

**Influence of Digital Technology Reliance on Compulsive Buying Behavior in Metropolitan Cities of Pakistan: A Mediated Moderated Model**

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**Abstract**

The rationale of the current study was to examine the mediating role of the urge to buy and the moderating role of income in the association between digital technology reliance and compulsive buying behavior. A sample of 377 participants completed questionnaire measures of compulsive buying behavior, urge to buy (enhancement, social, and coping motives), and reliance on digital technology (usage intensity and ease of navigation). PLS-SEM was used to comprehend the results. The conservation of resources theory is used to evaluate the framework. Despite digital technology's association with compulsive buying behavior, little is known about its underlying mechanisms. A cause-to-effect model is used in the current research, which helps elaborate on the relationship among the constructs with an underpinning theory. Results indicated that usage intensity was positively associated with compulsive buying behavior. The urge to buy partially mediated this association, where enhancement, social, and coping motives were significant indicators. In addition, income is a significant moderator between the mediator and compulsive buying behavior. Gender as a control variable had no impact; however, age as a control variable had a significant impact, showing youth to have high compulsive traits. These findings advance our understanding of how digital technology reliance causes stress that goes beyond consumer cognition and causes risky buying behavior. Limitations and implications are discussed.

## KEYWORDS

Digital technology, Usage intensity, Ease of navigation, compulsive buying behavior, and Buying motives.

### 1. Introduction

The new paradigm of virtual technologies guaranteed a corridor for prompt interconnectivity, swift ease of use, and instantaneous nature – has opened doors for the immediate addressing of consumers' needs and desires (Wang et al., 2021). Several scholars examined the digital paradigm and reported its adverse psychological and social contributions toward users where they inevitably demonstrate excessive reliance on media technologies (Abelsen et al., 2021). Accessing the phenomenon of extreme digital dependence has excruciatingly affected the emotional and behavioral state of human well-being (Limone & Toto, 2021). Despite cumulating evidence on the problematic variants of excessive media consumption, astoundingly the usage is to date incontrollable, causing severe damage in a variety of social and individual contexts (Dhir et al., 2021).

Internet usage has become an integrated part of our lives providing us with ease in communication and information search facilitating the purchase of products and services. The one-click simplicity of online transactions has made our lives easier through the comfort of our homes (Bighiu et al., 2015). As a result, internet usage and ease of connectivity put consumers at risk of developing compulsive buying disorder (Leong et al., 2018). In addition, smartphones further advance internet usage and act as an enabler for online CBB. These modern hi-tech devices offer customized, intriguing, and stimulating digital environments (e.g. mobile shopping platforms) allowing individuals to purchase with exceptional ease and without any human interaction (Mason et al., 2022). With this in mind, the current study sheds light on compulsive buying behavior concerning digital technology reliance where internet usage and ease of navigation may facilitate the development and subsequent satisfaction of those urges to buy felt by compulsive buyers.

Furthermore, ease of navigation is considered one of the primary factors for digital technology reliance which provides the user with a friendly interface while scrolling through websites equally contributing to and facilitating the buying process (Leong et al., 2018). On one hand, it is considered a resource where the user enjoys the ease of navigation which makes the buying procedure fast and convenient while on the dark side, the easiness contributes to compulsive buying behavior due to the feature of easy accessibility (Kukar-Kinney et al., 2016). Moreover, an individual comes across situational cues while web-browsing which are environmental stimuli, that are controlled and preferred by retail marketers, triggers individuals' thoughts, emotions, and behaviors (Schlosser, 2003). Extending situational cues through findings from literature predicts that environmental stimuli on web pages elicit a high level of pleasure and arousal enhancing the intention to explore and purchase (Ha & Lennon, 2010). Hence, the features represented as situational cues on the webpage, accessible via navigation act as an environmental stimulus provoking an urge to buy (Leong et al., 2018).

Nonetheless, much less attention has been paid to the damaging effects caused by excessive digitization, and the contributing factors manifesting the said damage are piteously understudied (Almeida et al., 2020; Olatunde-Aiyedun et al., 2021). Explicitly, individuals' reliance on virtual technology for work, socialization, and fulfillment of materialistic desires is becoming increasingly common (Echegaray, 2021; Wang et al., 2021). As such, users' reliance on human-machine interaction poses an incivility threat where they become insensitive to violence, exhibit higher levels of stress, anxiety, and depression, and experience social disconnection (Cerniglia et al., 2017). Henceforth, for the resolution of stress reduction individuals undertake actions to escape perceived stress (Huang et al., 2022). As a result, they are involved in buying behavior where they use materialistic possessions to experience pleasant emotions while blocking negative emotions (Dittmar et al., 2007).

Compulsive buying is a subset of futile reactive purchase behavior, deviating individuals towards an unnecessary urge to purchase as a result of negative feelings, environmental triggers, and internal desires (Jung, 2017; Nori et al., 2022; Huang et

al., 2022). For example, low self-esteem, anxiety, socially negative self-perception, or an escape from undesired events caused by hidden psychological strains induces behavioral reactions causing purchase dysfunctionality (Maccarrone-Eaglen & Schofield, 2017). Compulsive compulsion is seen as an addiction counteractively worsened by amplified reliance on digital technology (Darrat et al., 2016).

Given the excessive use of the internet, the ease of connectivity with uncapped usage intensity is critical to effectively counteract its potentially negative impacts (Almeida et al., 2020). Heavy media dependence and consumption impact internal and external emotional inferences, continuing to affect human behavioral well-being in daily life (Hansel et al., 2020). Literature finding entails negative effects of digital technology reliance may go beyond the emotional inferences forming a behavioral dysfunctionality (Kwon et al., 2016). This impending cause-and-effect phenomenon licenses an investigation because research to date has principally treated behavioral buying dysfunctionality in a conventional setting rather than in alignment with the increased digital reliance phenomenon that along the way is a human's emotional influence in the post-pandemic era (Hassani et al., 2021).

Excessive web browsing is an intense usage of technology regarded as an initial phase of online buying that entraps shoppers skimming for unneeded, needless information about products on a website causing a selection (Büchi et al., 2019). While browsing, consumers come across promotional marketing such as special limited-time offers triggering an urge to buy (Kwon et al., 2016). Results from the literature indicate a positive association between time spent browsing and purchase behavior as a result of increased exposure attributes such as usage intensity (Lin & Lo, 2016). Chaudhuri et al., (2021) attributed browsing to unjust abrupt buying behavior. To ascertain the effect of usage intensity on the urge to purchase extending to compulsive buying behavior (CBB), we propose usage intensity be included as a predictor in our research model.

Amusingly, many individuals are nested in the circle of excessive digital consumption in response to their negative feelings roused due to psychological, environmental, social, and physiological imbalances (Chen et al., 2021). It is essential to determine how and when the digital technology reliance begins to provoke users' emotional inferences affecting their motives to purchase and resulting in an adverse behavioral reaction (Chen et al., 2021; Buchi et al., 2019). Accordingly, we investigate the adverse effects of digital technology reliance in this study through the mediation of the urge to buy causing CBB.

Specifically, we propose a mediation moderation model where the objectives of the current study are (a) To determine the impact of digital technology reliance on individuals' urge to buy; (b) To explore whether the factors of consumers' urge to buy affect CBB; (c) To determine whether there exists an impact of consumer's income over CBB; (d) To explore the influence of age and gender towards CBB. By assessing these relationships, we seek to make an essential contribution to the literature regarding the adverse effects of digital technology on human emotional well-being in the post-pandemic era.

Firstly, many users are utilizing digital technology through various mediums that are leading to emotional inferences, such as coping, social, and enhancement motive causing a behavioral action of an urge to purchase, having an adverse effect of compulsive buying, hence the stakeholders and relevant authorities must pay close attention to the caused compulsive behavioral dysfunctionality (Büchi et al., 2019). Conservation of resources (COR) theory (S. E. Hobfoll, 1989) provides a grounding principle for the current study as it suggests that " individuals use various resources for accomplishing the desired task, but replenish those resources under the process thereby avoid stress" (Hobfoll et al., 1990; Holmgreen et al., 2017).

On the contrary, users who rely on digital technology excessively show psychological, emotional, and financial distress causing compulsive buying dysfunctionality (Chen et al., 2021). Hence, we aim to deliver more precise evidence for underlying inferences on digital technology reliance and its negative compulsive buying behavioral outcome for all study indicators.

Second, we expand the individual phenomenon of the digital technology reliance paradigm cut across the emotional state and behavioral dysfunctionality framework into the COR theory. According to S. E. Hobfoll et al., (2018) COR theory explains that "much of human behavior is based on the evolutionary need to acquire and conserve resources for survival, which is central to human behavioral genetics". Specifically, we predict that digital technology reliance in users' daily life act as a stressor that provokes negative emotions. To block these negative emotions individuals are involved in a reactive response to compulsive buying which has far lived emotional, psychological, and financial consequences (Lejoyeux & Weinstein, 2010; Bandyopadhyay, 2016). The understanding of the conceptual model of current research through COR theory will enhance scholarly understanding of the long-term unforeseen consequences of unconscious digital involvement which provoke internal motives causing the urge to buy triggering CBB over the internet.

Lastly, the literature on digital reliance in the post-pandemic times has called for more research on individual's psychological motives and behavioral reactions to better understand the subconscious effect on the human cognition cycle (Frankel & Krebs, 2021; Westera, 2012; Jiang & Stylos, 2021). We answer this call by examining negative behavioral reactions - discerning about an action to cope with arousal caused by external stimulus leads to an adverse behavioral disorder - as a risk factor that may make the behavioral reaction more permanent after coping with the stress caused by external stimulus. Examining both the users' stimulating and the coping experiences will provide a more accurate picture of digital reliance with the grounding principle of COR theory. As identifying the motives to cope with internal inferences is essential for enriching theories (Lazarus & Folkman, 1987) and devising effective controlling interventions for CBB, this study contributes to the literature on digital technology reliance and its stress processes.

## **2. Theoretical Background and Hypotheses Development**

### **2.1 Urge to Buy as a Behavioral Response to Digital Technology Reliance**

According to COR theory S. Hobfoll et al., (1990), when individuals lose their resources due to a stressful event, they are likely to protect residual resources and

engage in avoiding stressful situations to conserve remaining resources. Meanwhile, individuals are aggravated to replenish their lost resources through some risky actions (Zheng et al., 2020). In other words, post-experiencing stressors, individuals are keener on withdrawing themselves from traumatic circumstances by utilizing various stress coping strategies, such as internal inferences (Jung, 2017; Watson, 2002). More importantly, coping motives (enhancement, coping, and social) help block users' undesirable emotions by acquiring material possessions via online shopping made available through digital technology reliance (Bauer et al., 2012). Convenience shopping through digital forums replaces the stressors with positive emotional experiences satisfying their psychological needs (Dittmar et al., 2007).

A motive is elaborated as an individual's inner state that encourages a movement or an action (Miettinen, 2005). Motive is also described as arousal or an urge that provokes an individual to seek satisfaction. Moreover, the motive is also satisfaction seeking achieved through purchase behavior and is specifically termed a buying motive (Jung, 2017). Influences or considerations that prompt the urge to buy, persuade action, or define preference in the purchase of goods or services are included in the phenomenon of buying motives. A purchase action prompting internal positive reinforcement is referred to as an enhancement motive (Jung, 2017). In other words, an act that boosts positivity that an individual obtains via ownership of a product or service is termed EM (Jung, 2017). Hence, the capacity to buy becomes an easy journey in obtaining positive emotions and an escape from a negative state leads to repetitive buying behavior. On the contrary, the gloomier side of EM leads to CBB as a reason to reach a positive emotional state (Jung, 2017).

Considering the role of digitization and its reliance, the ease of navigation plays a major role by providing a platform of situational cues. The friendly nature of website browsing takes minimal searching effort in buying decisions (Ha & Lennon, 2010). The virtual layout plays an essential role in ensuring users' ease of navigation through an online environment influencing consumers' emotional responses (an urge to buy), in turn contributing to their CBB (Ha & Lennon, 2010; Lukavská et al., 2016). If an individual is looking to boost positive reinforcement through a purchase

behavior that is causing an urge to buy, ease of navigation provides an immediate solution to the problem through a seamless and flowing environment (Lukavská et al., 2016). Hence, we propose to test the association between ease of navigation and enhancement motive through the following hypothesis;

Hypothesis 1a: Ease of navigation influences enhancement motive

According to Rosell et al. (2022), a significant association was witnessed between internet usage where enhancement motive is identified as an underlying factor for problematic internet use. Literature suggests motives to be a cause of internet addiction where an individual utilizes it for escapism or mere entertainment (Chang et al., 2018). Considering virtual usage, motives are an essential factor that helps interpret its problematic use (Bischof-Kastner et al., 2014). Studies also exhibit a positive relationship between enhancement motive with loss of control which in the current study scenario is also an important determinant causing compulsive buying behavior (Rosell et al., 2022). This study specifically suggests to analyze:

Hypothesis 1b: Usage intensity influences enhancement motive

Moreover, social motive is defined as an external positive reinforcement that an individual experiences when socializing with family and friends (Jung, 2017). Additionally, a purchase behavior that involves buying for a social event e.g. celebration of a social occasion, or participation in an activity also falls under the umbrella of social motive. Social belonging is another factor that contributes to social motive, where a person has the desire to belong to a certain reference group and is involved in buying behavior (Stewart & Zack, 2008). Henceforth, buying encouraged by underlying social considerations leads to an increased frequency of purchase behavior ultimately contributing to CBB (Sahelices-Pinto et al., 2021). The user-friendly web interface used to buy due to SM provokes an urge to buy causing an increased frequency of buying action (Hassanein & Head, 2007). Thus, the current study suggests assessing the following hypothesis:

Hypothesis 2a: Ease of navigation influences SM



Heavy internet usage provokes an individual to be involved in sub-conscious and unnecessary social comparison provoking an urge to buy (Abelsen et al., 2021). A social affiliation-related motive is considered a reinforcement-related motive that drives a consumption behavior thus in our current study is reflected through an urge to buy (Rosell et al., 2022). Findings from literature also suggest that individuals use the internet on a social-communal basis which refers to the desire to belong to a certain group (Tosun & Lajunen, 2010). As a result, consumer relies on excessive use of digital technology to meet their social cravings or to escape from their feeling of loneliness which was created a circumstance of COVID-19 as well (Bischof-Kastner et al., 2014; Abelsen et al., 2021). Henceforth, the researcher intends to find the association between usage intensity and SM by proposing the following hypothesis; Hypothesis 2b: Usage intensity will be positively related to SM

Compulsive buying is viewed as a behavioral disorder, yet it can be a defensive response to internal emotional psychological strains, known as coping motives (Jung, 2017). That is, compulsive buying behavior can oblige as an adaptive function for individuals who are trying to cope with traumatic experiences or emotional trenches (Kukar-Kinney et al., 2016). A buying behavior induced as a coping mechanism for the negative emotional state is termed a coping motive (CM) (Jung, 2017). According to Challet-Bouju et al., (2020), negative coping plays a mediating role between perceived stress and compulsive buying. Perceived stress in the current study is an underlying factor for coping motive arousing an urge to buy, where the stress is caused through the provided ease of navigation via technology reliance. Furthermore, virtual layout plays an important role in interface technology and a website designer is an expert in adjusting the interface according to the desired goals (Lin & Lo, 2016). In addition, a website interface can also be used as an effective emotion-invoking stimulus in the current case we replace it with a negative emotional state. Hence this study specifically determines how ease of navigation provokes emotional reactions leading to influence an individual's urge to buy (Lin & Lo, 2016). Thus, the current study proposes to examine the following hypotheses;

Hypothesis 3a: Ease of navigation influences CM

Moreover, Leong et al., (2018) found a robust relationship between Facebook usage with stress and also reported such individuals to be less in control of things. In the current study, we replace Facebook usage with the outer paradigm of usage intensity under the umbrella of technology reliance and determine its impact on an urge to buy (Rafidah et al., 2009). Furthermore, a study conducted by Rosell et al., (2022) where problematic internet use was discussed and observed a significant link between coping motive and usage intensity. Moving forward, this study proposes to test;

Hypothesis 3b: Usage intensity influences coping motive

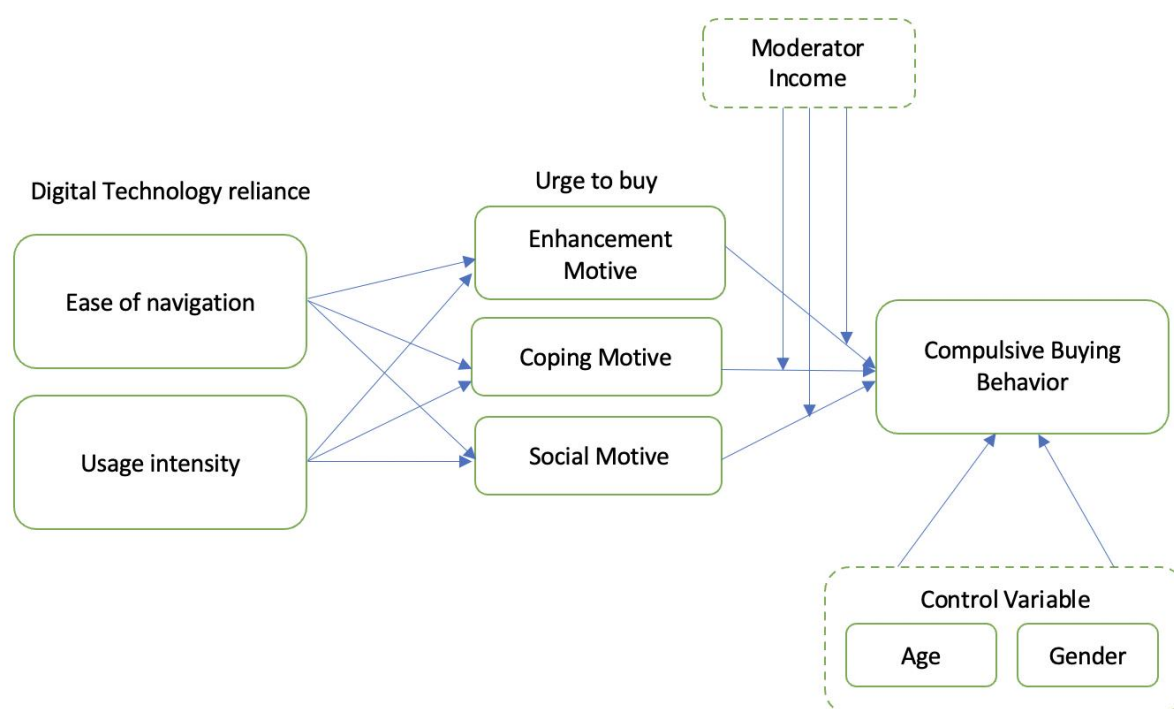


Figure 1: Conceptual Framework

Sources: Lin, S.-W., & Lo, L. Y.-S. (2016), Leong, L.-Y., Jaafar, N. I., & Ainin, S. (2018).

## 2.2 Mediating Effect Of an Urge to Buy Between Digital Technology Reliance and Compulsive Buying Behavior

Next, we argue that technology consumption provokes an unnecessary urge to buy which results in a reactive buying response (Lin & Lo, 2016). An individual may continually resort to online shopping to handle negative emotions after

perceived stress, potentially leading to an addictive buying behavior known as compulsive buying (Zheng et al., 2020). In other words, the path to compulsive buying emerges from digital technology reliance, where buying motives become a preferred strategy triggering the urge to buy and consequently becoming a predictor for online compulsive buying behavior (Lawrence & Elphinstone, 2021).

By integrating COR theory, we propose that technology reliance provides the user with the platform with excessive, unlimited exposure thus acting as a stressor counter producing an unnecessary urge to purchase (Kishore, 2020; Zheng et al., 2020). Moreover, technology reliance through an extension with COR theory aggravates internal emotions which the user initiates to block thus, provoking a reactive response leading to CBB for material possession (Halbesleben et al., 2014). In addition, technology reliance indirectly affects users' compulsive buying behavior via the urge to buy (enhancement, social, and coping motive), making the individual phenomenon of technology reliance an interconnected stress process (Lejoyeux & Weinstein, 2010). According to COR theory, the aggravation of buying caused by virtual reliance leads to the exhaustion of resources via the urge to buy as a result of negative coping motives, on the contrary, refilling the used resources and avoiding stress causes a contagious reactive CBB(Holmgreen et al., 2017).

According to empirical evidence, a coping mechanism is an individual's essential internal inference (enhancement, social, and coping motive) followed to avoid stress and an important linkage between digital reliance and compulsive buying behavior (Abelsen et al., 2021). Digital technology reliance provides an easy exposure and platform for navigating the coping mechanisms (enhancement, social, and coping motive) through an urge to buy causing compulsive buying (Hassani et al., 2021). The findings of the study conducted by Lin & Lo, (2016) indicate ease of navigation has a significant effect on consumers' emotional responses, subsequently affecting their urge to buy compulsively. Considering the current case model, we replace arousal and pleasantness with enhancement, coping, and social motives as emotional responses to study as a mediator between ease of navigation and compulsive buying behavior. Hence, we propose that perceived stress through ease

of navigation triggers consumers' internal inferences (enhancement, social, and coping motive) provoking an individual's urge to buy ultimately leading to online CBB (Zheng et al., 2020). To the best of the researcher's knowledge to date, no research has directly explored the mediating role of social, enhancement, and coping motives in the relationship between digital technology reliance and online compulsive buying. Drawing from literature and empirical studies, we propose to test

Hypothesis 4a: Enhancement motive mediates the link between ease of navigation and compulsive buying behavior

Hypothesis 4b: Social motive mediates the link between ease of navigation and compulsive buying behavior

Hypothesis 4c: Coping motive mediates the link between ease of navigation and compulsive buying behavior

In the second step, we argue that individuals stimulate through increased usage intensity, triggering the response based on an internal emotional state that causes a harmful response subconsciously. For example, the stimulation caused by increased internet usage intensity leads to emotional triggers precisely considering enhancement, social, and coping motives, causing a sub-conscious persistent buying dysfunctionality in the face of compulsive buying behavior (Kishore, 2020). Dittmar et al., (2007) considered the Internet a fast-growing alternative to conventional buying and found out that individuals who seek to enhance their emotions through online purchase behavior are more prone to compulsive buying behavior. Pahlevan Sharif et al., (2022) found a positive association between heavy internet usage in terms of social networking and SM in terms of social financial comparison causing online CBB. Empirical evidence from the literature also shows that SM and coping motives mediated the relationship between individuals' heavy internet usage and online CBB (Leong et al., 2018; Pahlevan Sharif et al., 2022; Dittmar, 2005). To test the above-discussed setting, the researcher suggests hypothesizing the following;

Hypothesis 5a: Enhancement motive mediates the link between usage intensity and compulsive buying behavior

Hypothesis 5b: Social motive mediates the link between usage intensity and compulsive buying behavior

Hypothesis 5c: Coping motive mediates the link between usage intensity and compulsive buying behavior

### 2.3 Effect of Urge to Buy on Compulsive Buying Behavior

Moreover, the Conservation of resource theory provides a link between users' stress and probable effects (S. E. Hobfoll, 2001). As per COR theory, the transmitted stress as an urge to buy induced due to technology reliance drains individuals' resources and as a result, users experience financial and psychological strain affecting their overall well-being (S. E. Hobfoll & Ford, 2007). Furthermore, due to the loss of resources, the user tries to re-acquire hence experiencing behavioral buying disorder (Holmgreen et al., 2017). The buying motives understudy is EM, SM, and CM through which an individual channel their stress and probable effects caused by technology reliance. A study by Rosell et al., (2022), has linked loss of control with enhancement motive where a positive association was found. Müller et al., (2015) stated the loss of control causes repetitive buying eventually making way for compulsive buying hence the study proposes to test the following hypothesis:

Hypothesis 6a: Enhancement motive influences compulsive buying behavior

Compulsive buying behavior is an internal need-driven behavior characterized by inappropriate repetitive spending patterns that interfere with individuals' social, personal, and professional lives. Individuals' addictive behavior can be studied through three motives enhancement, social, and coping motive (Jung, 2017). SM includes purchase behavior caused due to social reasons, social occasions, or social belongingness. Similarly, buying motivated by social considerations causes a frequent buying pattern sources CBB (Kukar-Kinney et al., 2016). Individuals with compulsive disorder traits have low self-esteem and negative perception of themselves therefore to feel better and enhance their self-worth they seek CBB (Kukar-Kinney et al., 2016).

Hypothesis 6b: Social motive influences compulsive buying behavior

The third path from an urge to buy via coping motive towards compulsive buying behavior is that consumers with compulsive traits who are in a state of unhappiness have associated shopping as a way to cope with their sufferings (Bighiu et al., 2015). Thus, they frequently repeat their buying pattern to feel better (Bighiu et al., 2015). According to Lee et al., (2012) people with low self-esteem turn towards online CBB as a coping mechanism so this study proposes to test;

Hypothesis 6c: Coping motive influences compulsive buying behavior

#### **2.4 Reflection of User's Income as Moderating Effect**

Ideally, purchase action provides an escape from negative emotions and unwinds from stressful circumstances. Income being a direct predictor of such purchase action along with unfortunate credit availability and digital forum dependence made compulsive buying a prevalent consumer behavioral disorder (Mulyono & Rusdarti, 2020). High income encourages their urge to buy acting as a stimulus providing a path to cope with a negative psychological state causing a reactive response of compulsive buying (Kishore, 2020). Empirical evidence on users with high-income levels reflects to be more compulsive in comparison to low-income groups (Sneath et al., 2009). Consequently, according to COR theory, income is presumed to provoke individuals' compulsive trait which is viewed as a resource-draining experience causing a reactive response resulting in resource loss thereby inhibiting resource restoration accomplished through compulsive buying behavior (Holmgreen et al., 2017; Mulyono & Rusdarti, 2020).

Income is considered a dominant socio-demographic factor regulating the relationship between stressors and users' compulsive buying behavior (Mulyono & Rusdarti, 2020). As evident from the literature, individuals with high incomes bear the freedom to support their compulsive activities in comparison to financially constrained lower-income groups (Leong et al., 2018). Literature findings from various studies show income levels significantly impact CBB considering individuals with high-income groups including young people (Zheng et al., 2020) (Mulyono & Rusdarti, 2020). Moreover, Sneath et al., (2009) claim income to be a moderator between depression and CBB. Considering the current study, depression is a

negative psychological state that underlies a coping motive causing an urge to buy resulting in a compulsive buying behavior (Sneath et al., 2009; Leong et al., 2018).

Combining the theoretical reasoning and previous findings, we anticipate income to possibly reflect and moderate the relationship between predictors and CBB. Based on the way of thinking from previous research, it can be formulated to test;

Hypothesis 7a: Income moderates the link between coping motives and compulsive buying behavior

Hypothesis 7b: Income moderates the link between enhancement motive and compulsive buying behavior

Hypothesis 7c: Income moderates the link between social motives and compulsive buying behavior

## 2.5 Reflection of User's Age and Gender as Control Variables

Age and gender as control variables are introduced in the current study, where according to Dittmar, (2005) the level of compulsivity is lower for older consumers in comparison with youth. To reiterate COR theory (S. Hobfoll et al., 1990), the younger generation possesses more life experiences having high involvement in consuming resources to deal with temptations leading to compulsive buying behavior via the path of the urge to buy (Roberts & Jones, 2001). Liu et al., (2022) found older individuals to be less compulsive in their buying and found age to have a diminishing effect on compulsive buying behavior. Young individuals bear a higher propensity toward CBB in comparison to older age individuals (Rodríguez-Brito et al., 2021; Mazhar, 2022). Literature posits individuals' compulsive buying tendencies change due to life development priorities, hence it is expected for older individuals to be less oriented toward compulsive buying as compared to the youth. The reason for older individuals' less inclination towards compulsive buying behavior is due to higher maturity and accumulation of life experiences (Tarka, Harnish, et al., 2022). Therefore, we postulate the following hypothesis;

Hypothesis 8: Age has a confounding effect on compulsive buying behavior

According to user's gender, female consumers are profoundly believed to be more compulsive in comparison to men but empirical results from studies have

reached conclusions otherwise (Dittmar, 2005; Roberts & Roberts, 2012; Kwak et al., 2002; O'Guinn & Faber, 1989). Interestingly, Dittmar, (2005) found younger people as more prone to compulsive buying and also confirmed the literature's documented gender differences. Although women typically scored higher than men considering the previous research on CBB the results of the compulsive trait among adolescents are gender-indifferent (Dittmar, 2005; Roberts & Roberts, 2012; Müller et al., 2015). Furthermore, Roberts & Roberts, (2012) found early adolescents to be highly compulsive in buying due to heightened stress, and gender as moderator was insignificant.

In addition, women tend to be more inclined toward the enjoyable aspect of shopping, possess a stronger motivation for it, and regulate their negative emotions (stress, anxiety, depression) through compulsive buying behavior (Tarka, Kukar-Kinney, et al., 2022). On the other hand, d'Astous, (1990) and Scherhorn et al., (1990) support previous findings indicating women bear compulsive buying traits and are more apt to view CBB as normal behavior. However, Block & Morwitz, (1999) argued that women bear lower compulsive tendencies than men (Elif, 2010). Hence, the goal of the current research is to use gender as a control variable to investigate its impact (if any) on CBB and clarify the role of gender towards compulsive buying behavior Therefore, the current study suggests testing;

Hypothesis 9: Gender has a confounding effect on compulsive buying behavior

### 3. Method

#### 3.1 Procedure and Participants

Individuals between the age group of 18-50 years considering all genders, residing in the metropolitan cities of Pakistan were requested to fill out the study questionnaire through the Google form link, where participation was completely voluntary. The generated link was circulated through the Facebook community, personal connections, university students, and parent networks. A total of 450 reported responses were received along with demographic information, out of which 73 were filtered out due to age-specific requirements and non-responses. The reason for restricting responses between 18 -50 years of age is that research suggests



that older people are less involved in the overall shopping experience inclusive of online shopping and have a lesser propensity for compulsive buying hence there is less technology reliance (Liu et al., 2022; Rodríguez-Brito et al., 2021; Mazhar, 2022; Tarka, Harnish, et al., 2022).

The current study follows a non-probabilistic, convenience sampling technique due to the subject's ease of approachability. According to Hair et al., (2006) [26, p.605], the minimum participation for the sample frame to perform confirmatory factor analysis (CFA) is between 100 and 150. Additionally, Chong et al., (2018) and Yap & Khong, (2006) declared the sample size of 193 as sufficient to perform statistical analysis of PLS-SEM. The minimum sample size (Loehlin, 2004) is declared 100-200 whereas in another study the same researcher has produced evidence for the sample size to be eight times the number of variables plus fifty. Moreover, different studies have produced various data sets to be sufficient where according to Stevens, (2012) there should be at least 15 sample points for each variable included in the study.

Bentler & Chou, (1987) and Kline, (2015) suggest that the sample size be five times the number of items included in the questionnaire. Marsh et al., (1988) propose sample size should be nine times the number of variables included in a study see table. The sample size calculated from Raosoft software has resulted in 377. Henceforth, given the previous research, the minimum sample size for the current study is based on 377 respondents which represents the highest number of required responses considered sufficient to run the essential statistical procedures such as Structural Equation Modeling (SEM) (Chong et al., 2018; Yap & Khong, 2006).

Table 1: Sample Size Determination

<b>Rule of thumb</b>	<b>Reference</b>	<b>The minimum sample size for the study</b>
The minimum sample size should be between 100 and 200	(Loehlin, 2004)	100 - 200
The sample size should be eight times the number of variables plus	(Loehlin, 2004)	98

fifty.

There should be at least 15 sample points for each variable included in the study.	(Stevens, 2012)	90
The sample size should be five times the number of items included in the questionnaire	(Bentler & Chou, 1987; Kline, 2015)	200
The sample size should be nine times the number of variables included in a study	Marsh et al., (1988)	54
The minimum participation for the sample frame to perform confirmatory factor analysis (CFA)	(Hair et al., 2019)	100 – 150
The minimum sample size declared sufficient to perform statistical analysis of PLS-SEM	Chong et al., (2018) and Yap & Khong, (2006)	193
Sample size calculated through Raosoft software	RaoSoft	377

### 3.2 Measures

This study is quantitative in nature and data collection is observed through an adopted structured questionnaire. All items of the constructs are measured using a five-point Likert scale (1 indicates least level agreement and 5 indicates highest level agreement).

#### Digital Technology Reliance

Increased digital technology reliance is measured through two sub-scales, usage intensity and ease of navigation. The scale for usage intensity is adapted from a scale developed by Mueller et al., (2011) and a refined version by Sharif & Khanekharab, (2017) to assess excessive digital technology usage. The scale consists of seven items (e.g., “I spend more time than I planned to use SNS”) where the previous reliability for the scale is 0.864 (Pahlevan Sharif et al., 2022). , the scale for ease of

navigation is adapted from (Semeijn et al., 2005) and consists of five items that include (e.g., 'Easy access to all services,' 'Pages download quickly,' 'Website is user friendly,' 'Searching is easy,' and 'Navigation is easy') (Lin & Lo, 2016).

### 3.2.2 Urge to Buy

We measured the urge to buy through three buying motives: enhancement, social, and coping motives using a three-dimensional scale adopted from Stewart & Zack, (2008). The scale comprises five items for each buying motive and all the items were measured on a five-point Likert scale. The previous reliability of the three subscales of enhancement, social motive, and are is 0.865, 0.9,04, and 0.796 respectively. To measure enhancement motive one of the scale items includes (e.g., "I indulge in shopping because you like the feeling"). To measure social and coping motives, the scale items include (e.g., I do shopping as a way to celebrate) and (e.g., I bought things to relax) respectively (Jung, 2017).

Table 2: Measurement Scale

Variable	Constructs	Codes	Instrument authors	No. of Items	Previous Reliability	Measurement Scale
Digital Technology	Ease of navigation	EO N	Semeijn et al. (2005)	7	0.747	1=SA,5=SD
Reliance	Intensity of usage	IoU	Pahlevansharif & Khanekharab, 2017	5	0.864	1=SA,5=SD
Urge to buy	Enhancement motive	EM	(Stewart & Zack, 2008)	5	0.865	1=SA,5=SD
	Social motive	SM	(Stewart & Zack, 2008)	5	0.904	1=SA,5=SD
	coping motive	CM	(Stewart & Zack, 2008)	5	0.796	1=SA,5=SD

compulsi

ve

buying

behavior

CBB	Edwards (1992)	13	0.76-	1=SA,5=S
			0.91	D

### 3.2.3 Compulsive Buying Behavior

Compulsive buying behavior was measured by a famous scale developed by Edwards, (1992) where this measure is authenticated and is consistent since many previous studies have computed and confirmed the reliability coefficient. The reliability coefficient for CBB is shown in Table 1. CBB was measured using five dimensions; tendency to spend, drive to spend, post-purchase guilt, dysfunctional spending, and feelings about shopping & spending. The first dimension, the tendency to spend consists of five items (e.g., "I sometimes feel the strong inner push to go shopping"), where the reliability of the scale is shown in Table 1. The second-dimension drive to spend comprises two items (e.g., "Sometimes, I buy things even when I don't need anything") with a reliability coefficient is 0.79.

The third dimension, post-purchase guilt contains two items (e.g., *Sometimes, When I go shopping and buy in excess, then I feel guilty or ashamed*) where the reliability coefficient is 0.76. The fourth dimension of compulsive buying consists of two items (e.g., *I sometimes buy things even though I cannot afford them*) with a reliability figure of 0.90. Feeling about shopping and spending being the fifth dimension also comprises two items (e.g., *I get little or no pleasure from shopping*) bear past reliability coefficient of 0.86.

## 4. Results

### 4.1 Data Screening

A total number of 377 responses were considered for data analysis post-data cleaning and filtration. Mardia's multivariate skewness and kurtosis test were used as a first step for data screening which established the data are skewed and kurtotic; thus, lack normality (see Figure 3). Hence the non-parametric statistical method is justified use (Hair et al., 2019). The data were assessed for multivariate outliers using

the Mahalanobis distance test as a next step (Tabachnick et al., 2019). Case 242 was an identified outlier which was removed.

#### 4.2 Demographic Profile of Respondents

The sample comprises 157 (42%) males and 220 (58%) females and 70% are aged between 29– 39 years. The majority of the respondents reported university-level education where 46% belong to Karachi, Pakistan. Approximately 49% of individuals stated to have a source of income from their husbands and 76% declared as married individuals. More or less 36% are housewives and 43% belong to the income group PKR 100,000 – 300,000. More or less 25% of respondents reported their shopping frequency as once or twice a month.

Table 3: Demographic Profile

Gender	Male	157	41.6%
	Female	220	58.3%
Age	18-28	47	12.4%
	29 - 39	256	67.9%
	40 - 50	74	19.6%
Level of Education	primary	0	0
	secondary	1	0.2%
	intermediate	23	6.1%
	bachelor	134	35.5%
	master	178	47.2%
	Ph.D./MPhil	41	10.8%
City	Karachi	174	46.1%
	Lahore	47	12.4%
	isl	96	25.4%
	other	60	15.9%
Source of Income	personal/job	159	42.2%
	parents/guardian	35	9.2%
	husband/housewife	182	48.5%

	Other	1	0.2%
Marital Status	single	41	9.2%
	married	289	76.6%
	divorced	13	3.4%
	separated	1	0.2%
	Other	3	0.8%
Occupation	student	42	11.1%
	employee	131	34.7%
	self-employed	54	14.3%
	housewife	136	36.1%
	unemployed	14	3.7%
Income	50,000-100,000	63	17%
	100,000-200,000	86	23%
	200,000-300,000	76	20.2%
	300,000-400,000	43	11.4%
	400,000+	89	23.6%
Shopping Frequency	twice	106	28.1%
	once	87	23.1%
	2 to 3	45	12%
	3 to 4	52	14%
	4 to 5	29	7.8%
	5 to 6	20	5.3%
	daily	8	2.1%
	6 to 7	4	1.06%
	weekly	10	2.7%
	daily	16	4.2%

### 4.3 Measurement Model

The current study comprises both mediation and moderation; hence PLS-SEM is utilized for statistical analysis as it effectively analyzes complex models in

marketing and social sciences-related studies (Henseler & Chin, 2010). Construct reliability and validity analysis is summarized in Table 4. Reliability for latent variables' is established through a composite reliability (CR) measure with a criterion value of 0.7 (Tabachnick et al., 2019). Additionally, the variables' reliability was also asserted through outer loadings being above the criterion value of 0.7 (Hair et al., 2019). Construct convergent validity was established through the Average Variance Extracted (AVE) was above the criterion value of 0.5 (Tabachnick et al., 2019).

Table 4: Reliability and Validity

Construct	Items	Loadin g	CB Alpha	CR	AVE	sqrt(AVE )
Compulsive Behavior	CBC2	0.684	0.838	0.87	0.50	0.712
	CBD1	0.701				
	Buying CBT1	0.709				
	CBT2	0.772				
	CBT3	0.731				
	CBT4	0.658				
Ease of Navigation	EON	0.835	0.889	0.91	0.68	
	1			4	1	0.825
	EON			0.874		
	2					
	EON			0.817		
3						
EON	0.809					
4						
EON	0.789					
5						
Usage Intensity	UI1	0.741	0.869	0.89	0.56	0.748

	UI2	0.829				
	UI3	0.775				
	UI4	0.776				
	UI5	0.724				
	UI6	0.682				
	UI7	0.701				
Enhancement Motive	EM1	0.864	0.922	0.94	0.76	
				1	2	0.873
	EM2	0.893				
	EM3	0.833				
	EM4	0.876				
	EM5	0.896				
Social Motive	SM1	0.747	0.615	0.79	0.55	
				1	8	0.747
	SM2	0.755				
	SM3	0.740				
Coping Motive	CM1	0.697	0.748	0.83	0.53	
				6	2	0.729
	CM2	0.850				
	CM3	0.767				
	CM4	0.836				
	CM5	0.813				

In the next step, latent variables' discriminant validity was established (see Table 5 ) as the AVE's square root of each given variable is greater than their correlation with other variables (Fornell & Larcker, 1981).



Table 5: Fornell- Larcker Criteria

	CBB	CM	EoN	EM	SM	UI
CBB	<b>0.712</b>					
CM	0.519	<b>0.729</b>				
EoN	0.123	0.044	<b>0.825</b>			
EM	0.540	0.618	0.089	<b>0.873</b>		
SM	0.464	0.623	-0.002	0.622	<b>0.747</b>	
UI	0.299	0.285	0.074	0.227	0.191	<b>0.748</b>

Note: The values in bold are AVE sq rooted values

Abbreviation: CBB: compulsive buying behavior, CM: Coping motive, EoN: Ease of navigation, EM: enhancement motive, SM: social motive, UI: Usage intensity

The Heterotrait-Monotrait (HTMT) ratio was utilized as an emerging and more reliable criterion of discriminant validity. The HTMT ratio for each construct was less than the threshold value of 0.5 (Henseler et al., 2015). Henceforth, all the items are declared reliable and valid and established through measurement model assessment.

Table 6: Heterotrait-Monotrait Ratio (HTMT)

	CBB	CM	EoN	EM	SM	UI
CBB						
CM	0.599					
EoN	0.136	0.073				
EM	0.600	0.708	0.094			
SM	0.605	0.861	0.109	0.778		
UI	0.349	0.355	0.129	0.246	0.255	

Abbreviation: CBB: compulsive buying behavior, CM: Coping motive, EoN: Ease of navigation, EM: enhancement motive, SM: social motive, UI: Usage intensity

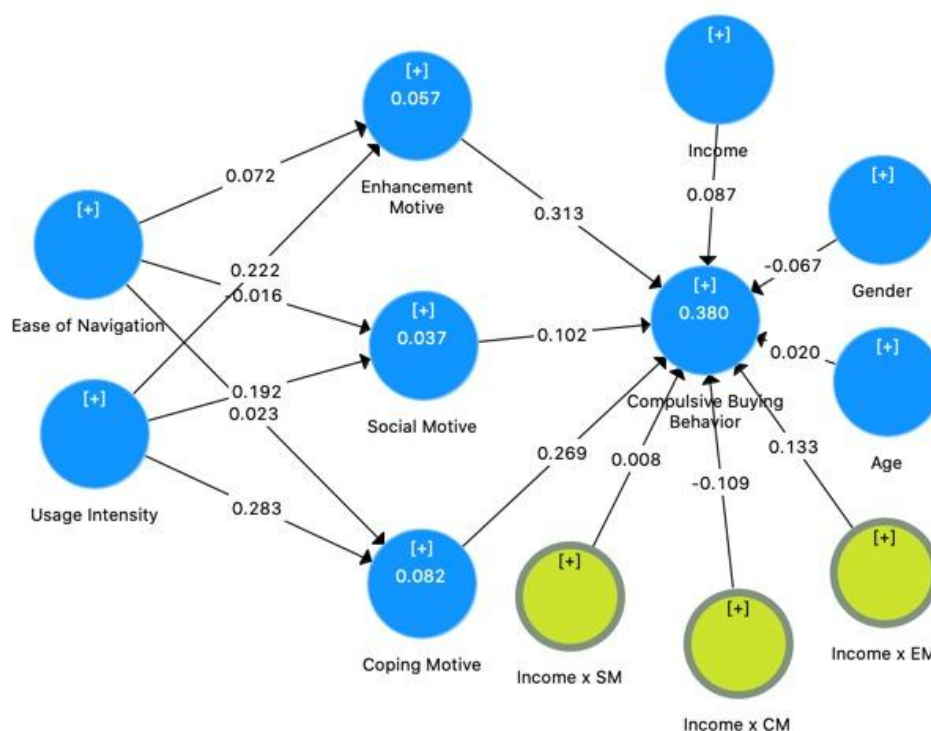


Figure 2: PLS Model Results

#### 4.4 Direct Effects

The hypotheses testing was done through Bootstrapping with 5000 subsamples. Table 7 summarizes the hypothesized direct effect path coefficients, T-values, P-values, and decisions. The findings do not support H1a, H2a, or H3a ( $P > .05$ ), which proposes that ease of navigation does not affect enhancement, social, and coping motives. However, H1b, H2b, and H3b are supported by the analysis results ( $P < .05$ ) which indicate usage intensity has a significantly positive impact on enhancement, social, and coping motives. Usage intensity has a positive impact on users' urge to buy.

Findings from H6a and H6c are supported that proposes enhancement and coping motive to have a positive impact on compulsive buying behavior. However, H6b findings are not supported ( $p > .05$ ) which implies that social motives have no

impact on users' compulsive buying behavior. Findings from H7 are also supported indicating that income has a positive impact on compulsive buying.

Table 7: Total Direct Effect

			Original	Sample	Standard	T	P	
			Sample	Mean	Deviation	Statistics	Value	Decision
H1a	EoN	->	0.072	0.071	0.075	0.961	0.337	Not Supported
	EM							
H2a	EoN	->	-0.016	-0.015	0.084	0.191	0.848	Not Supported
	SM							
H3a	EoN	->	0.023	0.022	0.070	0.322	0.748	Not Supported
	CM							
H1b	UI	-> EM	0.222	0.228	0.057	3.918	0.000	Supported
H2b	UI	-> SM	0.192	0.202	0.053	3.662	0.000	Supported
H3b	UI	-> CM	0.283	0.293	0.048	5.926	0.000	Supported
H6a	EM	->	0.313	0.312	0.072	4.374	0.000	Supported
	CBB							
H6b	SM	->	0.102	0.108	0.082	1.251	0.212	Not Supported
	CBB							
H6c	CM	->	0.269	0.270	0.073	3.675	0.000	Supported
	CBB							
H7	Inc	->	0.087	0.084	0.047	1.858	0.023	Supported
	CBB							

Abbreviation: CBB: compulsive buying behavior, CM: Coping motive, EoN: Ease of navigation, EM: enhancement motive, SM: social motive, UI: Usage intensity

#### 4.5 Moderation Effect

Previous studies have indicated that users with depression, low self-esteem, and anxiety are more prone to compulsive buying activities (Sneath et al., 2009;

Suresh & Biswas, 2020). It is suggested by previous studies to assess the moderating effect of income on the user’s inner psychological state causing an urge to buy CBB (Sneath et al., 2009; Leong et al., 2018). The results support hypotheses H7, H7a, H7b, and H7c ( $p < .05$ ) that show income to have a significant effect on coping, enhancement, social motive, and compulsive buying behavior. Hence results confirm that Income provokes an individual’s urge to purchase positively.

Table 8: Moderation Effect

		Origin al Sample	Sampl e Mean	Standar d Deviatio n	T Statistics	P Values	Decision
H7 a	Inc x CM -> CBB	0.139	0.122	0.058	2.869	0.000	Supporte d
H7 b	Inc x EM -> CBB	0.133	0.127	0.064	2.069	0.039	Supporte d
H7 c	Inc x SM -> CBB	0.232	0.328	0.056	3.828	0.000	Supporte d
H7	Inc -> CBB	0.087	0.084	0.047	1.858	0.023	Supporte d

Abbreviation: CBB: compulsive buying behavior, CM: Coping motive, EoN: Ease of navigation, EM: enhancement motive, SM: social motive, UI: Usage intensity

#### 4.6 Mediation Effects

The proposed model has a simple mediation path (see Table 9). The results propose partial mediation. The hypotheses H5a and H5c are supported, usage intensity has a positive impact on compulsive buying behavior along the mediated path of enhancement and coping motive. Whereas, usage intensity does not impact CBB through the mediated path of social motive. Similarly, hypotheses H4a, H4b, and H4c are statistically insignificant and do not support that indicates for ease of navigation has no impact on compulsive buying through the mediated paths of enhancement, social, and coping motives.

Table 9: Mediation Effect

		Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	Decision
H5a	UI -> EM-> CBB	0.069	0.072	0.026	2.633	0.009	Supported
H5b	UI -> SM -> CBB	0.020	0.022	0.018	1.083	0.280	Not Supported
H5c	UI -> CM -> CBB	0.076	0.079	0.025	3.030	0.003	Supported
H4a	EoN -> EM -> CBB	0.023	0.023	0.025	0.897	0.370	Not Supported
H4b	EoN -> SM -> CBB	-0.002	-0.001	0.011	0.146	0.884	Not Supported
H4c	EoN -> CM -> CBB	0.006	0.006	0.020	0.310	0.757	Not Supported

Abbreviation: CBB: compulsive buying behavior, CM: Coping motive, EoN: Ease of navigation, EM: enhancement motive, SM: social motive, UI: Usage intensity

#### 4.7 Control Variables

Furthermore, we found a significant effect of the control variable of age ( $P=0.002$ ,  $t=0.489$ ), thus H8 is supported. Whereas no significant effect of gender ( $\beta=0.001$ ,  $t=0.025$ ) is found on compulsive buying behavior. Hence, H9 is not supported.

Table 10: Control Variables

		Original Sample	Sample Mean	Standard Deviation	T Statisti cs	P Valu es	Decision
H8	Age -> CBB	0.020	0.019	0.041	0.489	0.002	Supported
H9	Gender -> CBB	-0.067	-0.065	0.036	1.858	0.064	Not supported

## 5. Discussion

### 5.1 Summary of Findings

The current study focused on ease of navigation and usage intensity in terms of digital technology reliance concerning the internet where digital dependence is considered an emerging stressor. Cause and effect are tested where the effect of digital technology in post covid-19 times was studied having an impact

on consumer's cognitive cycle and provoking an urge to buy. First, we found that individuals' internet usage intensity reflects an external stimulus acting as a stressor and a trigger that provokes enhancement, coping, and social motives causing an urge to buy. Second, the findings are in line with the literature which states that post experiencing the stressors, the individual looks up to reducing the negative emotions caused by the stressor hence as an outcome, the individual is involved in taking risky action of compulsive buying behavior (Hansel et al., 2020; Kwon et al., 2016; Chen et al., 2021).

Moreover, the findings that individuals' income strengthened the path from digital technology reliance to causing compulsive buying behavior are also aligned with previous studies conducted by Mulyono & Rusdarti, (2020); Kishore, (2020); and Holmgreen et al., (2017). Similarly, the income of individuals established a positive connection with compulsive buying behavior and also aggravated their urge to buy. Furthermore, considering reflection of individuals' age on CBB showed a significant effect which implies that the older the individual the lesser the compulsive traits, and these findings are in line with previous studies conducted by Dittmar, (2005), Roberts & Jones, (2001), Liu et al., (2022), Rodríguez-Brito et al., (2021), Mazhar, (2022) and Tarka, Harnish, et al., (2022). Whereas, the effect of gender over compulsive buying behavior resulted as insignificant and hence showed no reflection. Therefore, according to the findings of the current study gender does not influence the compulsive traits of individuals. The current results differ from the findings of Tarka, Kukar-Kinney, et al., (2022), d'Astous, (1990), and Scherhorn et al., (1990) where they signified women as a primary contributor towards CBB. Whereas, Block & Morwitz, (1999) and Elif, (2010) found males to be equally involved in compulsive buying activities whereas the findings of the current study are gender indifferent and in alliance with Dittmar, (2005), Roberts & Roberts, (2012) and Müller et al., (2015).

After controlling for the effects of all these variables, negative affect together with enhancement and coping motives predicted the compulsive buying scores of the sample. It seems negative emotions may be motivating compulsive buying and a

decrease in negative affect and an increase in positive affect may be maintaining the problem as Miltenberger and colleagues (2003) suggest. The results of the present study are especially important to reveal the robust predictive role of affect regulation motives on compulsive buying behavior after controlling for the effects of demographics, income, purchased items, and positive and negative effects. The contribution of enhancement and coping motives on the explained variance of compulsive buying was more than the contribution of the other study variables although those variables were entered into the regression equation in the preceding steps.

## 5.2 Theoretical implications

According to the main propositions of COR theory, individuals protect their residual resources, and as a resultant motive, individuals conserve remaining resources. Hence, they avoid stressful situations that might consume personal resources. Meanwhile, individuals try to replenish their lost resources through risky actions. This has been unexplored in empirical research about compulsive buying behavior. From this perspective, the current study exhibited that individuals perceive stress due to excessive usage of the internet hence they tend to seek negative coping strategies to block their negative emotions. The negative coping strategies could be relying on their social circle, being eager to take a break, and being involved in tasks that excite them. The agenda behind blocking negative emotions is to come out of the perceived stress caused by digital technology reliance (Lin & Lo, 2016).

Second, COR theory is seen as restricted around individuals and their own stress-causing experiences, omitting the fact that many individuals are influenced by an external stimulus which becomes a trigger. Our study expanded the COR theory's concept of resource loss, its preservation, blocking negative emotions, and replenishment to the interdependent cause-and-effect cycle, especially in the context of perceived stress becoming a trigger provoking negative emotions causing an urge to buy resulting in a compulsive activity. Specifically, by assessing the experiences of individuals, we provided empirical support for the notion that excessive reliance on

internet usage causes stress that goes beyond human cognition, causing a dysfunctional response to compulsive buying behavior. Thus, our findings shed light on the interdomain stress mechanism by which digital technology reliance are extended to emotional coping strategies and behavioral outcome (Bischof-Kastner et al., 2014).

Most importantly, this study extends the literature with the addition of knowledge of consumer compulsive buying behavior in the context of the low-income country of Pakistan. The developing and emerging economies are unclear about their standing on compulsive buying hence this study holds its prevalence in this regard. Also, to the best of the researcher's knowledge, this study is the first one to include the elements of enhancement, coping, and social motives as mediators to grasp its relevant impact. In terms of control variables of age and gender, the study found gender to be indifferent causing no effect on compulsive buying. Whereas, age being the control variable has a visibly positive impact on compulsive buying, strengthening the results found in the literature.

### 5.3 Practical implications

Considering the prevalent use of digital technology (internet) and its impact on human well-being in this study, individuals should recognize technology reliance as a troublesome stressor and address it more preemptively, rather than discounting it as a triviality. To combat the problems caused by digital reliance more meticulously, individuals need to understand how and when it starts to cause a subconscious impact and draw boundaries according to its usage. Also, there exists both positives and negatives of digital life however, digital life has and will continue to have a dark side. Addictive technologies have captured the attention and mind space of young individuals as per the findings of the current study agitating them to take risky actions.

To summarize, digital dependence has started to threaten our psychological, physical, economic, and, financial well-being. The findings of the current study could serve as an eye-opener for laymen as how to negatively digital reliance is having an impact on individuals' lives. Individuals should be mindful of their digital



usage patterns, should know when it's time to put a halt, should only use digital forums to connect with people who are an inspiration, and should not inflict negative emotions.

Our moderation effect being a significant predictor suggests income has a positive impact on compulsive buying. Hence, the findings from the current study show that the higher the income, the higher the support towards compulsive buying activities. The current findings help individuals realize how the level of income is linked with their compulsive buying and offer them a direction towards strategically controlling their finances to avoid being in financially stressful situations. One potential approach is to seek training programs to acquire control over compulsive spending traits. Lastly, for policymakers, it is an alarming situation that unlimited internet availability has led to its excessive usage which in turn has created major mental health problems, behavioral disorders (compulsive buying, materialism, depression, anxiety, low self-esteem due to social comparison, and dissatisfaction with life) and other social problems among individuals. Therefore, the government should take some impactful steps (workshops, training programs, and educational programs to increase exposure through social media) to minimize the negative effects of social comparison.

#### 5.4 Limitations and Future Research Directions

The current study deployed a cross-sectional approach for data collection hence the study of temporal effect was not accomplished. Since the experiences of the individuals may change over time regarding compulsiveness and digital dependence, a longitudinal approach is recommended to determine the time-based factor that might have an impact on their compulsive buying behavior. Moreover, the study was conducted in the Pakistani geographical context and therefore the findings cannot be generalized to other low-income countries based in different geographic regions. Therefore, forthcoming research can be carried out in different geographic regions to enhance the scope of generalizability. Furthermore, a cross-nation study could be conducted to study whether cultural differences may cause an impact in predicting CBB among individuals using the internet. Another limitation

of the study is the sample size which could be larger and more diverse enhancing both the internal and external validity of the findings.

## 6. Conclusion

This study's findings revealed usage intensity to have a direct impact on the urge to buy where buying motives come into play. The usage intensity has a positive indirect impact on compulsive buying behavior as well. The moderator of income resulted as significant whereas, the findings related to gender resulted to be indifferent. The impact of age significantly indicated that youth bears high compulsive traits whereas with aging the compulsive traits of an individual diminish due to maturity and lack of life experiences. In addition, enhancement and coping motives resulted as significant mediators between usage intensity and CBB.

The current study also disclosed that the effect of stress caused by digital technology reliance may go beyond human cognition and emotional inferences instigating an adverse reaction of compulsive buying behavior and also creating psychological imbalances. We expect the current findings to draw more academic attention to the context of the harmful effect of digital technology reliance so that future research will examine the consequences in different temporal settings. So, we can gather meaningful insights into how long the stress caused by digital technology reliance endures, what additional elements determine the intensity of its stress effects, and how the short-term effects can be stopped before posing long-term threats to humans' emotions and their psychological being.

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