Meta-Brand Engagement and Willingness to Buy: Exploring the Pre-Adoption Behavior on Emerging Digital Platforms

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Abstract: This study investigates the impact of meta-brand engagement on consumers' willingness to buy in the Metaverse. Adopting a quantitative, cross-sectional research design, data were collected through an online survey from 300 active Metaverse users, selected via purposive sampling to ensure relevance. Validated instruments measured various dimensions of meta-brand engagement and willingness to buy. The analysis employed both correlation and multiple regression techniques to test five hypotheses concerning these relationships. The results revealed that brand awareness and knowledge, as well as emotional and psychological factors, have a positive and significant influence on willingness to buy. Conversely, social and incentive factors exhibit a significant negative effect. The remaining factors—brand interaction and engagement and perceived value and experience—were not found to have a significant impact. These findings offer valuable insights into how meta-brand interactions shape consumer decision-making in virtual environments, providing actionable implications for marketers aiming to refine branding strategies within the Metaverse and deepen their understanding of virtual consumer behavior.

1. Introduction

The Metaverse, as a dynamic and immersive virtual environment, offers novel opportunities for brands to engage with consumers in innovative ways. This emerging technology provides businesses and individuals with a unique platform to expand their reach and interact within virtual spaces. The term "Metaverse", originally coined by Neal Stephenson (1992), described fictional virtual worlds inhabited by avatars. Today, the concept—closely tied to virtual reality (VR) and augmented reality (AR)—integrates elements of both to create engaging and interactive digital environments.

Often regarded as the next evolution of the internet, the Metaverse signifies a transformative shift in how we interact with and utilize digital technologies in

immersive settings (Dwivedi et al., 2022). It is characterized as a vast, interconnected network of real-time, three-dimensional (3D) virtual worlds that can host a virtually unlimited number of users simultaneously. These environments offer persistent and continuous experiences where users maintain a consistent sense of presence across aspects such as identity, history, rights, objects, communications, and transactions (Ball, 2022, p. 29).

Within this evolving digital landscape, "Meta-branding" has emerged as a critical strategy for brands aiming to establish their presence, build meaningful relationships, and influence consumer behavior (Rane, 2023; Koohang et al., 2023). As the Metaverse advances—potentially into a fully immersive mixed and augmented reality environment—brands are presented with unprecedented opportunities to deepen engagement and enhance brand-consumer relationships (Shen, 2025). This environment enables the creation of interactive experiences, the fostering of emotional connections, and the delivery of value in ways traditional marketing cannot replicate (Shah, 2022; Lee et al., 2021).

As investment in the Metaverse grows, it becomes increasingly evident that this platform has the potential to transform digital marketing and redefine industry practices (Melanthiou et al., 2024). It offers marketers the ability to connect with audiences more deeply and deliver experiences far beyond the capabilities of conventional approaches (Weber, 2009; Leeflang et al., 2014; Ryan, 2016; Hudson, 2017). Consequently, understanding the Metaverse's influence on consumer behavior is crucial for brands seeking to leverage this opportunity effectively.

The rationale for this study stems from the increasing importance of the Metaverse as a platform for consumer engagement and commerce (Rathore, 2017; Lee et al., 2023). As consumers spend more time in virtual environments, it becomes essential to understand the factors influencing their purchasing decisions in these contexts. While extensive research exists on branding in physical and digital environments, the Metaverse introduces new dynamics that may significantly reshape consumer-brand relationships. Given its potential as an advanced technological tool for crafting immersive consumer experiences, the Metaverse represents a promising area of research. Accordingly, this study addresses the following research questions: RQ1: How does meta-brand engagement influence consumers' willingness to make a purchase? RQ2: What specific aspects of meta-brand engagement are most strongly correlated with increased willingness to buy?

The study investigates how various meta-branding factors—such as brand interaction and engagement, brand awareness and knowledge, emotional and psychological factors, perceived value and experience, and social and incentive factors—influence consumers' willingness to buy. These dimensions are treated as independent variables, while willingness to buy is the dependent variable. The insights derived from this study aim to support the development of effective meta-branding strategies, strengthen brand loyalty, and ultimately drive consumer purchases.

The remainder of this paper is organized as follows. Section 2 provides a comprehensive literature review, exploring existing research on meta-branding and the factors that affect consumers' willingness to buy. Section 3 outlines the research methodology, including the study's design, data collection, and analysis techniques. Section 4 presents and discusses the key findings in light of relevant

theories and prior literature. Section 5 concludes the study by summarizing the results, acknowledging limitations, and proposing future research directions to further investigate the impact of meta-branding in the Metaverse on consumer behavior.

2. Literature Review

The Metaverse is a novel platform, and there is growing interest in understanding how its features and affordances influence user behavior. Recent conceptual and review articles (Chen et al., 2023; Dwivedi et al., 2022; Peukert et al., 2022) provide comprehensive overviews of existing and emerging research directions, highlighting the early developmental stage of this field. The term "Metaverse" is derived from the combination of "Meta" and "Verse," symbolizing the idea of "transcending the universe" (Chen, 2024).

A recent report by McKinsey & Company (2022) outlines the substantial marketing potential within the Metaverse, projecting direct-to-avatar virtual product sales to become a $54 billion market. It illustrates how brands are experimenting with new product strategies, citing examples such as Forever 21 selling virtual beanies on Roblox for less than $1 and Gucci's digital Dionysus bag being resold for $4,115—more than its physical counterpart. These early initiatives showcase the innovative marketing opportunities emerging in this space. As noted by Chris (2022) and Lu & Mintz (2023), the Metaverse offers businesses and individuals new possibilities for brand extension while also presenting novel challenges associated with this evolving technology.

The growing body of literature on marketing in the Metaverse demonstrates an increasing recognition of its potential to reshape consumer behavior and enhance brand engagement (Bousba & Arya, 2022). Researchers have begun exploring theoretical frameworks, technological developments, and ethical concerns associated with Metaverse marketing by drawing on insights from disciplines such as marketing, psychology, sociology, and computer science. However, important gaps remain in understanding the dynamic nature of branding within these virtual environments (Carrión, 2024), warranting further empirical research to better capture the complexities and opportunities of Metaverse-based commerce.

To guide this study, the key factors that influence consumers' willingness to buy (WTB) within the Metaverse branding context are clearly categorized and defined. The current study proposes that brand interaction and engagement, brand awareness and knowledge, emotional and psychological factors, perceived value and experience, and social and incentive factors significantly influence WTB. Figure 1 presents the conceptual framework, followed by the justification of each hypothesis.

2.1. Brand Interaction and Engagement

In the Metaverse, active brand engagement involves customers participating in virtual events, exploring branded experiences, engaging in gamified activities, earning rewards, and contributing via co-creation and feedback. Prior studies emphasize that user behavior is significantly shaped by active engagement (Sung et al., 2022; Rasool et al., 2020). This dimension includes two key elements:

- Meta-brand interactivity: The level and quality of user interaction with brands in the virtual environment.
- Brand engagement: The extent to which users are involved with meta-branded content and activities.

Drawing from this literature, the following hypothesis is proposed:

H1: There is a positive correlation between brand interaction and engagement in the Metaverse and consumers' willingness to buy.

2.2. Brand Awareness and Knowledge

Brand awareness refers to consumers' recognition of a brand's presence and activities within the Metaverse. Brand knowledge encompasses consumer understanding of the brand's products, values, and identity in this environment. Previous studies have demonstrated that brand awareness enhances both recognition and recall, playing a crucial role in purchase decisions (Aaker, 1991; Shahid, 2017). Furthermore, higher awareness and knowledge are associated with greater price premiums, as consumers are more willing to pay for trusted brands (Tariq et al., 2017; Hameed et al., 2023).

H2: Brand awareness and knowledge within the Metaverse are positively correlated with willingness to buy.

2.3. Emotional and Psychological Factors

Emotional and psychological factors are essential in influencing consumer willingness to buy—particularly in immersive virtual environments. The ability to create emotionally resonant experiences and foster psychological connections in the Metaverse plays a vital role in shaping user behavior. Studies consistently show that trust, emotional attachment, and brand affinity significantly affect consumer decision-making (You et al., 2021; Joshi et al., 2023). The multisensory, immersive nature of platforms like the Metaverse amplifies this connection, strengthening the consumer-brand relationship (Huang et al., 2024; Dash et al., 2024; Rane et al., 2023).

H3: Emotional attachment and trust developed through Metaverse experiences are positively correlated with consumers' willingness to buy.

2.4. Perceived Value and Experience

In the Metaverse, experiential value is especially significant due to the interactive and immersive nature of the platform. A positive virtual experience—marked by enjoyment, engagement, and personalization—can substantially enhance consumers' perceived value (Suh, 2024). Perceived value itself is multifaceted, encompassing functional, emotional, and experiential dimensions (Shiau et al., 2023; Shamim et al., 2024).

H4: Perceived value and virtual experiences with the brand in the Metaverse are positively correlated with willingness to buy.

2.5. Social and Incentive Factors

Social influence and incentive mechanisms play a vital role in shaping consumer behavior in virtual environments. These include peer influence, social proof, and brand communities, as well as financial or emotional incentives such as discounts, loyalty rewards, and referral programs. Research confirms that such factors

significantly impact purchase intentions and brand loyalty (Shah et al., 2023; Naeem et al., 2021; Qazzafi, 2020; Prabhu, 2020; Peng et al., 2023).

H5: Positive social proof and incentives within the Metaverse are positively correlated with consumers' willingness to buy.

3. Methodology

This study employed a quantitative research methodology to examine the impact of meta-brand engagement (MBE) on consumer willingness to buy (WTB). Using a cross-sectional survey design, data were collected online from 350 active Metaverse users through purposive sampling. To ensure validity, the data were carefully screened and cleaned. Analytical techniques, including correlation analysis and multiple regression, were used to assess the relationships between MBE factors and WTB. This structured approach enabled the study to test five hypotheses, offering valuable insights into the dynamics of meta-brand engagement and its influence on virtual consumer behavior.

The sample primarily targeted Gen Z and Millennial users, two generations known for seamlessly integrating their digital and physical lives, effectively shaping a new version of reality (Xue et al., 2020). According to Deloitte's 2023 Digital Media Trends Study, individuals aged 14–40—comprising Gen Z and Millennials—are significantly more likely than older generations to express interest in regularly using virtual reality (VR) headsets for a variety of immersive experiences. Many members of these age groups are already engaging with virtual platforms, making them ideal respondents for this research. The demographic profile of the respondents is presented in Table 1.

Table 1: Demographic profile

	Sample size	Percentage (%)
Gender		
Female	145	41
Male	205	59
Age		
< 20 yrs	45	13
21 to 30 yrs	178	51
31 to 40 yrs	127	36
Education level		
High school	21	6
Graduate	132	38
Masters	197	56
Occupation		
Student	106	30
Employed	218	63
Self employed	7	2
Freelancer	19	5

4. Data Analysis and Results

Given the exploratory nature of the research, correlation and regression analyses were employed to model and predict the relationships between variables. This

study seeks to explore how interactions within the Metaverse influence real-world willingness to buy (WTB). Using correlation and regression techniques helps provide a clearer understanding of how different aspects of meta-brand engagement (MBE) affect consumer behavior, offering predictive insights and validating the proposed relationships.

Data analysis was conducted using SPSS and consisted of two levels: descriptive and analytical statistics. At the analytical level, Spearman's correlation and multiple regression analyses were applied to test the hypotheses and determine the nature and strength of the relationships between the independent variables (the MBE factors) and the dependent variable (willingness to buy).

4.1. Correlation Analysis

Spearman's correlation was used to assess the relationships between the variables: Brand Interaction and Engagement (BIE), Brand Awareness and Knowledge (BAK), Emotional and Psychological Factors (EPF), Perceived Value and Experience (PVE), and Social and Incentive Factors (SIF), in relation to WTB. The results are presented in Table 2.

Table 2: Correlation coefficients among variables

Hypothesis	Variables	r	p-value	Result
H1	BIE	.634**	.000	Accepted
H2	BAK	.656**	.000	Accepted
H3	EPF	.742**	.000	Accepted
H4	PVE	.563**	.000	Accepted
H5	SIF	.322**	.000	Accepted

The results show that BIE, BAK, EPF, and PVE all exhibit strong positive correlations with WTB, with correlation coefficients ranging from 0.563 to 0.742. The SIF variable shows a moderate positive correlation ($r = .322$), though still statistically significant. These findings indicate a generally strong relationship between meta-brand engagement components and willingness to buy.

4.2. Regression Analysis

To evaluate the collective impact of the independent variables on WTB, a multiple regression analysis was conducted. Table 3 presents the regression outcomes, including beta coefficients, standard errors, t-values, and significance levels.

Table 3: Regression results – Impact of MBE factors on willingness to buy

Hypothesis	Variable	β	Std. Error	t	p-value	Result
H1	BIE	−.075	.150	−0.877	.382	Not Accepted
H2	BAK	.890	.082	10.853	.000*	Accepted
H3	EPF	.773	.100	10.321	.000*	Accepted
H4	PVE	.105	.103	1.289	.200	Not Accepted
H5	SIF	−.272	.048	−4.233	.000*	Accepted

*Dependent Variable: Willingness to Buy (WTB); *Significant at $p < 0.05$

The table above provides an overview of the regression results, including beta coefficients (β), standard errors, t-values, and significance levels (p-values) for each variable in the model. These results form the basis for the conceptual structural model, presented in Figure 1, which visually represents the relationships between the five independent variables—Brand Interaction and Engagement (BIE), Brand Awareness and Knowledge (BAK), Emotional and Psychological Factors (EPF), Perceived Value and Experience (PVE), and Social and Incentive Factors (SIF)—and the dependent variable, Willingness to Buy (WTB).

In Figure 1, solid lines indicate statistically significant relationships, while dotted lines denote non-significant paths. This visual framework provides a clearer understanding of which MBE dimensions meaningfully contribute to predicting consumer behavior in the Metaverse. The discussion below presents a detailed interpretation of each relationship based on the regression analysis.
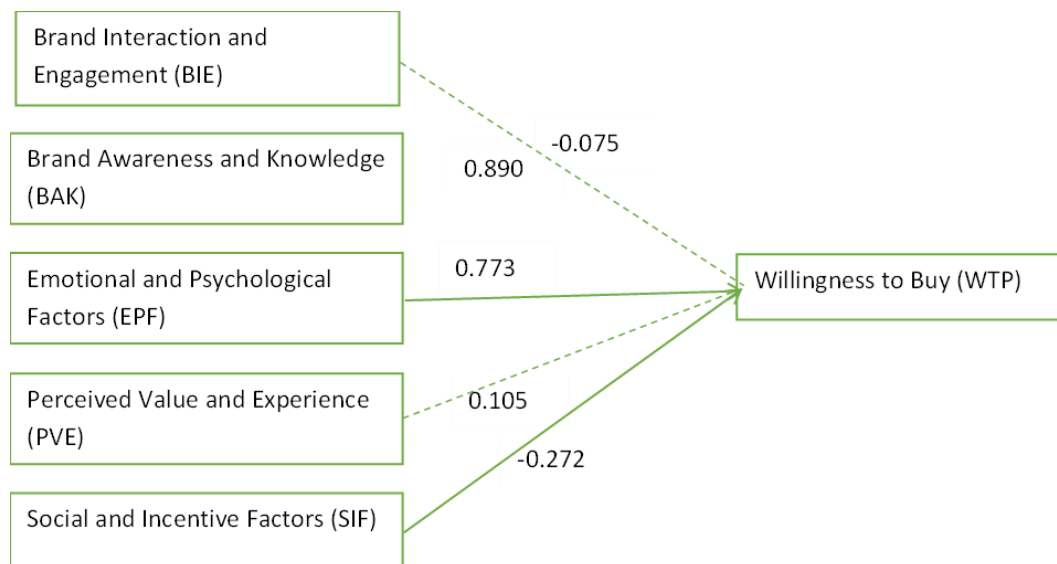

Figure 1: Structural model of meta-brand engagement and willingness to buy (*Source: Authors*)
Legend: ——— Significant relationship and - - - - Not significant

4.3. Brand Interaction and Engagement (BIE) and Willingness to Buy

The beta coefficient for BIE is negative (β = −0.075), suggesting an inverse relationship with willingness to buy. However, the relationship is not statistically significant (p = .382), as the p-value exceeds the standard threshold of 0.05. Therefore, **H1 is rejected**. This implies that, in this sample, brand interaction and engagement within the Metaverse do not significantly influence consumers' purchase intentions. This finding contrasts with previous research, which emphasized brand engagement as a strong predictor of repurchase intention.

4.4. Brand Awareness and Knowledge (BAK) and Willingness to Buy

The results show a strong and statistically significant relationship between BAK and WTB (β = .890, t = 10.853, p = .000). This supports **H2**, confirming that brand awareness and knowledge within the Metaverse play a crucial role in shaping consumer willingness to buy. These findings align with prior studies (Hameed et al., 2023), which highlight the importance of brand recognition and familiarity in influencing purchase decisions.

4.5. Emotional and Psychological Factors (EPF) and Willingness to Buy

EPF demonstrates a significant positive impact on willingness to buy, with a beta coefficient of β = .773 and a highly significant p-value (p = .000). This result validates **H3** and reinforces the argument that emotional connection, trust, and psychological involvement in virtual environments significantly influence consumer decision-making. These findings are consistent with previous literature (Sun et al., 2023) emphasizing the role of emotional resonance in digital and immersive brand experiences.

4.6. Perceived Value and Experience (PVE) and Willingness to Buy

Although the relationship between PVE and WTB is positive (β = .105), it is not statistically significant (p = .200). Thus, **H4 is rejected**, indicating that in this context, perceived value and immersive experience do not meaningfully affect consumers' willingness to buy. This result partially diverges from studies such as Park et al. (2023), Wu et al. (2023), and Saha et al. (2023), which found experiential value to be a notable driver of purchase intention in other virtual or retail settings. This suggests that the strength of this relationship may depend on specific brand or platform contexts.

4.7. Social and Incentive Factors (SIF) and Willingness to Buy

The analysis reveals a statistically significant negative relationship between SIF and WTB (β = $-$.272, p = .000), supporting H5. This indicates that increased reliance on social proof or incentive-based strategies may not necessarily lead to higher purchase intent and could, in some cases, reduce it. This counterintuitive result may reflect user skepticism toward overt incentivization or social pressure in virtual environments, where authenticity and user-driven engagement are highly valued.

5. Conclusion

This section of the study explores the intersection between startups and artificial intelligence (AI), with the overarching goal of identifying how AI adoption contributes to the sustainability of startups. The specific objectives were to

highlight the most successful startups leveraging AI technologies and to identify the countries investing most heavily in this domain.

A comprehensive review of scientific articles, industry reports, and credible online sources reveals that AI is increasingly being embedded into the operational frameworks of startups across multiple economic sectors. Startups are utilizing AI to optimize business processes, personalize customer experiences, improve data-driven decision-making, and innovate new product offerings—all of which enhance scalability and resilience.

The study aimed to explore the association between various meta-branding factors—namely, brand interaction and engagement, brand awareness and knowledge, emotional and psychological factors, perceived value and experience, and social and incentive factors—and consumers' willingness to buy in the context of the Metaverse.

The correlation analysis revealed statistically significant positive relationships ($p < 0.01$) across all five variables, confirming strong associations with willingness to buy. Among these, emotional and psychological factors emerged as the most influential, followed by brand awareness and knowledge, brand interaction and engagement, and perceived value and experience, which showed strong to moderate correlations. Social and incentive factors displayed the weakest, yet still statistically significant, correlation.

The regression analysis further clarified these relationships. It confirmed that emotional connection, brand knowledge, and social and incentive factors significantly influence consumers' willingness to buy. In contrast, brand interaction and engagement and perceived value and experience did not demonstrate a statistically significant impact in the predictive model. These results suggest that while all variables are associated with willingness to buy, not all contribute equally to a predictive sense.

This study provides valuable insights for both Metaverse researchers and marketing practitioners. It highlights the importance of emotional resonance and brand familiarity in driving consumer behavior in immersive virtual environments, while also pointing to the nuanced role of social incentives.

Building on these findings, several future research avenues are worth pursuing. First, interdisciplinary collaborations between marketing, psychology, computer science, and other related fields can deepen our understanding of metaverse-based brand engagement. Second, researchers should consider conducting return on investment (ROI) analyses to assess the financial effectiveness of Metaverse marketing strategies. Third, more focused investigations into consumer behavior and decision-making processes in virtual environments could illuminate what drives purchasing intent in immersive spaces. Finally, future studies should examine the role of social interactions and community building, especially how they shape long-term consumer engagement and brand loyalty within Metaverse ecosystems.

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