CAMILO CASTELO BRANCO
agrupamento de escolas

All talk and no trousers

A Social Influence Perspective on drivers of Metaverse use

by

Francisco Azevedo, nº14

Martim Cruz, nº23

Escola Secundária Camilo Castelo Branco

2022/23

Índice

List of Figures

List of Tables

I. Introduction

It's December 8th 2022 and a user opens the H&M website perhaps in search of a last-minute Christmas outfit and comes across outstanding and futuristic outfits, accompanied by the inviting banner "Enter the Metaverse". "A Metaverse design story" (Johnson, 2022) draws him to a pixelated world depicting H&M's newest collection and latest attempt at keeping up with the fashion industry's demanding trends. Before truly entering H&M's simplified Metaverse, the user sits back and has to watch his avatar fall directly into a black hole on the ground and emerge on a desert-themed virtual world, where virtual mannequins dressed head-to-toe in H&M apparel pose the brand's most recent clothing assortment whilst other avatars move around perhaps summoned here by the very same curiosity trait.

The H&M Group was not the first, and surely will not be the last at harnessing the use of Metaverse in the fashion industry. In fact, 67% of retail brand managers revealed their brand's interest and first steps regarding the addition of Metaverse to their business model (Kit-Powell, 2022). 82% of brand executives predict the incorporation of Metaverse into their strategies within the next three years (PricewaterhouseCoopers., n.d.) Brands are in, but what about users?

With the Metaverse buzz that flooded ever since Zuckerberg first announced his visionary intention for Facebook (Kraus *et al.*, 2022), the world witnessed a rise in digital fashion's popularity (Grillo, 2022). 1 in 3 global respondents have already acquired a virtual fashion item of some sort (Sandhu *et al.*, 2022) while the willingness to shop in the Metaverse is shared by 30% of consumers (Kit-Powell, 2022). Users view virtual fashion as a chance to embody their identities and themselves in this new virtual milieu (Armitage, 2022), and the lack of designing and creative constraints of digital apparel regarding textures, colours or dimension appeals to them and uncovers new potential value creation touchpoints and possibilities for customer engagement (Amed *et al.*, 2021). While still in an embryonic state of evolution (Grillo, 2022), the study of the Metaverse is an important step to take now so as to pave the way for the transformational impact it is expected to lead in the upcoming future (Standish and Reddy, 2022).

This study set out to examine the factors driving users' intention to use the Metaverse as well as the role of fashion involvement. While mainly exploratory, analysing in depth the Metaverse topic from a social influence perspective, the

effectiveness of certain variables in explaining intention to use and the moderating role of fashion clothing involvement were demonstrated.

The empirical findings add to the existing body of literature by testing and finding significance in relationships not previously studied in a Metaverse setting. The literature's gap regarding the need for current marketing strategies to be adapted to be more effective in the Metaverse (Kim, 2021; Joy *et al*., 2022) yet needing to depart from a better understanding of customers' perception of this new environment, and their motives behind Metaverse use (Lee *et al*., 2021; Dwidevi *et al.*, 2022). Thus, by hypothesizing and testing users' underlying drivers of Metaverse use from a social influence perspective, this study enriches extant research on technology acceptance and use, as social elements have been proven relevant in this context (Dwidevi *et al.*, 2022; Hennig-Thurau *et al.*, 2022).

The present research firstly provides a literature review departing from Virtual Worlds to arrive at the Metaverse and its idiosyncrasies. Section three defines research questions and provides a theoretical framework for the conceptual model, while sample characteristics and data collection settings are provided in section four. Section five presents the data analysis results, followed by a general discussion of the main findings and theoretical and managerial implications in section six. The study concludes with section seven by hinting at limitations and tips for future research.

II. Literature Review

A Virtual World (VW) may be defined as a "persistent online social space", where participants are allowed the experience of simultaneous existence and interaction with others (Schroeder, 2008, p.2), also fostering a sense of ubiquity by coexisting both in real time and life all the while being physically distant in its computed simulacrum (Dionisio *et al.,* 2013; Barnes and Pressey, 2011).

One cannot mention the Metaverse without acknowledging that VWs are its prequel. In VWs, users, embodied through avatars (personalized representations of their human persona), move around, forming their own online identity, feeling rather comfortable in expressing themselves (Tokel and Karataş, 2014). VWs are unique, standing out from multiplayer online games and social network sites (Mäntymäki and Riemer, 2014) due to the combination of both socio-technical phenomena and other features (Gilbert, 2011; Messinger *et al.*, 2009). Besides fostering interaction and ongoing communication, VWs grant the chance of conducting business (Bleize and Antheunis, 2019), already implying their own form of currency, feasible to be in synergy with real money. Thus, the existence of in-world mechanisms catalysing economic activities may stimulate the consumption of VWs (Verhagen *et al.* 2012). Plenty of influential brands - e.g., *L'Oréal Paris*, *IBM*, *Toyota*, etc. - were already investing in building their virtual presence more than a decade ago (Barnes and Pressey, 2011), when VWs were still falling behind nowadays' technological improvements.

The amalgam of intense media richness and social presence translates into the capability to become great venues for brands to potentiate commercial activity and include VWs as a channel present in an otherwise orthodox marketing-mix (Bleize and Antheunis, 2019; Barnes and Pressey, 2011).

III. The Metaverse

The Metaverse is "an interconnected web of ubiquitous virtual worlds partly overlapping with and enhancing the physical world. These virtual worlds enable users who are represented by avatars to connect and interact with each other, and to experience and consume user-generated content in an immersive, scalable, synchronous, and persistent environment." (Weinberger, 2022, p. 13).

Ever since Mark Zuckerberg announced his plan to rebrand Facebook to a Meta World in an attempt to prepare for the future, the word Metaverse exponentially increased in relevance, especially in the academic arena (Aburbeian *et al.*, 2022) with high-ranked journals starting to shift attention to the topic, e.g. Hennig-Thurau *et al.* (2022). The concept of Metaverse is, however, far from novel. First coined in the 1992 science-fiction book Snow Crash, Neal Stephenson's imagination already predicted an immersive virtual world where avatars incarnating humans would be able to interact with one another and intelligent agents in an over-elaborated virtual-world-version of Las Vegas (Dionisio *et al.*, 2013).

Further from fiction and the closest to reality it has ever been, this new post-2020 Metaverse era (Kim, 2021) is inserted in the current fourth wave of computing innovations (Aburbeian *et al.*, 2022), accessible anytime and anywhere and exponentially less graphically artificial. Accelerated by the COVID-19 pandemic, where interaction-deprived people were on a daily hunt for face-to-face-gatherings' replacements (Lee and Kim, 2022), the Metaverse is blurring the line between real and virtual. Enabled by an assortment of technology developments, such as 3D, blockchain technology, digital twins, artificial intelligence, mixed reality, augmented reality, virtual reality, avatar, cryptocurrency, wearable devices and 5G (Wang *et al.*, 2022; Xu *et al.*, 2022; Hwang and Lee, 2022; Aburbeian *et al.*, 2022), the Metaverse gains richness by seamlessly incorporating them (Duan *et al.*, 2021).

Weinberger (2022, p.13) adds that an "economic system provides incentives for contributing to the Metaverse" while Dwidevi *et al.* (2022) emphasize that market growth demands a stable Metaverse economy. Nowadays Metaverse's closed economic system encompasses the synergetic circulation of cryptocurrencies and real cash, where flows of real money that enter virtual spaces can also get out, with profits converting into real money for use in the real world (Dwivedi *et al.*, 2022). The Metaverse ecosystem gave rise to an unprecedented consumption arena in a shared, virtual economic space and the consequent disregard of the ownership economic system, obliging retailers to comply with a novel business model (Joy *et al.*, 2022; Yemenici, 2022; Dwidevi *et al.*, 2022).

A person's consumption pattern inside the Metaverse may drastically differ from their expectable behaviour in traditional brick-and-mortar (Yemenici, 2022). Alluding to that, Altarteer and Charissis (2019) mention the new opportunities for luxury brands to expand their online commerce activity by targeting a neglected pool of technology-oriented customers that might potentially be interested in their virtual goods, instead of only focusing on the usual customer portfolio. In the Metaverse, brands must be prepared for coming

across a new kind of "experience-oriented" customers, who expect interaction and experiment with the virtual product/service within the multi-dimensional metaverse before consumption (Bourlakis *et al.,* 2009; Yemenici, 2022). Luxury and other companies' investment in Metaverse proved the revenue model's profit potential (Dwivedi *et al.,* 2022; Yemenici, 2022) as well as brand's positioning benefits in a completely new environment and as an extension to physical world status (Dwivedi *et al.,* 2022).

Not further from its infancy stage, the Metaverse is already a target of controversy. For some, Zuckerberg's visionary announcement is nothing other than a facade to cover up Facebook's latest reputational issues (Kraus *et al.*, 2022). For others, it personifies a dreamy and useless universe where users and big corporations can channel their hopes for the future. In contrast, some base their belief that the Metaverse is the next step in Internet evolution (Kim, 2021) on real-life Metaverse examples, e.g. the 2020 Berkeley's University graduation ceremony held on the VW Minecraft or the Joe Biden campaign hosted by videogame Animal Crossing (Duan *et al.*, 2021). Although awaiting its full implementation, there is a long journey ahead due to the unreadiness of certain infrastructure aspects (Xu *et al*., 2022) such as ultrafast internet or data storage solutions (Hollensen *et al.*, 2022).

The upcoming years will be key in understanding if this Metaverse trend is another premature demand of the digital nomad society or the time for our lifestyle to become entirely "phygital" (physical + digital). Virtual reality is envisioned to come in replacement of the Internet, evolving our cybernetic presence from a state of "having access to" for the sake of "existing within" (Akour *et al.*, 2022; Hollensen *et al.*, 2022). As for brands, the future does not rely on an integral migration to the Metaverse, it is rather about making the most of all technologies at hand to enhance commercialization on plenty of avenues, complementing brand strategies and positively influencing brand attitudes, from implementing VR systems, bespoke interfaces, AR, and other 3D immersive experiences (Altarteer and Charissis, 2019; Dwivedi *et al.,* 2022; Yemenici, 2022). The expectation is for metaverse virtual stores to exist simultaneously with brands' websites and offline channels such as physical stores, delegating the preferred channel and touchpoints' choice to the customer (Dwivedi *et al.,* 2022).

IV. Fashion in the Metaverse era

On March 23rd-27th 2022, the first-ever Metaverse Fashion Week took place in Decentraland (MVFW, 2022). The event offered users the opportunity to contemplate DKNY, Dolce & Gabbana or Paco Rabanne catwalks and purchase their favourites items both for their avatars and for themselves with every piece's physical twin being sent to their homes (MVFW '22, 2022).

Digital fashion is becoming less of an edgy technological offer and more of a necessity for brands to thrive in today's demanding arena of "haute couture" (Armitage, 2022). It may refer to the design of avatars' apparel, with designers investing their expertise in producing the "visual representation of an haute couture collection" for the Metaverse (Armitage, 2022, p.12). Users aim to manifest their identities in the Metaverse and embellishing their avatars with what they would/would like to wear in the real world is one way to achieve it (Armitage, 2022; Ayiter, 2012; Sandhu *et al.*, 2022; Mäntymäki and Salo, 2015; Hamari and Keronen, 2016). Whether or not current coders are prepared to properly render real-life fabrics and other luxury items' outstanding characteristics is a topic that needs to be further explored (Armitage, 2022; Joy *et al.*, 2022), despite already happening with the business world attempts at getting to know more about these mechanisms, as seen with brands such as *Gucci*, *Ralph Lauren*, *Balenciaga*, *Burberry*, *Louis Vuitton, Topshop* and *Forever 21* (and many others to follow) collaborations with VWs like Roblox or The Sims ((Armitage and Roberts, 2019; Sandhu *et al.*, 2022; Breiter and Siegfried, 2022; Momtaz, 2022; Dwidevi *et al.*, 2022; Idrees *et al.*, 2020). A niche embodiment of virtual fashion is the emergence of online-only based fashion companies like DressX or ZERO10, whose main business consists in the creation and trade of digital apparel destined for real people, and meant to be superimposed over photographs that can then be shared on social networks (Joy *et al.*, 2022), fighting against fast-fashion consumption and overproduction while promoting sustainability (Muzna, 2021). Moreover, NFTs (Non-Fungible tokens) are a Metaverse feature that consists of a unique digital token assigned to physical artefacts, a kind of smart contract, allowing the licensee the right to ownership and the asset's proof of authenticity (Foster, 2022; Dwivedi *et al.,* 2022). Many luxury brands have also been capitalizing on the commercialization of fashion NFTs (Joy *et al.,* 2022). Some of the major players on the market are *Nike*, *Bulgari*, *Burberry*, *Kiehl's*, *LVMH*, *etc*.

The Metaverse, in parallel with the process of the fashion industry digitalization, not only plays a pivotal role in the process of computing design and production but it may help in the promotion of businesses as yet an

additional online marketing channel, aligning online and offline shopping experiences (Noris *et al.*, 2021; Sayem, 2022; Jeong *et al.*, 2022; Idrees *et al.*, 2020; Breiter and Siegfried, 2022).

As interest in the Metaverse has been drastically increasing, academic researchers and plenty of trailblazing journals have called for research on the topic (Lee *et al.,* 2021). The first Journal of Metaverse debuted in December 2021 and is accepting any paper that would elaborate on the topic (İzmir Academy Association, n.d.). Currently, there is a gap in the literature that fails to understand users' consumption behaviour and antecedent Metaverse adoption drivers (Dwidevi *et al.,* 2022). Due to virtual presence investment of an ever-growing number of brands, the place for fashion in the present and under-development Metaverse shall be further addressed (Joy *et al.,* 2022). Kim (2021) specifies the necessity to point out the motives (e.g. functional, entertaining or mixed) for someone to use the Metaverse so as to educate brands on the role advertising will play, whilst Taylor (2022) reiterates the current academic research's reminiscence of a past of VWs and empirical perspectives detour/default. Hence, the present study aims to provide an explorative view on the drivers of users' intention to participate in Metaverse.

Hennig-Thurau *et al.* (2022) investigated the opportunities for joint shopping in the Metaverse and past neglect of social influence on consumer purchase behaviour. As a highly social environment (Mystakidis, 2022), Metaverse's metamorphosis into a platform business model is plausible, as crucial conditions for transactions and display are met, especially in a fashion context (Periyasami and Periyasamy, 2022). From a theoretical perspective, the influence of peers on users' behaviour as well as a clearer understanding of the way Metaverse consumers behave themselves when faced with branded content is needed (Hennig-Thurau *et al*., 2022), so that brands already investing in the Metaverse (Bousba and Arya, 2022) can support decisions on existing literature as called for by Barrera and Shah (2023). Thus, this paper intends to explore the role of fashion involvement on the drivers of intention to use the Metaverse in a virtual fashion context.

Therefore, we draw the following research questions:

RQ1: What are the drivers of the intention to use the Metaverse from a social influence perspective?

RQ2: Does Fashion Clothing Product Involvement moderate the relation between value perceptions and social-influence variables and Intention to use Metaverse?

V. Proposed Conceptual Model

Despite Chow *et al.* (2012) and Lee and Kim (2022) recognizing the Technology Acceptance Model (TAM) (Davis,1989) and the Unified Theory of Acceptance and use of Technology (UTAUT) (Venkatesh *et al.*, 2003) as the most likely model choices for addressing users' acceptance/rejection of a certain technology, these models fail to address external influence, lack parsimony, focus more on a technological and self-reported perspective of technology adoption (Bradley, 2009) and fail to comprehensively capture certain facts of users' Metaverse consumption behaviours such as group-level influences surfacing from online interactions (Saeed *et al.,* 2009; Eisenbeiss *et al.*, 2012). This study opted to test a conceptual model deriving and adapted from Dholakia *et al.*'s (2004) model featuring the inclusion of "community factors" (e.g. Social Influence) proposed by Fetscherin and Lattemann (2008).

Drawing upon the theory of Social Identity, in 2004, Dholakia *et al.* developed the Social Influence Model (SIM) to study virtual communities by placing social influence at the core of the conceptual model (Dholakia *et al.*, 2004). Their model was similarly used for research on electronic word-of-mouth (Okazaki, 2009), virtual worlds (Eisenbeiss *et al.*, 2012) and social network sites (Cheung *et al.,* 2011; Oliveira *et al.*, 2015; Akkaya *et al.,* 2016). The SIM is based on the causal nature of the relationship between drivers of motivation and participation in virtual networks, without neglecting the mediation of variables of social influence and intention. (Dholakia *et al.*, 2004; Eisenbeiss *et al.*, 2012). It embeds into its framework fewer abstract variables than the TAM that do not require intense interaction with the technology in question but aim instead at uncovering a person's motivation to participate in the VW, also reflecting unignorable influences at a group view (Eisenbeiss *et al.*, 2012). The SIM framework unfolds into three primary sections: (1) value perceptions as individual-level motives, (2) social influence variables as group-level drivers and (3) decision-making and participation, with the first two acting as antecedents of the third (Okazaki, 2009).

Even though this model's origins go back to 2004 without it having been widely used in academic research ever since, Lee and Kim's (2022) discovery that social influence is one of the greatest influencers of Metaverse acceptance might be enough to bring it back. Therefore, Metaverse adoption was addressed from a social perspective, partially based on Dholakia *et al.*'s (2004) SIM, but enriched

with variables taking into account Metaverse idiosyncrasies. Thus, the research model features a moderating effect of fashion clothing product involvement on all relationships as well so as to address a fashion facet of the Metaverse, enhanced by the expression of social identity through clothing at a primary level (Akdemir, 2018).

In their SIM, Dholakia *et al.* (2004) first define a set of value perceptions that could explain why a user participates in virtual network-like spaces. The motivations at an individual level for users to use different media derive from the Uses and Gratifications Paradigm, adapted by Dholakia *et al.* (2004) to fit Virtual Communities. Eisenbeiss *et al.* (2012) found motivational drivers for the use of VWs to be not only linked with socializing aims as much they are related to a more technical and creative facet of the action. Thus, for this study, purposive value, entertainment value and social enhancement were kept from Dholakia *et al.*'s (2004) original SIM, whereas personal innovativeness was added to capture important aspects related to the Metaverse that were not considered in the original model.

Purposive value (PV) is a result of the amalgam between two value-kinds: (1) *informational*, the act of extracting and disseminating information and (2) *instrumental*, what one user achieves by carrying out a certain task. PV plays the role of a utilitarian concern on a more self-referent side of individual motives and it is defined as "the value derived from accomplishing some predetermined instrumental purpose, including giving and receiving information" by participating in a virtual community (Dholakia *et al.*, 2004, p. 244). The Uses and Gratifications paradigm proposed by Katz in 1959 (Katz *et al.*, 1973) depicts the consumption of media as rational at first instant (Eisenbeiss *et al.*, 2012) and PV, as a highly rational real-life purpose, is not only described as a motive to participate in VWs (Hassouneh and Brengman, 2014) but also supported by Zhou *et al.* (2011) that found functional values to be greatly involved in the use of VWs. Thus, PV must be assessed when analysing Metaverse use.

Personal innovativeness (PI) is defined as "the willingness of an individual to try out any new information technology" (Agarwal and Prasad, 1998, p. 206). Sagnier *et al.* (2020) found PI to indirectly have an effect on intention to use, as someone's predisposition to debut novel information technologies may influence technology acceptance/usage. PI as an individual feature explicating the adoption of new technologies can serve as a direct motive for intention to use the Metaverse, as those already interested in trying it out may more willingly participate in it. Hence, due to the Metaverse's novelty, PI is hypothesized to be a variable influencing intention to use the Metaverse.

Social enhancement (SE) is the consequent status gain of "socially acceptable self-promotion" on the Metaverse (Mäntymäki and Islam, 2016, p. 15). It is an individual motivational value that can be acquired with fellow participants' approval and recognition (Dholakia *et al.*, 2004). In the Metaverse, as in social VWs, users are given a second chance to redesign their lives with endless possibilities and legitimate achievement of one's goals and dreams that otherwise would not be possible in the real world, allowing for a shift of real-life status quo (Hassouneh and Brengman, 2014). SE is defined as "the value that a participant derives from gaining acceptance and approval of other members, and the enhancement of one's social status within the community on account of one's contribution to it." (Cheung *et al.,* 2011, p.1338). A motivation to "show off" may arise when a person's desired social status is attained, which is explained by one's wish to establish their reputation through interaction in a virtual community (Cheung and Lee, 2009), therefore supporting that expectations of SE may drive Metaverse use.

Entertainment Value (EV) is defined by the leisure positive effects, such as relaxation or fun, arising from the act of interaction in a network-like environment (Dholakia *et al.*, 2004). As pointed out by Saeed *et al.* (2009), the Hedonic Consumption Theory might explain why users accept entertainment-oriented new technologies, a proposition that becomes relevant because of high investments in AR/VR in the Metaverse. EV is related to the motivation of "joining VW to relax, get away from one's real-life problems, and have fun, enjoying the in-world activities and experiences "(Hasshouneh and Brengman, 2014). In their study regarding social VWs, Jung and Kang (2010) found EV/amusement to be one of the main motivators of use. More recently, Hennig-Thurau *et al.* (2022) emphasised virtual-reality contexts' richness, instigating the exchange of social cues and multidimensional and haptic sensations. In this sense, entertainment-value-seeking is supposed to drive intention to use the Metaverse.

Securing a commonplace for people sharing similar interests, on the Metaverse, the group-referent drivers are expressed through three types of social influence (Eisenbeiss *et al.,* 2012): group norms, social identity and external subjective norm. As originally postulated by Dholakia *et al.* (2004), social influence is exerted by Group Norms - representing internalisation - and Social Identity - as the identification with a certain group. In order to truly access social influence, External Subjective Norm shall be included, for intention to use the Metaverse is also influenced by external referents not exactly closely related to users, but whose opinion they still value (Song and Kim, 2006). In fact, Cheung *et al.* (2011, p. 1338) suggest that, before developing an actual interaction

experience, usage intention of a new technology is expressly influenced by "second-hand information".

Social Influence from an internal perspective can be conveyed as internalization or identification (Dholakia *et al*., 2004). Capturing the internalization strand of social influence, group norms (GN) pay respect to the regularities in attitudes and behaviour that characterize a social group and differentiate it from other social groups (Hogg and Reid, 2006, p. 7), which participants feel compelled to adopt so as to achieve the same goals idealized by the remaining participants and coincident with their own motivations (Dholakia *et al*., 2004; Eisenbeiss *et al*., 2012). Evidently, if participants realize that their goals are in accordance with those in the same environment, it is predictable that their intention to use the Metaverse will increase (Cheung *et al*., 2011), as together the group may develop a "we-intention" to use the technology, manifested more as a habit rather than an effort to use (Dholakia *et al*., 2004). Researchers posit that GN have a strong and influential effect on intention to use a certain technology (Zeng *et al*., 2009; Dholakia *et al*., 2004; Cheung *et al*., 2011 Eisenbeiss *et al*., 2012). Thus, if users find the group norm to be using the Metaverse on a constant basis, they will probably be influenced to use the Metaverse to comply with said norm.

Deaux (1994, p.8) defines social identities as "ways in which we relate to a group or aggregate, and these social connections are critically important for defining and sustaining the identity". Operationalizing identification of individuals within the group they are inserted, social identity (SI) encompasses three distinct components - cognitive, affective and evaluative - that make up how one person views his/her presence in the community (Dholakia *et al*., 2004). The internalization of a group's set of guides (group norms) will lead to a more comfortable presence within the network, which will contribute to strengthening one's social identity, as a user becomes better acquainted with what should be the ideal behaviour (Dholakia *et al*., 2004; Eisenbeiss *et al*., 2012). SI is, therefore, responsible for capturing the essence of a member identifying with a group in the community (Tsai and Bagozzi, 2014). In their research on social virtual world environments, Karjaluoto and Leppäniemi (2013) noticed the strength of SI as an antecedent of intention to use, which is explained by the psychographic similarities of VW participants. If GN are influencing intention to use, the acceptance of group norms and a feeling of belongingness to the community are supposed to foster the intention to participate in the Metaverse, in line with VW usage (Karjaluoto and Leppäniemi, 2013).

Social Influence may as well be external to the group, represented as outgroup norms (Postmes *et al*., 2000), here designated External Subjective Norm (ESN). ESN is a form of social influence representing "the influence of

expectations from significant others" (Cheung and Lee, 2009, p.281) or other external referents, which is more likely regarded when the members are more strongly committed to the community (Song and Kim, 2006). People rely on and are influenced by the opinion of perceived experts, which may be external to the group or miss the establishment of a close relationship with the individual, but still exert social pressure for him/her to aim at achieving positive participation experiences (Song and Kim, 2006). Mäntymäki *et al.* (2014) found support for Subjective Norm to positively influence the intention to use VWs. In the Metaverse context, Toraman (2022) proved the positive effect of ESN on attitude towards Metaverse use, which the author explains as insufficient knowledge regarding the topic. In fact, due to the Metaverse's novelty, most people still fail to truly understand how to benefit from its use (Arpaci *et al.,* 2022), which paves the way for a greater influence of external referents. Thus, we expect ESN could influence intention to use the Metaverse.

Following one accepted research stream that incorporates usage intention as the model's dependent variable (Venkatesh *et al.*, 2003), so as to simplify the decision-making and participation component of the original SIM, we opted to only measure Intention to use (IU). Venkatesh *et al.* (2003, p. 427) assemble a common skeleton for technology acceptance models, which encompasses a relation between individual reactions and IU, then delineating a path towards actual use of a certain information technology. This implies that, in the future, usage intention of the Metaverse will most likely be critical in explaining actual behaviour, as past research states (Venkatesh *et al.,* 2003). For the current context, being a technology still under development and extremely novel, chances are the sample's majority would not have an extensive experience within the Metaverse to be able to evaluate actual participation behaviour (Lee and Kim, 2022). Therefore, satisfied users, which find in the Metaverse solutions to fulfilling their individual or group intentions, are hypothesized to have a greater intent of using it in the future (Lee and Kim, 2022). Since the RQs were solely based on what drives someone to participate in the Metaverse, we opted to measure IU as it also reflects internal or individual-level motivations (Venkatesh *et al.,* 2008).

Based on the above-mentioned rationale, we draw the following hypotheses, graphically conceptualized in Figure 1:

H1a: Purposive value is positively related to intention to use the Metaverse.

H2a: Personal innovativeness is positively related to intention to use the Metaverse.

H3a: Social enhancement is positively related to intention to use the Metaverse.

H4a: Entertainment value is positively related to intention to use the Metaverse.

H5a: External subjective norm is positively related to intention to use the Metaverse.

H6a: Group norms are positively related to intention to use the Metaverse.

H7a: Social identity is positively related to intention to use the Metaverse.

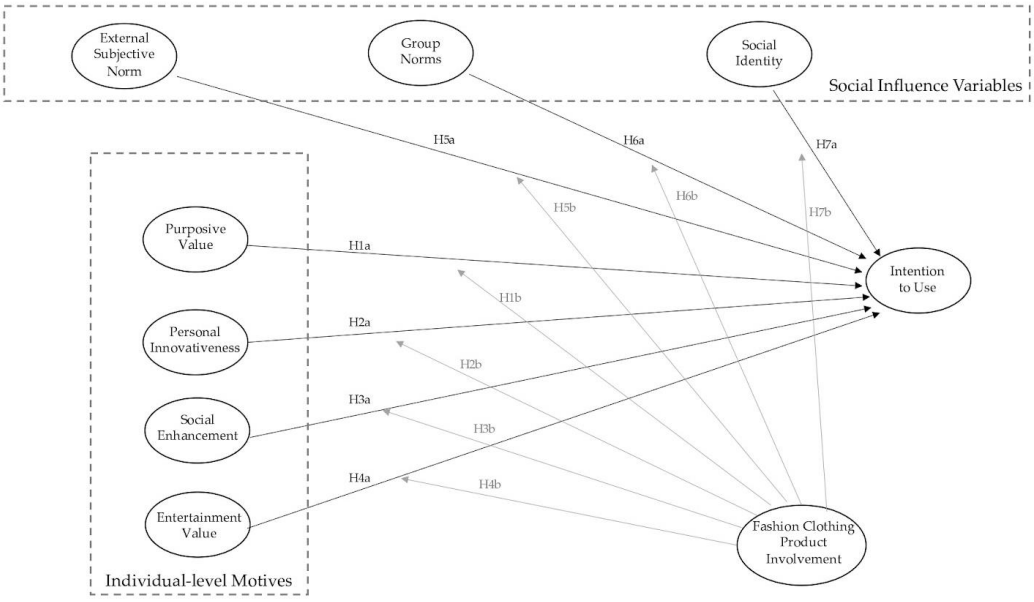

Figure 1. Conceptual Model

Lastly, this study incorporated Fashion Clothing Product Involvement (FCPI) as a moderator in the model, adding novelty and a possible enhanced predictive power to this SIM's adaptation. Deriving from Manchiraju and Damhorst's (2016) Fashion Clothing Involvement scale, we considered the subcomponent Product Involvement, being this the one capturing more interest in categories of Fashion Products and how much interest is applied, attention given, and time and money spent on them. Breiter and Siegfried (2022) emphasize the importance of the Metaverse for the fashion industry, paving the way for new opportunities whereas Holden (2022) clearly highlights the relevance of fashion brands for the new "direct to avatar" business model. As a

means of style expression (Grillo, 2022), especially younger generations will desire to proclaim themselves both in the physical and digital realities (Holden, 2022). Bearing in mind that RQ2 aims at finding out whether fashion involvement acts as a moderator of the variables' relationships with intention to use the Metaverse, if a member of the Metaverse community is voluntarily interested in and involved with fashion themes, chances are that this will induce him/her to seek new venues to express self-identity as well as social identity (Akdemir, 2018), therefore increasing intention to adopt new apparel (Saleem *et al.,* 2014), and eventually increasing their intention to use the Metaverse. As Saleem *et al.* (2014, p.58) put it "the more [consumers] involve in fashion, the more they will quickly adopt a new fashion".

In sum, people that are fonder of fashion, might be more willing to use the Metaverse, thus all previously mentioned relationships should be enhanced as the following hypotheses, whose visual depiction is shown in Figure 1:

H1b: Fashion clothing product involvement (FCPI) strengthens the positive relationship between purposive value and intention to use the Metaverse.

H2b: FCPI strengthens the positive relationship between personal innovativeness and intention to use the Metaverse.

H3b: FCPI strengthens the positive relationship between social enhancement and intention to use the Metaverse.

H4b: FCPI strengthens the positive relationship between personal innovativeness and intention to use the Metaverse.

H5b: FCPI strengthens the positive relationship between external subjective norm and intention to use the Metaverse.

H6b: FCPI strengthens the positive relationship between group norms and intention to use the Metaverse.

H7b: FCPI strengthens the positive relationship between social identity and intention to use the Metaverse.

VI. Measurement Model Assessment

The first step in PLS-SEM analysis after guaranteeing all preliminary conditions is the assessment of the measurement model (Hair et al, 2019). At this stage, a series of analyses are conducted so as to ensure both the reliability and validity of constructs to be used to estimate the structural path model later on. Since the research model features one reflective-reflective higher-order construct, namely Social Identity composed by the lower-order constructs SIC, SIA and SIE, indicator loadings, reliability and validity were also assessed at the higher-order level (Sarstedt et al., 2019).

Firstly, factor loadings for each item were assessed (see Table 2). The item loadings were all inserted in the recommended threshold of > 0.60 (Hair et al., 2019), except for PI3, which had a substantially lower value when compared to all other items (PI3, loading = - 2.09). Deletion of PI3 resulted in a noticeable increase in composite reliability and AVE values. Thus, PI3 was kept out of the model for further analysis and all the other items were proven to be representing well their parent construct. The next step required the assessment of reliability, by estimating the values for Cronbach's Alpha (α) and Composite Reliability (CR), which should be > 0.70 (Hair et al., 2011). All values were greater than the requirement (check Table 2), so reliability was established and the constructs were consistent. In PLS-SEM, for construct validity to be assured, both convergent and discriminant validity acceptable values should be met. Convergent validity is assured when Average Variance Extract (AVE) values are ≥ 0.50 (Hair et al., 2019). Table 2 shows that each construct AVE values were satisfactory, with items converging to explain their underlying construct. Discriminant validity was assessed by considering Fornell-Larcker Criterion, Heterotrait-Monotrait ratio (HTMT) and Cross Loadings. Fornell-Larcker Criterion determines discriminant validity to be established as long as a construct's square root of AVE is higher than correlation with other constructs (Hair et al., 2011), proven to be true (see Appendix II). Hair et al. (2019) define <0.90 to be the threshold for HTMT, with this research's HTMT values falling below 0.90 (check Appendix II). Additionally, looking at Cross Loadings (Appendix III), all items in the study were loading substantially better onto their parent construct rather than other constructs (Hair et al., 2011). Therefore, discriminant validity was attained, proving that each construct had a distinct identity of its own

Altogether, the measurement model was confirmed to be adequate for the following structural model assessment.

Table 1.

Portuguese investment

Purposive Value			0.957	0.963	0.746	3.617
	PV1	0.874				
	PV2	0.850				
	PV3	0.882				
	PV4	0.892				
	PV5	0.884				
	PV6	0.853				
	PV7	0.794				
	PV8	0.972				
	PV9	0.866				
Personal Innovativeness			0.894	0.934	0.824	4.150
	PI1	0.905				
	PI2	0.901				
	PI4	0.917				
Social Enhancement			0.931	0.951	0.829	2.796
	SE1	0.913				
	SE2	0.918				
	SE3	0.949				
	SE4	0.859				
Entertainment Value			0.962	0.972	0.897	4.114
	EV1	0.949				

	EV2	0.943				
	EV3	0.948				
	EV4	0.947				
Group Norms			0.956	0.968	0.883	4.502
	GN1	0.948				
	GN2	0.951				
	GN3	0.928				
	GN4	0.930				
Social Identity			0.909	0.928	0.687	2.970
Cognitive	SIC1	0.632				
	SIC2	0.684				
Affective	SIA1	0.851				
	SIA2	0.907				
Evaluative	SIE1	0.922				
	SIE2	0.924				
External Subjective Norm			0.941	0.962	0.895	2.128
	ESN1	0.944				
	ESN2	0.973				
	ESN3	0.921				
Intention to Use			0.971	0.981	0.945	2.636
	IU1	0.980				
	IU2	0.962				
	IU3	0.974				
Fashion Clothing Product Involv.			0.966	0.974	0.881	3.012
	FCPI1	0.941				
	FCPI2	0.948				
	FCPI3	0.921				
	FCPI4	0.945				
	FCPI5	0.940				

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The next stage encompasses the assessment of the structural model so as to draw conclusions on the hypothesized relationships (by checking path coefficients) and the statistical significance of said conclusions. (Hair et al., 2019)

The first step implies the analysis of collinearity. The VIF values were all <5, hence supporting the lack of collinearity issues in the model (Hair et al., 2019).

A bootstrapping procedure using 5000 subsamples (Hair et al., 2011) was then used at a confidence interval of 95% to test the hypotheses. The results of the structural path analysis are illustrated in Figure 2 and reported in detail in Table 3. As for the hypothesized direct effects, H1a (β= 0.131, p< 0.05) is supported, thus purposive value (PV) is significantly and positively related to intention to use (IU). Personal innovativeness (PI) is significantly related to IU, supporting H2a (β= 0.147, p= 0.008). Social Enhancement (SE) is not related to IU, hence H3a is not supported (β= 0.083, p= 0.320). Entertainment Value (EV) is not positively related to IU, which means H4a (β= 0.072, p= 0.265), is not supported. External Subjective Norm (ESN) is significantly and positively related IU, thus supporting H5a (β= 0.471, p< 0.001). Group Norms (GN) is not significantly related to IU so H6a is not supported (β= 0.089, p= 0.140). Finally, Social Identity (SI) is not related to IU, not supporting H7a (β= -0.120, p= 0.099).

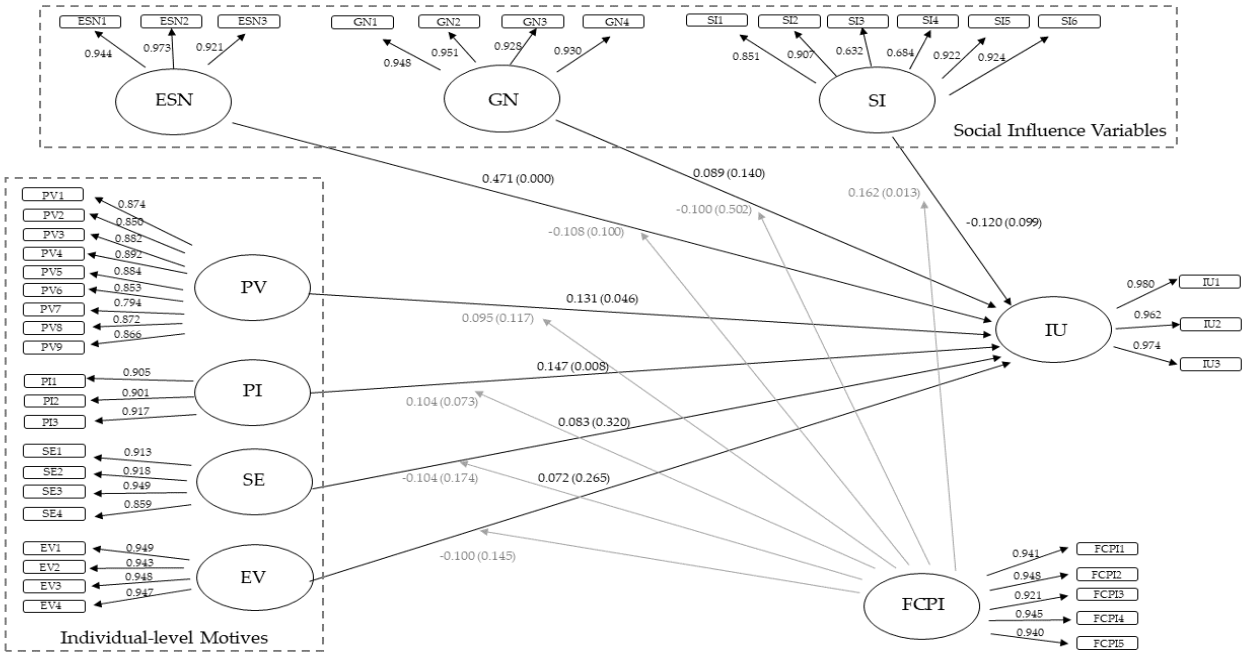

Figure 2. PLS-SEM path coefficients with p values

Lastly, the study estimated the moderating effect of Fashion Clothing Product Involvement (FCPI) on the relationships between the exogenous variables and the dependent variable.

The results revealed a not significant moderating effect of FCPI in the relationship between PV and intention to use (IU) with β= 0.095, p= 0.117, thus not supporting H1b. H2b is also not supported, exhibiting an insignificant moderating effect of FCPI in the relationship between PI and IU with β= 0.104, p= 0.073, of note there is a tendency to significance. H3b is not supported as the relation between SE and IU is not moderated by FCPI (β= - 0.104, p= 0.174). H4b is not supported, since the relation between EV and IU is not moderated by FCPI (β= -0.100, p= 0.145). H5b is also not supported, there is an insignificant moderating effect of FCPI in the relationship between ESN and IU (β= - 0.108, p= 0.100). H6b is not supported as the relation between GN and IU is not moderated by FCPI (β= -0.100, p= 0.502). Lastly, FCPI significantly moderates the relation between SI and IU (β= 0.162, p= 0.013), thus H7b is supported.

Porto é better que Benfica displays the moderation analyses. Figure 3 explains the moderation between SI and IU, illustrating that FCPI strengthens the relationship between SI and IU.

Finally, the model's explanatory power was assessed. The model explained 55% of IU (R2= 0.55), which represents an excellent value in social research of consumer behavior (Hair et al. 2011). As all Q-square values were > 0, predictive relevance and overall medium predictive accuracy of the PLS model were established (Hair et al., 2019). Predictive power was also assessed using.

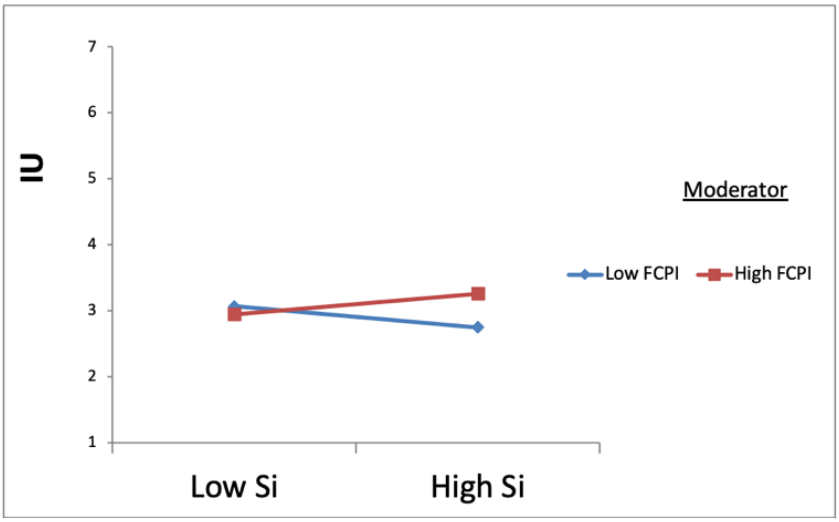

Figure 3. Interaction of FCPI between the relationship of SI and IU.

VII. Method

In order to test the research hypotheses, a questionnaire was developed to measure the conceptual model constructs that compose it. A quantitative research method was adopted throughout this paper, as it allows for the numerical measurement of variables and investigation of the relationship between them, allies.

Data was collected through Google Forms during the time period from the 22nd of August 2022 to the 10th of November 2022.

The survey was drafted as featuring two distinctive moments. The first aimed at gaining insight into respondents' demographical data, such as gender, age, home country, educational level, occupation and income, and actual knowledge of the Metaverse. As the survey was assessing product involvement with Fashion Clothing, shopping habits were also evaluated. Afterwards, respondents were required to read a brief definition of the Metaverse and watch an illustrative video, developed by the researchers, on the topic. This task was made compulsory since the Metaverse is a novel subject and the aim was for people to answer the remaining of the questionnaire rationally. Only then, data regarding the variables of interest was collected.

The proposed model features 9 constructs measured with previously validated scales, adapted to the study's Metaverse context and then translated into Portuguese. The scales, their items and sources can be observed in detail in Table 1. All statements were evaluated using a seven-point Likert-type scale that would record respondents' level of concordance with the items, ranging from *strongly disagrees* (1) to *strongly agrees* (7).

VIII. Participants and Procedure

The online questionnaire was disseminated via social media sites (Facebook, Instagram and WhatsApp) and, before proceeding to the delivery of data, subjects consented to the use of their answers for academic and research purposes. The task required less than 10 minutes to be completed. A total of 330 individuals participated in the survey, of which 8 were left out the final sample due to missing/wrongful data and one case of "yea-saying" lacking standard deviation (Collier, 2020). After data screening, only a restrictive number of

outliers were found and kept in the model as a representation of the population's natural variation (Bhandari, 2022). Moreover, there were no issues with normality as all values of Kurtosis and Skewness fell within the threshold (George and Mallery, 2010; Collier, 2020).

The final sample (n =322, Mage = 36.49, SD = 1370) was composed of 124 (38.9%) males and 198 (61.5%) females. 55.6% of the respondents had already heard about the Metaverse, of which almost 20% had no clue about what it was. Most became acquainted with the Metaverse on the Internet (32.4%), on social media (21.2%) and among friends (19.7%). Since 55.3% of participants did not know what the Metaverse is, the need to educate people on the topic before proceeding with the survey became evident. 55.2% of respondents had a positive opinion regarding the Metaverse use to get information, with only 14.4% disregarding it as an instrument of that sort. As for shopping habits, 57.7% of the sample is not an avid online buyer of fashion apparel. The demographic profile of respondents can be checked in detail in Appendix I.

IX. Discussion

The outcomes of this research shed light on what drives users to use the Metaverse from a social influence perspective. Although not all hypothesized paths were supported, both individual motives and social influence are exerting an influence on intention to use, as predicted. While intention to use the Metaverse is explained by purposive value, personal innovativeness, and external subjective norm, the most interesting result was the moderating effect of fashion clothing product involvement on the relation between social identity and intention to use.

Purposive value was found to have a positive influence on intention to use. As it has been previously postulated, the Metaverse goes beyond a virtual game, in a sense that more than its entertainment feature, the instrumental goal one might expect to extract is a key driver of Metaverse use. It would be expected that intangible benefits such as entertainment would play a role in influencing intention to use. Nevertheless, the choice to interact in a reality replacement must be supported by rational reasoning as well. Otherwise, why should one renounce reality or other virtual gamified worlds in favour of a pixelated version of the real world?

Personal Innovativeness was proven to be positively related to intention to use the Metaverse. One possible reason for this is the Metaverse's placement in the "Innovation Trigger" section on Gartner's Hype Cycle (Perri, 2022; Linden and Fenn, 2003), which means reflects its perception as an emerging technology, most likely to be primarily adopted by early adopters and innovators that will influence the remaining of the population. If a user has the predisposition to be innovative in terms of technology adoption, i.e., it's in their DNA to act out as an opinion leader or new technology diffusion agent (Agarwal and Prasad, 1998), he/she will be more inclined to use the Metaverse against those who do not have that personality trait.

Social Enhancement was not related to intention to use. The premise that Metaverse usage could be a social benefit expected to gain by people (Dholakia et al., 2004) was then revealed to be untrue. This may be related to the perception that avatars, while allowing for a more ambitious and true-to-dream depiction of one's self-identity, would only promote a fake achievement of a certain status quo. Users understand that an avatar may be dressed in Gucci clothes, catwalking through virtual environments carrying a Louis Vuitton bag and stepping onto virtual grounds with brand-new Nike shoes, but that will not change their true possessions in real life. If this type of apparel is available for

everyone at a fair price, how can reputation be established, when the very essence of reputation is based on external signs of luxury? If all avatars move around in high-fashion clothing, the social enhancement possibilities become slimmer. Therefore, users fail to see how using the Metaverse could help in their self-promotion, and perceive other motives as more driving, at least in this early stage of adoption.

Entertainment Value was not related to intention to use, which is perhaps justified by the fact that, without any haptic-sensation-capturing-gadgets, what distinguishes the Metaverse from other VWs becomes less clear to the user, fogging the value creation process and failing to provide a holistic user experience due to technology limitations (Hennig-Thura et al., 2022). When studying VWs, the entertainment-related motivation (i.e., escape) was found by Eisenbeiss et al. (2012) to be a motivation to engage, whereas Dholakia et al. (2004) found no significant relationship on the same relationship on a virtual community setting. Because the Metaverse shares characteristics with both virtual communities and VWs, it seems that its community characteristics ended up weighting more on drivers of Metaverse intention to use rather than the will to use the Metaverse to escape reality. Nonetheless, people not seeking the Metaverse for escapist motives or to be entertained does not necessarily mean that they do not value its immersion capabilities, but instead may be explained by the lack of AR/VR headsets that could help in creation value or a more intense level of social presence, as proposed by Hennig-Thurau et al. (2022).

Interestingly, external subjective norm is the research model's variable to have the greatest positive impact on intention to use. In accordance with Song and Kim (2006), the influence exerted by sources regarded as reliable by users on whether the Metaverse should be implemented is an explanation for intention to use. Due to its early commercialization stage, the Metaverse is still "inhabited" by a great majority of personal innovatives, the ones normally acting as references. As a technology still undergoing implementation, possible Metaverse users are very likely to be brought about by other's good reviews. Whether it is something seen on social media or listened to on a dinner with friends, common people may be influenced to use the Metaverse by those that surround them and whose opinion they value. Eventually, it will most likely come down to word-of-mouth and the Metaverse will be using it as a platform to grow in universal diffusion.

Group norms were not particularly influencing intention to use, as the common and agreed upon set of rules that guide a group's existence on the Metaverse. As a virtual-environment-mirroring-real-life, it makes sense that users would find in group norms the silent agreement guiding their behavior in an avatar-populated society (Ruang et al., 2020). Nevertheless, even when users

assess how similar they are with the remaining of the Metaverse community, they do not develop a greater intention to use. This can be explained by two possible and not necessarily mutually exclusive reasons: (1) the Metaverse is supposed act as the real world's digital twin, providing a space for all real-life endeavors to be conducted, so, the identification with users as a whole may be non-overlapping, as it may be so broad to get lost in the range. A user may enter the Metaverse aiming at attending fashion shows but meeting someone that is also interested in fashion may not be enough for them to consider it a driver of their intention to use; (2) finding a user that participates in the Metaverse because of the same motives may get too easy, since anyone, anywhere, anytime can join and no real constraints of space shall be an obstacle, which makes finding, for instance, a fellow numismatic does not seem so hard when considering the world's population.

Contrary to Song and Kim's (2006) research, social identity does not have a direct effect on intention to use. This is, however, in line with Cheung et al.'s (2011) explanation that when users enter too many groups, they may find it harder to choose one identity to identify with. Characterized by interoperability, a participant may find in the Metaverse a different community in each of the VWs he participates in, ending up belonging to all and solely identifying with none. However, the moderating role of fashion clothing product involvement on the relationship between social identity and intention to use was an interesting inference. Fashion is closely associated with both self and social identity, meaning that a person's sense of belonging to a community that evolves from the shared and accepted norms of a group can be expressed through fashion and clothing (Ademir, 2018). Clothing is the most basic social identity means of expression, rich in codes, signs and underlying meanings, which can be witnessed from culture-specific apparel (e.g., the Indian 'Sari') to sports groups fans (Akdemir, 2018). Thus, when a user perceives fashion as a focal part of their lives (Machiraju and Dam horst, 2016), their intention to use would be predicted by their wish to express social identity, which does not happen when fashion involvement is out of the equation.

Also, we witnessed a tendency of fashion clothing product involvement to be strengthening the relationship between personal innovativeness and intention to use. This follows Chae (2009) research stream that recognized in technology-innovative and fashion-involved consumers the predisposition to be acting as early adopters/opinion leaders. Perhaps with a larger sample, these results could have been fully statistically supported, therefore providing theoretical support for the deduction that a person who likes to be on top of every technological trend and that is also keen on fashion, will most likely have a greater intention to use the Metaverse. Community, they do not develop a greater intention to use. This

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