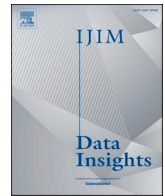


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## How could entertainment content marketing affect intention to use the metaverse? Empirical findings

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### ABSTRACT

Despite the metaverse's potential to transform digital business, there remains a scarcity of research investigating on how content marketing affects users' intention to use the metaverse. This study aimed to identify if entertainment content marketing affects users to adapt the metaverse. by adapting the Spice framework, incorporating variables like continuity, sense of presence, interoperability, concurrence, and economic flow. Data was collected via an online survey of 454 online gamers from Jordan who were purposefully selected. Structural equation modelling using partial least squares analysis revealed that all five factors positively affected metaverse intention. Overall, the study contributes to the knowledge by examining the Spice Framework in the context of metaverse technologies. Beyond the academic realm, our findings carry practical significance for marketers, policymakers, and stakeholders shaping the dynamic landscape of digital interactions within the metaverse.

### 1. Introduction

Telecommunication technology has played a crucial role in keeping people connected, especially during the pandemic, enabling individuals to communicate remotely with their loved ones and colleagues (Al-Madadha et al., 2022). Video conferencing and online meetings have become the new ordinary means in the workplace, allowing employees to work from home without being physically present in the office. Education has also adapted to the new reality with remote classes, which have provided an opportunity for students to continue learning and advancing their education. Additionally, live e-commerce has taken the place of traditional brick-and-mortar stores, where people can shop for goods and services online without leaving their homes (Al-Adwan & Yaseen, 2023; Dwivedi et al., 2021). The integration of AI technologies and the fourth industrial revolution has enabled a seamless transition to the intact era, making people's lives easier and more efficient (Kar & Varsha, 2023; Hmoud et al., 2023; Horani et al., 2023, a,b,c). These technological platforms have permitted companies to rationalize their processes, cutting costs and leveraging productivity.

The metaverse platforms have attracted the interest of venture

capitalists as a radical development engine that links business and content amidst the continuing COVID-19 downturn (Al-Adwan, 2024a). This platform stands out by leveraging state-of-the-art trivial visuals technology, 5 G network technology, and pioneering display device technology, concluding in a distinctive service contribution (Al-Adwan, 2024a). Introducing a new worldwide market model is probably extensive (Núñez Barriopedro et al., 2020). The metaverse offers a digital universe with a high degree of engagement and connectivity, allowing consumers to participate in activities autonomous of physical restrictions and temporal restrictions (Al-Adwan et al., 2023). This characteristic makes it a standard preference for an e-contact era and influences increased user value. The metaverse universe is reachable via several devices, including PCs and Smart devices, and is offered for entry at all times and locations (Al-Adwan et al., 2024). The metaverse is a technically driven channel shaped to fit the demands of a gradually e-contact society, and its significance within the industry and marketplace is growing. As the fourth industrial revolution progresses, the development of technically mediated networks and smart device technology, paired with the global disaster, has brought to light the metaverse's critical role. Initially, the metaverse was mainly associated with

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the gaming industry upon its emergence in the early 2000s. However, it has since permeated various sectors, including performance, fashion, commerce, and sports events. It is now considered one of the most effective marketing tools available in the e-contact age (Elmobayed et al., 2023). The present age is characterized by a reduced need for physical contact, with advanced technology and the fourth industrial revolution AI-based technology extensively employed. Among the most efficient devices for such technologies are smartphones, which serve not only as communication tools but also provide access to cultural and technological benefits. Therefore, smartphones are widely regarded as among the furthest essential smart devices for operating the metaverse (Ramadan, 2023). Mobile devices possess advanced features that leverage 5 G technology, enabling seamless integration with a multitude of electronic devices that can execute the Internet of Things augmented and virtual reality, and autonomous dynamic applications, thereby facilitating access to the metaverse (Dwivedi et al., 2023; Hollensen et al., 2022; Hollebeek & Macky, 2019).

Furthermore, entertainment content marketing clients are progressively discovering the capability of the metaverse as an innovative platform for contracting with viewers and presenting immersive experiences. As highlighted by Dwivedi et al. (2023) the metaverse proposes an exceptional combination of simulated surroundings and societal communications, feeding content marketers with novel opportunities to entrance and entertain virtual users. Within this context, users of entertainment content marketing predict leveraging the metaverse to create interactional storytelling experiences, where audiences can actively participate and shape stories in real-time. This participating nature of the metaverse associates with the advancing preferences of digital-savvy users, who seek more participating and tailored content experiences (Dwivedi et al., 2022). Through immersive storytelling procedures and collaborating elements, entertaining content marketers' intention to establish immersed connections with users, advancing brand loyalty and leading engagement metrics.

Furthermore, the metaverse grants opportunities for entertainment content marketers to stretch the lifetime of their content and produce additional revenue streams through simulated. By presenting virtual shows, and interactional gaming experiences within the metaverse, content marketers can influence universal users with no limitations of real venues (Shareef et al. 2017; Richter & Richter 2023; Batta et al., 2021). This approach not only improves the openness of entertainment content but also opens up new monetization paths through ticket sales, virtual goods, and brand sponsorships. In addition, the metaverse enables content marketers to gather valued data insights on users' activities, advising potential content tactics and developing overall marketing efficacy (Elhajjar, 2024). As entertainment content marketing users cross the advancing digital model, the metaverse surfaces as a favorable boundary for creating immersive, interactive, and monetizable content experiences.

The South Korean study by Kim and Kim (2023) was conducted during the pandemic period of 2020–2021, a time when the concept of the metaverse gained significant attention due to increased virtual engagement prompted by COVID-19 restrictions. Their findings highlight how public interest in the metaverse evolved, with a shift from virtual gaming to broader business and financial opportunities, reflecting a growing interest among older generations.

This research aims to examine the efficacy of utilizing the metaverse as a Modern marketing technique after the COVID-19 e-contact age, with a focus on exploring user shopping intention in Jordan. In addition, this study aims to investigate the role of entertainment content marketing on user shopping intention, as metaverse marketing has emerged as a novel technological shift across various businesses. Specifically, this research seeks to determine the viewpoint of entertainment content consumers and their perceived effects of metaverse marketing on entertainment content. This study offers a theoretical framework that marketers can employ to assess the efficiency of marketing strategies in the metaverse.

The burgeoning potential of the metaverse to revolutionize digital business landscapes underscores the critical need for comprehensive research into the factors influencing its adoption. Notably, the intersection of content marketing and user intention to engage with the metaverse remains underexplored. This study seeks to bridge this gap by examining the impact of entertainment content marketing on users' propensity to adopt the metaverse, with a specific focus on the Jordanian context. Studying the adoption of the metaverse in Jordan using the SPICE framework provides unique insights due to Jordan's rapidly growing digital landscape and tech-savvy population. Jordan's youthful demographic, with a significant proportion of the population being active internet users and social media enthusiasts, presents a fertile ground for examining how entertainment content marketing can influence metaverse engagement. Furthermore, Jordan's strategic position as a technology hub in the Middle East, coupled with its robust digital infrastructure, offers a distinctive context to explore the interplay of continuity, sense of presence, interoperability, concurrence, and economic flow within the SPICE framework. By focusing on Jordan, this study not only addresses a gap in regional research but also contributes to a broader understanding of how cultural and economic factors might affect metaverse adoption in similar emerging markets. Utilizing the SPICE framework, this research aims to provide nuanced insights into how these factors collectively influence user engagement. By understanding these dynamics, businesses and marketers can better strategize their content to foster a more immersive and appealing metaverse experience, ultimately driving higher adoption rates. This investigation not only contributes to the academic discourse on digital marketing and virtual environments but also offers practical implications for leveraging entertainment content in enhancing user adaptation to emerging digital platforms.

## 2. Metaverse background

"Metaverse" refer to a simulated universe that stands for the merging of the concepts of "meta" and "universe", expressing conceptions of virtuality and transcendence (Al-Adwan, 2024b). This term is more sophisticated than VR, an abbreviation for virtual reality. An extra way to identify the metaverse is as a self-sufficient service founded to address numerous social movements that begin beside technological innovations in the marketplace circumstances (Kshetri et al. 2024; Uddin et al., 2023).

In the early 2000s, the metaverse sparked a revolution in the entertainment industry, providing a decentralized environment for user interaction. Nevertheless, the rise of smartphones and the popularity of user-friendly social networking services led to a mass exodus from the metaverse, triggering its user base to gradually decline (Núñez Barriopedro, 2020). The beginning of COVID-19 reformed the market landscape, resulting in a strong interest in the metaverse. With the cooperation of 5 G networks and advanced digital devices, the metaverse, acting as a link between customers and manufacturers, saw a renaissance. Its capability for low-latency services became even more valued throughout the pandemic. The commercialization of 5 G also encouraged the expansion of VR, AR, and MR technologies, further stimulating the metaverse's appeal as a platform for e-contact worlds (Dwivedi et al., 2021).

Firstly, the term metaverse was commonly coupled with virtual reality. However, its meaning has grown and stretched over time. A substantial growth in this evolution was the beginning of the digital games. Second Life in 2003, which pursued to generate income through social communications and economic transactions among a large user base in a three-dimensional virtual space. Building on this premise, a VR rendition of the game was consequently proposed in the form of Sansar (lee & Kwon, 2021). Niel Stephenson's literary work, Snow Crash, published in 1992, presented an innovative depiction of the metaverse, wherein individuals could engage in everyday life and economic pursuits through their digital avatars. The novel's portrayal of the metaverse showcased

an expansion of its operational parameters (Lee & Kwon, 2021). In 2020, the social influencer Travis Scott showcased a metaverse act on the Fortnite stand, drawing a substantial audience of over 12 million viewers in real time. It has been approximated that a solitary metaverse performance would generate a revenue of no less than one million Dollars and an overall estimate of twenty million Dollars (Van der Merwe, 2021). Kwok and Koh (2021) posited that the coalescence of actual and simulated environments yields a distinct realm that yields benefits through sociocultural and economic undertakings.

Consequently, the current manifestation of the metaverse denotes an augmented virtual milieu that centres on artificial reality and augmented reality (Seo & Han, 2021). In a seminal work on the metaverse, Bolger (2021) classified four distinct types based on the spatial and informational characteristics of the platform. The first base, labelled as "lifelogging," involves the automatic recording, storage, and sharing of personal experiences and emotions in the digital realm via social networking Media like Facebook and Instagram. The second base, referred to as "AR," hires 3D objects to create a realistic digital overlay on the physical world, as seen in popular applications like Pokémon Go. The third base termed the "mirror world," is typified by Google Earth, which offers a virtual illustration of the real world and facilitates networks between the two. Finally, the fourth base, known as "VR," authorizes users to enter and interact with utterly new virtual worlds that do not exist in physical outer space, as proved by platforms like Zepeto and Roblox Wang et al. (2023) The existent state of the metaverse reveals a plethora of essential technologies required for its implementation. These technologies comprise diverse domains, extending from the basic 3D frameworking, blockchain, and AI to the virtual applications of avatars and cryptocurrency (Yang, 2024).

The term metaverse was described twenty years ago as an interactional, approaching rendering of the World Wide Web utilizing (VR) and (AR) technology. The roots of the metaverse can be drawn back to the advancement of the World Wide Web and 3D technology, which enabled the development of 2D electronic games for entertainment purposes (Choi & Kim, 2017). Subsequently, the "Lifelogging" type of metaverse emerged, represented by platforms such as Meta Company and its social networking sites, like Instagram and Facebook, which gained widespread popularity as a means of communication, community building, and sharing experiences, particularly with the proliferation of computers and other digital devices (Han, 2021). The classification of the metaverse into playing-type and universe-type metaverse, based on standards such as VR status, purpose, content formation, and consumption, has been proposed by Imm et al. (2021). While the former emerged in the early 2000s, the latter gained traction in the 2010s, leading to the metaverse of the twenty centuries. This latest iteration of the metaverse has expanded beyond gaming and entertainment, with various industries, such as corporations, educational institutions, government offices, fashion, and popular culture, establishing a presence in this virtual world. Such advancements hold significant implications for society, particularly for the MZ generation, comprising millennials and Gen Z technologically proficient individuals, as the metaverse increasingly becomes a platform for online social interaction (Al-Adwan & Al-Debei, 2023; Kala et al., 2023). The metaverse provides users with an immersive environment where the boundary between the physical and digital worlds is blurred, enabling them to experience daily life in a virtual setting (Kim, 2021a).

Metaverse technology, initially created for gaming purposes, has been increasingly adopted by various industries such as education, business, sports, entertainment, and fashion. This widespread implementation is mainly due to the growing preference for e-contact experiences, referred to as "untact," in response to the COVID-19 pandemic. An excellent example of this trend is the successful fan events organised by Korean girl groups, Blackpink and ITZY, on the Zepeto metaverse platform in 2020 and 2021, respectively. Likewise, fashion powerhouses like Gucci and Christian Louboutin have utilized the metaverse to promote their brands and products and sell virtual fashion items worn by

avatars. In convenience stores, avatars can simulate real-life shopping experiences, cook and eat ramen, and perform singing routines in the entertainment universe. The growing popularity of the metaverse in many businesses is expected to boost the worldwide market to over two hundred eighty billion dollars by 2025, establishing new marketplaces and cultural industries mostly aimed at teenage consumers.

### 3. Theoretical foundation and hypothesis development

#### 3.1. The spice framework

The SPICE framework, which incorporates continuity, sense of presence, interoperability, concurrence, and economic flow, offers a multifaceted approach to understanding user engagement in the metaverse. This framework can be juxtaposed with the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), both of which have been extensively applied in studies examining technology adoption.

The TAM, with its focus on perceived ease of use and perceived usefulness, provides a foundational understanding of how user perceptions drive technology adoption (Davis, 1989). However, it may fall short in capturing the nuanced, immersive experiences that are critical in the metaverse. For instance, Venkatesh and Davis (2000) extended TAM to TAM2, which includes additional factors such as social influence and cognitive instrumental processes but still might not fully address the experiential and economic dimensions emphasized by the SPICE framework.

The UTAUT, developed by Venkatesh et al. (2000), expands on TAM by incorporating constructs like performance expectancy, effort expectancy, social influence, and facilitating conditions, offering a broader perspective but still potentially lacking in addressing the immersive and interoperable nature of the metaverse. Studies such as Williams, Rana and Dwivedi (2015) have applied UTAUT in various contexts, including e-government and mobile banking, demonstrating its versatility but also its limitations in capturing the full scope of user experiences in highly immersive environments.

Additionally, Rogers' (1979) Diffusion of Innovations (DOI) theory examines how innovations are communicated and adopted over time within a social system, providing valuable insights into the adoption process. While DOI emphasizes the role of innovation characteristics and social systems, it does not explicitly address the immersive and interoperable aspects that are critical in the metaverse. For example, Al-Jabri and Sohail (2012) utilized DOI to study mobile banking adoption, highlighting the importance of innovation characteristics but not the immersive nature of digital environments.

Comparing these models highlights the unique contributions of the SPICE framework in the context of the metaverse. Specifically, the inclusion of a sense of presence and interoperability reflects the critical elements of immersive experiences and seamless interaction across digital platforms, which are less emphasized in traditional models. Furthermore, the economic flow component of SPICE underscores the importance of economic incentives and transactions within the metaverse, aligning with emerging trends in virtual economies.

By integrating these comparative insights, this study can better articulate the theoretical underpinnings of the SPICE framework and demonstrate its relevance and applicability in the context of metaverse adoption. This enhanced theoretical grounding not only enriches the academic discourse but also provides practical implications for designing effective content marketing strategies that leverage the unique attributes of the metaverse to drive user engagement and adoption.

The Spice framework is known as the Sense of Presence, Continuity, Interoperability, Concurrence, and Economic Flow. The first feature, Continuity, entails a continuous linking among numerous practices on a singular platform, allowing characters to carry on with their activities without disruption. The second feature, Sense of presence, refers to the

ability of users to feel physically present on the platform despite its virtual nature (Song et al. 2021). This is essential since physical contact is impossible in the metaverse. Interoperability denotes the interconnectivity of data in the metaverse with that in the actual world. These features form the foundation of the metaverse’s functionality and are vital in shaping its future development (Fukano, 2010). In essence, the integration of user experience and information acquisition in virtual platforms is not solely confined to the virtual realm. Still, rather it complements and interconnects with real-world experiences. The phenomenon of concurrence pertains to a context in which numerous operators can obtain diverse experiences and data concerning a particular object or subject within a VR-based metaverse. Unlike the physical world, where limitations of physical space preclude concurrent multiple experiences, the virtual environment offers an alternative platform where such experiences are feasible. Consequently, the economic dynamics within the metaverse are distinct from conventional market principles, whereby buyers and sellers engage in trade interactions. Instead, users engage in unrestricted currency transactions with one another.

3.2. Research hypothesis and operational definition

The research objective is to examine the impact of SPICE framework factors on shopping intentions in the metaverse by drawing upon relevant theoretical considerations and an extensive literature review. Prior research conducted by Davis et al. (2009) on metaverse typologies and developmental trajectories revealed that marketing tools used in traditional channels can be readily applied to metaverse users. Additionally, this study pursues to cover the literature on marketing strategies for performing arts in the post-COVID-19 period. Na et al. (2022) employed big data analysis to investigate the suitability of marketing methods for performing arts and cultural content in the "untact" era. Meanwhile, scholars such as Lee et al. (2021), You et al. (2021), and Yüksel et al. (2021) found that the SPICE framework, which includes variables such as continuity, presence, and interactivity, was optimal for promoting entertainment content in the metaverse platform. Hampe and Schwabe

(2003) studied the effect of content marketing centred on admired digital entertainment services and performances in the "untact" era, while Lu and Chen (2021) investigated shopping intention. The study of customer preference investigation highlighted the consequence of interoperability, simultaneousness, and commercial flow in influencing shopping intentions.

Moreover, Liikkanen, Liikkanen and Salovaara (2015) and Choi (2023) highlighted the considered function of content marketing in sponsoring and increasing YouTube content. Consequently, it is required to develop marketing techniques employing the SPICE framework, which has been found to be operational in promoting favoured content. To this end, this study consists of five factors as independent variables: continuity, sense of presence, interoperability, Concurrence, and economic flow. Fig. 1 presents the research framework used to analyse their influence.

This study employed the application of the metaverse SPICE framework and operational definitions from existing research to examine the correlation between the above-mentioned variables and shopping intention. Heo et al. (2022) observed that the metaverse SPICE framework variables represent focal features that can be employed as marketing tools for entertainment content. In the interior of the metaverse content marketing context, these variables were measured as sub-factors (Kabischm & Datascape, 2008). Precisely, the concept of a sense of presence was defined as a state in which customers could observe spatial and social contexts without physical contact. Moreover, interoperability, a key property of the metaverse, pertains to the interlocking of data between the real world and the metaverse (Clement Addo et al., 2021). Concurrence refers to an atmosphere wherein several customers are actively present and can experience varied interactions within a distance of one meter. On the other hand, economic flow applies to an environment that consents users to exchange goods and services spontaneously according to given transactional principles (Kim, 2021b). Shopping intention is measured in this study using a modified and supplemented five-point Likert scale adopted from Amfo et al. (2021), Kumra et al. (2021), and sub-dimensional (Patanasiri and Krairit, 2019). The sub-dimensional factors of the metaverse SPICE framework, which

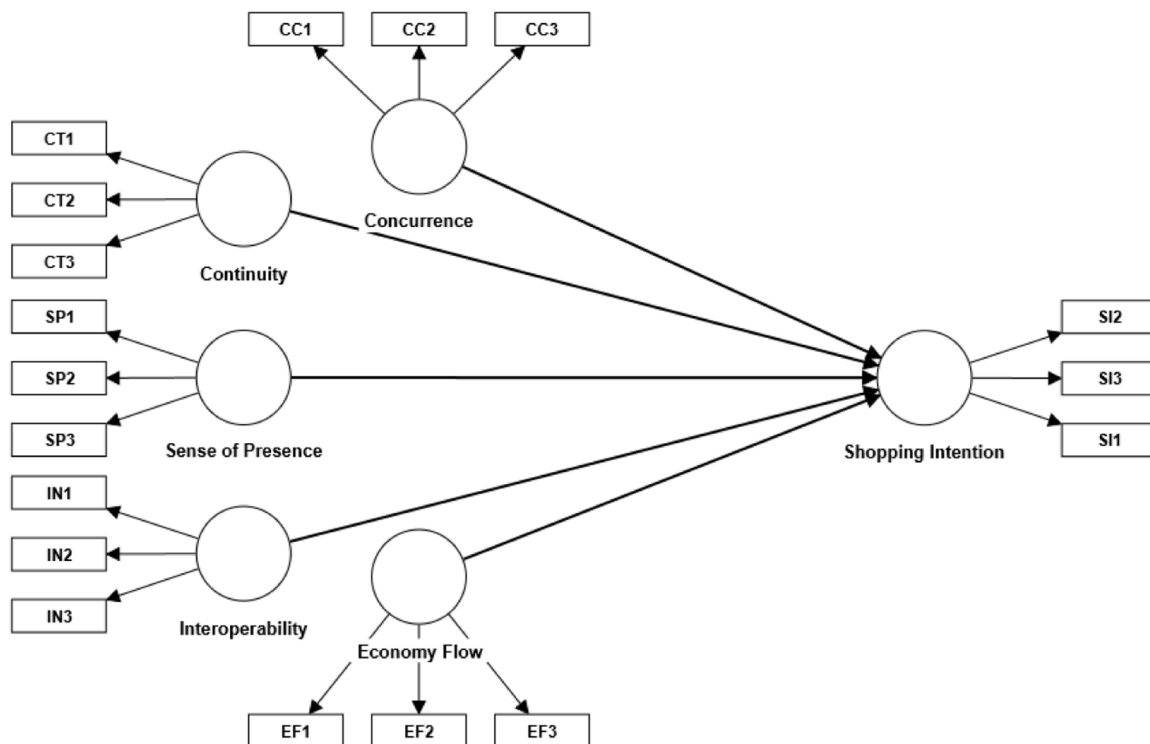


Fig. 1. Research Framework.

constitute independent variables, are measured using a 5-point Likert scale that comprises 15 items. The survey’s creation was instructed in prior literature as measurement factors for the metaverse SPICE framework in entertainment content marketing. The variables for measuring shopping intention consisted of interest in entertainment content (Núñez Barriopedro, 2020). The hypotheses for this research were founded on the basis of existing theoretical knowledge and previous research findings.

- H1. The metaverse SPICE framework for entertainment content marketing positively affects shopping intention.
- H1-1. Continuity positively affects shopping intention.
- H1-2. Sense of presence positively affects shopping intention.
- H1-3. Interoperability positively affects shopping intention.
- H1-4. Concurrence positively affects shopping intention.
- H1-5. Economic flow positively affects shopping intention.

#### 4. Research methodology

Data was collected from 454 respondents who engaged in entertainment content marketing. The data is obtained using an online questionnaire around November 2023 from randomly selected users. The survey questionnaire is separated into two main sections. In the first section, the respondents had to fill in demographic information, while in the second section, the respondents were asked to answer questions on a varied range of items related to the research model. The instrument was scaled using a five-point Likert scale, ranging from 1: Strongly Disagree to 5: Strongly Agree. The survey questionnaire was built up based on earlier validated instruments. Previously, a pilot study is carried out to ensure the validity of the instrument and that the survey questionnaire is not ambiguous. Cronbach’s  $\alpha$  is used, in which all constructs have to be over 0.6 (Malhotra, 2020). Cronbach’s  $\alpha$  test was conducted for all variables which are above 0.6, and the overall Cronbach’s  $\alpha$  is 0.9, hence the internal consistency among items and the scale system is highly reliable. Hence, the factor analysis method can be applied to the questionnaire (Field, 2009).

Common Method Bias (CMB) may have influenced the results since data was collected simultaneously according to Podsakoff et al. (2003). Measures taken to mitigate CMB include careful planning of the study design to avoid unclear language and ensure anonymity and honesty of responses (Al-Adwan et al., 2022). Additionally, statistical methods such as Harman’s Single-Factor Test were utilized to assess CMB via exploratory factor analysis. Results showed that the first factor accounted for only 45.7 % of the total variation, which is less than the threshold value of 50 %, indicating no significant CMB issue in this study.

#### 5. Data analysis

A partial least square structural equation modelling (PLS-SEM) technique was employed. PLS-SEM has been employed widely in various contexts (Al-Debei et al., 2024; Gulzar et al., 2024; Kala et al., 2024; Al Daboub et al., 2024; Bhat et al., 2023; Al-Hattami et al., 2024; Trawnih et al., 2022). Version 3.0 of the package SMART-PLS statistical software program was used to examine the collected data. SMART-PLS is a specialized software for Structural Equation Modeling (SEM), designed specifically for PLS analysis (Ringle et al., 2023). It is particularly useful for analyzing relationships between latent variables in large datasets and appropriate for handling non-normal data and complex models (Hair et al., 2019). Mardia’s multivariate normality test is employed to assess the normality of multivariate data. The test indicates that multivariate skewness (= 22.12) and kurtosis (= 173.05) exceed the standard cut-off, confirming the non-normality of the multivariate data. Consequently, PLS-SEM is deemed the most suitable data analysis approach. Operating Smart-PLS involves validating the relevance of the measurement model and then validating the structural model (Henseler et al., 2016). The measurement model represents the relationship between

constructs and their corresponding indicator factors, and the structural model explains the relationships between latent variables (constructs). After data screening, 454 were usable for advanced testing.

##### 5.1. Measurement model

The measurement model estimation is a fundamental phase angle in the SEM-PLS (Hair et al., 2020). It demonstrates the particular indicator reliability, Cronbach’s alpha, composite reliability, and average variance extracted (AVE) to estimate convergent validity, as shown in Table 1. The analysis shows that the items loading is above or equal to the accepted value (0.7). in addition, the convergent validity was tested and measured through Cronbach’s alpha, composite reliability, and AVE, and the results met the threshold levels for them (0.7, 0.7, and 0.5), correspondingly.

Furthermore, the discriminant validity was tested utilising the Fornell-Larcker criterion and exposed that it was greater than the correlations with other constructs. Table 2 points out the results of the discriminant validity for the measurement model. Fornell Larcker’s idea is that each construct reveals more variance with its related indicators than it has with any other construct (Fornell & Larcker, 1981).

##### 5.2. Structural model assessment

Hair et al. (2019) recommend evaluating the structural model regression for possible collinearity problems by checking the Variance Inflation Factor (VIF) values. A VIF value greater than 5 suggests a high likelihood of collinearity between predictor constructs. However, it is important to note that collinearity can still arise even when VIF values fall within the range of 3–5. As indicated in Table 3, all VIF values were less than 3, suggesting that multi-collinearity is not an issue. Structural model evaluation is the assessment of the predictive relationship between constructs in the study model. Fig. 2 displays the structural model and the analytical results. It is the path coefficient and the explained variance R square. The constructs of Concurrence, Continuity, Sense of Presence, Interoperability, and Economy Flow with an R-square of 0.53. The results indicate that the structural model has met Falk and Miller’s criteria for the level of variance explained (R-squared  $\geq 0.10$  and the predictor variable explaining  $\geq 1.5$  % of variance) (Falk & Miller, 1992).

Moreover, the structural model assessment includes hypothesis testing, according to Hair et al. (2021), the structural model should be used to assess the linear regression effects of the dependent variables on one another. Using PLS bootstrapping with 5000 bootstraps and 456 cases for demonstration of results related to paths and their significance level. The results reveal that seven out of ten hypotheses were supported, as presented in Table 3.

Generally, the results of measurement model analysis showed that measures of all constructs’ reliability and validity have met the existing criteria thus indicating that they were acceptable measures for this structural model. The structural model analytic results revealed significant variance in shopping intention that was explained by the study constructs. Given that there is a strong relationship between Concurrence, Continuity, Sense of Presence, Interoperability, Economy Flow and shopping intention (Fig. 3).

**Table 1**  
Convergent Validity.

Constructs	Cronbach’s alpha	Composite reliability (rho_a)	Average variance extracted (AVE)
Concurrence	0.895	0.896	0.826
Continuity	0.833	0.834	0.751
Economy Flow	0.764	0.792	0.676
Interoperability	0.858	0.861	0.779
Sense of Presence	0.879	0.88	0.805
Shopping Intention	0.816	0.819	0.731

**Table 2**  
Discriminant Validity.

Constructs	CC	CT	EF	IN	SP	SI
Concurrence						
Continuity	0.189					
Economy Flow	0.192	0.194				
Interoperability	0.569	0.229	0.136			
Sense of Presence	0.246	0.419	0.211	0.15		
Shopping Intention	0.541	0.517	0.34	0.745	0.328	

**6. Discussion**

This research examined the impact of the metaverse SPICE framework on entertainment content customer shopping intention. The results revealed that all five factors (continuity, sense of presence, interoperability, concurrence, and economic flow) were positive in shopping intention. Continuity influences shopping intention using metaverse positively, demonstrating that H1 is supported. This finding aligns with earlier research (Hwang & Lee, 2022). The study by Kim et al. (2023) showed that task-technology fit, which includes the characteristics of metaverse services such as presence, usefulness, and gamification, positively affects the continuance of use intention. Additionally, the study by Patil et al. (2022) revealed that the retail experience and metaverse application characteristics significantly impacted the organism components of hedonic and social gratification, which in turn influenced the intention to experiment with metaverse during shopping

experiences and continuity do so. In contrast, Park et al. (2023) found that continuity of the metaverse platform did not have significant effects. In fact, users who encounter consistent, coherent, and engaging content throughout their journey in the metaverse are more likely to form a deeper connection with the brand or the metaverse environment itself. In addition, individuals who are often exposed to compelling brand narratives and a cogent brand message inside the metaverse are more likely to remember and recognize the brand when deciding what to buy. Therefore, increasing trust levels impact users' intention to make purchases in the metaverse.

Likewise, this study provides empirical findings that demonstrate a substantial and positive relationship between a Sense of Presence and shopping intention while utilising the metaverse platform. This supports the second hypothesis (H2). Prior studies, like those conducted by Martínez-Navarro et al., 2019; and Ming et al., 2021, have shown comparable results. This finding shows that an expanded sense of presence regularly results in improved emotional involvement with the digital world. Additionally, an enhanced sense of social presence in the metaverse would further facilitate supportive interactions among users of positive social skills (Oh et al., 2023). The metaverse generally accelerates social collaborations and the willingness of connections among its parties. When individuals realise a sense of presence and commitment, they tend to have a higher level of trust in recommendations and endorsements supported by their friends and family. This can have a positive influence on their intent to participate in shopping activities.

The finding of this study also shows a significant and positive

**Table 3**  
Hypotheses Testing.

Hypotheses	Original sample	Sample mean	Standard deviation	T statistics	P values	VIF
Concurrence -> Shopping Intention	0.145	0.145	0.031	4.710	0.000	1.340
Continuity -> Shopping Intention	0.265	0.265	0.033	8.069	0.000	2.022
Economy Flow -> Shopping Intention	0.141	0.143	0.027	5.130	0.000	1.782
Interoperability -> Shopping Intention	0.476	0.476	0.038	12.678	0.000	2.153
Sense of Presence -> Shopping Intention	0.065	0.066	0.032	2.0310	0.042	1.770

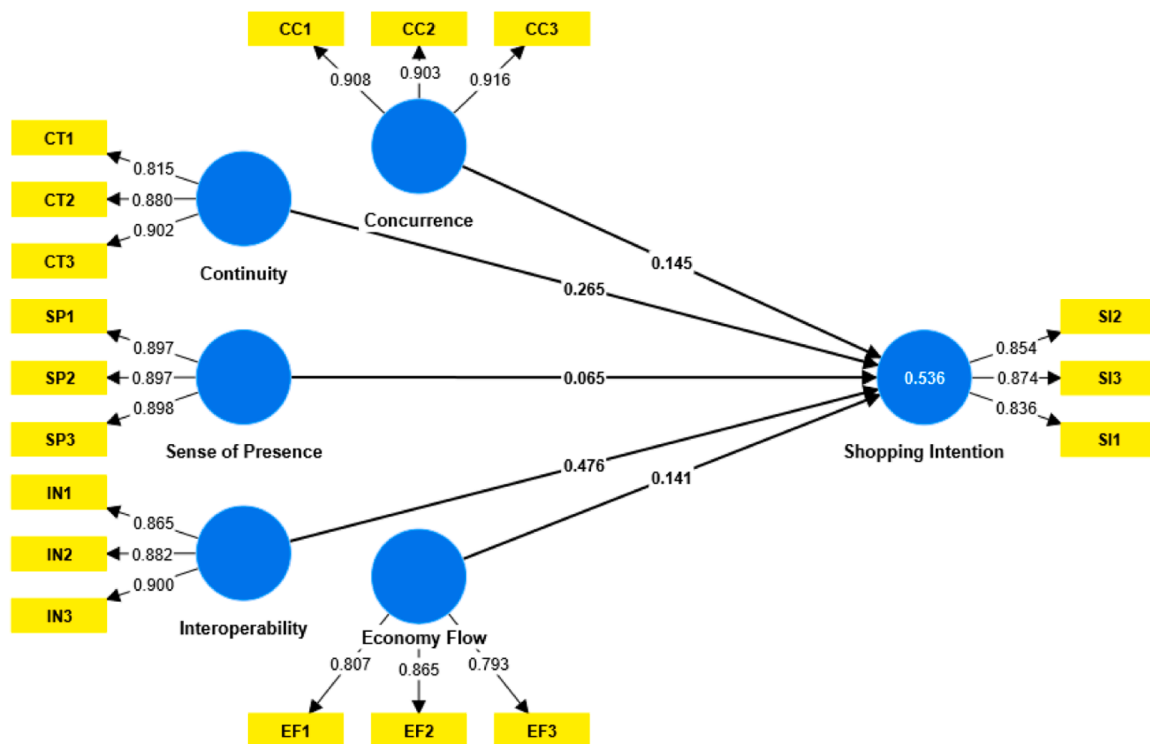


Fig. 2. Structural model.

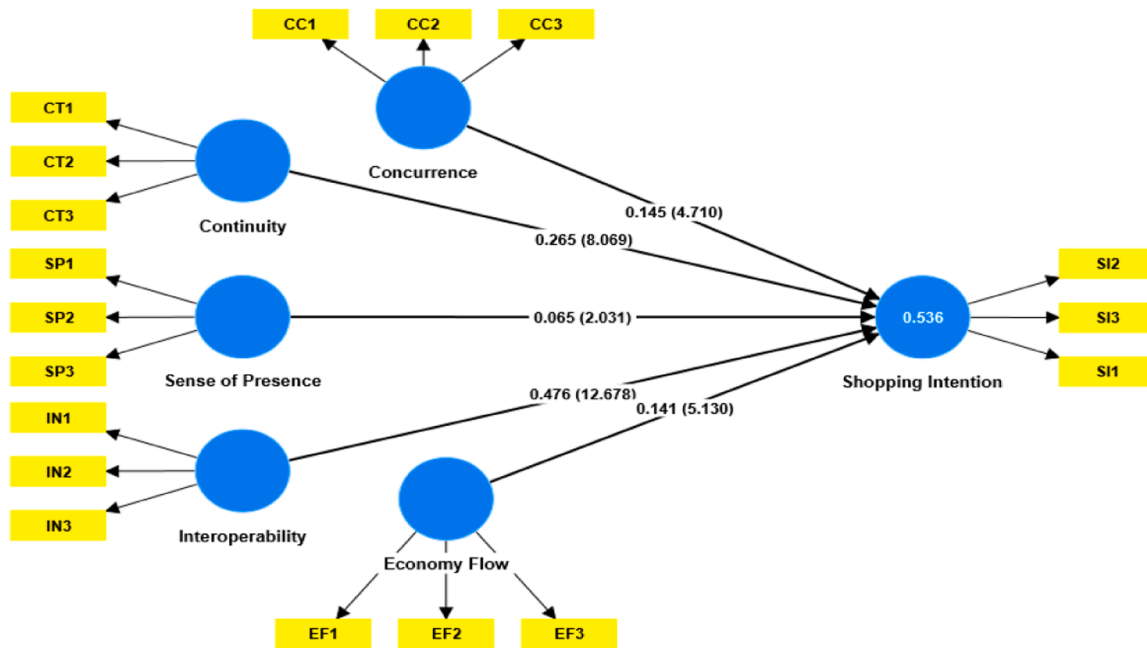


Fig. 3. Structural model.

relationship between Interoperability and shopping intention in the setting of the metaverse technology, providing support for Hypothesis (H3). This study aligns with the results of previous research conducted by Barrera and Shah (2023). This shows that the Interoperability in the metaverse technology allows customers to have a consistent and mutual competency in various digital platforms. Furthermore, Bang (2022) highlighted the need for interoperability in metaverse platforms to connect virtual worlds and allow users to navigate freely. Moreover, by streamlining the seamless drive of consumer information among several metaverse technologies and applications, its occupancies customers keep their previous purchases, wish lists, and avatars as they comprehend other areas of the metaverse, ensuring a continuing and modified purchasing atmosphere.

This research also indicates that concurrence has a significant positive influence on shopping intention. Consequently, (H4) is confirmed. This result aligns with the new research by Castillo-Abdul et al. (2022), who examined how branded content is enhanced by social media engagement through sharing. The metaverse technology can improve customers' motivation by intending concurrent and captivating capabilities. However, the findings contradict Heo et al. (2022) who found that concurrence' does not have significant impacts on the customers' intentions. Consumers can gain an extensive range of products, services, and experiences that match their desires. Consumers are likewise more liable to shop from Metaverse technology if they can access different products and services. Economic flow also positively influences shopping intention, confirming (H5). This is consistent with Park et al. (2023) study which revealed that economic flow significantly affected users' flow experience among the metaverse platform characteristics. Moreover, Lee et al. (2021) study, which investigated the metaverse's current and future potential, emphasises the economic opportunities and possibilities it offers. The aforementioned statement indicates that smooth and user-friendly shopping in the metaverse can expand the buyer's tendency to shop. This also facilitates consumers to collect virtual assets and belongings, which enhance their digital identity and self-expression. This indicates that consumers who want to enhance their digital appearance, status, or skills through digital shopping are likely to engage in economic movements, such as trading or exchanging digital assets, and show more intention to shop. The attraction of digital ownership, self-expression, social interaction, and the unique

entertainment provided by the metaverse motivate this experience.

Kim and Kim (2023) found that public interest in the metaverse in South Korea shifted significantly from 2020 to 2021. Initially, the focus was on virtual online gaming and the younger population, but it later expanded to encompass business and financial opportunities, indicating a broader demographic interest. This reflects a maturing perception of the metaverse as a versatile platform beyond entertainment. On the other hand, this study in Jordan confirmed that entertainment content marketing positively impacts metaverse adoption, with continuity, sense of presence, interoperability, concurrence, and economic flow being significant factors. These findings suggest that, like in South Korea, the metaverse in Jordan holds potential beyond entertainment, particularly if economic and infrastructural conditions are improved.

### 6.1. Theoretical implications

The theoretical implications of this study afford a major contribution to the current literature on the metaverse, content marketing and consumer behaviour. The confirmation of the SPICE framework keeps a real theoretical foundation for future researcher exploration on the ground. The afforded analysis offers a broad perspective on the underlying variables that affect consumer engagement and Purchasing intention in the setting of metaverse technology. Likewise, this study suggests the necessity to combine real interfaces with virtual simulations through the metaverse. Similarly, the findings of this study indicate that the metaverse can advance and enhance real-life experiences, providing customers with extraordinary and attractive chances for commerce and entertainment. The theoretical conclusion stresses the obligation of adopting a comprehensive approach to research in e-marketing and consumer behaviour, considering the communication between the physical and digital worlds.

### 6.2. Practical implications

The results of this research offer practical implications for vendors and organizations investing in the metaverse technology by identifying the variables that persuade shopping intention. It is also beneficial for marketers to develop successful digital marketing strategies that appoint customers and persuade their shopping choices. This could be achieved

by employing a unified and immersive metaverse encounter, enhancing customer curiosity and stimulus to shop for entertainment content and associated products. Further, this result offers valuable insight for experts in the field to augment shopping intention by placing the provision of a sense of continuity, launching a realistic sense of presence, sustaining interoperability across frequent platforms, transporting simultaneous and appealing experiences, and simplifying seamless commercial transactions. Finally, by detecting and emphasizing these aspects throughout the design process of metaverse experiences, companies have the potential to augment user delight and bolster the likelihood of customers joining shopping activities. This research highlights the property for marketers to prioritise the creation of outstanding and attractive digital content that is in line with the preferences and interests of the expected customers. By leveraging the metaverse's interactive and immersive nature, enterprises can create unique and extraordinary experiences that drive customer engagement and shopping intention.

### 6.3. Future research directions

It is important to note that while this study provides valuable insights, limitations should be admitted. The study focused on a specific context of entertainment content marketing, and the findings may not be generalizable to other businesses or contexts within the metaverse. Future research should resume to explore the metaverse's impact on customer behaviour and examine additional variables that may influence purchase intention in various contexts. Utilizing longitudinal and experimental designs allows researchers to monitor shifts in users' perceptions of the metaverse throughout time, providing insight into how sentiments develop alongside emerging features and advancements. Importantly, this research reveals information about entertainment content marketing's impact on Jordanian online gamers' intent to embrace metaverse technology. However, due to the small sample size of 454 participants from just one nation, generalizing these findings beyond this specific context may be challenging. Subsequent studies should extend the sample size and incorporate participants from various backgrounds and locations to improve external validity. Furthermore, this study centered exclusively on the Spice Framework for studying metaverse adoption, neglecting alternative theories. It suggests that scholars could broaden their comprehension of the subject matter by considering supplementary conceptual models or frameworks linked to technology acceptance. Finally, although this research offers valuable insights for practitioners, it primarily focuses on Jordanian online gamers. Thus, future investigations might examine different user groups and contexts to provide a broader perspective on metaverse adoption. Finally, one key limitation is the reliance on quantitative data collected through an online survey. Although this method allowed us to gather responses from a sizable sample, it may not capture the depth and nuance of participants' experiences and perceptions. Future research could address this limitation by employing qualitative methods, such as in-depth interviews or focus groups. These approaches would allow for a richer exploration of users' motivations, attitudes, and behaviors regarding metaverse adoption (Al-Adwan, 2017).

## 7. Conclusion

Despite the metaverse's potential to transform digital business, there remains a scarcity of research investigating how content marketing affects users' intention to use the metaverse. This study aimed to identify whether entertainment content marketing influences users to adopt the metaverse by adapting the Spice framework, incorporating variables like continuity, sense of presence, interoperability, concurrence, and economic flow. Data was collected via an online survey of 454 online gamers from Jordan who were purposefully selected. Structural equation modeling using partial least squares analysis revealed that all five factors positively affected metaverse intention.

This study has significantly improved our understanding of the

intricate relationship between entertainment content marketing and metaverse adoption intentions among Jordanian online gaming participants. The meticulous examination of the Spice framework variables has provided empirical validation for each linked research hypothesis. Analyzing a dataset comprising 454 judiciously screened responses, the research underscored the nuanced nature of these variables in shaping individuals' proclivities towards metaverse intention. Leveraging the SmartPLS-4 Structural Equation Model facilitated a comprehensive exploration of the multifaceted relationships embedded within the Spice framework.

### CRedit authorship contribution statement

**Malek Alsoud:** Writing – review & editing, Writing – original draft, Supervision, Resources, Methodology, Investigation, Data curation, Conceptualization. **Ali Trawnih:** Funding acquisition, Formal analysis, Data curation, Conceptualization. **Hussam Yaseen:** Resources, Project administration, Methodology, Investigation. **Tha'er Majali:** Writing – review & editing, Validation, Software, Formal analysis, Conceptualization. **Anas Ratib Alsoud:** Writing – review & editing. **Omar Abdel Jaber:** Writing – review & editing.

### Declaration of competing interest

The author like to confirm that there are no conflicts of interest related to this manuscript.

### References

- Al Daboub, R. S., Al-Madadha, A., & Al-Adwan, A. S. (2024). Fostering firm innovativeness: Understanding the sequential relationships between human resource practices, psychological empowerment, innovative work behavior, and firm innovative capability. *International Journal of Innovation Studies*, 8(1), 76–91. <https://doi.org/10.1016/j.ijis.2023.12.001>
- Al-Adwan, A. S. (2024a). The government metaverse: charting the coordinates of citizen acceptance. *Telematics and Informatics*, 88, Article 102109. <https://doi.org/10.1016/j.tele.2024.102109>
- Al-Adwan, A. S. A. (2017). Case study and grounded theory: a happy marriage? An exemplary application from healthcare informatics adoption research. *International Journal of Electronic Healthcare*, 9(4), 294–318. <https://doi.org/10.1504/IJEH.2017.085821>
- Al-Adwan, A. S., & Yaseen, H. (2023). Solving the product uncertainty hurdle in social commerce: The mediating role of seller uncertainty. *International Journal of Information Management Data Insights*, 3(1), Article 100169. <https://doi.org/10.1016/j.ijime.2023.100169>
- Al-Adwan, A. S., Alrousan, M. K., Yaseen, H., Alkufahy, A. M., & Alsoud, M. (2022). Boosting online purchase intention in high-uncertainty-avoidance societies: a signaling theory approach. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 136. <https://doi.org/10.3390/joitmc8030136>
- Al-Adwan, A. S., Li, N., Al-Adwan, A., Abbasi, G. A., Albelbisi, N. A., & Habibi, A. (2023). Extending the technology acceptance model (TAM) to predict university students' intentions to use metaverse-based learning platforms. *Education and Information Technologies*, 28(11), 15381–15413. <https://doi.org/10.1007/s10639-023-11816-3>
- Al-Adwan, A. S., Alsoud, M., Li, N., Smedley, J., & Habibi, A. (2024). Unlocking future learning: Exploring higher education students' intention to adopt meta-education. *Heliyon*. <https://doi.org/10.1016/j.heliyon.2024.e29544>
- Al-Adwan, A. S. (2024b). The meta-commerce paradox: exploring consumer non-adoption intentions. *Online Information Review*. <https://doi.org/10.1108/OIR-01-2024-0017>
- Al-Adwan, A. S., & Al-Debei, M. M. (2023). The determinants of Gen Z's metaverse adoption decisions in higher education: Integrating UTAUT2 with personal innovativeness in IT. *Education and Information Technologies*. <https://doi.org/10.1007/s10639-023-12080-1>
- Al-Debei, M. M., Hujran, O., & Al-Adwan, A. S. (2024). Net valence analysis of iris recognition technology-based FinTech. *Financial Innovation*, 10, 59. <https://doi.org/10.1186/s40854-023-00509-y>
- Al-Jabri, I., & Sohail, M. S. (2012). Mobile banking adoption: Application of diffusion of innovation theory. *Journal of Electronic Commerce Research*, 13(4), 379–391.
- Al-Hattami, H. M., Almaqtari, F. A., Abdullh, A. A. H., & Al-Adwan, A. S. (2024). Digital accounting system and its effect on corporate governance: An empirical investigation. *Strategic Change*, 33(3), 151–167. <https://doi.org/10.1002/jsc.2571>
- Al-Madadha, A., Al Khasawneh, M. H., Al Haddid, O., & Al-Adwan, A. S. (2022). Adoption of Telecommuting in the Banking Industry: A Technology Acceptance Model Approach. *Interdisciplinary Journal of Information, Knowledge, and Management*, 17, 443–470. <https://doi.org/10.28945/5023>



- Amfo, B., & Ali, E. B. (2021). Consumer satisfaction and willingness to pay for upgraded meat standards in Kumasi, Ghana. *Journal of International Food & Agribusiness Marketing*, 33, 423–457. <https://doi.org/10.1080/08974438.2020.1812464>
- Bang, J. (2022). Metaverse interoperability with composability in hyper-connected and hyper-personalized virtual environments. *2022 ITU Kaleidoscope-Extended reality—How to boost quality of experience and interoperability* (p. 1). IEEE. <https://doi.org/10.23919/ITUK56368.2022.10003039>
- Barrera, K. G., & Shah, D. (2023). Marketing in the Metaverse: Conceptual understanding, framework, and research agenda. *Journal of Business Research*, 155, Article 113420. <https://doi.org/10.1016/j.jbusres.2022.113420>
- Batta, A., Gandhi, M., Kar, A. K., Loganayagam, N., & Ilavarasan, V. (2021). Diffusion of blockchain in logistics and transportation industry: an analysis through the synthesis of academic and trade literature. *Journal of Science and Technology Policy Management*, 12(3), 378–398. <https://doi.org/10.1108/JSTPM-07-2020-0105>
- Bhat, AA., Mir, AA., Allie, AH., Lone, MA., Al-Adwan, AS., Jamali, D., & Riyaz, I. (2023). Unlocking corporate social responsibility and environmental performance: Mediating role of green strategy, innovation, and leadership. *Innovation and Green Development*, 3(2), Article 100112. <https://doi.org/10.1016/j.igd.2023.100112>
- Bolger, R. K. (2021). Finding wholes in the metaverse: Posthuman mystics as agents of evolutionary contextualization. *Religions*, 12(9), 768. <https://doi.org/10.3390/rel12090768>
- Castillo-Abdul, B., Pérez-Escoda, A., & Núñez-Barriopedro, E. (2022). Promoting social media engagement via branded content communication: A fashion brands study on Instagram. *Media Commun*, 10, 185–197. <https://doi.org/10.17645/mac.v10i1.4728>. 2022.
- Choi, E. (2023). Brand integration, disclosure, and ethics in child-targeted YouTube videos: A content analysis. *Journal of Media Ethics*, 38(1), 34–47. <https://doi.org/10.1080/23736992.2022.2158829>
- Choi, H. S., & Kim, S. H. (2017). A content service deployment plan for metaverse museum exhibitions—Centering on the combination of beacons and HMDs. *International Journal of Information Management*, 37(1), 1519–1527. <https://doi.org/10.1016/j.ijinfomgt.2016.04.017>
- Clement Addo, P., Fang, J., Asare, A. O., & Kulbo, N. B. (2021). Customer engagement and purchase intention in live-streaming digital marketing platforms. *The Service Industries Journal*, 41(11–12), 767–786. <https://doi.org/10.1080/02642069.2021.1905798>
- Davis, A., Murphy, J., Owens, D., Khazanchi, D., & Zigurs, I. (2009). Avatars, people, and virtual worlds: Foundations for research in metaverses. *Journal of the Association for Information Systems*, 10(2), 1. <https://doi.org/10.17705/1jais.00183>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319–340. <https://doi.org/10.2307/249008>
- Dwivedi, Y. K., Hughes, L., Baabdullah, A. M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M. M., & Wamba, S. F. (2022). Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 66, Article 102542. <https://doi.org/10.1016/j.ijinfomgt.2022.102542>
- Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., & Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 57, Article 101994. <https://doi.org/10.1016/j.ijinfomgt.2019.08.002>
- Dwivedi, Y. K., Hughes, L., Wang, Y., Alalwan, A. A., Ahn, S. J., Balakrishnan, J., & Wirtz, J. (2023). Metaverse marketing: How the metaverse will shape the future of consumer research and practice. *Psychology & Marketing*, 40(4), 750–776. <https://doi.org/10.1002/mar.21767>
- Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filiieri, R., Jacobson, J., Jain, V., Karjaluoto, H., Kefi, H., Krishen, A. S., Kumar, V., Rahman, M. M., Raman, R., Rauschnabel, P. A., Rowley, J., Salo, J., Tran, G. A., & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 59, Article 102168. <https://doi.org/10.1016/j.ijinfomgt.2020.102168>
- Elhajjar, S. (2024). The current and future state of the marketing management profession. *Journal of Marketing Theory and Practice*, 32(2), 233–250. <https://doi.org/10.1080/10696679.2023.2166535>
- Elmobayed, M., Al-Hattami, H. M., Al-Hakimi, M., Mraish, W. S., & Al-Adwan, A. S. (2023). Effect of marketing literacy on the success of entrepreneurial projects. *Arab Gulf Journal of Scientific Research*. <https://doi.org/10.1108/AGJSR-06-2023-0266>
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. University of Akron Press.
- Field, A. (2009). *Discovering statistics using spss* (3rd ed.). Sage Publications.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *J. Mark. Res.*, 18, 382–388. <https://doi.org/10.1177/002224378101800313>
- Fukano, A. (2010). Interaction via avatar on metaverse. *J. IEEE Jpn*, 39, 819–821.
- Gulzar, R., Bhat, A. A., Mir, A. A., Athar, S. A., & Al-Adwan, A. S. (2024). Green banking practices and environmental performance: navigating sustainability in banks. *Environmental Science and Pollution Research*, 1–16. <https://doi.org/10.1007/s11356-024-32772-6>
- Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101–110. <https://doi.org/10.1016/j.jbusres.2019.11.069>
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., Ray, S., & Ray, S. (2021). *Evaluation of the structural model. Partial least squares structural equation modeling (PLS-SEM) using R: A workbook* (pp. 115–138). <https://doi.org/10.1007/978-3-030-80519-7>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hampe, J. F., & Schwabe, G. (2003). Enhancing mobile commerce: Instant music purchasing over the air. *Seeking success in E-business: A multidisciplinary approach* (pp. 107–130). Boston, MA: Springer US. [https://doi.org/10.1007/978-0-387-35692-1\\_36](https://doi.org/10.1007/978-0-387-35692-1_36)
- Han, S. Y. (2021). Metaverse platform status and outlook. *Future Horiz*, 19–24.
- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial Management & Data Systems*, 116(1), 2–20. <https://doi.org/10.1108/IMDS-09-2015-0382>
- Heo, J., Kim, D., Jeong, S. C., Kim, M., & Yoon, T. H. (2022). Examining Participant's perception of SPICE factors of metaverse MICE and its impact on Participant's loyalty and behavioral intentions. *Emotional artificial intelligence and metaverse* (pp. 183–197). Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-031-16485-9\\_14](https://doi.org/10.1007/978-3-031-16485-9_14)
- Hmoud, H., Al-Adwan, A. S., Horani, O., Yaseen, H., & Al Zoubi, J. Z. (2023). Factors influencing business intelligence adoption by higher education institutions. *Journal of Open Innovation: Technology, Market, and Complexity*, 9(3), Article 100111. <https://doi.org/10.1016/j.joitmc.2023.100111>
- Hollebeek, L. D., & Macky, K. (2019). Digital content marketing's role in fostering consumer engagement, trust, and value: Framework, fundamental propositions, and implications. *Journal of Interactive Marketing*, 45(1), 27–41. <https://doi.org/10.1016/j.intmar.2018.07.003>
- Hollensen, S., Kotler, P., & Oprensnik, M. O. (2022). Metaverse—the new marketing universe. *Journal of Business Strategy*, 44(3), 119–125. <https://doi.org/10.1108/JBS-01-2022-0014>
- Horani, O. M., Khatibi, A., Al-Soud, A. R., Tham, J., & Al-Adwan, A. S. (2023c). Determining the factors influencing business analytics adoption at organizational level: a systematic literature review. *Big Data and Cognitive Computing*, 7(3), 125. <https://doi.org/10.3390/bdcc7030125>
- Horani, O. M., Khatibi, A., AlSoud, A. R., Tham, J., Al-Adwan, A. S., & Azam, S. F. (2023b). Antecedents of business analytics adoption and impacts on banks' performance: The perspective of the TOE framework and resource-based view. *Interdisciplinary Journal of Information, Knowledge, and Management*, 18, 609–643. <https://doi.org/10.28945/5188>
- Horani, O., Al-Adwan, A. S., Yaseen, H., Hmoud, H., Al-Rahmi, W., & Alkhalifah, A. (2023a). The critical determinants impacting artificial intelligence adoption at the organizational level. *Information Development*. <https://doi.org/10.1177/0266669231166889>
- Hwang, R., & Lee, M. (2022). The influence of music content marketing on user satisfaction and intention to use in the metaverse: A focus on the SPICE model. *Businesses*, 2(2), 141–155. <https://doi.org/10.3390/businesses2020010>
- Imm, B. Y., Heo, Y. W., & Imm, J. Y. (2021). Effects of plant-based content, flavor and texture information on consumer satisfaction with non-fried ramen. *Food Quality and Preference*, 92, Article 104221. <https://doi.org/10.1016/j.foodqual.2021.104221>
- Kabisch, E. (2008). Datascape: A synthesis of digital and embodied worlds. *Space and Culture*, 11(3), 222–238. <https://doi.org/10.1177/1206331208319147>
- Kala, D., Chaubey, D. S., Meet, R. K., & Al-Adwan, A. S. (2024). Impact of user satisfaction with e-government services on continuance use intention and citizen trust using TAM-ISSM framework. *Interdisciplinary Journal of Information, Knowledge, and Management*, 19, 001. <https://doi.org/10.28945/5248>
- Kala, D., Chaubey, D. S., & Al-Adwan, A. S. (2023). Cryptocurrency investment behaviour of young Indians: Mediating role of fear of missing out. *Global Knowledge, Memory and Communication*. <https://doi.org/10.1108/GKMC-07-2023-0237>
- Kar, A. K., & Varsha, P. (2023). Unravelling the techno-functional building blocks of metaverse ecosystems – A review and research agenda. *International Journal of Information Management Data Insights*, 3(2), Article 100176. <https://doi.org/10.1016/j.ijimei.2023.100176>
- Kim, J. G. (2021). A study on metaverse culture contents matching platform. *International Journal of Advanced Culture Technology*, 9(3), 232–237. <https://doi.org/10.17703/IJACT.2021.9.3.232>
- Kim, E. J., & Kim, J. Y. (2023). Exploring the online news trends of the metaverse in South Korea: A data-mining-driven semantic network analysis. *Sustainability*, 15(23), 16279. <https://doi.org/10.3390/su152316279>
- Kim, M., Lee, S., & Choi, J. (2023). A study on factors affecting intention to continuous use metaverse platform service. *Journal of Korean Society for Quality Management*, 51(1), 97–117. <https://doi.org/10.7469/JKSQM.2023.51.1.97>
- Kshetri, N., Dwivedi, Y. K., Davenport, T. H., & Panteli, N. (2024). Generative artificial intelligence in marketing: Applications, opportunities, challenges, and research agenda. *International Journal of Information Management*, 75, Article 102716. <https://doi.org/10.1016/j.ijinfomgt.2023.102716>
- Kumra, R., Khalek, S. A., & Samanta, T. (2021). Factors affecting BoP producer intention to use P2P lending platforms in India. *Journal of Global Marketing*, 34, 328–352. <https://doi.org/10.1080/08911762.2021.1915440>
- Kwok, A. O., & Koh, S. G. (2021). COVID-19 and extended reality (XR). *Current Issues in Tourism*, 24(14), 1935–1940. <https://doi.org/10.1080/13683500.2020.1798896>
- Lee, L. H., Lin, Z., Hu, R., Gong, Z., Kumar, A., Li, T., ... & Hui, P. (2021). When creators meet the metaverse: A survey on computational arts. *arXiv preprint arXiv:2111.13486*. <https://doi.org/10.48550/arXiv.2111.13486>
- Lee, J., & Kwon, K. H. (2021). Recognition and the development potential of mobile shopping of customized cosmetic on uncontacted coronavirus disease 2019 period: Focused on 40's to 60's women in Seoul, Republic of Korea. *Journal of Cosmetic Dermatology*, 20(7), 1975–1991. <https://doi.org/10.1111/jocd.14150>

- Liikkanen, L. A., & Salovaara, A. (2015). Music on YouTube: User engagement with traditional, user-appropriated and derivative videos. *Computers in Human Behavior*, 50, 108–124. <https://doi.org/10.1016/j.chb.2015.01.067>
- Lu, B., & Chen, Z. (2021). Live streaming commerce and consumers' purchase intention: An uncertainty reduction perspective. *Information Management*, 58(7), Article 103509. <https://doi.org/10.1016/j.im.2021.103509>
- Malhotra, N. K. (2020). *Marketing research: An applied orientation*. Pearson.
- Martínez-Navarro, J., Bigné, E., Guixeres, J., Alcañiz, M., & Torrecilla, C. (2019). The influence of virtual reality in e-commerce. *Journal of Business Research*, 100, 475–482. <https://doi.org/10.1016/j.jbusres.2018.10.054>
- Ming, J., Jianqiu, Z., Bilal, M., Akram, U., & Fan, M. (2021). How social presence influences impulse buying behavior in live streaming commerce? The role of SOR theory. *International Journal of Web Information Systems*, 17(4), 300–320. <https://doi.org/10.1108/IJWIS-02-2021-0012>
- Na, J., Kim, E. J., & Kim, J. (2022). Big data analysis of the impact of COVID-19 on digital game industrial sustainability in South Korea. *PLoS ONE*, 17(12), Article e0278467. <https://doi.org/10.1371/journal.pone.0278467>
- Núñez Barriopedro, E., Cuesta Valiño, P., & Gutiérrez Rodríguez, P. (2020). Perception of advertisements for healthy food on social media: Effect of attitude on consumers' response. *International Journal of Environmental Research*. <https://doi.org/10.3390/ijerph17186463>
- Oh, H. J., Kim, J., Chang, J. J., Park, N., & Lee, S. (2023). Social benefits of living in the metaverse: The relationships among social presence, supportive interaction, social self-efficacy, and feelings of loneliness. *Computers in Human Behavior*, 139, Article 107498. <https://doi.org/10.1016/j.chb.2022.107498>
- Park, Y., Ko, E., & Do, B. (2023). The perceived value of digital fashion product and purchase intention: The mediating role of the flow experience in metaverse platforms. *Asia Pacific Journal of Marketing and Logistics*, 35(11), 2645–2665. <https://doi.org/10.1108/APJML-11-2022-0945>
- Patanasiri, A., & Krairit, D. (2019). A comparative study of consumers' purchase intention on different internet platforms. *Mobile Networks and Applications*, 24, 145–159. <https://doi.org/10.1007/s11036-018-1139-3>
- Patil, K., & Pramod, D. (2022). Can Metaverse Retail lead to purchase intentions among the youth? A Stimulus-Organism-Response theory perspective. In *2022 ASU international conference in emerging technologies for sustainability and intelligent systems (ICETISIS)* (pp. 314–320). IEEE. <https://doi.org/10.1109/ICETISIS55481.2022.9888929>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879–903. <https://psycnet.apa.org/doi/10.1037/0021-9010.88.5.879>
- Ramadan, Z. (2023). Marketing in the metaverse era: Toward an integrative channel approach. *Virtual Reality*, 27(3), 1905–1918. <https://doi.org/10.1007/s10055-023-00783-2>
- Richter, S., & Richter, A. (2023). What is novel about the Metaverse? *International Journal of Information Management*, 73, Article 102684. <https://doi.org/10.1016/j.ijinfomgt.2023.102684>
- Ringle, C. M., Sarstedt, M., Sinkovics, N., & Sinkovics, R. R. (2023). A perspective on using partial least squares structural equation modelling in data articles. *Data in Brief*, 48, Article 109074. <https://doi.org/10.1016/j.dib.2023.109074>
- Rogers, E. M., & Adhikarya, R. (1979). Diffusion of innovations: An up-to-date review and commentary. *Annals of the International Communication Association*, 3(1), 67–81. <https://doi.org/10.1080/23808985.1979.11923754>
- Seo, Y. H., & Han, G. H. (2021). The present and future of the digital human. *Broadcast Media Magazine*, 26, 72–81.
- Shareef, M. A., Dwivedi, Y. K., Kumar, V., & Kumar, U. (2017). Content design of advertisement for consumer exposure: Mobile marketing through short messaging service. *International Journal of Information Management*, 37(4), 257–268. <https://doi.org/10.1016/j.ijinfomgt.2017.02.003>
- Song, E. Y., FitzPatrick, G. J., Lee, K. B., & Griffor, E. (2021). A methodology for modeling interoperability of smart sensors in smart grids. *IEEE Transactions on Smart Grid*, 13(1), 555–563. <https://doi.org/10.1109/TSG.2021.3124490>
- Trawnih, A., Al-Masaeed, S., Alsoud, M., & Alkufahy, A. (2022). Understanding artificial intelligence experience: A customer perspective. *International Journal of Data and Network Science*, 6(4), 1471–1484. <https://doi.org/10.5267/j.ijdns.2022.5.004>
- Uddin, M., Manickam, S., Ullah, H., Obaidat, M., & Dandoush, A. (2023). Unveiling the metaverse: Exploring emerging trends, multifaceted perspectives, and future challenges. *IEEE Access*. <https://doi.org/10.1109/ACCESS.2023.3281303>
- Van der Merwe, D. (2021). The metaverse as virtual heterotopia. In *1. 3rd world conference on research in social sciences*.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926>
- Wang, H., Ning, H., Lin, Y., Wang, W., Dhelim, S., Farha, F., ... Daneshmand, M. (2023). A survey on the metaverse: The state-of-the-art, technologies, applications, and challenges. *IEEE Internet of Things Journal*, 10(16), 14671–14688. <https://doi.org/10.1109/IJOT.2023.3278329>
- Williams, M. D., Rana, N. P., & Dwivedi, Y. K. (2015). The unified theory of acceptance and use of technology (UTAUT): A literature review. *Journal of Enterprise Information Management*, 28(3), 443–488. <https://doi.org/10.1108/JEIM-09-2014-0088>
- Yang, H. (2024). The genesis effect: Digital goods in the metaverse. *Journal of Consumer Research*, 51(1), 129–139. <https://doi.org/10.1093/jcr/ucad072>
- You, Y., He, Y., Chen, Q., & Hu, M. (2021). The interplay between brand relationship norms and ease of sharing on electronic word-of-mouth and willingness to pay. *Information & Management*, 58(2), Article 103410. <https://doi.org/10.1016/j.im.2020.103410>
- Yüksel, H. F., & Akar, E. (2021). Tactics for influencing the consumer purchase decision process using instagram stories: Examples from around the world. *International Journal of Customer Relationship Marketing and Management (IJCRMM)*, 12(1), 84–101. <https://doi.org/10.4018/IJCRMM.2021010105>