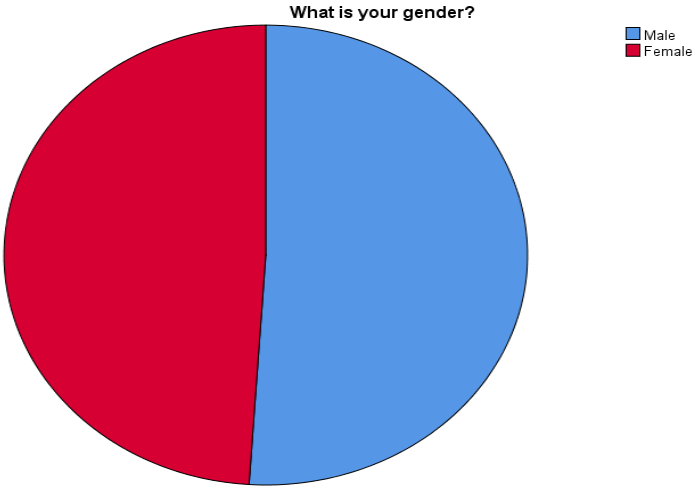

Figure 6: Distribution of Gender Categories in a Pie Chart

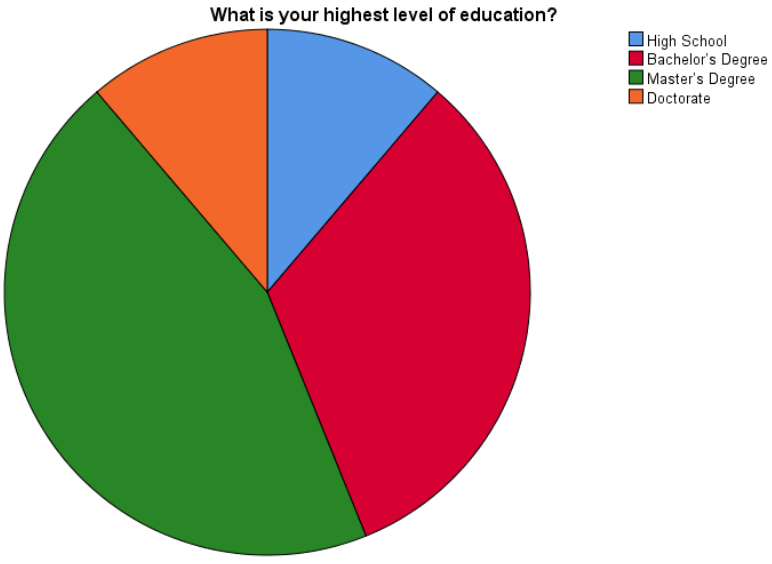

Figure 7: Distribution of Educational Levels in a Pie Chart

International Journal of Instructional Cases
ISSN: 2399-830x

Figure 8: Distribution of Shopping Frequency in a Pie Chart

Reliability Analysis

Cronbach's alpha is employed to evaluate the reliability of the measurement tools. As presented in Table 2, all constructs demonstrate Cronbach's alpha values above 0.7, signifying adequate internal consistency.

Table 2: Reliability Analysis.

Construct	Number of Items	Cronbach's Alpha
Characteristics of Virtual Anchors	4	0.848
Consumer Engagement	4	0.843
Purchase Intention	4	0.855
Flow Experience	4	0.851

Validity Analysis

A CFA is performed to evaluate validity. The findings confirm that all factor loadings are statistically significant and surpass the 0.7 threshold, indicating robust convergent validity. Table 3 displays the goodness-of-fit indices for the measurement model, confirming an adequate model fit.

Table 3: Confirmatory Factor Analysis Results.

Fit Index	Recommended Value	Obtained Value
Comparative Fit Index (CFI)	> 0.90	0.923
Tucker-Lewis Index (TLI)	> 0.90	0.912
Root Mean Square Error of Approximation (RMSEA)	< 0.08	0.064
Goodness of Fit Index (GFI)	> 0.90	0.931

International Journal of Instructional Cases
ISSN: 2399-830x

Structural Model Analysis

The structural model is examined using SEM to analyse the hypothesised relationships among the constructs. Table 4 outlines the path coefficients and their significance levels. The results reveal that the attributes of virtual anchors exert a significant positive influence on consumer engagement ($\beta = 0.812$, $p < 0.001$) and purchase intention ($\beta = 0.215$, $p < 0.01$) (Figure 9).

Table 4: Path Coefficients and Significance Levels.

Path	Path Coefficient	p-value
Virtual Anchors -> Engagement	0.812	< 0.001
Virtual Anchors -> Purchase Intention	0.215	< 0.01
Engagement -> Purchase Intention	0.175	< 0.001
Virtual Anchors -> Flow Experience	0.848	< 0.001
Flow Experience -> Purchase Intention	0.558	< 0.001

Mediation Analysis

The mediation analysis reveals that flow experience partially mediates the relationship between the characteristics of virtual anchors and purchase intention. This partial mediation is supported by the significant indirect effect ($\beta = 0.22$, $p < 0.01$), indicating that virtual anchors influence purchase intention both directly and through their impact on flow experience.

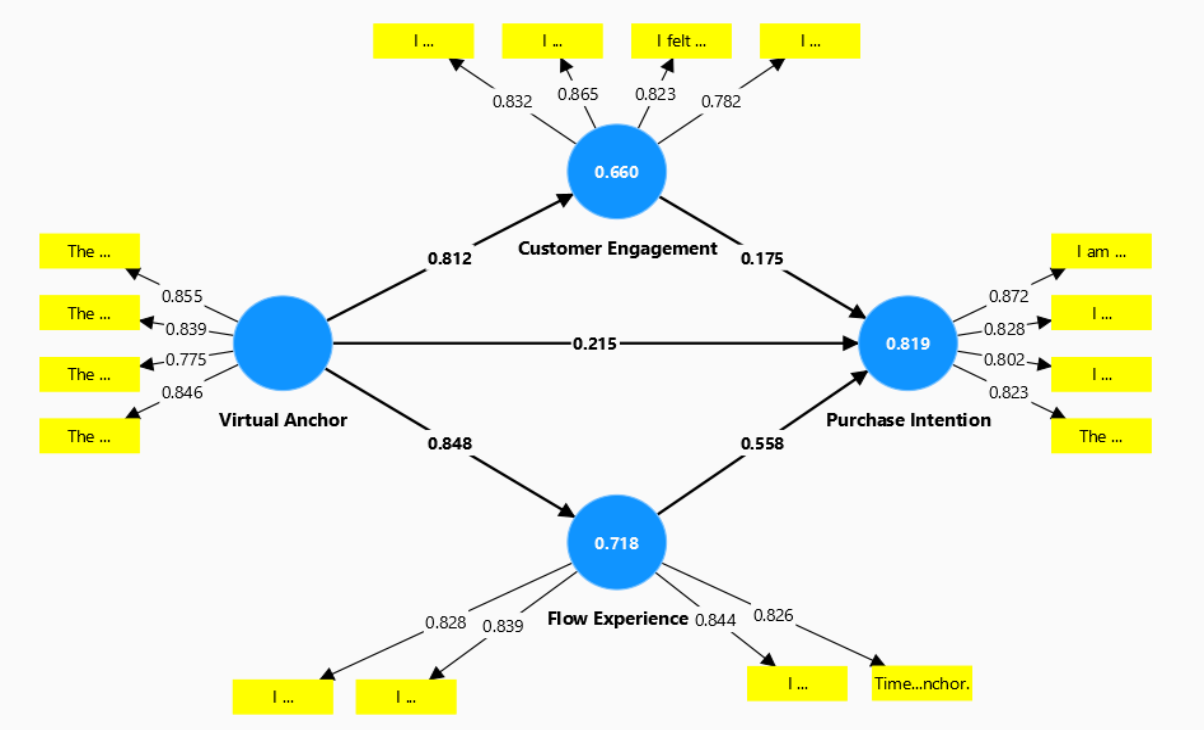

Figure 9: Path Correlation

International Journal of Instructional Cases
ISSN: 2399-830x

Discussion of Results

The SEM analysis confirms the significant influence of virtual anchors on online shopping behaviour. Their interactive, attractive, and credible features enhance consumer engagement, positively impacting purchase intention. Additionally, flow experience serves as a crucial mediator, demonstrating that an immersive and enjoyable shopping experience amplifies the effectiveness of virtual anchors in shaping consumer behaviour. These findings align with existing literature, reinforcing the pivotal role of engaging interactions in driving purchase decisions. The positive correlation between flow experience and purchase intention underscores the need for marketers to cultivate interactive and enjoyable online shopping environments.

Interpretation of Findings

The findings of this study highlight the significant role of virtual anchors in shaping consumer online purchase decisions. Their attributes—credibility, attractiveness, and interactivity—are positively associated with consumer engagement and purchase intention. This supports the hypothesis that well-designed virtual anchors effectively capture and sustain consumer attention, enhancing the shopping experience. SEM analysis confirms that virtual anchors directly influence engagement, as consumers perceive credible and interactive anchors as reliable sources of information, reducing uncertainty and fostering engagement. Furthermore, mediation analysis underscores the importance of flow experience in the online shopping process. When flow is induced, consumers are more likely to develop positive attitudes towards products and shopping platforms, increasing their purchase intentions. This study underscores how AI-driven virtual anchors, as engaging digital presenters, can effectively influence consumer purchasing behaviour by creating a more interactive and immersive shopping experience. The findings indicate that incorporating virtual anchors into online shopping platforms significantly enhances consumer engagement, ultimately increasing purchase intentions. To maximise their effectiveness, businesses should prioritise the interactivity, attractiveness, and credibility of these digital personas. Virtual anchors, designed as digital avatars with human-like traits and behaviours, simulate a realistic shopping assistant experience, fostering a more engaging and immersive online shopping environment.

Comparison with Existing Literature

These findings reinforce existing literature on the role of digital interaction in shaping consumer behaviour. Previous research has demonstrated that highly interactive and engaging virtual environments significantly enhance consumer satisfaction and purchase intention (Huang, 2012). This study builds on these insights by specifically examining the impact of virtual anchors, a relatively recent innovation in digital marketing, on online shopping behaviour. The positive correlation between virtual anchor characteristics and consumer engagement aligns with the work of Liu and

International Journal of Instructional Cases
ISSN: 2399-830x

Shrum (2002), who established that interactivity in online environments enhances user engagement. Likewise, the significant influence of virtual anchor credibility on consumer engagement supports Ohanian (1991) findings, which suggest that credible sources are more likely to capture consumer interest. The mediating role of flow experience identified in this study also supports Csikszentmihalyi's (1990) theory of flow, which posits that immersive and enjoyable experiences lead to positive behavioural outcomes. This aligns with Koufaris (2002), who found that flow conditions in online shopping environments enhance consumer satisfaction and increase purchase likelihood. While previous studies have explored various forms of digital interactivity, the real-time, highly personalised nature of virtual anchors sets them apart.

Implications for Theory and Practice

The findings yield valuable theoretical and practical implications. Theoretically, this research advances understanding of the SOR model within digital marketing by demonstrating that virtual anchors serve as a powerful external stimulus influencing consumers' internal states and behaviours. The incorporation of flow experience as a mediating factor within the SOR framework provides a more comprehensive explanation of how virtual anchors shape consumer behaviour. From a practical perspective, the results offer actionable insights for marketers and e-commerce platforms. Businesses should prioritise investments in developing virtual anchors with high visual appeal, interactivity, and credibility. Enhancing interactivity and personalisation can create engaging and enjoyable shopping experiences, fostering greater consumer involvement and increasing purchase intention. Additionally, to facilitate flow experience, marketers should focus on crafting a stimulating online shopping environment, as heightened engagement levels can further drive purchasing behaviour. This research provides critical insights into the role of virtual anchors in shaping online shopping behaviour, positioning them as transformative tools in digital marketing strategies. Companies that effectively integrate the defining attributes of virtual anchors and enhance flow experiences are likely to achieve higher consumer engagement, leading to increased purchase intention and, ultimately, greater sales.

Conclusion

This study employed the SOR model to examine the extent to which virtual anchors influence online shopping behaviour. The findings confirm that AI-driven virtual anchors—fully digital entities designed to replicate human-like interaction—play a pivotal role in enhancing online shopping experiences. The results indicate that key attributes of virtual anchors, namely credibility, attractiveness, and interactivity, significantly impact consumer engagement and purchase intention. Furthermore, the study establishes that flow experience mediates the relationship between virtual

International Journal of Instructional Cases
ISSN: 2399-830x

anchors and purchase intention, underscoring the necessity of creating an immersive and enjoyable shopping environment. This reinforces the conclusion that virtual anchors enhance online shopping experiences and exert a substantial influence on consumer behaviour. Firstly, it extends the application of the SOR model to the context of virtual anchors in live-streaming commerce, providing empirical validation of its relevance in this domain. Secondly, it highlights the mediating role of flow experience, offering fresh insights into the psychological mechanisms underlying consumer responses to virtual anchors. Lastly, by identifying the specific characteristics of virtual anchors that shape consumer behaviour, this study offers practical guidance for businesses seeking to leverage digital personas to engage customers more effectively.

Limitations and Suggestions for Future Research

In this work, the sample consists of 98 respondents, which is relatively small and may restrict the generalisability of the findings. Future investigations should utilise larger and more diverse samples to strengthen the validity and applicability of the results. Furthermore, as the data were gathered through self-reported measures, there is a risk of response biases. Incorporating behavioural data in subsequent research could offer a more objective evaluation of consumer behaviour. Additionally, this study was conducted at a single point in time, providing only a momentary view of consumer perceptions and behaviours. While the findings confirm the impact of virtual anchors on consumer behaviour, this study did not explore the potential moderating influence of individual characteristics, such as personality traits or cultural factors. Future research should investigate these aspects to gain deeper insights into variations in consumer responses to virtual anchors.

References

Arora, R. (1982). Validation of an SOR model for situation, enduring, and response components of involvement. *Journal of Marketing Research*, *19*(4), 505-516. https://doi.org/10.1177/002224378201900411

Bala, M., & Verma, D. (2018). A critical review of digital marketing. *International Journal of Management, IT and Engineering*, *8*(10), 321-339. https://ssrn.com/abstract=3545505

Buxbaum, O. (2016). *Key insights into basic mechanisms of mental activity*. Springer. https://doi.org/10.1007/978-3-319-29467-4

Chen, B., Wang, L., Rasool, H., & Wang, J. (2022). Research on the impact of marketing strategy on consumers' impulsive purchase behavior in livestreaming e-commerce. *Frontiers in psychology*, *13*, 905531. https://doi.org/10.3389/fpsyg.2022.905531

International Journal of Instructional Cases
ISSN: 2399-830x

Chen, Y., Lu, F., & Zheng, S. (2020). A study on the influence of e-commerce live streaming on consumer repurchase intentions. *International Journal of Marketing Studies*, *12*(4), 1-48. https://ideas.repec.org/a/ibn/ijmsjn/v12y2020i4p48.html

Chen, Z. (2023). Virtual anchors in the metaverse: exploring the future of live broadcasting in the digital age. 2nd International Conference on Economic Management and Foreign Trade (EMFT 2023), https://doi.org/10.54097/hbem.v19i.11983

Czikszentmihalyi, M. (1990). The domain of creativity. In M. A. Runco & R. S. Albert (Eds.), Ttuories of creattuity (pp. l9G-212). Newbury Park, cA: Sage Publications. https://psycnet.apa.org/record/1990-97842-009.

Cress, U., & Kimmerle, J. (2007). Guidelines and feedback in information exchange: The impact of behavioral anchors and descriptive norms in a social dilemma. *Group Dynamics: Theory, Research, and Practice*, *11*(1), 42.https://doi.org/10.1037/1089-2699.11.1.42.

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. https://doi.org/10.1177/002224379102800305

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business research*, *54*(2), 177-184. https://doi.org/10.1016/S0148-2963(99)00087-9

Fitria, T. N. (2024). Artificial Intelligence (AI) News Anchor: How AI's Performance in Journalistic Sector? *Indonesia Technology-Enhanced Language Learning (iTELL) Journal*, *1*(1), 29-42. https://itell.or.id/journal/index.php/itelljournal/article/view/4

Huang, E. (2012). Online experiences and virtual goods purchase intention. *Internet Research*, *22*(3), 252-274. https://doi.org/10.1108/10662241211235644

Koufaris, M. (2002). Applying the technology acceptance model and flow theory to online consumer behavior. *Information systems research*, *13*(2), 205-223. https://doi.org/10.1287/isre.13.2.205.83

Lee, D., & Wan, C. (2023). The impact of mukbang live streaming commerce on consumers' overconsumption behavior. *Journal of Interactive Marketing*, *58*(2-3), 198-221. https://doi.org/10.1177/10949968231156104

Li, J. (2018). Studies on Douyin app communication in social platforms: Take relevant Douyin short videos and posts on microblog as examples. Proceedings of 2018 International Conference on Arts, Linguistics, Literature and Humanities, https://www.webofproceedings.org/proceedings_series/ART2L/ICALLH%202018/ICALLH067.pdf

Li, R., Meng, Z., Tian, M., Zhang, Z., & Xiao, W. (2021). Modelling Chinese EFL learners' flow experiences in digital game-based vocabulary learning: The roles of learner and contextual factors. *Computer Assisted Language Learning*, *34*(4), 483-505. https://doi.org/10.1080/09588221.2019.1619585

Liu, Y., & Shrum, L. J. (2002). What is interactivity and is it always such a good thing? Implications of definition, person, and situation for the influence of

International Journal of Instructional Cases
ISSN: 2399-830x

interactivity on advertising effectiveness. *Journal of advertising*, *31*(4), 53-64. https://doi.org/10.1080/00913367.2002.10673685

Lo, L. Y.-S., Lin, S.-W., & Hsu, L.-Y. (2016). Motivation for online impulse buying: A two-factor theory perspective. *International Journal of Information Management*, *36*(5), 759-772. https://doi.org/10.1016/j.ijinfomgt.2016.04.012

McCroskey, J. C., & and McCain, T. A. (1974). The measurement of interpersonal attraction. *Speech Monographs*, *41*(3), 261-266. https://doi.org/10.1080/03637757409375845

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. the MIT Press. https://psycnet.apa.org/record/1974-22049-000?ref=nepopularna.org

Novak, T. P., Hoffman, D. L., & Yung, Y.-F. (1998). Measuring the flow construct in online environments: a structural modeling approach. *Unpublished manuscript, Owen Graduate School of Management, Vanderbilt University, Nashville, Tennessee*. https://www.researchgate.net/profile/Thomas-Novak-7/publication/228704105

Ohanian, R. (1991). The impact of celebrity spokespersons' perceived image on consumers' intention to purchase. *Journal of advertising Research*. https://psycnet.apa.org/record/1991-26094-001

Peukert, C., Pfeiffer, J., Meißner, M., Pfeiffer, T., & Weinhardt, C. (2019). Shopping in virtual reality stores: the influence of immersion on system adoption. *Journal of Management Information Systems*, *36*(3), 755-788. https://doi.org/10.1080/07421222.2019.1628889

Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer engagement: Exploring customer relationships beyond purchase. *Journal of marketing theory and practice*, *20*(2), 122-146. https://doi.org/10.2753/MTP1069-6679200201

Wang, W., & Chen, R. (2012). How to Retain your Customers: the Impact of Consumer Trust and Commitment in e-marketplaces. Wuhan International Conference on e-Business (WHICEB), https://aisel.aisnet.org/whiceb2011/41

Wang, Y., Lu, Z., Cao, P., Chu, J., Wang, H., & Wattenhofer, R. (2022). How live streaming changes shopping decisions in E-commerce: A study of live streaming commerce. *Computer Supported Cooperative Work (CSCW)*, *31*(4), 701-729. https://doi.org/10.1007/s10606-022-09439-2

Yu, Y., Peng, A., Kwong, S., & Bannasilp, A. (2023). Influence of Virtual Anchor Characteristics on Consumersâ€™ Consumption Willingness. *Journal of International Business and Management*, *6*(8), 01-11. https://doi.org/10.37227/JIBM-2023-07-6203

International Journal of Instructional Cases
ISSN: 2399-830x

Appendix

Questionnaire: Evaluating the Role of Virtual Anchors on Online Shopping Behavior uing the SOR Model

Section 1: Demographic Information

1. What is your age?

18-25	26-35	36-45	46 and above

2. What is your gender?

Male	Female

3. What is your highest level of education?

High School	Bachelor's Degree	Master's Degree	Doctorate

4. How frequently do you shop online?

Rarely	Occasionally	Frequently

Section 2: Characteristics of Virtual Anchors

5. The virtual anchor provided accurate product information.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. The virtual anchor appeared knowledgeable.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. The virtual anchor was visually appealing.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. The virtual anchor interacted with me in real-time.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Section 3: Consumer Engagement

9. I felt emotionally engaged with the virtual anchor.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

10. I paid close attention to the virtual anchor's presentation.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

11. I enjoyed interacting with the virtual anchor.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

12. I felt more connected to the products due to the virtual anchor.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

International Journal of Instructional Cases
ISSN: 2399-830x

Section 4: Flow Experience

17. I felt immersed in the shopping experience with the virtual anchor.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

18. Time seemed to fly by while I was watching the virtual anchor.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

19. I found the shopping experience with the virtual anchor enjoyable.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

20. I was completely absorbed in the shopping experience with the virtual anchor.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Section 5: Purchase Intention

21. I am likely to purchase products recommended by the virtual anchor.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

22. I would recommend products showcased by the virtual anchor to others.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

23. I intend to buy more products if recommended by the virtual anchor.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

24. The virtual anchor increased my intention to purchase the products.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree