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Dualism of Attitudes Towards the Metaverse as a Challenge for Online Consumer Behaviour Researchers

Abstract

The aim of this study is to identify the different attitudes towards the metaverse among consumers who use it. The authors consider this issue particularly important due to the multifaceted and often abstract nature of the metaverse, which combines various experiences that shape attitudes. The metaverse is not only about creativity, hedonism, work, entertainment, social services, education, leisure, and shopping. It also encompasses areas that raise concerns related to ethics, data security, regulations, and potential harmful psychological impacts on users.

The study analysed the attitudes described in a survey of 625 users of the metaverse. The analysis was conducted using factor analysis. The conclusions drawn from the analysis focus on two perspectives, namely that of the management of organisations that want to use the metaverse commercially, e.g. for sales or to transfer some responsibilities to virtual worlds, and that of a social science researcher. From the first perspective, the most relevant element is to nullify the risks that may arise in the minds of the users—namely those concerning loneliness, alienation, addictions, or mental health. From the perspective of a social science researcher, the metaverse presents significant challenges for philosophy, psychology, sociology, economics, finance and management.

Keywords: metaverse, customer behaviour, generations, virtual reality, attitudes


Definitions


Each of the metaverse characteristics mentioned above can potentially shape user attitudes which, if insufficiently identified, may significantly endanger the creation of offerings and business models within this environment. Dwivedi et al. (2022) makes an important point that the metaverse is a tool for solving problems and overcoming challenges in the real world (e.g., work, social life, education, healthcare) while also being profit-oriented (e.g., gaming, blockchain-based business, virtual real estate, and monetised role-playing through avatars). For this reason, research on user activities within the metaverse and their attitudes is an interesting area of study.

In the literature, an attitude is defined as an “internal affective orientation explaining an individual’s action” (Reber, 1985, p. 65) and is composed of three components: cognitive, affective, and behavioural (e.g., Karpiński & Hilton, 2001; Wojciszke, 2011). These components require a brief explanation, as they influence to some extent the proposed research hypotheses. The cognitive component of an attitude is defined as beliefs formed as to the properties of the object of the attitude, while the behavioural component concerns actions towards the object of the attitude. In turn, as noted by Greenwald and Banaji (1995) and Wojciszke (2011), the affective element relates to emotional dispositions towards the object of the attitude. Thus, attitudes towards the metaverse are primarily formed based on beliefs, emotions, or behaviours.

It is worth bearing in mind the lack of awareness of sources of attitudes, and the automatic nature and duality of attitudes. The duality of attitudes refers to the situation where the same object is evaluated differently on two levels—automatic (implicit) and controlled (explicit) (Wilson et al., 2000, p. 104). An implicit attitude is a record of

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past experiences that evoke favourable or unfavourable feelings (Greenwald & Banaji, 1995). Moreover, Wilson et al. (2000), in defining implicit attitudes, find that the sources of implicit attitudes are not consciously recognised, that implicit attitudes are activated automatically, and that they cause unconscious, uncontrolled reactions and behaviours through which the individual unconsciously expresses their attitude and which they do not attempt to control. Implicit attitudes are evaluative dispositions towards social objects that are not necessarily subject to introspection, and as a result, an individual may be unaware of their existence (Madhavaram & Appan, 2010).

Explicit and implicit attitudes towards the same object do not have to be identical (Devine, 1989; Wilson et al., 2000). As Wielicka-Regulska et al. (2011) point out, in studies, attitudes resulting from conscious processing were measured using direct methods, where respondents performed a self-assessment of their attitudes, typically being aware of the study's purpose. However, due to the weak correlation between attitudes measured in this way and actual behaviour, the use of attitudes as predictors of behaviour has become limited (Hughes et al., 2011; Maison, 2004). In the literature, this dichotomy between explicit attitudes and behaviour is explained by the difficulty of defining one's stance using traditionally employed scales. Respondents may not have an explicit attitude at the time of the study or may have trouble recalling or refreshing it. This leads to ambiguous responses, answers invented for the sake of the study, or no response at all.

Respondents may also be unwilling to disclose their true explicit attitude, for example, due to subconsciously succumbing to the effect of social expectations (Gattol et al., 2011). Greenwald and Banaji's (1995) approach remedies this. They proposed a concept of implicit attitudes as "introspectively unidentified or inaccurately identified traces of past experience that mediate favourable or unfavourable feeling, thought, or action toward social objects" (p. 6). As a result, it is possible for two different attitudes towards the same object to exist simultaneously (Wilson et al., 2000). Greenwald and Banaji's concepts are still used in research and have stood the test of time, although with different emphases (Bar-Anan & Vianello, 2018).

Wielicka-Regulska et al. (2011) emphasise that explicit attitudes are those measured directly, most often through questionnaires or interviews, where deliberate and carefully considered judgments and opinions are obtained. Implicit attitudes, on the other hand, are measured using indirect methods.

Research Problems

This article poses the following main research question: Can the generational affiliation of a broad range of metaverse users, and the experiences they have accumulated throughout their lives have an unconscious effect on their behaviours and attitudes towards the metaverse? The hypothesis adopted is that the younger the generation, the more open they

will be. The selected analytical method for revealing implicit attitudes was factor analysis.

In factor analysis, a dependency model is considered in which observations concern only dependent variables, while independent variables are generated during the analytical procedure. Hence, observed variables are referred to as *real variables*, while independent variables, not recorded in reality, are referred to as *common factors* or simply *factors*. The factor analysis model thus assumes the existence of relationships between a set of real variables and a (smaller) set of unobservable factors. (Rószkiewicz, 2002, p. 194)

The hidden feature examined using other declarative indicators was the **attitude of openness towards the metaverse**. The following variables from a questionnaire based on a symmetrical Likert scale, where 5 means *strongly agree* and 1 means *strongly disagree*, were selected as declarative indicators: The metaverse is a space for more frequent social interactions; The metaverse is an ideal space for making new acquaintances; I believe virtual realities can reduce inequalities in access to certain content for people living in small towns or rural areas; The metaverse is an ideal space for engaging with culture; I believe virtual realities can reduce inequalities in access to certain content for older or lonely individuals; The metaverse is an ideal space for shopping; Contact with other people online is just as valuable as offline; The metaverse leads to loneliness and alienation; The metaverse is addictive; The metaverse will increase the likelihood of mental illnesses; The metaverse is for those who are afraid to approach others in real life; The metaverse is only for young people; The metaverse is just entertainment.

The metaverse, often incorrectly equated with virtual reality, is one of many contemporary technologies that first emerged in the works and minds of visionary writers and later, thanks to technological advancements, became permanently embedded in economic practice. In 1935, Weinbaum, in his short story *Pygmalion's Spectacles*, presented the first vision of virtual reality. Subsequent stages in the development of this technology have enabled the transition from a set of independent virtual worlds to a network of virtual worlds characterised by immersion in virtual experiences, easy access, and the ability to build identity, interoperability, and scalability (Dionisio et al., 2013). Today, the metaverse enables not only access to virtual reality but also interpersonal interactions, work, the development of passions, entertainment, leisure, and economic activities.

The development of the metaverse involves not only the use of virtual reality (Horoch, 2023; Schlichting et al., 2022; Tayal et al., 2022) but also platforms for conducting marketing communication (Buhalis et al., 2023; Hollensen et al., 2022; Sarna et al., 2024) and the provision of social services (Allam et al., 2022; Jenifer et al., 2023; Mystakidis, 2022; Uluba Hamurcu,

2022). Nowadays, this type of environment is increasingly recognised as a space for work (Koochang et al., 2023; Ning et al., 2021), entertainment and leisure (Demir et al., 2022; Ioannidis & Kontis, 2023; Tsai, 2024), education (Jagatheesaperumal et al., 2022; Kaddoura & Hussein, 2023; Kye et al., 2021; Lin et al., 2022), and social development (Aljanabi & Mohammed, 2023; Bale et al., 2022), although it is not free of legal problems (Szpringer, 2023).

This environment provides a broad space for potential users through the synergy of immersive digital experiences and a rich array of socio-economic activities. In the context of the challenges faced by consumers exploring the metaverse, issues such as privacy and security in virtual spaces are frequently highlighted (Abdulsattar Jaber, 2022; Fernández & Hui, 2022; Kumar, 2008; Wang et al., 2023; Zhao et al., 2023). Nevertheless, it remains an open space for new business models and customer acquisition strategies (Cheng et al., 2022; Papagiannidis & Bourlakis, 2010; Spajić et al., 2022; Surma, 2023).

Consumers in the metaverse are often subject to in-depth analysis aimed at perfecting product offerings (Kovacova et al., 2022; Nica et al., 2022). For this reason, recognising hidden attitudes and factors influencing their socio-economic behaviours is crucial in helping to build customer value (Du et al., 2022; Lee & Park, 2023). Research into customer behaviours in the metaverse focuses on several dimensions, including the impact of virtual reality and the *Internet+* environment on buyer behaviours (Busse & Strauss, 2023; Jiang & Ye, 2019); identifying challenges and factors that encourage SMEs to implement solutions within the metaverse (Gil-Cordero et al., 2024); identifying and developing models and methodologies for analysing e-customer behaviours to understand the factors underlying decision-making in the metaverse (Kwan et al., 2005; Sheth & Mittal, 2003).

Another significant area of analysis involves identifying hidden attitudes in the context of consumers' economic choices. An intriguing aspect is the connection between interest in the metaverse and its relatively limited impact on purchasing decisions (Breiter & Siegfried, 2022). However, this scientific area remains underexplored and requires further analysis (Toraman, 2022). Together, these studies highlight the complexity and multidimensionality of customer behaviour in the metaverse and the need for a comprehensive understanding of its various aspects.

Empirical Study

The research section utilised quantitative analysis conducted as part of a grant, on *The Metaverse as an Environment for Implementing Sustainable Development Strategies – Opportunities, Risks, and Challenges*, carried out by the Institute of Value Management, Collegium of Business Administration, SGH Warsaw School of Economics. The study was conducted between 20 November and 7 December 2022 by IQS using an online panel and the CAWI method, based on

a purposive sample of broad range of $N = 625$ users of the metaverse.

Using factor analysis calculations with IBM SPSS command files, applying the maximum likelihood extraction method and Oblimin rotation, a model matrix was obtained that explained 41% of the variance from the sample using three factors. Despite the limitations of the research tool (quantitative method), efforts were made to identify attitudes towards virtual worlds, which would only indirectly reveal the respondents' hidden beliefs. Nevertheless, comparing the components in the factor analysis yielded interesting results regarding implicit elements.

The results of the factor analysis, specifically the factor loading matrix, are presented in table 1. For ease of data interpretation, values below 0.3 were excluded from the table.

The obtained matrix indicates three hidden, uncorrelated traits explained by the selected variables—where initially, only one was assumed, which is **openness** towards the metaverse. In this case, however, three hidden traits (2 and 3) were identified. They are explained by their respective groups of indicators.

Let us tentatively name the first trait **openness to opportunities**.

The second trait can be referred to as **awareness of negative effects**.

The third trait can be named **distance**.

The conclusion from the analysis emerges when examining the factor loadings of the indicators forming the factors. The strongest indicators for *openness to opportunities* are:

- the metaverse is a space for more frequent social interactions (0.757),
- the metaverse is an ideal space for making new acquaintances (0.698).

For *awareness of negative effects*, the three strongest indicators are:

- the metaverse leads to loneliness and alienation (0.674),
- the metaverse is addictive (0.657),
- the metaverse will increase the likelihood of mental illnesses (0.595).

The next step in the analysis was an attempt to create three indices to measure the three discussed hidden traits. The indices were constructed in an identical manner—as the sum of all Likert scale values (1–5) of the indicators, divided by the number of indicators, resulting in continuous indices on a scale of 1 to 5.

The created indices showed the following average levels in the studied population: openness to opportunities: 3.23, awareness of negative effects: 3.25, and distance: 2.97. To verify the hypothesis posed at the beginning of the text, Pearson's correlation was calculated between the generational variable and each index (table 2). The generational variable was derived by transforming the age variable based on the following intervals: Baby Boomers – 1945–1964, Gen X – 1965–1979, Gen Y – 1980–1994, Gen Z – 1995–2009 (McCrimble, 2014, p. 7).

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Table 1

Factor Analysis – Results

Statements	Factor		
	1	2	3
The metaverse is a space for more frequent social interactions	0.757		
The metaverse is an ideal space for making new acquaintances	0.698		
I believe virtual realities can reduce inequalities in access to certain content for people living in small towns or rural areas	0.681		
The metaverse is an ideal space for engaging with culture	0.669		
I believe virtual realities can reduce inequalities in access to certain content for older or lonely individuals	0.632		
The metaverse is an ideal space for shopping	0.571		
Contact with other people online is just as valuable as offline	0.454	-0.362	
The metaverse leads to loneliness and alienation		0.674	
The metaverse is addictive		0.657	
The metaverse will increase the likelihood of mental illnesses		0.595	
The metaverse is for those who are afraid to approach others in real life		0.350	
The metaverse is only for young people			0.583
The metaverse is just entertainment			0.307

Source: authors' own work.

Table 2

Correlations between the Generational Variable and the Indices

Generation	Openness to opportunities	Awareness of negative effects	Distance
Pearson's correlation	-0.25	-0.11	0.063
Significance (two-tailed)	0.53	0.786	0.115

Source: authors' own work.

The results of the correlations between the generational variable and the indices derived from factor analysis do not confirm the hypothesis, and thus it has been disproven. It turns out that generation does not influence hidden attitudes towards the metaverse. To

further examine how the population may differ in this regard, correlations with variables related to gender, education, and the size of the place of residence were examined. The results are presented in tables 3, 4 and 5.

Table 3

Correlations between the Gender Variable (1 – Female, 2 – Male) and the Indices

Gender	Openness to opportunities	Awareness of negative effects	Distance
Pearson's correlation	-0.06	-0.115**	-0.088*
Significance (two-tailed)	0.13	0.00	0.03

Note. ** Correlation significant at the 0.01 level (two-tailed).

*Correlation significant at the 0.05 level (two-tailed).

Source: authors' own work.

Table 4

Correlations between the Education Variable and the Indices

Education	Openness to opportunities	Awareness of negative effects	Distance
Pearson's correlation	-0.065	0.136**	-0.028
Significance (two-tailed)	0.104	0.001	0.479

Note. ** Correlation significant at the 0.01 level (two-tailed).

Source: authors' own work.

Table 5*Correlations between the Size of the Place of Residence Variable and the Indices*

Size of place of residence	Openness to opportunities	Awareness of negative effects	Distance
Pearson's correlation	-0.025	0.080*	-0.016
Significance (two-tailed)	0.525	0.044	0.696

Note. *Correlation significant at the 0.05 level (two-tailed).

Source: authors' own work.

Table 6*Average Level of the Awareness of Negative Effects Index Across Groups with Different Education Levels*

Education	Awareness of negative effects – average
Primary	3.16
Secondary	3.26
Higher	3.38

Source: authors' own work.

Statistically significant correlations were primarily found for the second index, related to awareness of negative effects. The strongest, though weak, correlation was observed with the education variable.

The obtained averages for groups with different education levels show that if there is any relationship between hidden attitudes towards the metaverse, the most interesting factor appears to be the awareness of risks associated with new technologies. This awareness increases with the level of education of users. However, this relationship is rather weak.

The issue was also examined of whether hidden attitudes are in any way related to consumers' declared behaviours. First, respondents with a very strong particular hidden trait were selected from the population, choosing individuals who scored 4–5 on the scale. This resulted in the following groups:

open to opportunities ($N = 97$), aware of negative effects ($N = 104$), and distance ($N = 86$). Next, their responses to the question: Which of the following situations best describes your experiences with the Internet over the past three months? were analysed.

Particular attention should be paid to the differences in the last four rows of the table. It is evident that individuals open to opportunities in the metaverse are much more likely than those aware of negative effects or distant to visit virtual worlds, socialise in them, create avatars, or work in them. Thus, hidden attitudes translate into real behaviours.

Conclusions

Summarising the analyses conducted on empirical data, while there are some correlations between demographic data and hidden attitudes towards the metaverse, these correlations are very weak or insignificant. This suggests that a hidden attitude towards the metaverse is not a matter of generational affiliation or gender but rather a state of mind, norms, and attitudes that are not defined by demographic factors.

From the perspective of organisational management aiming to utilise the metaverse commercially—whether for sales or to transfer certain responsibilities to virtual worlds—the most critical aspect is mitigating risks that may arise in users' minds, particularly those related to loneliness, alienation, addiction, and mental health.

Table 7*Declared Online Behaviours of Metaverse Users by Different Types of Hidden Attitudes*

	Openness to opportunities $N = 97$	Awareness of negative effects $N = 104$	Distance $N = 86$
Using social media services	82%	82%	79%
Watching VoD films, YouTube, etc.	77%	80%	67%
Writing emails	73%	76%	69%
Purchasing something in virtual worlds	62%	68%	78%
Listening to music/podcasts	70%	67%	59%
Socialising (e.g., playing games in virtual worlds, chatting, meeting people)	45%	32%	28%
Visiting virtual worlds (e.g., virtual museum, exhibition, city)	32%	25%	27%
Using an avatar (e.g., creating a character in a game)	24%	20%	15%
Working in virtual worlds	20%	10%	16%

Source: authors' own work.

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The most effective way to address this is by leveraging the strongest indicators from the first index, as the advantages of openness to opportunities may simultaneously serve as barriers for some users. Therefore, the metaverse should be positioned as a space for frequent social interactions and forming new relationships.

The metaverse demands a new perspective for social sciences. It is not an area where all research methodologies from the real world can be applied on a 1:1 scale. It presents a significant challenge for philosophy, psychology, sociology, economics, finance and management.

Looking at the studies presented, it is worth outlining several key research directions as a final reflection, which could be explored through in-depth dual attitude testing. First and foremost, such tests should be integrated into the analysis of the effectiveness of various metaverse user interfaces. It is essential to remember that the current entry barrier to this space involves the costs and effort required to obtain and use Augmented Reality (AR) and Virtual Reality (VR) devices.

Another important aspect concerns attitudes towards Artificial Intelligence (AI) and intelligent agents, which play an increasingly significant role in the metaverse. Will AI-developed tools that communicate with consumers in a natural and effective manner be a source of explicit attitudes with positive overtones? Or will explicit attitudes remain favourable while, at the same time, negative implicit attitudes emerge as a result of experiences? This issue is particularly important in communication, where identity is already constructed, revealing internal motivations, beliefs, values, memories, and episodic memory.

Narrowing the scope of research directions to management and marketing, duality of attitudes will influence the creation of user interactions and how they are experienced. This is due to the novelty value of a solution that captures attention, how users perceive the items on offer to be useful, and virtual aesthetics in the broad sense. Considering the technical aspects of participation, such as avatar design, artefacts, and Non-Fungible Tokens (NFTs), these areas also provide opportunities for studying duality of attitudes. How do elements that engage users in the metaverse impact how real and psychological ownership of virtual products is perceived?

Another challenge is the need to redefine the customer journey map and the purchasing process within the metaverse. Each stage of interaction with a product, service, or brand is devised within completely personalised experiences and *touchpoints*. The customer is continuously accompanied by a virtual sales assistant, adjusting tools and communication methods. This scenario presents an opportunity where knowledge about duality of attitudes can be leveraged to develop new approaches to customer persona building and insight generation. Additionally, comparing attitudes will help sellers understand whether virtual products in the metaverse influence the perception and purchase of real-world products, and vice versa. Acquiring insights into attitudes will help to optimise influencer strate-

gies, which may be free from traditional real-world constraints. Furthermore, brands can focus not only on image and communication but also on designing the metaverse in a way that delivers the expected experiences, thereby eliminating barriers hindering the development of virtual worlds.

One of the most important aspects of the metaverse revealed in the empirical study is inclusivity. This becomes apparent not only in the elimination of geographical, gender, racial, age, and health-related barriers to employment but also in the elimination of limitations (such as time, space, or financial constraints) in accessing cultural services. The inclusivity of the metaverse also supports education, where transportation challenges and safety risks for certain age groups cease to be relevant. Additionally, minors voluntarily enter the labour market within the metaverse. Thanks to their creativity, they are able to monetise ideas that would be difficult to implement in the real world. These aspects of inclusivity contribute to a rapid shift in human attitudes, making them a worthy subject of further research.

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