Informative and peripheral metaverse: Which leads to experience? An investigation from the viewpoint of self-concept

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ABSTRACT

The growth of the Metaverse has been massive in the last two years. However, limited evidence exists to understand how consumers perceive it as a potential retail space. This study investigates the effect of information (central route) and design (peripheral route) to experience and its subsequent impact on purchase intention and continuation intention in the Metaverse. The study also employed actual and ideal self-congruence to test its indirect effect on the model. This study was conducted using a simulated metaverse space by employing a 3x3 factorial design in which the data was collected from 354 participants. The results indicate that information and design are crucial in developing a metaverse experience, which builds positive purchase and continuation intentions in metaverse space. It was also found that ideal self-congruence with the Metaverse significantly creates an indirect relationship effect. The study extends theoretical knowledge of various theories and metaverse literature and suggests implications to managers.

1. Introduction

The Metaverse is a three-dimensional digital environment that breathes with the help of XR interfaces (Dwivedi et al., 2022). The Metaverse's enormous scope can benefit healthcare, organisations, marketing, tourism, and industries (Han et al., 2022; Dieck, Jung, Lee, & Chung, 2024; Tom Dieck & Han, 2022). Precedenceresearch (2023) predicts that the global market of Metaverse can scale to $1.3 trillion by 2030. Despite the speculations around the Metaverse, research is still in its infancy and has yet to provide a more comprehensive outlook on how individuals perceive themselves. Brands like Nike and Walmart have opened Metaverse in various domains, allowing consumers to experience digital immersion. Consumers in Metaverse can immerse themselves in varied experiences regarding technology, brands, gadgets and the geometric elements present within the digital space (Tom Dieck &

Han, 2022). Metaverse can induce cognitive and affective processing of the environment, which can influence consumers to develop prospective outcomes. Prominent retailers have already established retailing spaces in metaverse platforms such as Roblox and Sandbox. Consumers may enjoy being in the Metaverse, but whether it would lead to buying or continuation behaviour is yet to be explored. Apart from functionalities in the Metaverse that aid in purchasing, it is essential to investigate consumers' psychological preparedness to be involved in purchase actions (Dwivedi et al., 2023). Although academicians and industry leaders predict the high metaverse prospects, little research is available to understand consumer buying or continuation behaviour in the Metaverse.

Research supports that the Metaverse can be an alternative to physical interactions over time (Dwivedi et al., 2022). Metaverse integrates physical or virtual worlds (Dwivedi et al., 2022) in which

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consumers impart more cognitive embodiment to support their rational process during interaction (Shin, 2022). On the other hand, Metaverse can add a greater depth of creativity to engage consumers fruitfully (Dwivedi et al., 2023). Thus, the Metaverse can involve both cognitive and peripheral interactions. Metaverse replicates the real world, but the developer will have control to depute information and design based on user preferences. Marketing literature has stated that information design and colours in buying areas will positively impact consumers' decision-making (Teeny et al., 2021). Information and design are crucial, especially in a technology-mediated environment. However, no research empirically supports these results from a metaverse point of view (Hadi et al., 2023). As stated above, experience is crucial in developing behavioural intentions in the technology space (Barrera & Shah, 2023). Metaverse cannot be different from such propositions; thus information and designs of the Metaverse can also develop a strong metaverse experience. However, very minimal research has investigated or conceptualised the role of experience in the Metaverse.

Despite the productive efforts of marketers to create an immersive experience for consumers, consumers' self-consciousness in the Metaverse can be bridged as a barrier for consumers to gain total momentum (Petit et al., 2022). Research in marketing has stated that consumers tend to choose brands and products congruent to themselves (Japutra et al., 2019). However, very minimal research has been available to understand how consumers connect themselves with a technological space. Metaverse is a virtual medium designed with creativity, and there is a possibility that consumers can feel actual and may fill their ideal self using the medium, which can result in the experience. Park and Kim (2023) explain that metaverse users associate their avatar with their physical self during their purchase journey in the Metaverse. Similarly, Kim and Bae (2023) found that both the actual and ideal self in Metaverse can play a stronger role in creating purchase intention. Despite the importance of self-congruence in the metaverse purchase journey, there is no clear evidence to understand how self-congruence is processed in the Metaverse and its subsequent impact on the purchase intentions. Thus, it is important to understand how these self-congruences (actual and ideal self) can indirectly play a role in metaverse buying intentions. Thus, from the above discussions, the following gap is evident: (1) there is a need to understand whether consumers perceive the Metaverse as a purchase medium and whether they will continue using the Metaverse based on their experience (Dwivedi, 2023), (2) there is a necessity to understand the role of information and design in creating metaverse experience (Zallio & Clarkson, 2022), (3) it is important to understand how actual and ideal selves can be congruent with the Metaverse and how it can accelerate the experience perceptions (Park & Lim, 2023).

This research employed the Elaboration Likelihood Model (ELM; Petty et al., 1981) to order the information and design under the central and peripheral routes to investigate these gaps. Consumer and technology users process information through central and peripheral routes. The central route involves an individual processing or evaluating a persuasive message through deep cognitive processing. Meanwhile, shallow cognitive processing is involved in the peripheral route, where attractive stimuli and emotional appeals persuade people. As mentioned in the gap, this research investigates the impact of central and peripheral routes in creating purchase intention in the Metaverse, using the actual and ideal self as intervening variables. For this purpose, this research uses the tenets of other psychological theories, namely self-concept (Gecas, 1982), self-congruent (Sirgy, 1985), sensory learning theory (Laird, 1985), and information processing theory (Kim, 2019) to strengthen the propositions of the research questions. When integrated with the ELM, the psychological theories can provide a more in-depth view of the Metaverse on how users engage in the platform from both functional and psychological points of view. The research questions of the study are proposed below:

RQ1 What is the role of the central and peripheral route in creating a metaverse experience and subsequently creating an effect on purchase intention and continuation intention in the Metaverse?

RQ2 What is the intervening role of actual and ideal self-congruence with the Metaverse in creating the metaverse experience?

The research results will extend the theoretical knowledge available in the elaboration likelihood model, self-concept theory, and experience theories. Further, the results can develop greater value to the marketers to design their Metaverse and optimise the elements based on the research results. The research uses an experimental design integrated with survey methodology to investigate the proposed framework. The remaining of the paper is structured in the following manner. First, the theories were discussed to form a rationale for proposing the conceptual model based on which the hypotheses were proposed. Second, the research design and the methodology operationalised are discussed elaborately. Finally, the study's results are discussed, and its implications are explained.

2. Theoretical background

2.1. Elaboration likelihood model

The Elaboration Likelihood Model explains the central and peripheral structure of human comprehension that leads to describing an individual's attitude (Petty & Cacioppo, 1986; Petty et al., 1981). The theory states that humans can elaborate a stimulus through two comprehending routes, namely, central and peripheral. The central route mainly denotes the cognitive processing of information or stimuli. In the central route, an individual will have high cognition to process the information, thus leading to an attitudinal change of attitudinal formation (Haugtvedt et al., 1992). On the other hand, the peripheral route denotes an individual's attraction towards peripheral elements in the stimuli where the cognition is less, and the liking towards sensory attractions is high. Petty and Cacioppo (1986) explain that individuals elaborate on information or stimuli based on their underlying motivation and ability to process the information. The information and reasoning skills provided in any of the activities in the Metaverse can describe the cognitive processing or central route (Yoo et al., 2017). Metaverse is known to create vivid, colourful structures and geometric designs that can introduce an individual to a creative atmosphere. Subsequently, the need for peripheral cues can be high compared to cognitive cues.

The Metaverse is a virtual space that allows a higher degree of thinking and creativity; individuals in this space respond to the thinking and feel that developers place in the Metaverse (Gadalla et al., 2013). Metaverse users can interact, perceive, and engage using high cognitive processing in the digital world. The cognitive part of the Metaverse can include awareness, navigation in the Metaverse, searching, interactions, applying rationality and other ways. Thus, compared to the traditional internet and digital world, Metaverse can consciously implant various cognitive frameworks, consequently enlarging the need for cognition among users. The need for cognition can differ across individuals, especially as a consumer (Kim, 2019). Most of the literature in marketing has stated that messages elaborated through have a more persuasive ability (Jayawardena et al., 2023). However, messages elaborated through the cognitive route help in memory retrieval (Shahab et al., 2021).

Similarly, the Metaverse can deploy various peripheral aspects in terms of virtual characters, ambient effects and characterisations, user-generated content, virtual designs and marketplaces, and vividness (Hadi et al., 2023). Thus, the spatial view of the Metaverse can include both cognitive and peripheral features. Consumers may elaborate on the Metaverse in different ways, which can subsequently lead to experience. Research in marketing has supported that consumers connect themselves with the brand and the virtual space, allowing them to build a

congruent picture (Argyris et al., 2020; Belanche et al., 2021). Self-perception is an important factor that allows an individual or a consumer to elaborate on their identity in connection with the process (Grewal et al., 2019). The same may apply in the context of the Metaverse, in which the self-perception of the Metaverse and its congruity can help consumers to elaborate appropriately in central or peripheral themes.

Previous studies have supported that technology's cognitive and peripheral aspects can provide users with more experience (Jayawardena, 2021; Rodríguez-Torrico et al., 2020). Similar understanding was available in the marketing context, where the cognitive and peripheral factors can develop consumer experience (Balakrishnan & Dwivedi, 2021). The same was investigated in the context of the use of mobile applications (Molinillo et al., 2020), online reviews (Bigne et al., 2020), website design (Bleier et al., 2019), online advertising (Lu et al., 2019) and chatbots (Balakrishnan & Dwivedi, 2021). However, minimal knowledge is given to understand the cognitive and peripheral role in the Metaverse from a theoretical point of view. Previous research has stated that the elaboration with cognitive and peripheral elements may vary across technology and tools (Bigne et al., 2020; Bleier et al., 2019). Thus, there is a possibility that consumers may perceive these variables differently in the Metaverse. Subsequently, it may have different reflections in self-perception and experience that consumers carry in the Metaverse. The retailing environment in the Metaverse can provide more variant effects that can lead to multiple consumer outcomes. Especially during the purchase journey, consumers can exhibit buying intention. In connection with the technology consumers use, they will also create a continuing association with the technology and tool.

Previous research has supported that information processing is a high involvement in which product information gathering can develop the buying intention of the product (Zhang et al., 2020). Consumers can also rely on peripheral cues or factors such as the message's attractiveness or other superficial aspects, which can lead to buying action (Huang et al., 2020). Persuasive arguments in marketing communications strongly influence buying intention online (John & De'Villiers, 2020; Tan et al., 2021). Marketers also focus on peripheral factors such as celebrity endorsements, appealing visuals, emotional appeals, or catchy slogans to influence buying intention (Chin et al., 2020). So, the central and peripheral routes play a major role in developing consumer buying intentions. Alongside, consumers tend to develop strong continuation intentions towards technology, as suggested by previous research (Wang et al., 2020). Consumers with a high elaboration of cognitive or peripheral needs may form a strong affinity with the technology, leading to continuous intention. The central and peripheral routes can lead to experience, buying intention and continuation intention. Meanwhile, self-perception and self-congruence can have a strong intervention in these relationships.

2.2. Self-concept and self-congruity

Self-concept and self-congruity are related concepts, and both terms explain how human connect and represent their self with an object based on their learning. Self-concept is "the totality of an individual's thoughts and feelings having reference to himself as an object" (Sirgy, 1985). Self-concept explains two ways humans associate themselves: the actual and ideal self. The actual self describes an individual's thoughts and perceptions about themselves in the present state. Idea self describes an individual's thoughts and perception of how they like to be. Psychological literature has stated that a human with an actual self tends to respond to the inherent motivation to achieve a desired outcome (Zogaj et al., 2021). Meanwhile, a human with an ideal self tends to behave and orient their thoughts to achieve their ideal (Zogaj et al., 2021). Thus, the actual and ideal self can be a significant influencer of human behaviour. Self-concept is an interdisciplinary concept that has been used in various contexts such as consumer psychology (Mittal, 2015; Sirgy, 1982), tourism (Yankholmes & McKercher, 2019), branding (Nyadzayo et al.,

2020), social media usage (Hermanda et al., 2019), psychological well-being (Luo & Hancock, 2020), sustainable consumption (Legere & Kang, 2020), and technology usage (Blut & Wang, 2020). However, this concept is not explored in the context of the Metaverse.

Research in marketing has stated that consumers connect themselves with a product or brand to build self-congruity (Nyadzayo et al., 2020). Research in branding has found that consumers connect their personality and self-image with the brand image (Li et al., 2022). Similarly, other research on consumer behaviour states that the need pattern of purchasing a product may vary based on the consumers' self-congruence with the product (Basha, Aw, & Chuah, 2022). The degree to which a consumer feels the product or brand is similar to his personality denotes actual self-congruence (Chauhan et al., 2021). On the other hand, the degree to which the consumer thinks that the product or brand can help them reach their imagined ideal self refers to the ideal self-congruence (Basha et al., 2022; Chauhan et al., 2021; Nyadzayo et al., 2020). Thus, the consumer's perception varies across situations based on their comprehension of elements they wish to be congruent with.

The self-concept and self-congruent studies were also previously explored in technology (Javornik et al., 2021). Previous studies have found that individuals connect themselves with chatbots and other technology mediums (Alabed et al., 2022). The same can exist in a metaverse scenario where the consumers can associate their identity with the avatars in the process of the metaverse transition (Zimmermann et al., 2022). In the case of the Metaverse, consumers can cognitively and peripherally engage in the space, allowing them to understand their actual and ideal congruence. Psychological researchers have stated that the self-concept and the congruity perceived is more of a subliminal state, which may not directly impact the decision process (Das & Pingali, 2022). So, the outcome of the central and peripheral route in the Metaverse may be intervened by the actual and ideal self-congruity perceptions present with the consumers. Based on the above theoretical discussions, we propose the study's conceptual model in Fig. 1.

3. Hypotheses development

3.1. Central and peripheral route to metaverse experience

The metaverse experience denotes the flow a consumer can feel in the virtual world. The information available in the Metaverse can increase navigation flow across the Metaverse, thus providing them with less effort to attain their objective. Previous studies have supported that easeness associated with the technology can build a better experience (Kasilingam, 2020). So, the clarity and accuracy of information in the Metaverse can motivate consumers to see it as a potential benefit and reduce their effort in the journey, resulting in a positive metaverse experience. The elaboration likelihood model states that when consumers process information through the central route, they generate new arguments that can eventually result in a better experience (Shahab et al., 2021). Uses and Gratification Theory (U&G) similarly expresses that consumers' expected gratification and product information can develop positive outcomes (Liu, Zhang, & Zhang, 2020; Luo, 2002). Consistent with the propositions of U&G theory, previous studies have supported that product utilitarian features can build positive behavioural outcomes (Liu, Zhang, & Zhang, 2020; Luo, 2002). Literature in marketing has inferred that responding to utilitarian information is a form of cognitive processing which can persuade consumers to attain a desired outcome (Qin, 2020). Previous studies have supported that cognitive processing can develop experience during purchase (Kowalczuk et al., 2021). In retailing context, any informative cues can act as an effective tool to develop cognitive processing among customers (Wang et al., 2022). Similarly, in Metaverse, information clarity and accuracy can aid consumers in processing the information cognitively, resulting in better experience flow. Based on the discussion, the following hypothesis is provided.
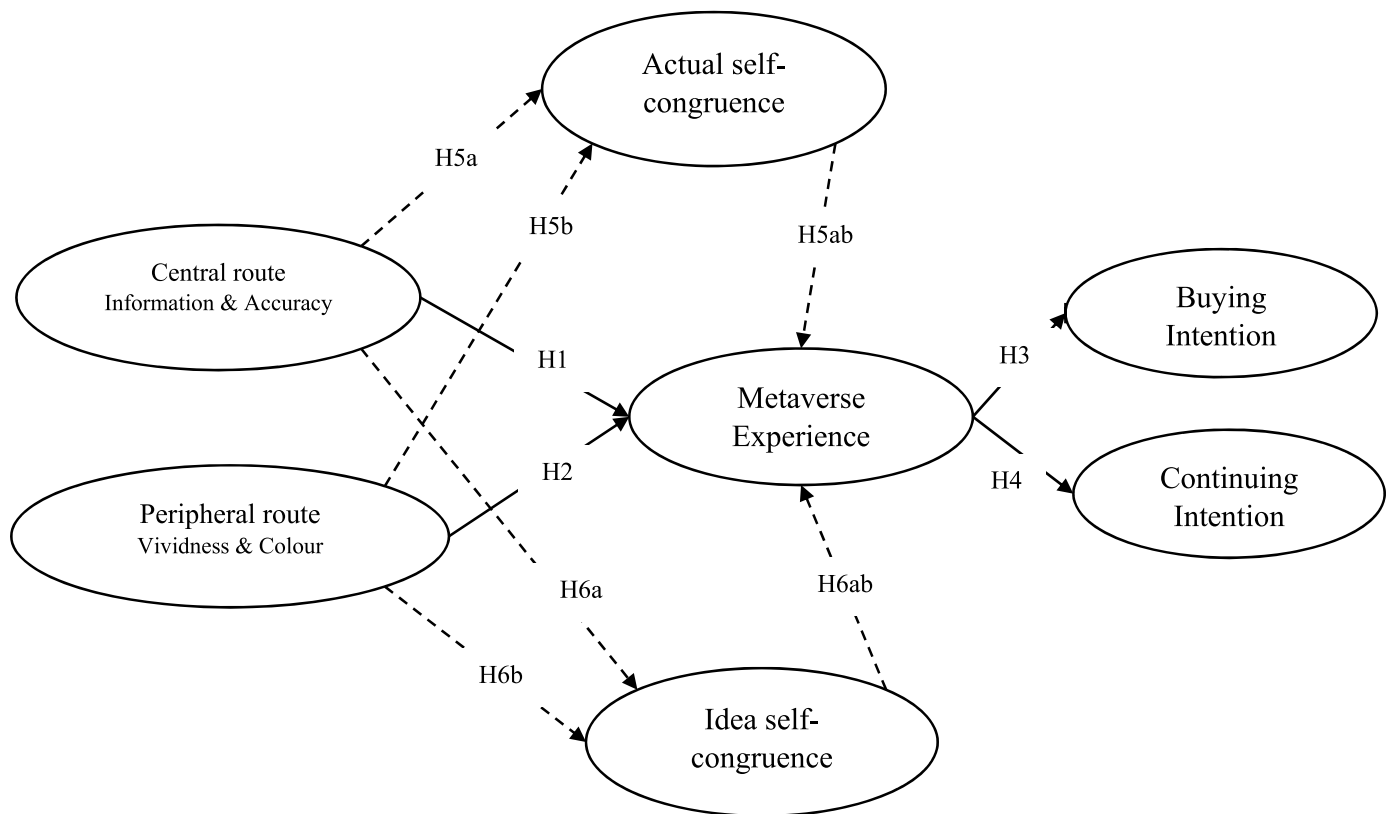
Fig. 1. Conceptual model of the study.

Hypothesis 1. The perceived central route will have a positive relationship to the metaverse experience.

Studies using the Elaboration Likelihood Model found that peripheral advertising cues will significantly impact the creating experience (Lu et al., 2019). Previous research has supported that visual designs and sensory elements in online shopping websites can improve experience (Yim et al., 2017). In the case of Metaverse, the design, vividness, and colour elements can develop better sensory cues among the consumers. Thus, the sensory feel can result in developing a better metaverse experience. Sensory learning theory (Laird, 1985) states that humans employ their five senses to learn the environment better. These senses drive humans to comprehend the sensation based on their previous learning. However, these senses can also allow humans to take heuristic decisions. In other words, these senses can peripherally attract consumers to take heuristic decisions during their purchasing phase (Eberhart & Naderer, 2017; Park & Lessig, 1981). Previous research has supported the idea that sensory cues will result in a better experience in retail space (Spence et al., 2014). Sensory experiences are mostly built with the help of various visual aids integrating rich designs, vividness, and colours (Yim et al., 2017). Through the tenets of social learning theory (Laird, 1985) and the literature understanding from sensory experience (Park & Lessig, 1981), it is assumed that the peripheral elements provided in the Metaverse can yield better experiences. Based on the discussion, the following hypothesis is developed.

Hypothesis 2. The perceived peripheral route will positively affect the metaverse experience.

3.2. Metaverse experience to buying intention

Research using the Elaboration Likelihood Model has found that cognitive and peripheral routes can build positive consumer experiences (Shahab et al., 2021). However, their subsequent impact on behavioural intentions remains least explored. Ajzen and Fishbein (1980) posit that human intentions are based on the subjective evaluation of a situation or object. Buying intention explains a consumer's interest and the likelihood of a purchase action expected in future (Laroche et al., 1996). Buying intentions are strong judgmental outcomes from various subjective evaluations (Laroche et al., 1996). Researches have asserted that buying intentions can be understood from different angles, such as product purchase intention (Mou et al., 2020), brand purchase intention (Park et al., 2021), online purchase intention (Dabbous & Barakat, 2020), and technology-based purchase intention (Masukujjaman et al., 2021). Apart from product and brand, the technology or channel in which the consumers interact can also play a crucial role in creating buying intention (Dabbous & Barakat, 2020). Various attributes are associated with the channel, which can lead to positive purchase intentions such as value, trust, loyalty, reviews, and experience. Previous research has supported the idea that the online channel experience has resulted in favourable purchase intention (Shi et al., 2020). Flow theory states that when humans get immersed in a flow state, they focus highly on that activity (Csikszentmihalyi, 2013). Research in information systems has stated that technology mediums can create higher user immersion (Yim et al., 2017). In marketing, previous research has found that consumers are immersed in technology and perceive fruitful experiences in the medium (Yim et al., 2017). The above discussion shows that the channels' technology-based experience and buying intentions are closely intertwined. A similar understanding can also be tested in metaverse conditions. However, Metaverse is a highly immersive tool that can create a more incredible experience than online marketplaces. Based on the discussion, we posit the following hypothesis.

Hypothesis 3. The metaverse experience will positively affect buying intention in the metaverse space.

3.3. Metaverse experience to continuing intention

Flow theory asserts positive immersion and enjoyable experiences

have positive outcomes (Csikszentmihalyi, 2013). Previous research has extended this understanding that positive experiences can impact consumer behaviour futuristically (Yang & Han, 2021). Research which has tried to connect experience and continuation intentions has viewed it from the point of loyalty (Zhao et al., 2012). However, the Expectation-Confirmation theory suggests that continuation intention is influenced by confirming customers' initial expectations, which can be functional or psychological (Bhattacherjee, 2001). At the same time, most research has found that functional benefits can foster positive continuation intention with a brand (Banerjee et al., 2021). Some researchers have also supported the idea that psychological benefits associated with the technology or product can develop positive experiences resulting in continuing usage (Alalwan, 2020). Metaverse is a developing format where the penetration of usage is gradually increasing. Businesses are finding space to establish themselves in the virtual space. In such a case, consumers' continuing intention mainly depends on how they experience their journey in the Metaverse. Previous studies in the online marketplace have found that experience in websites will positively impact re-purchase in e-commerce (Chopdar & Balakrishnan, 2020). Similarly, the perceived metaverse experience can develop positive intentions to visit or continue their journey in the Metaverse.

Hypothesis 4. The metaverse experience will positively affect continuing intention in the metaverse space.

3.4. Intervening role of actual and ideal self-congruity

Self-congruity refers to the degree of match or similarity between a consumer's self-image and the image or identity associated with a brand or product (Mittal, 2015; Sirgy, 1982). Both actual and ideal self-congruity are crucial in shaping behavioural actions based on the situation and object they are related to. The degree to which a customer views a brand, product, or service as consistent with their self-identity is called actual self-congruity (Nyadzayo et al., 2020). It is based on how well the customer's identity and the identity are connected to the offering or the object match. When actual self-congruity is strong, it indicates that the consumer's perception of the brand or product and their self-perception are closely aligned (Li et al., 2022). The scope of such alignment can take place based on a human's personality traits, values, lifestyle, goals, and social identity, and this alignment may take place. Besides products and brands, the actual self can also be attributed to technology (Blut & Wang, 2020), in which the user can understand their actual self in the virtual world, thus building congruity.

Chang et al. (2020) integrated the elaboration likelihood model with information processing theory to find that information processing can impact user attitudes and behaviours in online mediums. Previous research has informed that thinking and interpretations can vary based on how consumers' congruity presents themselves (Basha et al., 2022; Chauhan et al., 2021). Similarly, information processing theory states that humans process and store information based on previous learnings and associations (Klahr & Wallace, 2022). Koo et al. (2014) found that actual self-congruence can significantly informational cues in an e-commerce website. In other words, consumers tend to interpret and observe elements based on how they feel connected to the technology medium based on their cognitive processing. Previous studies In the case of the Metaverse, various embodiment-based presences allow the consumers to think they are connected in the virtual space, thus building actual self-congruency (Jin et al., 2019). This process and perceptions can eventually help them to embody a fruitful experience (Alabed et al., 2022; Büyükdağ & Kitapci, 2021). So, the clarity of information and accuracy provided in the metaverse medium can enable consumers to better comprehend their actual selves, thus resulting in a better metaverse experience. Based on this discussion, we propose the following hypothesis.

Hypothesis 5a. Actual self-congruence will indirectly affect the

relationship of the central route to the metaverse experience.

The above discussion, merging the elaboration likelihood model and information processing theory, points out that the comprehension and cognitive aspects help consumers realise their self-congruence with the Metaverse. On the other hand, previous studies have supported the idea that actual self-congruity can arouse favourable feelings and resonance with the brand (Nyadzayo et al., 2020). When consumers believe a brand is consistent with their sense of themselves, they feel a greater emotional connection. This emotional connection creates a more satisfying and enjoyable shopping experience (Büyükdağ & Kitapci, 2021). Consumers' hedonic value of a brand or product might rise when there is actual self-congruity (Chauhan et al., 2021). A greater sense of pleasure, happiness, and personal satisfaction is related to the consumer experience when their self-identity and the brand are aligned. A similar understanding can be viewed through the eyes of the Metaverse such that consumers can get peripherally attracted to the design's vividness and colours, thus realising their actual self-congruence. Assimilating from the above discussion, the following hypotheses are posited.

Hypothesis 5b. Actual self-congruence will indirectly affect the relationship of the peripheral route to the metaverse experience.

An individual's ideal self is subjective and can vary from person to person, depending on past experiences, societal norms, learning, and cultural influences (Bazi et al., 2020). Self-congruence is the degree to which a person's opinion of themselves and how they relate to a given event, item, or context match or are comparable (Kaur & Anand, 2021). It concerns how closely a person's identity, experiences, and preferences match their self-concept. Congruence and the self are different but can interact in the Metaverse or virtual settings. People may try to build an idealised version of themselves in the Metaverse by matching their digital avatar or representation with that ideal self (Jin et al., 2019). When a person's ideal self and virtual identity are in line or harmonious, it can lead to happiness and experience in the virtual world. In the Metaverse, the concept of the "ideal self" and "self-congruence" refers to how people construct and inhabit their ideal digital selves, matching them to their self-perceptions and desires. Their experiences, activities, and interactions inside the Metaverse may depend on how closely their virtual depiction resembles their ideal selves.

Self-discrepancy theory states that individuals represent themselves in multiple forms matching with the environment based on cognitive and affective processing (Higgins, 1989; Mason et al., 2019). Cognition can persuade individuals, reminding them of their ideal role in their exploring environment (Mason et al., 2019). Previous research has confirmed that thoughtful and systematic evaluation of the information presented in the digital space can make people realise their goals and thus reminding their ideal selves (Blut & Wang, 2020). Although not directly related, it may increase the possibility that someone will use the central route to assess and accept the message if persuasive messages are consistent with their ideal selves. In the Metaverse, their ideal selves represent the consumer objectives and ideal traits. Consumers may become more motivated to use a product, service, or digital platform when it fits their ideal selves (Jin et al., 2019). Users' motivation to interact with the product, accomplish their objectives, and project the self-image they seek may increase, improving their overall user experience. Thus, the ideal self congruent with the Metaverse can indirectly influence the relationship between information processing and metaverse experience. The following hypothesis is proposed based on the discussion.

Hypothesis 6a. Ideal self-congruence will indirectly affect the relationship of the central route to the metaverse experience.

As mentioned above, self-discrepancy theory states that emotions and affective elements can help people understand their selves (Higgins, 1989; Mason et al., 2019). Individuals may rely on peripheral cues congruent with their ideal selves when processing persuasive messages.

Emotional appeals might affect processing along the peripheral route. Ads or persuasive communications that arouse feelings associated with a person's ideal self, including happiness, fulfilment, or belongingness, might affect that person's attitudes and choices (Büyükdağ & Kitapci, 2021). The ideal self might indirectly influence persuasion through peripheral processing. Peripheral route processing can change attitudes and behaviours by matching peripheral stimuli with a person's ideal self's qualities and goals. An emotional connection and a sense of fulfilment can be produced by comparing the user experience with the ideal consumer version (Chauhan et al., 2021). Consumers feel good and have a more satisfying user experience when they believe a product or service helps them express their desired traits, values, or identities (Shin et al., 2020). In the Metaverse, the design vividness and colour can help consumers realise their flow of ideal self, thus contributing to a better experience. Thus, when consumers realise their ideal selves, they augment the experience better. Based on the above discussion, the following hypothesis is proposed.

Hypothesis 6b. Ideal self-congruence will indirectly affect the relationship of the peripheral route to the metaverse experience.

4. Methodology

4.1. Study design and experimental conditions

This study uses 3x3 factorial designs to investigate the proposed hypothetical model given in Fig. 1. The two experimental variables represent the central route and peripheral route. "Information clarity and accuracy" (high, medium, and low) and "Design vividness and colour" (high, medium, and low) are deployed for the central route. Table 1 shows the conditions corresponding to each variable. The study design follows an experiment with a survey conducted with participants after they were exposed to the conditions. Three hundred fifty people were recruited to participate in the experiment and survey, of which we received 344 valid responses spread across the nine experimental blocks. Initially, a physical departmental retail store agreed to provide its customers' panel data and stock-keeping units to make it available in the Metaverse. Of 5786 customers, 350 agreed to participate in the experiment for a reward of 5% on their subsequent sales in the retail store. With the help of technical students and the IT manager of the retail store,

a metaverse retail outlet was created on the Roblox platform, where the experiment was conducted. The Metaverse is structured in a gaming format, in which the participants were given instructions to walk through the meta-retail outlet and choose a product of their own for purchase. The Metaverse is accessible using VR devices, and they are connected to the interface, allowing them to navigate inside the Metaverse world. While multiple environments are created in the Metaverse, users can walk around the Metaverse and functionally visit the store to purchase the products. A sample of the experiment stimuli is provided in Fig. 2. On average, the participants spend 78 min in the designed Metaverse (maximum = 128 min and minimum = 36 min). The participants were given directions to select the products they wished to purchase. After the experiment, the participants are requested to fill out a structured questionnaire sharing their opinion of their journey in the Metaverse. The socio-demographic information about the participants is given in Table 2.

The created Metaverse is manipulated to fit with the 9 blocks (3x3). The nine blocks and the participants placed under each block are given in Appendix A. The metaverse retail was created with (1) directions to the store, (2) products available in the retail store, and (3) information signs in the store. The information is appended in terms of clarity and accuracy to operationalise the first variable (Information clarity and accuracy). The second independent variable (Design vividness and colour) is also operationalised using three conditions. At a high level, the vividness and colour are found to be very bright in the meta-retail store. At a low level, the meta-retail store is set to be less aesthetic in terms of vividness and colouring. At first, five academicians and seven metaverse business leaders were consulted regarding the conditions that can be placed in the Metaverse to describe the Metaverse's central and peripheral cues. The abovementioned conditions were decided based on the deep interaction (mean = 26 min). The conditions were pre-tested respectively before proceeding to the main study.

4.2. Experiment procedure and manipulations

The experiment was specific to nine blocks (3x3 design) as nine different experiment waves. For example, wave 1 represents high information clarity and accuracy with high design vividness and colour. Likewise, each wave was manipulated according to the block design. Detailed manipulations of the nine waves and blocks are given in Appendix A. As mentioned above, the participants were given a free pass to walk in the simulated metaverse area. The Metaverse directs consumers to enter a retail shop and choose products. The retail outlet was tuned to have more than 16 product categories, from convenience goods to specialty goods, and a range of product elements were included in the stimulated store. Their navigation and picturisation will differ based on the block condition they were asked to use. The number of samples exercised in each block is also given in Appendix A. The avatar is common to all; the avatar is not customised to the consumers to reduce

Table 1
Conditions of the two experimental variables.

Central Route	
High (coded as 3)	In the high conditions, the metaverse is designed to have high information cues about the products with greater clarity and accuracy in the retailing space, Sign boards were placed in the metaverse with information of great clarity and high accuracy both out of the retail outlet and also inside the retail outlet.
Medium (coded as 2)	In the medium conditions, the metaverse is designed to have normal information cues about the products with medium accuracy in the retailing space, Sign boards were placed in the metaverse with information of medium clarity and medium accuracy both out of the retail outlet and also inside the retail outlet.
Low (coded as 1)	In the low conditions, the metaverse is designed to have less information cues about the products with less clarity and accuracy the retailing space Sign boards were placed in the metaverse with information of less clarity and less accuracy both out of the retail outlet and also inside the retail outlet.
Peripheral Route	
High (coded as 3)	In high conditions, the vividness and visual appeal in the metaverse is designed to be high. The metaverse is designed with high vivid look and high RGB colouring
Medium (coded as 2)	In medium conditions, the vividness and visual appeal in the metaverse is designed to be normal. The metaverse is designed with medium vivid look and medium RGB colouring
Low (codes as 1)	In low conditions, the vividness and visual appeal in the metaverse is designed to be low. The metaverse is designed with low vivid look and low RGB colouring

Fig. 2. A sample screenshot of the metaverse operated.

Table 2
Social demographic information about the study participants.

Socio-demographic Variables	Characteristics	Frequency N = 354	Percentage (%)
Gender	Male	212	59.89%
	Female	142	40.11%
Age	Under 30 years	126	35.59%
	31–40 years	112	31.64%
	41–50 years	82	23.16%
	Above 50 years	34	9.60%
Occupation	Student	112	31.64%
	Working professional	182	51.41%
	Others	60	16.95%
Product intended to purchase in metaverse	Apparels	115	32.49%
	Electronics	106	29.94%
	Consumer goods	58	16.38%
	Cosmetics	44	12.43%
	Others	31	8.76%
Previous Experience in Metaverse	Gaming	158	44.63%
	Tourism	78	22.03%
	Shopping	69	19.49%
	Other services	49	13.84%

the avatar biases in the study. After their whole interaction, the consumers ended their journey in the Metaverse after choosing a list of products. The consumers spent considerable time navigating various information and designs in the retail outlet (min = 6.12 min; max = 14.56 min; average = 7.82 min). After the successful completion of their metaverse journey in our retail store, a survey is collected by the instructor with a standard self-administered questionnaire. The participants are randomly assigned to each group. Malhotra and Birks (2006) recommended that randomisation can reduce the selection bias error during experimental research. By randomly setting the participants to blocks, we tried to control the effect of selection bias.

4.3. Experiment validations

The study exercised manipulation checks to confirm whether the metaverse experience differs across the conditions. Ninety participants were employed to test the six states. Forty-five consumers were employed to test the conditions of the first experimental variable (information clarity and accuracy) and 45 for the second experimental variable (design vividness and colour).

The conditions of the first experimental variable (information clarity and accuracy) were tested using 45 samples. The 45 participants were divided into 15 for three conditions each (high/medium/low). Fifteen participants were placed in a high condition of information clarity and accuracy. The participants are exposed to high information with detailed accuracy in the Metaverse. Similarly, 15 participants were each placed in medium and low information clarity and accuracy levels. After successfully exposing each condition, a questionnaire about the conditions was asked to record the variance across the conditions. The questionnaire consisted of three questions measured on a five-point scale, with "five" being Strongly Agree and "One" being Strongly Disagree, "The information shared in the metaverse was helpful for me to navigate the retail store and helped me understand the products (Q1)", "The information shared in the metaverse had clarity in guiding me to the retail store and in understanding the products (Q2)", "The information shared in the metaverse had better accuracy in providing information about the retail store and the products (Q3)". The responses were tested using ANOVA to understand the differences in mean values. The results showed a high mean difference across the conditions. The results are as follows: Q1 (mean = 3.4889; F = 16.023 (df = 42,2); $p < 0.001$); Q2 (mean = 3.244; F = 16.289 (df = 42,2); $p < 0.001$); and Q3 (mean = 3.286; F = 21.689 (df = 42,2); $p < 0.001$). The results show the conditions significantly between themselves regarding information clarity and accuracy.

The conditions of the second experimental variable (Design vividness and colour) were tested using 45 samples. In the first condition, 15 participants were introduced with high design vivid and colourful setting in the Metaverse, and 15 participants were introduced with medium design vivid and colourful setting in the Metaverse. In the third condition, 15 samples were assigned to low-design vivid and colourful settings in the Metaverse. Similar to the pilot testing of the first experimental variables, the participants were asked to engage in a metaverse-free world with the objective of purchasing products. After their interaction in the Metaverse, they were asked to fill a questionnaire containing three questions measured on a five-point scale with "5" being Strongly Agree and "1" being Strongly Disagree, "I like the design of the metaverse (Q1)", "The metaverse to me is more vivid and clear to interact with (Q2)", "The metaverse is colourful with clarity to interact with (Q3)". The responses were tested using ANOVA to understand the differences in mean values. The results showed a high mean difference across the conditions. The results are as follows: Q1 (mean = 3.5559; F = 56.153 (df = 42,2); $p < 0.001$); Q2 (mean = 3.400; F = 24.212 (df = 42,2); $p < 0.001$); and Q3 (mean = 3.200; F = 19.467 (df = 42,2); $p < 0.001$). The results show the conditions significantly between themselves regarding design vividness and colour.

4.4. Analysis

The experimental variables, information clarity and accuracy, design vividness, and colour, are measured using dummy variable coding. The three information clarity and accuracy conditions are coded as 3 to 1 based on the condition level. Similarly, the conditions of design vividness and colour are coded accordingly. Previous studies have used a similar measurement methodology for experimental variables (Balakrishnan et al., 2020; Balakrishnan & Dwivedi, 2021; Edwards et al., 2002; Jöreskog and Sörbom, 1989). The scale source for other items is given in Table 3. The details of the scale are provided in Appendix B. This research used structural equation modelling (SEM) analysis using the partial least square estimation method in SmartPLS 4.0 to test the proposed hypotheses. First, confirmatory factor analysis (CFA) was employed to test the content, convergent, and discriminant validity and reliability requirements. Also, the common method bias analysis (CMB) is employed to test whether the data is free from CMB. Previous research has used CB-SEM estimation in SmartPLS 4.0 (Balakrishnan & Dwivedi, 2021; Balakrishnan et al., 2020), especially in experimental studies (Hair et al., 2021). Next to the CFA, the SEM is used to test the direct and indirect relationships present in the model.

5. Results

5.1. Confirmatory factor analysis

The CFA analysis confirmed the validity and reliability requirements for structural equation modelling. Table 3 shows that all the constructs' items are above 0.60, ensuring the constructs' content validity (Nunnally, 1978; Portney & Watkins, 2000). Also, Table 3 shows Cronbach's Alpha value above 0.75, confirming that the scale is consistent for further analysis. The Average Variance Extracted (AVE) values are given in Table 4. The AVE values are above 0.50, which confirms the presence of convergent validity in the constructs (Fornell & Larcker, 1981). Table 4 also shows the Squared Root of AVE values in the table's diagonal, which is less than the inter-correlation of respective constructs. This condition indicates that the constructs are discriminant to each other, confirming the discriminant validity requirements (Fornell & Larcker, 1981). Thus, the confirmatory factor analysis shows that the reliability and content, convergent, discriminant validity requirements are met as suggested by Bagozzi et al. (1991) and Fornell and Larcker (1981), and the constructs can be employed to test the hypothetical relationships. Besides the CFA, we also tested for common method bias (CMB: Podsakoff et al., 2003) analysis. As Kock (2015) proposed, the

Table 3
Confirmatory Factor Analysis results.

Constructs	No. of Items	Mean (Std. Dev)	Standardised factor loadings	Cronbach Alpha	Scale Source
Actual self-congruence	ASC1	3.407 (1.017)	0.830***	0.883	Liu, Zhang, and Zhang (2020) and Rabbanee et al. (2020)
	ASC2	3.465 (1.132)	0.820***		
	ASC3	3.285 (0.972)	0.807***		
	ASC4	3.256 (1.037)	0.774***		
Idea self-congruence	ISC1	3.192 (1.126)	0.701***	0.835	
	ISC2	3.372 (0.999)	0.832***		
	ISC3	3.401 (0.984)	0.784***		
	ISC4	3.343 (1.108)	0.850***		
Metaverse Experience	ME1	3.392 (1.060)	0.857***	0.917	Balakrishnan and Dwivedi (2021)
	ME2	3.613 (1.095)	0.865***		
	ME3	3.410 (1.054)	0.834***		
	ME4	3.503 (1.079)	0.872***		
Buying Intention	BI1	3.488 (1.041)	0.751***	0.802	Liu, Zhang, and Zhang (2020)
	BI2	3.509 (1.032)	0.738***		
	BI3	3.366 (1.137)	0.764***		
	BI4	3.137 (1.012)	0.723***		
Continuing Intention	CI1	3.387 (0.906)	0.803***	0.842	Chen et al. (2009) and Alalwan (2020)
	CI2	3.390 (1.004)	0.816***		
	CI3	3.317 (0.951)	0.793***		

Note 1: CFA Fit indices: $\chi 2/df = 2.37$; GFI = 0.909 (Good fit>0.9), CFI = 0.957 (Good fit>0.9); TLI = 0.956 (Good fit>0.9); SRMR = 0.055 (Good fit<0.06); RMSEA = 0.059 (Good fit <0.06).
Note 2: ***denotes $p < 0.001$.
Note 3: All the scale items are measured in a five-point Likert scale format, with 5 representing Strongly Agree and 1 representing Strongly Disagree.

Table 4
Inter-construct correlations and AVE value.

	CR	AVE	1	2	3	4	5
1. Actual Self-Congruence	0.919	0.683	0.826				
2. Buying Intention	0.870	0.607	0.375	0.779			
3. Continuation Intention	0.904	0.641	0.079	0.140	0.800		
4. Ideal Self-Congruence	0.892	0.618	0.657	0.386	0.098	0.786	
5. Metaverse Experience	0.941	0.735	0.324	0.375	0.397	0.358	0.857

Notes: 1. AVE represents Average Variance Extracted; 2. CR represents composite reliability; 3. Square root of AVEs are presented in the diagonal for each construct in bold format; 4. All values in the correlation matrix are significant at 99% confidence level.

collinearity statistics (VIF) value is less than 3.3 for all the inner models. Thus, we propose that the model is free of common method bias (CMB).

5.2. Structural equation modelling

Table 5 shows the coefficients of the proposed hypotheses with the t values and significance level. In Table 5, Model 1 reflects the plain estimates without the role of actual self-congruence and ideal self-congruence, whereas Model 2 accounts for these variables. Hypotheses 1 to 4 investigated the direct relationships, and hypotheses 5a, 5b, 6a, and 6b investigated the indirect relationships of the model. Hypotheses 1 to 4 were found to be significantly supported. Hypothesis 1 (Central

Route to Metaverse Experience) was positively significant, and the relationship established a relatively moderate coefficient. The results of hypothesis 2 (Peripheral Route to Metaverse Experience) were also positively significant; the relationship established a better coefficient than Hypothesis 1. Hypothesis 3 and 4 investigated the relationship of Metaverse Experience to Buying Intention and Continuation Intention, respectively. Both Hypotheses were found to establish a strong relationship. The coefficient of hypothesis 4 was slightly higher than Hypothesis 3. The values of fit indices of the estimated model established a good fit. The fit indices of the model is provided in the footnote of Table 5; the results indicate a good fit as supported by previous research. (Henseler et al., 2014; Bentler & Bonett, 1980). Thus, the fit indices of the proposed model are acceptable. Moreover, the R^2 value of Metaverse Experience, Buying Intention, and Continuation Intention is relatively acceptable, given that the model has employed experimental variables.

The mediation results were calculated based on the 5000 subsamples using the bias-corrected and accelerated method at a significance level of 0.05. The results of Hypothesis 5a indicated that actual self-congruence does not produce any significant indirect effect in the relationship of the central route to metaverse experience. Similarly, actual self-congruence failed to create any indirect effect in the relationship of the peripheral route to metaverse experience (Hypothesis 5b). Hypotheses 6a and 6b investigated the indirect effect of ideal self-congruence in the relationship of the cognitive route to metaverse experience and the peripheral route to metaverse experience. The results indicated that the ideal self-congruence partially mediated the two paths (Hypothesis 6a and 6b). The indirect effects were found to be significant. Table 6 shows the detailed results of the mediation.

Table 5
Standardised estimates of the proposed model.

Hypotheses	Exogenous Variable	Endogenous Variable	Model 1		Model 2	
			Standardised Coefficients	T values	Standardised Coefficients	T values
Hypothesis 1	Central Route	Metaverse Experience	0.266	5.940***	0.196	3.577***
Hypothesis 2	Peripheral Route		0.361	7.698***	0.289	5.499***
Hypothesis 3	Metaverse Experience	Buying Intention	0.369	5.643***	0.375	5.713***
Hypothesis 4	Metaverse Experience	Continuing Intention	0.400	6.831***	0.397	6.781***

Notes: *** represents values significant at a 99% confidence level. Model fit indices (model 1): $\chi 2/df = 1.878$; GFI = 0.951; NFI = 0.954; CFI = 0.973; TLI = 0.966; RMSEA = 0.049. Model 1 represents the values without mediating paths and Model 2 represents those with mediating paths.

Table 6
Mediation effects present in the structural model.

	Indirect Effect (t statistic)	Total Effect (t statistic)	Direct Effect (t statistic)
Hypothesis 5a CR- > ASC- > ME	0.021^{ns} (0.649)	0.295*** (5.836)	0.196*** (3.577)
Hypothesis 5b PR- > ASC- > ME	0.016^{ns} (0.615)	0.401*** (7.019)	0.289*** (5.499)
Hypothesis 6a CR- > ISC- > ME	0.050*** (2.089)	0.295*** (5.836)	0.196*** (3.577)
Hypothesis 6b PR- > ISC - > ME	0.057*** (2.297)	0.401*** (7.019)	0.289*** (5.499)

All the estimates are standardised and significant at the 95% level: bootstrap iterations = 5000 through the bias-corrected percentile bootstrap method. *** indicates p < 0.05, and ^{ns} indicate not significant.
Notes: CR denotes Central Route; ASC denotes Actual Self-Congruence; ME denotes Metaverse Experience; ISC denotes Ideal Self-Congruence.

6. Discussion

The study investigated the impact of the central and peripheral routes in creating metaverse experiences, buying intentions, and continuation intentions. Actual self-congruence and ideal self-congruence were introduced as mediators in the proposed model. To test the model, a 3x3 factorial design is implemented with fitting information clarity and accuracy in the central route and design vividness and colour in the peripheral route. The model is analysed using the partial least squares method using structural equation modelling. The following sections discuss the results, and the implications are provided.

This research investigated four hypotheses (Hypotheses 1,2,3 and 4) measuring the direct effects and four hypotheses measuring the indirect effects (Hypotheses 5a, 5b, 6a, and 6b). The results of hypothesis 1 indicated that the cognitive route can build a positive metaverse experience. This result partially confirms the tenets of U&G and information processing theories since both theories have confirmed that cognitive actions can develop prospective experience (Klahr & Wallace, 2022; Liu, Zhang, & Zhang, 2020; Luo, 2002). The cognitive route is measured using information clarity and accuracy, thus, the ease of information processing can provide a better experience and state of flow in the Metaverse. Previous studies have confirmed that providing information in the retail setup can provide more satisfaction in the purchase journey (Kasilingam, 2020). However, this research has extended these results in the context of metaverse experience. The results of hypothesis 2 indicate that the peripheral route can build a positive metaverse experience. The results align with the propositions of sensory learning theory (Laird, 1985), in which the peripheral sensation can provide a better experience. So, the consumers do get peripherally attracted to the metaverse space, leading to the experience. This research has used vividness and colouring to test the consumers' reactions towards the experience. Previous research has also supported the idea that designs and peripheral attractions can develop positive experiences in online purchase areas. The study results extend those results from a metaverse perspective. Of both hypotheses (1 and 2), the peripheral route shared a higher coefficient with metaverse experience compared to the cognitive route, which also shows the importance of the peripheral route in creating the experience.

Hypotheses 3 and 4 investigated the role of metaverse experience in buying intention and continuation intention, respectively. It was found that metaverse experience can develop consumer buying intention (Hypothesis 3). The connection between experience and buying intention is positively associated with previous research. This research confirms the same in the metaverse context. Consumers tend to vary based on the portal they operate with (Silva et al., 2020). Metaverse is

well-recognised as a gaming arena rather than a commercial place. So, the dilemma of recognising Metaverse as a commercial space with consumers positive responses towards it remained unexplored. This research has found that the experience perceived in the metaverse space motivates consumers to see the Metaverse as a potential retail outlet. Hypothesis 4 found that metaverse experience can develop continuation intention in the Metaverse. Previous research has supported that experiences integrated with the value continuum have positive effects on consumer's intention to continue with the technology (Chopdar & Balakrishnan, 2020). This research has confirmed such a proposition from a metaverse perspective. Metaverse experience is considered more effective by nature (Dwivedi et al., 2022). However, some research has explained that experiential value is more important to develop positive continuation intention. Thus, the consumers perceived experience in Metaverse can also be seen as a value-based experience, building a positive relationship with continuation intention.

Hypotheses 5a, 5b, 6a, and 6b investigate the indirect effect of actual self-congruence and ideal self-congruence of Metaverse in the relationship of cognitive and peripheral route to metaverse experience. The results indicate that actual self-congruence failed to create any indirect effect in the central and peripheral route relationship to metaverse experience. Research which has explored self-concept theory in marketing has found that the actual self is more confined to an individual and can resist idealising new experiences (Alabed et al., 2022; Büyükdağ & Kitapci, 2021). This research confirms such underpinnings. While tuned by information and metaverse designs, consumers in the Metaverse may not get aroused to new experiences because of their self-perception, which resists new expectations. Research in consumer behaviour has stated that consumers with high actual self tend to build their environment with the existing and well-defined self-protocols. So, the same might have reacted in the Metaverse, where the perception of being the actual self failed to create any indirect effect.

On the other hand, ideal self-congruity refers to how consumers connect their aspirational self in the Metaverse. Most of the research in marketing, which has investigated the consumer ideal self, has found that it has a significant effect on changing decisions in present and future states. The results indicate the same. Ideal self-congruence is found to create a significant indirect effect on the relationship of central and peripheral routes to metaverse experience. Consumers with aspirations are found to be explorative and try to garner new experiences even from the existing environment (Büyükdağ & Kitapci, 2021). In the case of the Metaverse, the consumers' perception of the ideal self is found to tune the experience to a better level. Thus, consumers with high ideal self and those who feel the Metaverse is congruent with their aspirations tend to feel better experiences than those who are high in actual selves.

6.1. Theoretical contribution

The research model and the results extend a greater understanding of the existing theories from the perspective of the research questions investigated and their scope in the Metaverse. This research contributes in the following ways: (1) This study has extended the theoretical knowledge of the elaboration likelihood model in the context of Metaverse, (2) By introducing metaverse experience as a new construct, the study has extended the flow theory, especially by integrating it with elaboration likelihood model, (3) The study has introduced actual self-congruity and ideal self-congruity as a potential mediator, thus adding more knowledge to self-concept and self-congruent theories, (4) The study introduces metaverse experience as a factor that is dependent on buying intention and continuation intention, thus providing more scope to the psychological theories associated with experience, (5) Overall, literature in the Metaverse is gradually booming. Most of the research about the Metaverse is composed of conceptual ideas, and this research has gone ahead to provide empirical validations using experimental design.

This research has extended the contribution of the elaboration

likelihood model by introducing information cues and peripheral cues in metaverse space. This contribution will allow future research to understand the scope of information and designs in the Metaverse and operationalise experiments to extend or fill the gap in the study. Besides the elaboration likelihood model, the relationships associated with the central (information clarity and accuracy) will provide more meaning to information processing theories since not much research has explained the relationship between information processing and experience. Most research employed the central route to understand advertising and website effectiveness (Lu et al., 2019). Thus, this research extends the previous knowledge of information processing theory (Kim, 2019; Rodríguez-Torrico et al., 2020; Tan et al., 2021) from the metaverse experience perspective. Researchers have used sensory learning theory (Laird, 1985) to support the idea that peripherality can induce experience. This research supports the idea that sensory learning theory can also be extended to understand metaverse experience. Most of the research which has investigated experience has developed specific experiences based on the context of the study, such as user experience (Huang et al., 2021), technology-based experience (Weretecki et al., 2021), tourism experience (Kim & Hall, 2019), customer experience (Becker & Jaakkola, 2020) and memorable experience (Buhalis & Sinarta, 2019). This research has introduced experience in the context of the Metaverse and extended the understanding from the central and peripheral routes.

Actual self and ideal self-concepts were primarily used in the branding literature to understand how consumers feel the brands are congruent to them, thus resulting in changes in attitude toward the brand (Argyris et al., 2020). Most of the literature in marketing has used self-concepts, and self-congruent has tested consumers' selves matching with brand or product. This research has extended the role of actual and ideal selves on how consumers connect themselves from a technology point of view, especially in the Metaverse. Notably, the research has shed light on how the ideal and actual self can indirectly affect the proposed relationships. This research has provided more valuable insights into the literature on self-concept, self-congruence, experience, and the Metaverse. The relationship between experience and buying intention has been previously investigated in marketing concepts and technology-based marketing literature. However, this research has extended the understanding from the metaverse point of view that consumers perceive the Metaverse as a potential digital medium to transact. Besides the marketing literature, the study has opened a comprehensive understanding of various behavioural intentions that can be present in the metaverse space.

Similarly, consumers in the Metaverse develop continuation intention based on the experience they perceive in the Metaverse. This finding will contribute to the experience-based research and theories associated with continuation intention, such as expectation disconfirmation theory. Overall, the results will be an essential addition to metaverse literature, allowing researchers to understand and extend the results empirically.

6.2. Managerial implications

An important finding of the research is that information clarity, accuracy, design vividness, and colouring can build positive experiences in the Metaverse. Managers can cognitively engage users if they concentrate on offering thorough, well-reasoned knowledge about the Metaverse. This process highlights the increase of flow in metaverse usage and experience. Metaverse developers can develop strategic alignment and educated decision-making across their teams by encouraging a deeper comprehension of the cognitive features of the Metaverse. It is equally important to acknowledge the impact of peripheral and emotional stimuli. To connect with a broader audience, managers should take into account the adoption of metaverse technology's emotional appeal, simplicity, and user-friendliness. This process entails emphasising the benefits that can be experienced, the user-friendly interfaces, and the possibility of increased creativity and collaboration.

Marketers should aim to create a colourful metaverse with high vividness for the consumers to transit in the space. The McKinsey (2022) report states that AI and user preferences augment a favourable user presence. Marketers can have customised consumer experiences based on their continued interaction in the Metaverse.

Metaverse should aim to balance cognitive and peripheral channels to maximise the impact. Managers can present a more comprehensive and convincing argument for adopting Metaverse by fusing detailed information with visually appealing content and emotionally charged storytelling. Marketers should ethically try to gather consumer data to understand their preferences and translate them to their ideal selves. Providing a metaverse congruency with their ideal selves will develop more experience. Consumers use brand showcases to reach their ideal self. However, consumers can feel the Metaverse and their ideal self in the virtual world. For example, a person who desires to visit a retail store in New York from India may fulfil his desire by visiting the same in the Metaverse. Thus, Metaverse can fill the ideal self of the consumers if provided accurately, which results in the experience. Marketers should develop mechanisms such as collecting pre-purchase information and consumer preferences to tailor the Metaverse according to consumer preferences. Consumers perceive the Metaverse as a potential buying space and wish to continue using the Metaverse, in which experience plays a more vital role. Thus, marketers' primary aim should be to provide a better experience in the Metaverse. Besides, developers without prior knowledge about the Metaverse can also use these insights to create user case diagrams. The results show the importance of creating a self-congruent experience in the Metaverse, so the designers should focus more on developing user-congruent personas and avatars.

7. Conclusion, limitations, and future research directions

The research investigated the impact of the central route (information clarity and accuracy) and peripheral route (design vividness and colouring) on metaverse experience, resulting in purchase intention and continuation intention. Importantly, the study investigated the indirect impact of actual self-congruence and ideal self-congruence in the model. The results indicated that both the central and peripheral routes can build a positive metaverse experience, significantly influencing purchase intention in the metaverse and continuation intention of the Metaverse. Ideal self-congruence is found to mediate significantly in the path of central and peripheral route to metaverse experience. However, actual self failed to create any significant indirect effect in the path. Overall, The research shed light on the importance of metaverse experience and how it can build strong consumer behavioural intentions. Besides the merits of the study, it holds certain limitations that must be considered while generalising the results. The research has used a simulated metaverse environment particular to a retailing setup, thus, the research needs follow-up investigations to generalise these results across other verticals of business or gaming. Future research can employ more intervening variables, such as trust and perceived security, to understand its effect on continuation intention. This research used information and design to represent central and peripheral routes. However, future research can use other representations such as arguments, reasonings, and puzzles to develop central (cognitive) routes and interactive emotions as a part of peripheral routes, which can provide robustness in understanding this study's results.

CRediT authorship contribution statement

Janarthanan Balakrishnan: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft. **Ronnie Das:** Conceptualization, Methodology, Writing – review & editing. **Ali Abdallah Alalwan:** Conceptualization, Methodology, Writing – review & editing. **Ramakrishnan Raman:** Conceptualization, Methodology, Writing – review & editing. **Yogesh K. Dwivedi:**

Conceptualization, Methodology, Supervision, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Appendix A. Factorial Manipulations

Blocks	Information clarity and accuracy	Design vividness and colour	Explanation	Sample
Block 1 (Wave 1)	High	High	Consumers will be exposed to a high level of information clarity and accuracy in the metaverse both on the outside and inside of the retail store with highly vivid and colourful conditions	37
Block 2 (Wave 2)	Medium	High	Consumers will be exposed to a medium level of information clarity and accuracy in the metaverse both on the outside and inside of the retail store with highly vivid and colourful conditions	38
Block 3 (Wave 3)	Low	High	Consumers will be exposed to a low level of information clarity and accuracy in the metaverse both on the outside and inside of the retail store with highly vivid and colourful conditions	39
Block 4 (Wave 4)	High	Medium	Consumers will be exposed to a high level of information clarity and accuracy in the metaverse both on the outside and inside of the retail store with medium vivid and colourful conditions	37
Block 5 (Wave 5)	Medium	Medium	Consumers will be exposed to a medium level of information clarity and accuracy in the metaverse both on the outside and inside of the retail store with medium vivid and colourful conditions	38
Block 6 (Wave 6)	Low	Medium	Consumers will be exposed to a low level of information clarity and accuracy in the metaverse both on the outside and inside of the retail store with medium vivid and colourful conditions	38
Block 7 (Wave 7)	High	Low	Consumers will be exposed to a high level of information clarity and accuracy in the metaverse both on the outside and inside of the retail store with low vivid and colourful conditions	37
Block 8 (Wave 8)	Medium	Low	Consumers will be exposed to a medium level of information clarity and accuracy in the metaverse both on the outside and inside of the retail store with low vivid and colourful conditions	39
Block 9 (Wave 9)	Low	Low	Consumers will be exposed to a low level of information clarity and accuracy in the metaverse both on the outside and inside of the retail store with low vivid and colourful conditions	41

Appendix B. Scale Information

Constructs	Construct Coding	Scale Items
Actual self-congruence	ASC1	Concerning the Metaverse, the avatar and I are very similar
	ASC2	I resemble the avatar in the Metaverse very much
	ASC3	I can easily identify myself with this avatar in the Metaverse
	ASC4	My actual self-image is consistent with the overall image in this Metaverse
Idea self-congruence	ISC1	The ideal of myself is very similar to the avatar in the Metaverse
	ISC2	Participating in this Metaverse activity, I want to show the best of me
	ISC3	The avatar in the Metaverse reflects my ideal self
	ISC4	My ideal self-image is consistent with the overall image in this Metaverse
Metaverse Experience	ME1	The interaction in the Metaverse is more appealing.
	ME2	It is easy to navigate in the Metaverse during the visit.
	ME3	The interaction and designs are more personalized.
	ME4	The designs and experience in the Metaverse are up to date.
Buying Intention	BI1	I would like to buy some brands/products/service in this Metaverse
	BI2	I intend to buy some brands/products/in this Metaverse within the next year
	BI3	I trust the brands/products/service in this Metaverse
	BI4	I would introduce products/brands recommended in this Metaverse to my friends
Continuing Intention	CI1	I intend to continue using the Metaverse for shopping in the future
	CI2	I will always try to use the Metaverse in my daily life.
	CI3	I plan to continue to use the Metaverse frequently

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