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ORIGINAL ARTICLE

How Do Anxiety about Contracting COVID-19 and the Perceived Risk of Financial Loss from COVID-19 Interact to Increase Consumer Impulse Buying?

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ABSTRACT

While preceding research has focused on various aspects of the pandemic, there is still a need for further exploration of the relationship between preventive behavior against the pandemic and impulse buying. This study fills a gap by exploring how the fear of contracting COVID-19 and perceived financial losses from the pandemic interplay, and how they combine to drive impulse buying behavior, while considering the mediating role of preventive behavior. To investigate our hypothesis, we collected data from 760 respondents in South Korea through in-person survey. Using the PROCESS macro in SPSS model-58, we analyzed the data and found that the mediator role of preventive behavior and moderating role of perceived financial loss risk from COVID-19 significantly influence the relationship between the fear of COVID-19 infection and impulse buying. Specifically, when individuals perceive a higher risk of infection, they are more likely to engage in preventive behaviors. However, the negative relationship between preventive behavior and impulsive purchases weakens when there is a high perceived risk of financial loss.

Keywords: COVID-19, perceived risk of financial loss, impulse buying, preventive behavior, fear of infection.

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1. Introduction

The significance of comprehending how the COVID-19 pandemic impacts individuals has been emphasized, as it is not just a medical concern but a societal issue[1]. Researchers from multiple disciplines have specifically been urging for attention to be given to the psychological well-being of different demographics, and in this regard, comprehending the effect of the pandemic on people's everyday lives is a crucial matter[2]. In the medical field, Banerjee and colleagues highlighted those physicians faced several challenges during the pandemic. These included the fear of contracting the virus, shortages of safety equipment, inadequate training, and social discrimination[3].

The infection fears from the virus, and the risk of financial loss from the pandemic are two key factors that have been identified as driving these changes in mental health and well-being[4,5]. In addition to causing economic volatility, they have affected consumer buying choices globally[6]. It is not unexpected that the altered lifestyle caused by the pandemic has resulted in a shift in consumer behavior, including changes in spending habits. Research implemented by Pantano, and Sheth suggests that peoples tend to buy on impulse more often during the pandemic than before[7,8].

Furthermore, preventive behavior is a crucial precondition for modifying behavior, not only to safeguard oneself against infection but also to prevent possible harm to the health of others[9]. Numerous preventive measures, including maintaining cleanliness and disinfection, staying indoors, and maintaining cleanliness and disinfection, are suggested to prevent virus transmission[10]. According to Rhodes and colleagues, individuals are implementing measures such as staying indoors, practicing social distancing, and using disinfectants and sanitizers to lower the chances of getting infected with COVID-19[11].

To counteract the spread of the pandemic, a range of strategies have been implemented by individuals, governments, and organizations to combat the virus from spreading. A combination of active vs. passive and positive vs. negative frameworks can be used to understand the different human responses to the pandemic. As an example, Fong et al. noted that addressing COVID-19 involved a range of public health interventions, including active and passive measures such as case identification and isolation, contract tracing, quarantine, and social distancing[12]. In contrast, Bavel et al. explored the social identity role in shaping positive and negative responses to the pandemic[13]. They found that people who identified strongly with their local community had a strong attachment to their local community tended to exhibit constructive action, such as following social distancing rules and helping others, whereas those who had a strong political affiliation were more prone to negative behaviors such as disregarding public health recommendations.

More specifically, active and positive responses, such as getting vaccinated, wearing masks, and adhering to social distancing guidelines, are based on the belief that these measures effectively limit the transmission of the virus and safeguard public health. For instance, Lunn et al. argued that individuals who believed social distancing was fruitful in decreasing the virus diffusion were more prone to adopt social distancing guidelines[14]. Similarly, Khubchandani et al. confirmed that lower perceived susceptibility to COVID-19 and disease severity were significantly associated with vaccine hesitancy[15].

In contrast, passive and negative responses, such as refusing to wear masks, ignoring social distancing guidelines, and spreading misinformation about the virus, are often based on the belief that Covid-19 is no more serious than influenza or that no action can prevent the ongoing virus diffusion. Roozenbeek et al. discovered that individuals who believed in conspiracy theories or had low trust in science and government were more prone to accepting misinformation regarding the pandemic and less likely to take preventive measures[16]. Betsch et al. reported comparable findings that individuals with lower confidence in the government and medical authorities were less inclined to adopt preventive behaviors like

wearing masks and maintaining social distancing[17].

Governments around the world have also shown varying responses to the pandemic in terms of swiftness and strictness[18]. However, it is challenging to make specific claims about countries and their responses to COVID-19 because the pandemic is an evolving situation, and government responses are subject to change as the situation evolves.

While there have been various responses to the pandemic, the effects of these responses on consumer behavior, including impulse buying, have not been investigated thoroughly. Additional investigation is necessary to comprehend the influence of how preventive behaviors (active and positive responses) have influenced consumer behavior during the pandemic. Improving public health messaging and developing effective marketing strategies for businesses during the pandemic period could benefit from utilizing this knowledge.

To fill this research gap, we pose the following research questions: (1) How does active and positive action against COVID-19 come about? What are the drivers? (2) What are the psychological consequences of active and positive behavior against COVID-19? Does it pay off?

This paper explores how the fear of COVID-19 infection and perceived financial loss risk, along with their interaction, lead to impulse buying behavior. The study also considers the mediating role of preventive behavior while addressing these questions. Previous research has largely been aimed at assessing various effects of the pandemic. Despite the pandemic's preventive behavior, the relationship between preventive behavior against the pandemic and impulse buying remains understudied. Some studies have examined the connection between preventive behavior and impulse purchases in other contexts, such as the relationship between impulse buying and preventive health practices. However, to the best of the researcher's knowledge, no research has yet empirically studied the influence of COVID-19 preventive measures on impulse buying.

2. Hypothesis Development

2.1. Fear of COVID-19 Infection and Preventive Behavior

Protection Motivation Theory (PMT) proposes a direct relationship between fear and the motivation to protect oneself, as suggested by Rogers[19]. Many studies have demonstrated that fear can drive individuals to adopt preventive behaviors. Stephenson & Witte[20] found that fear was linked to taking preventive action, such as applying sunscreen to protect against skin cancer. Similarly, a study by Terblanche-Smit & Terblanche[21] found that participants had a more positive perception of HIV/AIDS messages when presented with medium and high fear appeals rather than low fear appeals.

Several studies have investigated the antecedents of consumer preventive behavior in relation to pandemics, specifically COVID-19. These studies have concentrated on different elements that could impact the behavior of consumers, such as fear appeals, perceived susceptibility, perceived benefits, and self-efficacy[3,11,22,23].

Specifically, Rhodes et al. reported that participants implemented such preventive behaviors to minimize the chances of contracting the infection[11]. Banerjee et al.'s study also highlighted that to safeguard oneself and those close to them, fear of catching the virus increased related preventive behaviors[3]. Wu et al. conducted a survey in 244 cities in China and discovered that citizens' anxiety levels could be positively affected, leading to improved preventive behaviors, by the physical distance from confirmed cases[24].

Therefore, it can be argued that the anxiety about COVID-19 contraction will increase preventive behaviors.

H1. The fear of COVID-19 infection leads to an increase in preventive behavior.

2.2. Perceived Risk of financial loss due to COVID-19 and preventive actions

Behavioral economics has provided insights into various health behaviors that involve risks and preventive actions[25]. Soofi et al. examined the actions associated with the COVID-19, such as optimism bias, herding behavior, present bias, framing effect, and status quo bias[26].

In the present bias context, various health behaviors require choosing between immediate and future consequences. The decision to not follow stay-at-home policies involves trading the pleasure of going out now for the uncertain risk of catching COVID-19. Therefore, researchers suggest that people who prioritize immediate pleasure are relatively unlikely to follow COVID-19 preventive actions, such as staying at indoors and washing their hands. Additionally, herding behavior takes place when individuals judge a behavior's quality by observing and coping with others' actions.

On the other hand, Truong D. and Trung M.D. explored the modifications in people's shopping behaviors caused by COVID-19, they demonstrated that shopping behavioral changes are influenced by concerns regarding both health and financial conditions. Fears regarding these issues compel people to modify their shopping behaviors by selecting modes of shopping that help them manage or evade the risks involved[27].

Studies have shown that the relationship between financial insecurity and preventive behaviors may differ depending on the mode and the type of preventive behavior in question. Faulkner et al. stated that individuals with a higher socioeconomic status were more inclined to participate in physical activity while COVID-19 containment measures were in place[28]. Furthermore, those who regularly participated in physical activity during this period had better mental and physical well-being outcomes than their fewer active counterparts. Similarly, Nivette et al. found that the common reasons for non-compliant with public health measures was commonly associated with social and emotional needs, lower income, lower levels of education, and lower trust in authorities. Contextual factors, such as living in urban areas and experiencing pandemic-related stress, were also associated with non-compliance[29].

Financial loss, such as unemployment due to the pandemic, has been found to be a significant stressor for individuals[30]. Negative mental health consequences, including anxiety, stress, and depression have been associated with economic insecurity and job loss[31]. These negative mental health outcomes may further increase people's fear of coronavirus and their perceived need to act in preventive behaviors, thus reducing the risk of infection.

Based on previous research, we can argue that people's anxiety about contracting COVID-19 is more engaged to step preventive measures when there is a greater risk of financial loss from the pandemic.

H2. The relationship between the fear of contracting COVID-19 and preventive behaviors will be stronger when the perceived risk of financial loss from the pandemic is high.

2.3. Fear of Contracting COVID-19 and Impulse Buying

Bicket Zillmann's affect regulation theory argues that people tend to eliminate negative moods and pursue positive ones[32]. As per the theory, individuals make conscious efforts to adjust internal and external factors to minimize negative emotions and maximize positive ones. Situational cues and personal traits may both influence impulse buying[33, 34]. In addition to the impact of personal traits, individuals tend to engage in impulse buying by negative moods like anxiety and distress[34]. The fear of contracting COVID-19 can be considered a negative emotion that is prevalent today, and it may lead individuals to involve in impulse buying to alleviate anxiety and stress.

Vukovic et al. pointed out that the size of the global dietary supplement market doubled during the COVID-19 period[35].

The primary motivation behind purchasing such supplements during the pandemic was fear, according to a survey of 257 those who consume dietary supplements. The new disease was perceived by respondents as a threat to their physical condition and well-being.

Similarly, according to Naeem, groups of people who are vulnerable, as well as the fear of illness, the fear of not finding products on shelves, the fear of increased prices, and the tendency to buy more when confined at home, have all contributed to a rise in panic and impulsive buying behaviors among customers[36]. Furthermore, Gupta et al. conducted research on how consumers have responded to the pandemic[37]. Their results showed that COVID-19 has significantly influenced consumer behavioral patterns, as shown by consumers stocking up and engaging in impulsive buying behavior.

The pursuit of mood repair can have a negative impact on actively pursuing other goals, as explained by self-regulation theory[38]. This is because mitigating negative emotions and distress consumes energy and resources that are needed for self-regulation and impulse control. In other words, when individuals focus on repairing their mood, they may have fewer resources available to effectively self-regulate. Additionally, according to self-regulation theory, experiencing negative moods can lead to self-regulation failures, and emotional distress may shift an individual's priorities towards shorter-term goals, potentially resulting in impulsive behaviors. The emotional distress resulting from believing there's a higher chance of getting infected with COVID-19 may lead to impulse buying.

H3. The fear of contracting COVID-19 will increase consumer impulse buying.

2.4. Mediating role of preventive behaviors between the fear of contracting COVID-19 and consumer impulse buying

According to the mood maintenance theory[39], individuals are driven to regulate their emotions by maintaining or improving their current emotional state. To this end, people tend to avoid risky activities that could lead to negative emotions or losses[40]. As individuals continually monitor their emotional states, they strive to preserve positive feelings and alleviate negative ones[41]. To sustain good moods, refraining from engaging in risky activities may jeopardize positive feelings or result in negative outcomes[42].

On the other hand, to improve bad moods, individuals tend to engage in uplifting activities or distract themselves from negative events. For instance, Tice et al. argued that people who experienced negative emotions following a self-regulatory task were more prone to take self-soothing behaviors to improve their mood[43]. However, amid the fear of contracting COVID-19, individuals may experience heightened anxiety and distress, leading to difficulties with emotion regulation, which in turn prompts impulsive purchasing. The Emotional Dysregulation Model[44] suggests that an intolerance of negative emotions prompts impulsive behaviors. According to previous research, impulsive behavior may protect anxious individuals from negative emotions[45]. Moreover, uncertainty and the negative emotions it arouses can trigger impulsive behavior[46].

Meanwhile, preventive behaviors may help maintain one's emotional regulation because actions such as wearing masks and practicing social distancing can protect individuals' physical health and also foster a sense of control and safety[47]. These behaviors provide a tangible means of addressing the underlying anxiety associated with the fear of infection, thereby reducing the need for impulsive purchasing as a coping mechanism. This notion aligns with Taylor's argument that psychological factors, such as fear of COVID-19, influence individuals' coping mechanisms during a pandemic[48].

Despite the significance of understanding these psychological mechanisms, existing studies have primarily focused on

preventive health behaviors[49], neglecting the relationship between fear appeals from the health sector and impulsive buying behavior[36]. This echoes Larson and Shin's observation of insufficient investigation into consumption behavior during natural disasters[50]. Building upon existing research, we investigate the relationship between the fear of contracting COVID-19 and consumer impulse buying mediated by preventive behaviors, as outlined in the following hypothesis.

H4. Preventive behaviors against COVID-19 will reduce impulsive purchasing by consumers.

2.5. Mediating Role of Perceived Risk of Financial Loss from COVID-19 between the Fear of Contracting COVID-19 and Consumer Impulse Buying

Research indicates that financial concerns and job insecurity are significant stressors that amplify anxiety and depression, effects that are particularly pronounced among disadvantaged groups such as those in low-pay or service sector jobs[51,52]. These groups are disproportionately vulnerable to the economic impacts of COVID-19, a susceptibility that is well-documented across different socioeconomic groups and employment sectors[48, 53, 54]. The pervasive fear of financial loss not only dominates the emotional landscape of individuals under high uncertainty[55] but also significantly undermines the psychological benefits associated with preventive health behaviors aimed at reducing disease transmission. This disconnection highlights a critical gap: while such behaviors may lower the risk of infection, they do not mitigate the economic anxieties that fuel stress and impair mental health.

Previous studies confirm that during periods of crisis, individuals with job insecurity and financial worries exhibit deteriorated mental health[51, 56]. According to the Emotional Dysregulation Model[44], an inability to manage stress-induced negative emotions can lead to maladaptive coping strategies such as impulsive buying. This behavior serves as a temporary relief from distress, ultimately reducing the effectiveness of preventive measures.

Therefore, it is hypothesized that the negative correlation between consumer engagement in preventive behaviors against COVID-19 and impulsive buying behaviors weakens as financial anxiety intensifies. This hypothesized attenuation results from increased financial anxiety overshadowing the psychological benefits derived from consistent health-focused actions.

H5. The negative relationship between consumer preventive behavior against COVID-19 infection and impulsive buying will be weaker when the risk of financial loss from the pandemic is high.

3. Materials and Methods

3.1. Measurements

All measurements were taken using a seven-point scale (1 = strongly disagree, 7 = strongly agree). Fear of contracting COVID-19 was assessed to use four items from Ahorsu et al. [57]: "I am most afraid of COVID-19," "I feel uncomfortable even just thinking about COVID-19," "My hands sweat when I think of COVID-19," and "I fear losing my life from COVID-19." The risk of monetary loss due to COVID-19 was measured using four items from Norvilities[58]: "Significant economic losses are anticipated due to COVID-19," "Compared to pre-COVID-19 income, my income during the pandemic is expected to decrease," "The economy is expected to suffer due to COVID-19," and "I am worried that there will be problems such as dismissal/temporary closure due to COVID-19. Four items from Probst et al. were used to measure preventive behaviors[59]: "I avoid contact with people outside my family during COVID-19," "I maintain social distancing when interacting with people during COVID-19," "I avoid visiting crowded places during COVID-19," and "I prefer online shopping over in-person shopping during COVID-19." Impulse buying was assessed with five statements from Celik &

Kose[60]: "I felt a lot of urges to buy something," "I often bought things I didn't plan to buy," "I have often bought things I didn't need," "I thought a lot about spending money if I had it," and "I had more unintended consumption compared to before the Covid-19 pandemic."

3.2. Data Collection

A total of 760 samples were collected from city dwellers aged 20 and older in South Korea using an in-person survey. This study was approved by the institutional review board of the university with which the researchers were affiliated. Descriptive statistics are presented in Table 1.

Table 1. Descriptive statistics (n=760)

Variable		N	%
Gender	Male	395	52
	Female	365	48
Age	-19	0	0
	20 - 29	110	14.5
	30 - 39	122	16.1
	40 - 49	145	19.1
	50 - 59	284	37.4
	60 -	99	12.9
Income level	Very low	46	6.1
	Low	228	30
	Moderate	440	57.9
	High	37	4.9
	Very high	9	1.1

3.3. Data Analysis

To test our hypothesis, we utilized the PROCESS macro (model 58) for SPSS as suggested by Preacher et al. [61], using 5,000 bootstrap samples. All key variables were mean-centered before testing for moderation effects to avoid multicollinearity. The PROCESS macro (model 58) produces two regression outputs. In Model 1, the mediator (preventive behavior) is regressed on the independent variables. In Model 2, the dependent variable (impulsive buying) is regressed on both the independent and the mediator variables. Age, gender, and income were included as covariates in both models.

4. Results

4.1. Reliability and Validity

To evaluate the reliability and validity of the variables used in multiple-question items, it is essential to calculate Cronbach's alpha score and other coefficients. In this study, each alpha score was above the minimum required.

The validity of the measures was then examined using an exploratory factor analysis (EFA). This analysis used a method

of principal component analysis utilizing the VARIMAX rotation. The factor loading for each construct was acceptable (Table 2).

Table 2. Overview of the exploratory factor analysis results

Items	Impulse buying	Preventive behavior	Perceived Risk of financial loss from COVID-19	Fear of COVID-19 infection	Cronbach's Alpha
Impulse buying1	**.868**	-.027	.067	.148	0.919
Impulse buying2	**.862**	-.009	.081	.153	
Impulse buying3	**.857**	.016	.093	.089	
Impulse buying4	**.843**	.024	.105	.145	
Impulse buying5	**.836**	-.019	.088	.151	
Preventive behavior1	.020	**.858**	.061	.171	0.882
Preventive behavior2	-.098	**.848**	.159	.108	
Preventive behavior3	.017	**.836**	.108	.171	
Preventive behavior4	.031	**.817**	.149	.047	
Perceived risk of financial loss from COVID-19 1	.093	.077	**.867**	.138	0.882
Perceived risk of financial loss from COVID-19 2	.120	.146	**.836**	.175	
Perceived risk of financial loss from COVID-19 3	.118	.090	**.823**	.158	
Perceived risk of financial loss from COVID-19 4	.063	.178	**.807**	.094	
Fear of COVID-19 infection1	.263	-.010	.111	**.800**	0.858
Fear of COVID-19 infection2	.231	.068	.180	**.795**	
Fear of COVID-19 infection3	.091	.272	.168	**.795**	
Fear of COVID-19 infection4	.094	.260	.149	**.791**	
Initial Eigenvalue	5.697	3.389	1.969	1.573	
% Variance explained	33.511	19.933	11.584	9.254	

Table 3 represents the correlation matrix among the variables. Absolute correlation values among constructs range from 0.023 (impulse buying-preventive behavior) to 0.378 (perceived risk of financial loss from COVID-19-fear of COVID-19 infection). Notably, all relationships, except for preventive behavior (c) and impulse buying (d), exhibited a significant positive correlation.

Table 3. Correlation table

	(a)	(b)	(c)	(d)
Fear of COVID-19 infection (a)	**0.607**			
Perceived risk of financial loss from COVID-19 (b)	0.378**	**0.694**		
Preventive behavior (c)	0.321**	0.295**	**0.705**	
Impulse buying (d)	0.372**	0.236**	0.023	**0.697**

Note(s): ** p<0.01; AVEs are shown on the diagonal.

4.2. Model Estimation

The results of the analysis for both Models 1 and 2 can be found in Table 4. Model 1 included the dependent variable "preventive behavior," with an R2 value of .154, while Model 2 included the dependent variable "impulse buying," with an R2 value of .255. These values indicate that the respective models explained 15% and 26% of the observed variation within the data.

The results of Model 1 show that fear of COVID-19 infection (b=0.217, SE=0.034, t=6.379, p<0.01) and perceived risk of financial loss from COVID-19 (b=0.217, SE=0.034, t=6.379, p<0.01) have both positive and significant effects on preventive behavior. Moreover, the interaction between the fear of contracting COVID-19 and the perceived financial loss risk due to the pandemic is also significant in Model 1 (b=0.061, SE=0.021, t=2.878, p<0.01). Hence, both H1 and H2 are supported. Model 2 examined the mediating effect of preventive behavior on the relationship between fear of contracting COVID-19 and impulse buying. The fear of contracting COVID-19 increased impulse buying (b=0.352, SE=0.042, t=8.390, p<0.01), while preventive behavior exerted a significant and negative impact on impulse buying (b=-0.152, SE=0.045, t=-3.350, p<0.01), indicating that respondents with higher levels of preventive behavior engage in significantly less impulse buying. Therefore, the results support hypotheses 3 and 4.

Furthermore, the interaction of preventive behavior and the perceived risk of financial loss from COVID-19 was positively associated with impulse buying (b=0.084, SE=0.031, t=2.693, p<0.01), supporting hypothesis 5. This indicates that the negative correlation between preventive behavior and impulse buying becomes less pronounced when the perceived risk of financial loss from the pandemic is high.

In terms of the control variables, Model 2 shows that age significantly influences impulse buying behavior in a negative way in Model 2 (b=-0.247, SE=0.035, t=-7.091, p<0.01), while income has a negative impact on impulse buying behavior in both Model 1 (b=-0.050, SE=0.062, t=-0.813, p<0.05) and Model 2 (b=-0.289, SE=0.074, t=-3.903, p<0.01). Gender, on the other hand, does not significantly influence impulse buying behavior in either model.

Overall, the results suggest that the fear of contracting COVID-19 and the perceived risk of financial loss from COVID-19 have a positive effect on impulse buying behavior, and when these factors are combined, their impact may be evens stronger.

Table 4. Regression results

		Model 1 (DV: Preventive behavior)			Model 2 (DV: Impulse buying)		
		B	SE	T-value	B	SE	T-value
Constant		-0.029	0.091	-0.318	4.170**	0.110	37.960
Independent var.	Fear of COVID-19 infection (a)	0.217**	0.034	6.379	0.352**	0.042	8.390
	Perceived risk of financial loss from COVID-19 (b)	0.171**	0.035	4.895	0.192**	0.043	4.498
Mediator	Preventive behavior (c)				-0.152**	0.045	-3.350
Interaction	(a)X(b)	0.061**	0.021	2.878			
	(b)X(c)				0.084**	0.031	2.693
Control var.	Age	0.042	0.029	1.437	-0.247**	0.035	-7.091
	Gender	0.103	0.075	1.375	0.150	0.090	1.670
	Income	-0.050	0.062	-0.813	-0.289**	0.074	-3.903
F-value		F(6,707)=21.37			F(7,706)=34.51		
R-squared		0.154			0.255		
(** p< 0.01, * p< 0.05)							

Overall, a summary of the regression results is presented in Figure 1.

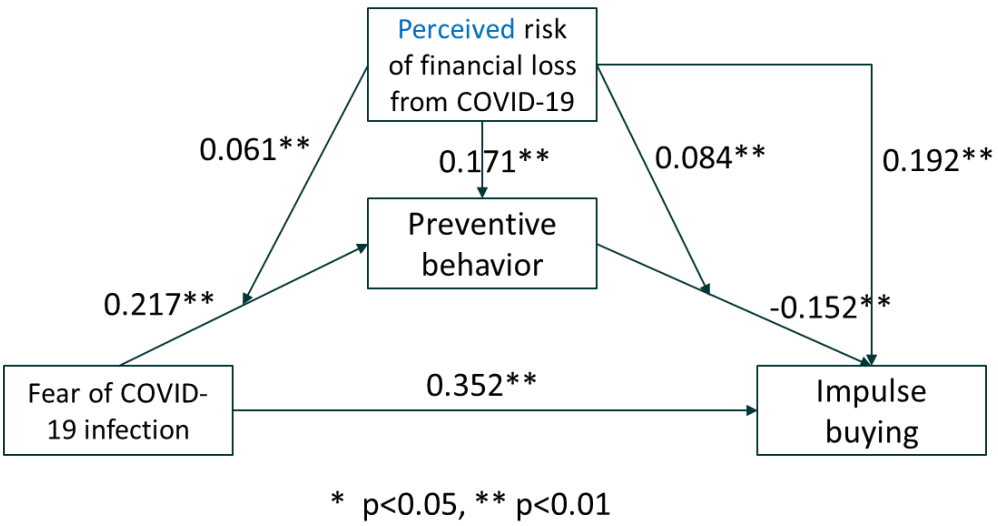

Fig 1. Regression results

5. Discussion

The outbreak of COVID-19 has led to numerous changes in people's daily routines, including their purchasing behavior. The aim of this study was to investigate the relationship among fear of contracting COVID-19, perceived risk of financial loss from COVID-19, preventive behavior, and impulse buying. The findings suggest that both the fear of COVID-19 infection and the perceived risk of financial loss due to the pandemic tend to practice preventive behavior, and the interaction also significantly influences preventive behavior. This aligns with previous research, such as studies by Harper et al.[62] and Rhodese et al.[11], which found that individuals are more inclined to adopt preventive measures in response to perceived health risks. Moreover, concerning the perceived risk of financial loss, our findings are consistent with previous studies, including Nisa et al.[63], which found that perceived economic risk is strongly associated with support for COVID-19 preventive measures.

Overall, these findings suggest that individuals who feel more threatened by the coronavirus are more inclined to adopt preventive measures.

Additionally, the study discovered that the fear of contracting COVID-19 results in an increase in impulse buying behavior, while preventive behavior exerts a negative impact on impulse buying behavior. These findings indicate that preventive behavior can play a role in reducing impulse buying behavior. Previous research has largely supported the relationship between the fear of contracting COVID-19 and impulse buying. For example, Naeem[36] reported a rise in panic and impulsive buying behavior due to COVID-19-related fears, such as fear of illness or scarcity of products. Similarly, Gupta et al.[37] found that COVID-19 influenced consumer behavioral patterns, leading to stockpiling and impulsive buying behavior. Our study builds upon the concept of mood maintenance theory[39], illustrating how individuals distract themselves from negative emotions induced by COVID-19 by engaging in uplifting activities.

Furthermore, the findings indicated that the negative relationship between preventive behavior and impulse purchase weakens when there is a high perceived risk of financial loss due to COVID-19. This extends the findings of Addo et al.[6], who confirmed that personal emotions like anxiety and stress can lead to impulsive buying behavior. Studies by Ruengorn et al.[64], Witteven & Velthorst[53], and Wilson et al.[51] have highlighted how the economic burden of the pandemic increases depression and anxiety, contributing to impulsive buying behavior as individuals seek to regain a sense of control in the face of fear and uncertainty surrounding COVID-19. Additionally, panic buying and stockpiling of essential items, as discussed by Baker et al. [65], further explain these behaviors. This suggests that individuals may struggle to exercise self-control over impulse buying when they perceive a heightened financial risk associated with the pandemic, despite their efforts to engage in preventive behavior.

5.1. Theoretical Implications

The study's theoretical implications highlight several significant findings. First, fear of contracting COVID-19 and risk of financial loss from the pandemic significantly influence both preventive behavior and impulse buying behavior. This finding aligns with prior research, which has established that individuals' response to COVID-19 is driven by their perceived risk of infection and financial loss. The results also support the notion that the pandemic has affected not only public health but also economic activity and consumer behavior worldwide.

Second, preventive behavior has a significant negative relationship with impulse buying behavior. This finding implies that individuals who take more preventive behaviors against COVID-19 are less likely to make impulse purchases. The

existing literature on consumer behavior also indicates that people who take more preventive measures are more likely to practice responsible consumption.

Third, the interaction between fear of contracting COVID-19 and the risk of financial loss from the pandemic has a positive relationship with impulse buying behavior. This finding suggests that the fear of contracting COVID-19 combined with the risk of financial loss may encourage individuals to partake in increased impulsive purchasing behavior. This result is consistent with the literature on stress and coping, which suggests that individuals might resort to impulsive behaviors as a way to coping with stress and anxiety.

5.2. Practical Implications

The outcomes of this study have some practical implications for marketers and public health professionals. First, our results suggest that public health campaigns aimed at promoting preventive behavior against COVID-19 could indirectly reduce consumers' impulse buying behavior. Specifically, our results suggest that increased fear of contracting COVID-19 and the risk of experiencing financial loss from the pandemic may lead to increased preventive behavior, which in turn reduces impulse buying. Therefore, public health campaigns could highlight the potential financial benefits of preventive behavior, such as reduced medical bills and expenses associated with COVID-19 infection, to encourage individuals to engage in such behavior. Government and public health organizations should prioritize the dissemination of information on preventive behaviors and the benefits of such behaviors in order to encourage individuals to engage in them. This could be done through various mediums such as social media, television, radio, and other forms of mass communication.

Second, our findings suggest that marketers should consider the influence of precautionary actions on impulsive purchasing behavior amid the pandemic. Marketers could highlight the importance of preventive behavior in their messaging and promote products or services that are aligned with preventive behavior, such as personal protective equipment, cleaning supplies, and healthy food options. Furthermore, our results suggest that marketers should consider targeting individuals who are more fearful of COVID-19 infection or perceive a higher risk of financial loss from the pandemic, as these individuals may be more receptive to marketing messages that promote preventive behavior.

Finally, our findings also suggest that public health campaigns and marketers should consider the interaction effect between fear of contracting COVID-19 and the risk of financial loss from the pandemic on impulse buying behavior. Specifically, our results suggest that individuals who experience both significant levels of fear regarding COVID-19 infection and a substantial perceived risk of financial loss may be particularly susceptible to impulse buying behavior. Therefore, public health campaigns and marketers should develop targeted messaging that addresses the unique needs and concerns of this population. Furthermore, this result suggests that companies in the retail industry should focus on providing a safe shopping environment and encouraging the adoption of preventive measures like maintaining social distancing. This would not only help diminish the transmission of the virus but also would serve to reduce stress and uncertainty among shoppers, which in turn can reduce impulse buying.

5.3. Limitations and Future Research

Despite the insightful findings that have emerged from this study, it is crucial to acknowledge its limitations, as they may affect the generalizability of the results. A key limitation is that the use of self-reporting in the in-person survey might have introduced social desirability bias, which could have impacted the responses provided by participants. Future studies

could utilize more objective measures, such as observational studies or experiments, to obtain a more accurate evaluation of the relationship.

The research also has a limitation in that it did not take into account other factors that could affect impulse buying behavior, such as individual differences in personality traits or socioeconomic status. Considering these variables in future studies could help to uncover potential moderating effects and provide a more comprehensive understanding of the link between consumer perceptions of COVID-19 and impulse buying behavior.

Furthermore, this research focused only on the immediate impact of the pandemic on impulsive buying behavior. In light of the existing pandemic, taking into account the possible enduring effects of the pandemic on impulsive purchasing behavior is crucial. Future studies could examine the effects of COVID-19 on impulse buying behavior over an extended period to determine whether these effects are enduring or transitory.

Another limitation is that it employed a cross-sectional design, which restricts the capacity to establish causality among the variables under investigation. Future works could utilize a longitudinal design to provide a more robust examination of the relationship among COVID-19, preventive behaviors, and impulse buying behavior over time.

Finally, this study solely focused on investigating the influence of preventive behavior on impulsive purchasing during the pandemic. However, preventive behavior may have other consequences beyond its effect on impulse buying. Future research could explore the broader impact of preventive behavior on diverse facets of consumer behavior and well-being amid the pandemic or other similar crises.

6. Conclusion

The objective of this research is to examine how the fear of contracting COVID-19, the potential for financial loss due to the pandemic, and impulse buying behavior are interconnected. The study also considered the mediating role of preventive behavior in this relationship. The study findings indicate that preventive behavior plays a pivotal role in the relationship between the fear of contracting COVID-19 and impulse buying behavior. Therefore, businesses and policymakers should focus on promoting preventive behavior to reduce impulsive purchasing behavior amid the pandemic. Marketers could emphasize the significance of preventive behavior in their messaging and promote products or services that align with preventive behavior, such as personal protective equipment, cleaning supplies, and healthy food options. The results further suggest that marketers should target individuals who are more fearful of COVID-19 infection or perceive a higher risk of financial loss from the pandemic, as they may be more receptive to marketing messages that promote preventive behavior. Moreover, companies in the retail industry should prioritize providing a safe shopping environment and encouraging protective actions like maintaining social distance. These actions would not only help diminish the transmission of the virus but also alleviate stress and uncertainty among shoppers, leading to a decrease in impulse buying behavior.

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