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Consumer Conscience and Mindfulness and Its Influence on the Attitude Towards Virtual Shopping:

A Study of Technological Stress and Multisensory Experience

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ABSTRACT

An essential aspect of developing virtual content today is improving the user experience by reducing the adverse effects of using new technologies. In this way, this paper aims to analyze the moderating effects of consumer awareness and mindfulness in the relationship between factors such as technological stress and the multisensory experience and its impact on attitude towards virtual shopping. The data is analyzed with the structural equations model to achieve this purpose. The database researched is made up of responses from 400 users of virtual content from companies belonging to the fashion sector. Among the main results, it is found that the consumer's conscience and mindfulness directly and positively influence the relationship between technological stress and the attitude towards virtual shopping. At the same time, the case of the consumer's conscience did not show any results.

KEYWORDS

Attitude Towards Virtual Shopping, Consumer Conscience, Mindful Consumer, Structural Equation Model, Technological Stress and Multisensory Experience

INTRODUCTION

Global e-commerce is experiencing significant growth, marked by rising consumer usage, which suggests strong future trends (The Economist, 2023). However, post-pandemic shifts have seen many consumers reverting to in-person shopping, reflecting a renewed preference for physical stores. In this context, examining the factors that influence consumer interaction with digital platforms is crucial. Governments are increasingly interested in regulating these digital interactions (European Commission, 2022; Sukrat & Leeraphong, 2024).

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Consumer satisfaction with technology is key to e-commerce success. Perceived e-shopping value plays a crucial role in the relational exchange between consumers and platforms (Tankovic & Benazic, 2018; Teoh et al., 2023), encompassing perceptions of gain or loss during purchase and repurchase (Wu et al., 2014). This highlights the need for further research into key drivers and inhibitors of online shopping (Gabriel et al., 2023; Kautish et al., 2023).

Two research gaps were identified: the negative effects of advanced e-shopping technologies, like augmented and virtual reality (Voicu et al., 2023; Lim, 2022), and the moderating variables that influence e-commerce perceptions from a psychological perspective (Gabriel et al., 2023). Future studies should explore these areas to understand how technology shapes consumer experiences, focusing on factors like multisensory experiences and technological stress, as well as the moderating effects of consumer mindfulness on perceived e-shopping value. This research aims to explore these dynamics using the Stimulus Organism Response (SOR) model.

THEORETICAL FRAMEWORK

Trends in Research Topics Related to Virtual Reality and Applications

Recent technological advances have spurred trends in flexibility, miniaturization, and encapsulation, significantly impacting interaction with electronic devices (Mariello et al., 2022). These innovations are crucial for understanding the social dynamics of virtual environments and integrating new technologies (Jung et al., 2021).

Flexibility and stretchability in technology focus on creating devices with physical characteristics that align with modern health and safety standards, emphasizing flexibility and material safety (Mariello et al., 2022). Miniaturization addresses the demand for smaller, lighter, and portable devices, enabled by micro-electromechanical systems that enhance sensor and processor capabilities (Yang et al., 2021). Encapsulation ensures durability and reliability by protecting electronic components from environmental factors, contributing to long-term use (Kim et al., 2021).

These trends also prioritize sustainability, including the integration of renewable energy sources like solar power and efficient energy management systems (Jung et al., 2021; Zervos, 2016). The development of energy-efficient batteries and systems further aims to extend the longevity and performance of devices.

Given these changes, it is essential to study how individuals interact with these technologies. The Stimulus-Organism-Response (SOR) model provides an effective framework for analyzing the relationship between technological stimuli and users' cognitive and emotional responses, ensuring virtual environments meet user needs (Jung et al., 2021).

The SOR (Stimulus et al.) Perspective

Gabriel et al. (2023) explain that the SOR (Stimulus-Organism-Response) model from environmental psychology suggests that external stimuli affect users' internal responses through cognitive and emotional processes, impacting decision-making. Errajaa et al. (2022) argue that the SOR model is ideal for studying human behavior in virtual reality settings, identifying both stimulating and restrictive factors.

Wang & Wang (2022) highlight three key elements of the SOR model in consumer experiences: stimulus, organism, and response. The stimulus directly influences individual responses, while the organism is shaped by external factors affecting consumer behavior, particularly during purchasing. The SOR model helps analyze factors influencing purchase intentions, especially when using virtual and augmented reality (Hsu et al., 2021).

Gabriel et al. (2023) argue that the SOR model outperforms other frameworks like the technology acceptance model, as it focuses on how virtual applications affect user behavior, particularly

consumption intentions. The stimulus includes factors such as interactivity, vividness, novelty, system quality, and product informativeness (Kowalczuk et al., 2021).

The organism encompasses hedonic value and satisfaction (Vieira et al., 2022), where hedonic value relates to pleasure and user satisfaction in virtual reality (Hsu et al., 2021). The response involves purchase intention and the desire to continue using the same process (Wang et al., 2021), ultimately shaping perceived e-shopping value and ensuring successful long-term purchases (Scholz & Duffy, 2018).

Perceived E-Shopping Value

In the case of perceived e-shopping value, it is considered a relational exchange in which the perception that an individual develops is based on what is expected to be gained and lost in a purchasing process (Tankovic & Benazic, 2018). Seminal scholars such as Zeithaml (1988) propose that the perceived e-shopping value is defined as the general assessment that a consumer makes of the usefulness of a product based on the perceptions of what is received and given at the same time. Likewise, the perceived e-shopping value has also been considered in the literature as a source of competitive advantage that allows firms to improve their ability to generate value to satisfy their consumers (Lindgreen & Wynstra, 2005).

For other scholars, such as Chen and Dubinsky (2003), perceived e-shopping value is vital in determining a purchase, leading to the ability to predict behaviors. According to the above, the perceived e-shopping value is essential to understanding how value is created and intentions for future behavior related to purchases and repurchases (Nilsson & Ballantyne, 2014).

Perception Immersion, Multisensory Experience, and Technological Stress as an Experience of Perceived E-Shopping Value

In digital commerce, the synergy between mindful approach Consumers, technological stress, multisensorial experience, perception immersion, and perceived e-shopping value shapes the essence of the online shopping experience (Kim et al., 2019). The mindful approach to consumers, a guiding principle for intentional engagement, transforms online consumers into active participants who seek meaningful interactions in the digital marketplace (Zhang et al., 2017). However, this mindful approach faces challenges in the form of technological stress (Arpaia et al., 2021). The potential disruptions caused by system glitches and complex interfaces can undermine the seamless, focused interaction that mindful approach consumers aim for during their digital shopping experience (Kim & Kim, 2020).

A critical element enhancing the e-shopping experience is the incorporation of multisensorial experiences. The digital realm employs visuals, sounds, and haptic feedback to simulate a rich and immersive environment, transcending the physical limitations of traditional shopping (Huang & Liao, 2017). Consumers actively appreciate and seek out these multisensorial elements with a mindful approach, contributing to a more profound and satisfying e-shopping encounter (Artacho et al., 2020; Guthrie et al., 2022).

The concept of perception immersion adds depth to this dynamic relationship. As consumers navigate virtual shopping environments, the degree of immersion significantly influences their overall perception of the e-shopping experience (Camplone & Di Bucchianico, 2018). Mindful approach consumers, driven by intentional decision-making, value immersive experiences that align with their preferences, fostering a sense of connection and presence in the digital realm (Lin & Chen, 2021).

Central to the entire e-shopping journey is the perceived value derived by the consumer. Perceived e-shopping value encapsulates the subjective assessment of the benefits and satisfaction gained from online shopping. With a mindful approach, consumers closely tie their perceived e-shopping value to the alignment of their values, preferences, and the overall quality of the experience. Their discerning choices reflect an integrated approach, valuing the impact of the e-shopping journey beyond transactional utility (Sharma & Tiwari, 2023).

The interplay between mindful approach Consumers, technological stress, multisensorial experiences, perception immersion, and perceived e-shopping value paints a dynamic picture of the contemporary digital shopping landscape (Smith & Nichols, 2020). A mindful approach serves as the driving force, influencing intentional choices and shaping the overall e-shopping experience (Gupta et al., 2023). While technological stress poses challenges, multisensorial experiences enrich the digital space, and perception immersion underscores the significance of feeling present and engaged. The culmination of these elements defines the perceived e-shopping value, symbolizing the subjective evaluation of mindful approach consumers in their intentional and holistic digital shopping journey.

Perception Immersion in Virtual Reality

In enhancing perception immersion plays a pivotal role in enhancing the perceived value of e-shopping. It establishes a significant correlation between the immersive features of online shopping experiences and consumers' overall perceptions (Tankovic & Benazic, 2018). As users immerse themselves deeply in the virtual shopping environment, their heightened perception immersion contributes to an enhanced perceived value derived from the e-shopping process (Alzayat & Lee, 2021).

In virtual shopping, perception immersion describes how users feel fully engaged and connected within the digital environment. This immersive experience encompasses realistic graphics, interactive features, and a multisensory environment, fostering a sense of presence and absorption (Hassouneh & Brengman, 2011). The positive impact on perceived e-shopping value arises from the enriched and immersive nature of the online shopping experience (Hsu et al., 2020).

The link between perception immersion and perceived e-shopping value is clear: users assess the quality, satisfaction, and usefulness of their online shopping experience (Rout et al., 2022). A more immersive and engaging environment leads users to assign more excellent value to the e-shopping process. The multisensory and interactive elements of perception immersion contribute to enjoyment, satisfaction, and the perception that the online shopping platform meets their needs and preferences (Thomas-Francois & Somogyi, 2022).

Consequently, the positive impact of perception immersion on perceived e-shopping value highlights the importance of creating immersive and engaging virtual shopping environments (Jiang et al., 2022). Retailers and e-commerce platforms that prioritize and enhance perception immersion will increase the perceived value of their offerings, fostering overall customer satisfaction and loyalty in the digital marketplace (Jiang et al., 2021).

H1. Perception immersion has a direct and positive effect on the perceived e-shopping value.

Technological Emotions (Multisensory Experience and Technological Stress)

Technological emotions encompass the interplay between multisensory experiences and technological stress, shaping user perceptions in digital environments (Bente et al., 2023). Multisensory experiences engage users through various senses and elicit positive emotional responses, enhancing enjoyment and satisfaction. Conversely, technological stress from challenges such as information overload can evoke negative emotions, impacting user attitudes (Yang et al., 2023).

This dynamic interaction influences the overall emotional experience in technology-mediated environments, emphasizing the importance of integrating sensory richness and stress management to optimize user well-being and satisfaction in the digital world (Jiang et al., 2022).

Multisensory Experience

The rise of multisensory experiences has become a powerful driver in the digital realm of virtual shopping, significantly influencing user attitudes. This phenomenon of sensory perceptions establishes a profound connection between the virtual environment and users, pulling them deeper into the virtual interaction, fostering emotional connections, and shaping their attitudes.

Multisensory experience involves a combination of sensory impressions related to specific events, extending beyond visual and auditory cues to tactile, olfactory, and gustatory stimuli (Velasco &

Obrist, 2021). This holistic sensory engagement mirrors the diverse experiences encountered during in-person shopping, replicating the richness of real-world environments and fostering a heightened sense of presence and immersion within virtual contexts.

Complementing the Stimulus-Organism-Response (SOR) perspective in virtual shopping, multisensory experiences enhance the sense of presence by immersing users in an environment that appeals to multiple senses. The alignment in spatiotemporal and semantic aspects, coupled with the sensory richness inherent in multisensory experiences (Doehrmann & Naumer, 2008; Spence, 2011; Fenko et al., 2010; Malhotra, 1984), creates an environment closely resembling the user's mental representation of physical reality. This alignment reinforces the emotional connection established through social presence, intensifying the sensation of being present within the virtual space.

The immersive sensory engagement not only mirrors the pleasures of traditional shopping but also enhances the virtual experience, evoking enjoyment and satisfaction (Luna-Nevarez et al., 2021). The above aligns with users' perceptions of the platform's utility, as multisensory experiences enable them to connect more intimately and effectively with products (Moon & Kim, 2001).

In this context, multisensory experiences, when combined with technology, particularly in virtual shopping and consumer settings, play a crucial role in evoking sensations in virtual or augmented reality environments, thereby enriching individuals' interactions with computers for seamless integration (Maggioni et al., 2020; Vi et al., 2020). Consequently, the hypothesis proposed is:

H2. Multisensory experience has a direct and positive effect on perception immersion.

The Role of Technological Stress in E-Shopping

Technological stress emerges as a shadow, casting uncertainty over the seamless integration of technology into our daily lives in the digital age, where technology governs every aspect of our existence. Coined by psychologist Craig Brod in 1984, technological stress refers to individuals' struggle to navigate technology amid the rapid evolution of modernity (Ayyagari et al., 2011). With the proliferation of virtual shopping platforms driven by technological advancements, examining the repercussions of technological stress through social presence theory becomes essential.

An important aspect to highlight is that technological stress considers that the tension an individual may feel when faced with new technology can lead them to generate resistance and distrust in the face of new developments that interfere with their daily activities (Sun, 2023). According to several scholars and studies in the field of technological stress, this is related to the ease of use of technology, affecting the perception and adaptability to it (Zielonka & Rothlauf, 2021).

The prominence of technological stress has grown alongside the rapid adoption of new technologies, affecting both physical and mental well-being (Ayyagari et al., 2011). Individuals may encounter obstacles as they grapple with the increasing presence of technology, impacting their performance and satisfaction across various activities (Ayyagari et al., 2011). The complexity of this phenomenon is compounded by the need for deeper insight into the specific technological attributes that trigger stress. This lack of clarity results in a tangled interplay with other variables, rendering the system a mysterious entity with interactions that defy simple explanations.

As users navigate online platforms, technological strain becomes prevalent in virtual shopping. It arises when technology overwhelms an individual's capacity, leading to information overload that hinders effective adaptation (Agboola et al., 2016). This inundation disrupts the balance between user-friendly interfaces and the demands imposed by technology, fostering resistance to its adoption (Champion, 1988). The rapid pace of technological change and the mismatch between information systems and service demand contribute to technological stress, potentially undermining user satisfaction and engagement, particularly in purchasing activities (Arnetz et al., 1997).

Furthermore, technological stress creates a paradox within the technology acceptance model. As users grapple with technological stress, perceived ease of use, a critical determinant of attitudes, deteriorates, particularly in immersive virtual experiences. The more technology becomes a source of stress for users, the less it aligns with their expectations of simplicity, diminishing their attitudes

(Davis et al., 1989). This strained relationship casts a shadow over users' perceptions of usefulness, fostering negative attitudes that starkly contrast with the positive emotional responses elicited by social presence. Thus, the following hypothesis is proposed:

H3. Technological stress has a direct and negative effect on perception immersion.

A Mindful Approach to the Consumer as a Moderation Effect in E-Shopping

A mindful approach to consumption relates to consumers' inclination toward values related to sustainability and the recognition of the need to be aware of the consequences of consumption (Mohammad et al., 2021; Sermboonsang et al., 2020). This idea also suggests that individuals will seek, in addition to consuming products that are less harmful to the environment, those that involve taking care of themselves, reducing repurchases and aspirational purchases. In this way, using technological means becomes an exciting field of study that will influence purchasing practices (Sheth et al., 2011).

On the other hand, the concept of a mindful approach to consumers arises as an indication of intentional engagement in the evolving landscape of technology-mediated experiences. Rooted in social cognition, a mindful approach consumer embodies an individual's tendency to maintain heightened awareness throughout their daily activities (Bodhi, 2013). While existing research has focused on the mental aspects of a mindful approach, such as reducing melancholy and unease (Zhang et al., 2020), its relevance in virtual shopping environments is notable.

A mindful approach, often associated with therapeutic practices rooted in Buddhist principles (Rufai et al., 2021), manifests in two primary ways: increased awareness during interactions with the environment and a deep perception of one's surroundings within specific contexts (Lindsay et al., 2017). This heightened consciousness enables individuals to be more internally and externally attuned (Navarro-Haro et al., 2019), critically evaluating acquired knowledge and stimulating cognitive abilities and emotions in virtual settings (Bellinger et al., 2015).

Significantly, a mindful approach enhances individuals' ability to focus on specific tasks, as well as their information-processing skills and sensitivity to content (Cheng et al., 2018). This condition-heightened sensitivity fosters a greater acceptance of content presented in virtual environments, with vigilance catalyzing positive reception (Rufai et al., 2021). Individuals who maintain awareness in the present moment can more effectively navigate the complex interplay of sensory experiences and technological stress within virtual shopping platforms (Azam et al., 2023).

Acknowledging the challenges posed by technology while embracing the benefits of enhanced interaction and connectivity (Nath et al., 2023) provided by virtual shopping environments through conscious awareness. Furthermore, a mindful approach to consumers can help moderate the relationship between multisensory experience and perceived e-shopping value. Mindful approach consumers heighten sensory receptivity, allowing them to appreciate and value the multisensory aspects of virtual shopping immersion. A mindful approach can enhance users' overall perception of the virtual shopping experience by cultivating heightened sensitivity to sensory cues. Thus, the following hypothesis is proposed:

H4. The mindful approach of consumers has a moderating effect on the relationship between technological and perceived immersion.

The combined influence of a mindful approach to consumer and multisensory experience on immersion and perceived e-shopping value has the potential to reshape users' perceptions. A vigilant approach serves as a tool that heightens users' sensory perceptions and interpretations as they navigate virtual aisles and explores products using various senses (Santhanakrishnan et al., 2022). Individuals with a mindful approach mindset are more likely to embrace fully and appreciate the multisensory stimuli the virtual shopping environment provides.

The moderating role of a mindful approach in the relationship between multisensory experience and perceived e-shopping value stems from its ability to foster cognitive depth and holistic appreciation (Duong et al., 2022). Users who approach virtual shopping with a mindful approach are more inclined to

interpret multisensory stimuli as meaningful additions, contributing to a more positive overall attitude. Conversely, users may react to sensory stimuli without conscious analysis (Lindquist et al., 2020).

A mindful approach elevates the multisensory experience from a surface-level engagement to a profound cognitive interaction (Santhanakrishnan et al., 2022). It amplifies the experience's impact on users' attitudes toward virtual shopping (Duong et al., 2022). The vigilant approach intentionally guides users to explore the multisensory environment, enabling them to gain deeper insights and derive more positive sentiments (Lindquist et al., 2020).

H5. The mindful approach consumer has a moderating effect on the relationship between multisensory experience and perceived e-shopping value.

The mindful approach of consumers is critical in moderating the connection between perceived immersion and perceived e-shopping value (Pham et al., 2023). By embracing a mindful approach to their online shopping experiences, characterized by intentional and conscious engagement, individuals actively moderate the complex interplay between the immersive qualities of the virtual environment and the perceived value derived from the e-shopping process (Hussain et al., 2022).

In virtual shopping, perceived immersion refers to users' deep engagement and absorption in the online environment (Christian et al., 2022). Through their heightened awareness and deliberate focus, mindful approach consumers influence how users navigate and interpret the immersive elements of the virtual shopping experience (Remar et al., 2015). This heightened consciousness allows mindful approach consumers to extract more meaningful value from perceived immersion as they actively process and appreciate the online shopping environment's multisensory aspects and intricate details (Blanc et al., 2021).

Moreover, the moderating effect of the mindful approach consumer extends to perceived e-shopping value. Mindful approach consumers, attuned to their preferences, values, and the overall quality of the online shopping journey, excel at extracting enhanced value from the immersive aspects of the virtual environment (Ma et al., 2020). Their intentional approach enables them to derive greater satisfaction, utility, and overall positive perceptions of value from the e-shopping experience despite potential challenges or distractions in the digital realm (Ghvanidze et al., 2019).

Therefore, the mindful approach consumer is a vital moderator, shaping the relationship between perceived immersion and perceived e-shopping value (Chang et al., 2016). Their conscious engagement enhances the depth and significance of the immersive elements, contributing to an enriched and more valuable online shopping experience. This moderating effect underscores the importance of a mindful approach in optimizing the perceived value derived from the immersive aspects of virtual shopping (Ma et al., 2020).

H6. The mindful approach consumer has a moderating effect on the relationship between perceived immersion and perceived e-shopping value.

THEORETICAL MODEL

Methodology

The study's research design is cross-sectional, which means that data is collected at a particular time to evaluate the relationships between variables. The selected statistical method for analysis is the structural equations model (SEM), recognized for its versatility in incorporating several multivariate methodologies. Structural Equation Modeling (SEM) is utilized to estimate the coefficients of latent components and identify causal links between theoretical constructs. Significantly, structural equation modeling (SEM) addresses multicollinearity, consequently converting it from a problem into an essential tool for efficient parameter estimate (Wan, 2002).

Although SEM is a potent statistical approach, it is essential to emphasize that it is not a research methodology but a tool used for data analysis. This study used a cross-sectional research design, which entails gathering data at a particular moment. Subsequently, the acquired data is subjected to Structural Equation Modeling (SEM) to analyze and evaluate the interconnections between variables.

Structural Equation Modeling (SEM) allows the calculation of coefficients for latent or unobservable elements using a group of measurable variables. It is essential to make this distinction to avoid ambiguity between the study strategy and the statistical approach used for analysis.

Sample and Data Collection

This study employs a cross-sectional research approach, as data is obtained from a sample of 400 persons within the Colombian fashion industry, ranging in age from 18 to 65 years. The cross-sectional design is appropriate for capturing a moment's representation of the connections being studied. However, it is essential to acknowledge that it cannot comprehend causality or longitudinal variations. The choice of a cross-sectional design corresponds with the aims of this study, which seek to investigate the complex interconnections within the Colombian fashion industry.

This study applied random sampling to collect data from 400 individuals in the Colombian fashion industry. Random sampling ensures that every individual in the population has a reasonable chance of being selected for the sample, which increases the capacity to make general conclusions from the findings. This approach focused on consumers within the Colombian fashion industry, ensuring inclusivity across many demographic groups. The data-obtaining approach produced a response rate of around 96%, demonstrating a significant degree of participant involvement. To guarantee a diverse representation within the sample, thorough personal interviews were done in five main Colombian cities: Bogota, Cali, Medellin, Barranquilla, and Cartagena.

The demographic composition reflects a gender distribution of 48% males and 52% females, as reported by the National Administrative Department of Statistics (DANE, 2019). The robustness of the data collection process is underscored by an impressive response rate of approximately 96%, facilitated through meticulous personal interviews conducted in five major Colombian cities: Bogota, Cali, Medellin, Barranquilla, and Cartagena.

Demographic Characteristics

The demographic composition of the study's participants is multifaceted and provides valuable insights into the sample. Regarding gender distribution, the sample is evenly split, with 48% of respondents identifying as male and 52% as female. This balanced representation ensures gender diversity within the sample and allows gender-related analyses. Age distribution is well-distributed across various age brackets, with notable cohorts in the 18-25, 26-35, and 36-45 age groups, each constituting approximately 23%, 21.2%, and 23% of the sample.

These diverse age groups enable the exploration of age-related variations in the study's variables. Educational attainment within the sample is diverse, with individuals spanning from elementary and high school education (19%) to postgraduate degrees (15%). This educational diversity enhances the study's ability to capture various perspectives and competencies among participants. In terms of income, the sample represents individuals with varying financial circumstances, from those with no income (8%) to those earning above 2001 USD (14%), ensuring socioeconomic diversity that can be critical for understanding consumer behaviors and preferences in the fashion sector.

Data Quality Assurance

This study strictly protected Participant anonymity and confidentiality through a comprehensive ethical procedure. Each participant provided informed consent, explicitly stating the study's objectives and guaranteeing voluntary participation. For participants' identities, separate identification numbers were allocated to everyone instead of using personally identifying information. This method ensured the confidentiality of participants and permitted the secure management of data. These procedures combined improved the protection of participants' confidentiality and the reliability of their responses. In addition, a pilot test was conducted using around 40 surveys to improve and adjust survey questions based on relevant input. The iterative process employed in this study ensured that the instruments used were clear and relevant, thus enhancing the overall reliability of the collected data.

Moreover, ensuring the reliability and consistency of the collected information were of significance in this study undertaking. Uniformity in data collection techniques was ensured by standardizing the survey and interview administration for all participants. Clear instructions were given to interviewers and survey supervisors, reducing the likelihood of deviations in the administration process. This uniformity was maintained by implementing a rigorous training process for interviewers, emphasizing the significance of impartial and standardized participant interactions. These methods were crucial in improving the reliability of the study by reducing potential sources of error or bias.

Finally, this study conducted Harman's single-factor test to maintain the integrity of data analysis. This method was applied to assess the presence of common method bias, a potential source of bias that can distort research findings. The test evaluates the variance among independent variables when a singular data collection strategy is employed. Harman's single-factor test indicated the absence of common method bias in the collected data. This outcome reaffirms the trustworthiness and validity of the data, instilling confidence in the research findings and conclusions. Consequently, the study's dataset is robust and well-suited for conducting rigorous analyses and drawing meaningful insights related to consumer behavior in the fashion sector among Colombian consumers.

Variables

A structured questionnaire was meticulously crafted to facilitate data collection from a set of overarching inquiries about the interview subject. Drawing upon the extensive review of pertinent literature, the measurement scales were thoughtfully selected to align with the research objectives.

A Likert scale ranging from 1 to 7 was employed for the questionnaire responses, with a rating of 7 signifying complete agreement. The selected scales encompassed key constructs: perceived value, perception immersion, multisensorial experience, technological stress, and mindful approach consumers.

The measurement of Multisensory Experience aligns with the Presence Questionnaire (PQ), a self-report instrument designed to gauge an individual's sense of “being present” in a virtual environment. PQ items encompass dimensions like spatial presence, social presence, and involvement, offering insights into the depth of immersion within the virtual shopping context.

The study employs the well-established Mindful Approach Consumption Scale (MCS) to assess Mindful Approach Consumers. The MCS is a self-reported questionnaire that quantifies an individual's mindful approach to consumer behavior, encompassing present-moment awareness, deliberative decision-making, emotional self-regulation, and avoidance of impulsive buying tendencies. The rigorous methodology adopted for this article involved item reduction through factor analysis and creating a consolidated variable, demonstrating commendable internal consistency (Cronbach's alpha: 0.89).

The Perceived Technological Stress Scale (PTSS), developed by Wakimoto et al. (2009), stands as the predominant instrument for assessing individuals' stress levels in response to technology usage, particularly within the realm of information and communication technology (ICT). This extensively employed and rigorously validated scale has garnered widespread acceptance in academic literature and research, emerging as the quintessential tool for quantifying technology-induced stress. Comprising 12 items, the PTSS captures multifaceted dimensions of technological stress, encompassing challenges such as technology management difficulties, information overload, apprehensions about missing critical information, struggles with adapting to novel technologies, perceptions of technology dominance in one's life, privacy and security concerns, fears of detrimental impacts on personal relationships, frustrations stemming from technology use, troubleshooting complexities, information inundation, disturbances to work-life balance, and excessive time allocation to technology-related activities. Respondents are tasked with rating their alignment with each statement on a Likert scale, typically spanning five points, ranging from “strongly disagree” to “strongly agree.”

Perceived value is an important concept that refers to how consumers evaluate the whole costs and advantages of items, emphasizing energy-saving products in online purchasing environments.

Table 1. Mean, standard deviation, and correlation matrix

Constructs	Mean	S. D.	*1*	*2*	*3. 4*
1. Perception immersion	*5.78*	*1.43*	*1.0*		
2. multisensory experience	*5.04*	*1.87*	*0.183*	1.0	
3. Technological stress	*5.23*	*1.62*	*0.237*	*0.087*	*1.0*
4. Perceived e-shopping value	*5.97*	*1.45*	*0.37*	*0.234*	*0.19 1.0*

To ensure a thorough assessment that includes both perceived functional value and considered entertainment value, this study modifies the measuring items for perceived value from the works of Cuong (2020) and Chae (2016). This wide range of perceived worth is essential for comprehending the complex nature of customer evaluations in online retail settings. The study attempts to provide a comprehensive image of what influences customer happiness and preference in virtual purchasing by combining these many value-related factors.

Another critical component of this study is measuring immersion experiences based on Charfi's seminal work (2014). In the context of online buying, immersion experiences describe how profoundly connected and engaged users feel in the virtual world. This sense of immersion is essential in influencing how customers view and feel about their shopping experiences. The study, which recognizes the vital part that consumer immersion has in affecting total shopping happiness and perceived value, aims to measure the depth and intensity of consumer immersion in virtual retail environments precisely by modifying Charfi's method.

Results

Table 1 presents a comprehensive overview of the constructs considered in our study, drawing upon data from the entire sample. This table provides insight into the mean and standard deviation values for the entire sample, offering a general understanding of the interrelationships among the five constructs outlined in the correlation matrix. The mean value for each construct is 5.19, with a standard deviation of 1.45, underscoring the diversity of responses elicited by our questionnaire. The correlation matrix values affirm the suitability of all constructs for integration into a structural equation model, with no indications of heteroscedasticity concerns.

To evaluate the psychometric characteristics of each scale, we utilized a statistical approach to guarantee the reliability and validity of our measurements. We analyzed Cronbach's alpha to evaluate convergent validity, emphasizing values over 0.7, which indicate high internal consistency. Additionally, we aimed for Average Extracted Variance (AVE) values higher than 0.5, which are consistent with recognized standards (Anderson & Gerbing,1998). The reliability of the scales was additionally substantiated by the t-values obtained, consequently increasing the validity of our measurements. The rigorous technique used in this process reinforces the scales as reliable and precise estimations of the focused concepts.

The discriminant validity was evaluated to confirm the distinctive characteristics of each construct. We calculated the confidence intervals for each pair of constructs and verified that the value "1" was absent. The absence of an intersection between the constructs confirms that they are independent of one other, consequently confirming the uniqueness of our measurement scales. The overall statistical adjustments for the total sample yield the following results: $\chi 2 = 302.14$; RMSEA = 0.058; CFI = 0.90; TLI = 0.91; and SRMR = 0.065.

Our findings strongly support the hypothesis that multisensory experiences significantly and positively influence attitudes toward virtual shopping. According to Velasco and Obrist (2021), the data emphasizes integrating various sensory elements to create immersive virtual shopping experiences. Thus, our findings support H1, emphasizing that sensory engagement contributes to consumers' positive perceptions of virtual shopping environments.

In our research, this hypothesis received empirical solid support, as evidenced by a beta value of 0.45 and a t-value of 3.21 ($p < 0.05$), both of which supported its validity. Our investigation showed a significant and positive relationship between the perceived value of online shopping and perception immersion. More interest in the online buying environment was correlated with an increased perception of the value of the online purchasing experience. According to Velasco and Obrist (2021), the data emphasizes integrating various sensory elements to create immersive virtual shopping experiences.

These results highlight the crucial role of creating engaging online shopping environments. Retailers and e-commerce platforms must prioritize features and interfaces that arouse consumers' senses since this type of immersion has always been linked with increased customer perceived value.

Furthermore, the validity of H2 is supported by our study, which has a beta value of 0.532 and a t-value of 3.98 ($p < 0.05$). We found a solid and favorable relationship between perception immersion and multimodal experiences. This previous idea suggests that customers' sense of immersion in the virtual world increases significantly when they use various senses (such as sight, sound, and touch) while buying online.

These results highlight the importance of integrating various sensory aspects into e-commerce platforms. Retailers should endeavor to provide a multimodal experience that includes interactive elements, crisp graphics, and even haptic input. These initiatives will increase immersion degrees, improving the overall online purchasing experience.

On the other hand, our results support H3, demonstrating its validity with a beta value of 0.31 and a t-value of 2.12 ($p < 0.05$). Our study revealed a noteworthy, favorable, and unexpected link between perceived immersion and technology stress. This previous condition implies that customers' involvement in the virtual purchasing environment paradoxically intensifies while they struggle with technological issues.

This finding emphasizes the complex relationship between immersion and technological stress. To improve the overall shopping experience, businesses should prioritize strategies that reduce technological stressors and guarantee a more effortless and engaging online shopping environment.

Additionally, we found convincing evidence that the relationship between technological stress and the sense of immersion in the virtual shopping environment is moderated by mindful approach consumers (Hypothesis 4: beta value: 0.39 and t-value: 2.67 ($p < 0.05$). This result emphasizes how vital a mindful approach is as a quality in consumers that can affect how technology stress affects immersion. Conscious shoppers are more conscious of their online experiences. They are, therefore, better able to manage and reduce the adverse effects of technological stress, improving their level of immersion in the virtual world of online shopping.

With a beta value of 0.15 and a t-value of 1.63 ($p > 0.05$), our analysis offers intriguing insights into Hypothesis 5, demonstrating that our investigation does not support this hypothesis. It did not appear that mindful approach consumers had a significant moderating effect on the relationship between multisensory experiences and the perceived value of online shopping. This result suggests that, in the context of our investigation, consumers' degree of mindful approach does not affect the relationship between multisensory experiences and their assessment of the value of online shopping. Although a mindful approach is essential for many aspects of the shopping experience, it has less effect on the relationship between perceived value and sensory engagement in this specific environment.

Furthermore, H6 is validated by our data, which shows a beta value of 0.39 and a t-value of 2.67 ($p < 0.05$). It was observed that conscientious consumers have a moderating effect on the relationship between perceived immersion and perceived value of online shopping. In short, customers who exhibit a mindful approach may improve the connection between their level of immersion in the online shopping environment and their overall opinion of the value of e-shopping. This result emphasizes how vital a mindful approach is as a quality in consumers that can enhance the effect of immersive experiences on perceived value. Retailers should consider customized approaches to interact with and satisfy conscientious customers, utilizing the opportunity to optimize the influence of immersive characteristics in the virtual shopping experience.

Discussion

The study's findings provide an understanding of essential consumer behavior elements in the online purchasing environment. The significance of perception immersion in moderating the relationship between technology emotions (multisensory experiences and technological stress) and the perceived value of e-shopping shows the dynamics that impact consumers' virtual experiences. This condition aligns with other research emphasizing the importance of developing immersive environments that promote positive consumer perceptions (Velasco & Obrist, 2021). Furthermore, the identified moderating effects of mindful approach customers provide an additional element, emphasizing the importance of consumer consciousness in influencing the impact of technological emotions on the perceived value of online buying. This coincides with the idea that consumers who adopt a considerate mindset are more competent at managing the comprehensive characteristics of technology, which decreases the potential adverse effects of technological stress (Anderson & Gerbing, 1998).

These findings will give fashion businesses practical implications for developing digital platforms. Understanding the significance of multisensory interactions while considering the moderating effect of attentive consumers could offer insight into improving all aspects of the virtual shopping experience. This is aligned with the permanent debate about the significance of businesses providing high priority to guarantee that consumers are satisfied with technology. This is linked to the performance of e-commerce platforms (Tankovic & Benazic, 2018). Furthermore, this study improves the current theoretical framework by expanding the Stimulus Organism Response (SOR) model. It emphasizes the interaction between technology emotions, perceptive immersion, and conscious consumer awareness in influencing the value of e-shopping. This research provides our understanding of the interplay between technology and consumer experiences by filling gaps in the existing literature on the adverse effects of e-shopping and the role of psychological factors as moderation variables (Lim, 2022; Gabriel et al., 2023). It also creates an environment for further investigations in this rapidly developing field.

Extending beyond academia, the consequences of this research have relevance for marketers working to improve specific aspects of the marketing mix in the digital environment. Understanding the multiple aspects of technology's impact on emotions, which can capture and stress consumers, allows marketers to customize their approaches to reduce technological stress while exploiting the immersive potential of digital platforms (Hussain et al., 2022). Conscious customers are essential in moderating and mediating technological influences, emphasizing the significance of creating digital interfaces connecting mindful approach consumers (Ghvanidze et al., 2019).

Furthermore, by understanding the specifics of virtual shopping experiences, marketers can improve their strategies according to fashion industry customers' complicated preferences and perceptions. Businesses can significantly boost client engagement and fulfillment in the online marketplace by customizing communication to connect to environmentally conscious customers and utilizing modern technologies such as augmented and virtual reality. This research presents an argument for marketers to modify and improve their strategies in response to the evolving nature of e-commerce.

CONCLUSION

Analyzing consumer behavior in the fashion industry is more challenging because of the digital change in the purchasing experience. This study aimed to research this area, focusing on the complex interactions between consumer psychology and technology. The concept of the “mindful approach consumer,” whose function in the virtual purchasing experience is crucial and revolutionary, lies at the center of this investigation. The study places itself in the nexus of technology, consumer consciousness, and market dynamics, drawing on the theoretical framework of the Stimulus-Organism-Response (SOR) model (Christian et al., 2022; Blanc et al., 2021).

Modern technology has completely changed how people purchase by providing multimodal experiences that may both engage and overwhelm customers. On the one hand, customers frequently struggle with the intricacies and fears associated with digital platforms, which presents a difficulty due to technical stress. However, these platforms provide profound, engaging experiences that could significantly enhance the buying experience. This study delves into this duality to fully comprehend how these opposing aspects of technology impact consumer attitudes and actions in the virtual world (Hussain et al., 2022; Remar et al., 2015).

The study's main conclusions provide a new perspective on how customers behave in online buying settings. They illustrate the complex interplay between technology emotion, perception immersion, and perceived e-shopping value, emphasizing the critical moderating function of attentive consumers and the mediating role of perception immersion. These results are essential to comprehending how customers see and value their online purchasing experiences in the fashion industry (Ghvanidze et al., 2019; Ma et al., 2020).

However, it is essential to recognize the inherent limits of the study's approach. The study uses self-reported data and focuses on a particular demographic: fashion industry customers. This may affect the generalizability of the results or generate biases. Additionally, while structural equation modeling offers valid statistical analysis, it could not accurately represent online commerce's complex and dynamic nature. These restrictions draw attention to the need to interpret the data cautiously and apply them more broadly with prudence.

In terms of future research directions, the report presents numerous options. Studying these patterns in sectors other than fashion is an essential next step that might confirm the findings' applicability to other industries and advance our knowledge of online buying habits. Another important field is analyzing how various demographic groups view and interact with virtual retail environments. More insights into customer behavior in digital purchasing may be obtained by comprehending the effects of age, gender, technical proficiency, and other demographic variables. Future studies should also consider the effects of new digital technologies, such as augmented and virtual reality, on online shoppers' experiences. These technologies will significantly impact how people purchase online as they develop, opening new possibilities to improve customers' interaction and experience.

Future studies should also consider the effects of new digital technologies, such as augmented and virtual reality, on online shoppers' experiences. As they develop, these technologies will significantly impact how people purchase online, opening new possibilities to improve customers' interactions and experiences. Future trends in e-commerce may be better understood by examining how these technological developments affect consumer attitudes and actions.

This study adds significantly to the body of knowledge on consumer behavior in virtual worlds from an academic perspective. This study adds to the body of knowledge on consumer behavior in academia by combining mindful approach theory with the stimulus-organism response (SOR) model, especially regarding online purchasing. It advances our knowledge of consumer behavior in the digital age by providing new insights into how customers engage with and evaluate products in virtual retail environments (Christian et al., 2022).

Practical and Theoretical Contribution

Among the main practical implications is the contribution to the gaps identified in the literature based on developing strategies that mitigate the adverse effects of virtual shopping experiences aimed at having better couplings with new technologies. Through understanding and analyzing the effects on consumer perception, improvements in experiences and minimization of adverse reactions can be implemented.

From a theoretical perspective, the implications revolve around understanding consumer psychology in the context of e-commerce services. On the other hand, identifying moderating variables that influence consumer perceptions opens new avenues for constructing models and theoretical

frameworks that explain consumer behavior in digital markets. This deep understanding can guide future research in consumer psychology and e-commerce studies.

CONFLICTS OF INTEREST

We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

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