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## **The Effect of Technostress on Cyberbullying in Metaverse Social Platforms**

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### **Abstract**

Facebook and platforms such as Second Life3 and Roblox5 have contributed to the late interest in Metaverse. The metaverse is a three-dimensional virtual world inhabited by avatars of real people. After the prolonged pandemic people have got engaged more with the metaverse and used social metaverse platforms such as VRchat to communicate and interact. However, the lack of regulation that controls content creation on the Metaverse, and the democratized environment have presented a rich environment for people not only to escape stress but also to find an outlet for this stress by cyberbullying other avatars. In this conceptual paper, we are proposing a conceptual model based on the stress-strain model that explains the relationship between technostress elements and cyberbullying. This paper is also a call for policymakers and metaverse social platform owners to put clear policies to prevent cyberbullying on these platforms.

Keywords: Technostress, Metaverse, Antisocial behaviour, Cyberbullying, Escapism

### **1 Introduction**

Since launching its new vision to bring the Metaverse to life by moving into the complete virtual ecosystem, Facebook has paved the road to a new era in online consumer interaction (Facebook, 2022; Han et al., 2022). Along with Facebook, platforms such as Second Life<sup>3</sup> and Roblox<sup>5</sup> have contributed to the late interest in Metaverse (Fernandez and Hui, 2022).

Metaverse is a term that refers to a “three-dimensional virtual world inhabited by avatars of real people” (Kim, 2021, p141). The global Metaverse market is growing fast; it is expected to be worth 280 billion U.S. dollars by 2025 (Jeon, 2021). Generally, the Metaverse is changing the face of trading from both the consumer and business sides. For example, people are shifting towards owning and trading virtual online assets that serve their avatars, such as real estate and fashion products for their avatars (Fernandez and Hui, 2022). From the business side, metaverse has created an opportunity for businesses to market their services to potential customers (Collins, 2008)

The Metaverse is also significantly affecting societies and human lives. The Metaverse is a 3D world that mimics the physical world. In this 3D world, users can interact with each other and their digital space surroundings using avatars that represent them and imitate their movements (Hollensen et al., 2022). As a result, many people have started to resort to the Metaverse and engage in social metaverse experiences and activities with other fellow avatars. One of the reasons people use social Metaverse such as VRchat is to escape their everyday stress (Panova and Lleras 2016).

One aspect that people might escape is the stress caused by different technologies such as mobiles and emails, which extend working hours and allow reachability of employees during their off-work hours (Tarafdar et al. 2007). In addition, the nature of the Metaverse allows people to overcome physical world limitations (Davis et al.2009), which is not limited to activities but extends to the availability of regulations that rule how people interact and play. As a result, several antisocial behaviours might occur while in the Metaverse such as cyberbullying (Jamison, 2022).

In this paper, we propose a conceptual model based on the stress-strain model as a theoretical background to explain how technostress results in antisocial behaviour in the Metaverse, such as cyberbullying.

The following parts of this paper are organized as the following. First, it will present a literature review that covers the main concepts of this paper. The second section will present the stress-strain model as a theoretical background, followed by some prepositions.

## **2 Literature review**

### **2.1 The Metaverse**

The Metaverse has received significant attention since 2020. The term refers to a “three-dimensional virtual world inhabited by avatars of real people” (Kim, 2021, p141). The Metaverse is a computer-generated world that goes beyond the physical world (Lee et al., 2011). The Metaverse has also been described as a “3D virtual world with collapsed reality and virtual boundaries, along with technological developments

such as virtual reality and augmented reality” (Jeon, 2021, p81). Communicating using social metaverse platforms is one of the various uses of the Metaverse. Since the pandemic has forced people to adopt a non-face-to-face culture using social metaverse (Lee et al., 2021). People have resorted to social metaverse platforms such as VRchat to connect and communicate. One of the significant characteristics of the Metaverse is being a democratized platform that permits anybody to produce interactive content (MacCallum and persons, 2019). As such, and with the lack of regulations that controls the produced content (low inhibitors), there is a growing presence of inappropriate behaviour among users of Metaverse. The "Centre for Countering Digital Hate" has reported that Metaverse is a rich environment for antisocial behaviour such as cyberbullying and hate speech (Centre for Countering Digital Hate, 2021).

## **2.2 Cyberbullying on the metaverse social platforms**

There are a number of acts that can be referred to as antisocial behavior on the metaverse platforms. However, in this paper we will focus on cyberbullying as a general form of antisocial behavior that includes in it more than one type of antisocial behavior like cyber harassment and cyber stalking (Lowry et al., 2016).

Cyberbullying is “any behavior performed through electronic or digital media by individuals or groups that repeatedly communicate hostile or aggressive messages intended to inflict harm or discomfort on others (Gonzalez-Cabrera et al., 2017. P153).

Modern Information Communication Technology and electronic media artifacts such as anonymity (Slonje et al., 2013), and lack of regulations that control content creation have significantly influenced cyberbullying (Jamison, 2022)

## **2.3 Self-Indulging Escapism and the Metaverse**

The blaring between the physical world and the Metaverse creates a novel consumer experience, presenting a potentially negative consequence. The fast-paced life of modern humans and the existence of Information Communication Technology have led to many mental and physical health issues such as stress. The Metaverse allows people to spend a vast amount of time in a virtual environment where they have the luxury of interacting with other avatars sheltered in the illusion of the alternative reality (Han et al., 2022).

Self-indulgent escapism proposes that a person can use Information Communication Technology to escape from and cope with everyday stressors such as workload (Panova and Lleras 2016). Yee (2006) has proposed that escapism is one of the motives people engage with the virtual environment.

## **2.4 Technostress and technostressors**

Technostress represents the dark side of technology and focuses on the negative effect of Information Communication Technology on individuals’ mental and physical

health by studying topics such as techno stressors and outcomes of dealing with Technostressors (Tarafdar et al., 2010). Technostress was defined as the direct or indirect effect of interacting with Information Communication Technology on users' cognition, attitudes, emotions, thoughts and behaviours (Rosen, 1997, Weil and Rosen, 1997; Brooks et al., 2017).

Technostress is generated by a number of causes known as technostressors or stressors (Ayyagari et al., 2011). Since Information Communication Technology has become part of modern human lives, the negative effect of these technologies is becoming more significant. For example, the invasive nature of technologies (e.g., instant messaging) and overloading (e.g., emails on smartphones) nature allow work to overwhelm and interrupt people's lives out of working hours.

This conceptual paper adopts the stressor-strain model (Yan et al., 2013). We will be focusing on two stressors; these are first, techno-invasion, which refers to the stress caused by Information Communication Technology's ability to continuously allows reaching people. Second, techno-overload which refers to the stress caused by being forced to increase the amount and speed of work because of Information Communication Technology (Tarafdar et al. 2007).

In this paper we assume that one expected outcome to the existence of techno-overload and techno-invasion as stressors is anger and aggression (Barlett et al., 2021). People are expected to search for a way to eliminate anger. As people are already escaping their reality to an uncontrolled environment it is expected that people will ease their anger by attaching and cyberbullying fellow avatars in social metaverse platforms.

### 3 Theoretical background and propositions

In this conceptual paper, we propose using the stress-strain model as the theoretical background that will explain the relationship between variables of our proposed model. Stress-strain relationship refers to stressors -the stimuli that cause technostress (Ayyagari et al., 2011, Qasem, 2019), and strains which are the outcomes of being exposed to a specific stressor (Ayyagari et al., 2011). This paper proposes two main stressors: technology overload and technology invasion. Being faced with these stressor people are expected to show anger as a strain. In the existence social metaverse platforms which allows people to escape reality, and in the lack of regulations that inhibit creating negative content people are expected ease their anger by cyberbullying other avatars. Hence, we propose the following prepositions.

Preposition one: there is a positive relationship between technology-overload and anger

Preposition two: there is a positive relationship between technology-invasion and anger

Preposition three: there is a positive relationship between anger and self-indulgent escapism

Preposition four: there is a positive relationship between self-indulgent escapism and cyberbullying

Preposition Five: the relationship between self-indulgent escapism and cyber bullying in social metaverse platforms is moderated by low inhibitors

#### **4 Proposed Research Methodology**

This research aims to study the effect of workload related technostressors on cyberbullying on social metaverse platforms. Therefore, the sample of this study will be employees who use social metaverse platforms. Quantitative survey-based research is recommended to test the proposed model.

#### **5 Conclusion**

The importance of the Metaverse is increasing daily specially after being adopted by big companies like Facebook. This increased importance makes it very crucial for researchers and businesses alike to understand how people interact on this virtual world. Hence, this paper comes as a call for social metaverse platforms owners to start putting policies and regulations to protect the Metaverse users from different misbehavior that might harm users such as cyberbullying. In this paper we are focusing on one aspect that might lead to cyberbullying which is stress caused by workload. The prepositions of this paper suggest that people might ease their stress on metaverse social platforms by cyberbullying their fellow users.

#### **References**

Ayyagari, R., Grover, V., and Purvis, R. 2011. "Technostress: Technological Antecedents and Implications," *MIS Quarterly* (35:4), pp. 831-858. Bradshaw, R. and Zelano, J.A., 2013. Exploring themes of technostress for end users working with hardware and software technology. *Retrieved on July*.

Barlett, C.P., Rinker, A. and Roth, B., 2021. Cyberbullying perpetration in the COVID-19 era: An application of general strain theory. *The Journal of Social Psychology*, 161(4), pp.466-476.

Brooks, S., Longstreet, P. and Califf, C., 2017. Social media-induced technostress and its impact on Internet addiction: A distraction-conflict theory perspective. *AIS Transactions on Human-Computer Interaction*, 9(2), pp.99-122

Centre for Countering Digital Hate. 2021. New research shows Metaverse is not safe for kids. [online][15.04.2022]. available on the world wide web at: <https://www.counterhate.com/post/new-research-shows-metaverse-is-not-safe-for-kids>

Collins, C., 2008. Looking to the future: Higher education in the Metaverse. *Educause Review*, 43(5), pp.51-63.

Davis, A., Murphy, J.D., Owens, D., Khazanchi, D. and Zigurs, I., 2009. Avatars, people, and virtual worlds: Foundations for research in metaverses. *Journal of the Association for Information Systems*, 10(2), p.90.

Fernandez, C.B. and Hui, P., 2022. Life, the Metaverse and Everything: An Overview of Privacy, Ethics, and Governance in Metaverse. *arXiv preprint arXiv:2204.01480*.

González-Cabrera, J., Calvete, E., León-Mejía, A., Pérez-Sancho, C. and Peinado, J.M., 2017. Relationship between cyberbullying roles, cortisol secretion and psychological stress. *Computers in Human Behavior*, 70, pp.153-160.

Kim, J., 2021. Advertising in the Metaverse: Research Agenda. *Journal of Interactive Advertising*, 21(3), pp.141-144.

Han, D.I.D., Bergs, Y. and Moorhouse, N., 2022. Virtual reality consumer experience escapes: preparing for the Metaverse. *Virtual Reality*, pp.1-16.

Hollensen, S., Kotler, P. and Opresnik, M.O., 2022. Metaverse—the new marketing universe. *Journal of Business Strategy*.

Jamison, M. 2022. The dark side of the Metaverse, part I. American enterprise institute (AEI). [online][15.04.2022]. available on the world wide web at: <https://www.aei.org/technology-and-innovation/the-dark-side-of-the-metaverse-part-i/#:~:text=As%20such%2C%20in%20some%20areas,data%20exploitation%20becoming%20well%20established.&text=Antisocial%20behavior%20includes%20assault%2C%20bullying%2C%20harassment%2C%20and%20hate%20speech.>

JEON, J.E., 2021. The Effects of User Experience-Based Design Innovativeness on User-Metaverse Platform Channel Relationships in South Korea. *Journal of Distribution Science*, 19(11), pp.81-90.

Lee, S.G., Trimi, S., Byun, W.K. and Kang, M., 2011a. Innovation and imitation effects in Metaverse service adoption. *Service Business*, 5(2), pp.155-172.

Lee, L.H., Braud, T., Zhou, P., Wang, L., Xu, D., Lin, Z., Kumar, A., Bermejo, C. and Hui, P., 2021. All one needs to know about metaverse: A complete survey on technological singularity, virtual ecosystem, and research agenda. *arXiv preprint arXiv:2110.05352*.

Lowry, P.B., Zhang, J., Wang, C. and Siponen, M., 2016. Why do adults engage in cyberbullying on social media? An integration of online disinhibition and deindividuation effects with the social structure and social learning model. *Information Systems Research*, 27(4), pp.962-986.

MacCallum, K. and Parsons, D., 2019, September. Teacher perspectives on mobile augmented reality: The potential of Metaverse for learning. In *World Conference on Mobile and Contextual Learning* (pp. 21-28).



Tarafdar, M., Tu, Q. and Ragu-Nathan, T.S., 2010. Impact of technostress on end-user satisfaction and performance. *Journal of management information systems*, 27(3), pp.303-334.

Weil, M.M. and Rosen, L.D., 1997. *Technostress: Coping with technology@ work@ home@ play* (Vol. 13, p. 240). New York: J. Wiley.

Yan, Z., Guo, X., Lee, M.K. and Vogel, D.R., 2013. A conceptual model of technology features and technostress in telemedicine communication. *Information Technology & People*, 26(3), pp.283-297.