

# THE ROLE OF RELIGIOSITY IN THE CONTEXT OF THE ANXIETY TOWARD PANIC BUYING AND COMPULSIVE BUYING IN THE COVID-19 PANDEMIC

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**Abstract:** This study explores consumer Panic Buying (PB) and Compulsive Buying (CB) due to consumer anxiety during the COVID-19 pandemic. The role of the religious moderator was also tested to influence consumer attitudes and behavior towards PB and CB to carry out responsible consumption. To empirically test consumer shopping behavior towards groceries during the COVID-19 pandemic in East Java, Indonesia. Using the convenience sampling approach, data were gathered from young and adult customers in East Java, Indonesia. Through an online survey, 334 customer answers were obtained. The hypotheses were tested using SEM-PLS, which could analyze variables' effect and role in the complex model. The results indicate that anxiety significantly affects panic buying and compulsive buying. Then panic buying has a significant effect on compulsive buying. Further, the results show that anxiety indirectly influences panic buying and compulsive buying. Likewise, religiosity can suppress consumer anxiety when they want to make panic buying and also compulsive buying. This study further contributes as a pilot study on the role of religion in consumer behavior research in a pandemic context, where consumer religiosity can significantly suppress their anxiety in terms of their panic buying and compulsive buying. This study has special implications for retail stores and government agencies for planning retail and social policies that are positive for consumer behavior during a pandemic.

**Keywords:** Compulsive Buying, Panic Buying, Religion, Anxiety, Covid-19

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The coronavirus SARS-CoV-2, which causes COVID-19. The Hubei region of China's Wuhan was the site of the disease's initial discovery in December 2019. It has since spread quickly around the world. As of January 30, 2020, WHO declared the COVID-19

pandemic a highly contagious international public health crisis as the third pandemic in the 21<sup>st</sup> century (Jaspal et al., 2020a); (Qi and Ploeger, 2021). COVID-19 cases need to be taken seriously by all countries, considering that more than one million people have been infected and more than one hundred thousand people are reported to have died just one month after WHO declared the coronavirus a pandemic in March 2020 (WHO, 2020); (Worldometer, 2020).



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China was the first nation infected with the coronavirus and implemented a lockdown policy in the city of Wuhan, which serves as the epicenter of the coronavirus's propagation (WHO, 2020); (Yuen et al., 2020). The Indonesian government also implemented a lockdown policy to deal with the coronavirus. Social distancing policies were also implemented to deal with the coronavirus in areas where the spread of the coronavirus had not been massive. Social distancing and lockdown policies have been implemented in various nations, including Indonesia, which has been affected by the coronavirus. The difference in the prevention of the coronavirus is based on the characteristics and level of transmission in each country. Indonesia announced a national lockdown policy by temporarily closing many businesses and banning mass gatherings, in addition to do social distancing policy that requires people to stay at home. This condition significantly affects the retail industry in Indonesia.

Before the Covid-19 epidemic, the retail business enjoyed relatively stable annual conditions, but the pandemic has altered the global economy's outlook and the competitive retail landscape (Ting et al., 2020). The pandemic's lockdown significantly impacts consumer behavior and demand for staple goods, including hoarding staple foods and health supplies such as masks. Consumer panic purchasing (PB) has resulted in stockpiling and empty store shelves, which have made headlines in the media (Arafat et al., 2021). Panic buying (PB) behavior has gained traction as a social phenomenon that necessitates using social marketing methods to boost more positive consumption habits (Naeem, 2021).

Panic buying (PB) in the pandemic occurred, where people experienced a sudden urge to buy and stockpile goods in large quantities because of anxiety about shortages, worrying that something terrible would happen or price increases in the future as well as conditions of uncertainty due to the COVID-19 pandemic (Oxford, 2020). This PB behavior tends to be excessive, for example, what happened to Indonesian consumers in February 2022 regarding the scarcity of cooking oil during the COVID-19 pandemic, where consumers began to hoard cooking oil due to anxiety or fear because cooking oil is an ingredient staple that must be in

every home and is a necessity that cannot be eliminated. The consequences of catastrophic changes in consumption and consumer behavior, including the response to COVID-19, are often implemented in doing like panic buying and or hoarding" (Pantano et al., 2020); (Yuen et al., 2020). Consumers tend to hoard basic foodstuffs, especially when there is a shortage (rice, sugar, cooking oil, and others), and other necessities that can help them survive as long as supplies are thought to be limited. As well as being a large-scale behavior, Stockpiling resulted from a severe disaster (like a COVID-19 pandemic). The effects of anxiety and fear caused by extreme events impact the self and others. Therefore, the COVID-19 crisis is predicted to increase consumer fear and have a broader impact on fear and uncertainty in shopping decisions (Loxton et al., 2020). This pandemic is also a local experience and the importance of studying consumer behavior, especially in the scarcity of basic consumer needs.

News of food scarcity has increased consumer PB, consumer satisfaction, and pleasure through consumption. Individuals motivated by this self-satisfaction could lead to compulsive behavior that is often difficult to distinguish from normal consumption (Piper et al., 2021). As far as the author meets, This phenomenon has not received much attention from academics and marketers (Kaur and Malik, 2020); (Naeem, 2021); (Taylor, 2021a). Research that is related to the COVID-19 pandemic and the factors driving PB behavior (Laato et al., 2020); (Kaur and Malik, 2020); (Lehberger et al., 2021); (Naeem, 2021); (Taylor, 2021a); (Yuen et al., 2020) and the issue related about the impact of PB on supply chain (Zheng et al., 2021), about the condition of the cognitive consequence like security and guilt (Prentice et al., 2020). None of those studies investigated the impact of PB behavior on compulsive buying and the moderating effect of the COVID-19 pandemic. We explored PB and compulsive buying (CB) through a social marketing lens to discuss tools for bringing about behavioral transformation among consumers and business stakeholders (Eva et al., 2021).

In the perspective of religions worldwide have presented propaganda forbidding the gathering of goods and encouraging restraint (Singh et al., 2021a).

Even as a religion opposes indulgence in worldly urges, desires, and possessions, many studies have shown that religion and goods can serve as substitutes. Some research that was found showed 52 percent of American consumers consider themselves religious, 84 percent of American consumers admit to frequently engaging in impulse buying behavior (Picchi, 2019); (Newport, 2019), and they spend an average of 5400 dollars annually on impulse purchases (Newport 2019). There was the result of a study found that even religious people prefer to engage in behaviors that are prohibited by their religion. (Horváth and Adygüzel, 2018) Further indicates that their buying behavior is not related to available economic resources. The era of COVID-19 pandemic shows that many consumers are sacrificing their religious beliefs for a consumption-oriented lifestyle. The behavior of PB and CB cannot control the desire to have staple food due to their anxiety. However, the literature found also suggests that religion was known to facilitate individuals to control their urges and desires in many ways. Religion provides standard guidelines for individuals to live life (Singh et al., 2021b).

Economic behavior research has shown that religious beliefs impact economic activity. Encouraging personal qualities like work ethic, thriftiness, and honesty, these values impact economic activity (McCleary and Barro, 2006). Allah forbids Muslims from engaging in lavish spending, according to the Qur'an's surah al-Isra [17]: 26–27, and all these characteristics, together known as *akhlaq*, serve as a guide for Muslims in adjusting their consumption behavior to uphold moral usefulness (Alam et al., 2011). Additionally, each Muslim should spend their money keeping with their requirements and resources. They have not allowed consuming anything that contributes to their indebtedness or other financial issues. Because of this, religion is emphasized by (Borzooei et al., 2014) as an essential element influencing customer purchasing intentions. Musadik and Azmi (2017) explored in their study that there are five categories religious affiliation, religious commitment, religious motivation, religious knowledge, and awareness that influence consumer behavior.

The core of religion is religiosity. Regarding religious commitment, (Worthington et al., 2003) defined it as “the degree to which a person commits to religious ideals, beliefs, and practices and employs them in everyday life.” Furthermore, he discovered that there were distinctions between individuals who were devoted to their faith and those who were only moderately to be devoted weakly. Considering how quickly economic activity is evolving and whether compulsive buying can be managed, religion appears to play a more significant influence. Self-regulation is required to limit this behavior because panic and compulsive buying are linked to negative behavior (Pradipto et al., 2016). It is because compulsive buying has been conceptualized as a lack of self-control, like doing about spending money emotionally (Verplanken and Sato, 2011). Therefore, religiosity could take the place of norms and beliefs that give customers an understanding of what is morally right or wrong to be done (Hofmann et al., 2018). (Gebauer et al., 2017) revealed a cross-cultural comparative study from an Islamic perspective explaining the importance of religiosity and religious culture. Then Aliman et al. (2018), in their study in Malaysia, found that Islamic religiosity commitment is significant for Muslim consumers; both young and adults, Islamic religiosity is an essential consideration in their shopping style.

Research on anxiety behavior, panic buying, and compulsive buying has been carried out by several studies with various scopes and interests such as: (Keane and Neal, 2021) developed the mode of a dynamic of consumer panic as a function of the policy change and the spread of COVID-19. (Kaur and Malik, 2020); (Naeem, 2021) identified the factors that cause panic buying during a pandemic; (Darrat et al., 2016); (Maccarrone-Eaglen and Schofield, 2020) highlighted the characteristics and behavior of compulsive buying and examined the link between compulsive buying and the phenomenon of impulse buying; (Moon and Attiq, 2018) designed a universal classification scheme for compulsive buyers; (Taylor, 2021b) applied the panic buying related to the pandemic with Psychological concepts, like the theory of social learning and a concept of the behavioral system; (Tarka, 2020);

(Jaspal et al., 2020b) examined the relationship of two groups of consumers with higher levels of power among compulsive buyers and lower levels of power. However, a study on the role of religiosity in the relationship between anxiety, panic buying, and compulsiveness has not been conducted.

Based on the description above, this phenomenon is considered necessary and vital to test further whether religious belief has an essential role in the relationship between anxiety towards panic buying and compulsive buying during the COVID-19 pandemic, especially regarding the anxiety felt by Indonesian consumers during the crisis of scarcity of basic needs. This study tried to develop and implement a stimulus-organism-response (SOR) model (Mehrabian and Russell, 1974) and provide a clear picture of consumer anxiety about COVID-19 acting as a stimulus that elicits PB behavioral responses and compulsive buying. The SOR model is widely applied in the study of consumer behavior (Tahir Islam et al., 2021). It is used as the theory underlying this research because of its capacity to translate how consumers respond to the pandemic environment. The SOR model explains that “various aspects of the environment act as stimuli (S) which together influence the internal state of people and act as organisms (O) which in turn drive their behavioral responses (R)” (Mehrabian and Russell, 1974). This model is particularly relevant in the context of PB and CB (Tahir Islam et al., 2021) during a pandemic as a social marketing problem.

## **HYPOTHESIS DEVELOPMENT**

### **Consumer Anxiety and Panic Buying Behavior**

Leung et al. (2021) stated anxiety is a state of internal distress and anxiety disorders such as panic disorder, generalized anxiety disorder, obsessive-compulsive disorder, and social anxiety disorder. This anxiety usually coexists with other psychiatric conditions, especially major depressive disorder. Moon and Attiq (2018) stated that anxiety is one of the most determinants of panic buying behavior. Then, Panic Buying is a manifestation of personal anxiety and fear due to a threat (Chouchene 2020); (Putri et al. 2021). Furthermore, he explains that fear or

panic is a form of basic emotion that activates the fight response, allowing individuals to respond quickly when facing danger. Wilson et al. (2008) pointed out that panic buying is a form of survival mechanism or life instinct that makes people afraid of death, which they do as an effort to protect and defend themselves. So, it can be said that panic buying (PB) is a quick remedy for anxiety because it encourages consumers to reduce tension by pressing spontaneous actions.

Weinstein et al. (2015) found the nature of anxiety and panic buying has an impact positively. Some believe that consumers make purchases because of anxiety about the scarcity of basic needs, so they tend to act compulsively to escape the tension. Escaping from anxiety is the main motive of panic buying, then shopping and buying to escape anxiety. Panic buying made by consumers in a non-conducive environment is anxiety. In a recent study, anxiety was positively related to panic buying behavior (He et al., 2018); (Roy et al., 2020). Based on this explanation, we assume that

H1: Consumer Anxiety has an influence on panic buying behavior.

### **Consumer Anxiety and Compulsive Buying Behavior**

Compulsive buying behavior (CB), caused by consumer anxiety caused by the scarcity of staple foods due to the COVID-19 pandemic, is often carried out by consumers because of “the preoccupation or urge to buy which results in the sense of satisfaction, pleasure, and security in relieving anxiety. CB is carried out as an intolerable, disruptive, and unreasonable” characterized by obsessions and anxiety identified as trans-diagnostic risk factors for emotional disorders (Carleton, 2016). Anxiety can reduce stress, similar to a mental ritual that uses repetitive thoughts to neutralize anxiety or fear (Gillett et al., 2018). Then, consumers who engage in pressure to reduce the possibility of a perceived negative state are similar to people who feel anxious, so they hoard more staple foods. Therefore, high anxiety levels are consistently associated with compulsive buying, so they tend to take compulsive actions to reduce their anxiety (Moon and Attiq,

2018). Some literature, such as (Laato et al., 2020); (and Jaspal et al., 2020a), said the strong relationship between anxiety and compulsive buying could create uncertainty and create fear, thus making consumers feel high anxiety. In turn, it encourages the creation of CB. Therefore, we assume that  
H2. Consumer anxiety has an influence on CB behavior.

### **Consumer Panic Buying and Compulsive Buying Behavior**

World and Indonesian consumers have faced the COVID-19 pandemic and its psychosocial impact, especially the consumer urge to buy in a panic (Naeem, 2021). One recent discussion on the current COVID-19 pandemic showed that feelings such as anxiety and panic influenced buying behavior and led people to buy more things than usual (Lins and Aquino, 2020). The anxiety and fear due to the COVID-19 pandemic could drive the increasing number of infection cases and Indonesian government regulations related to the pandemic, namely PKM (restrictions on community activities). Some experts said the scarcity of basic foodstuffs has made consumers anxious, then about the limited access to daily staple foods that encourage PB (Tahir Islam et al., 2021); (Naeem, 2021); (Sim et al., 2020). Consumers experience panic when they face stressful and anxious situations, so they perform compulsive behaviors to regain balance (Taylor, 2021a). Lopes et al. (2020) stated that compulsive behavior (CB) is triggered internally by anxiety and pressing increased fear of COVID-19 triggered by CB. Therefore, more research is needed to understand CB behavior because consumers panicking about buying staple foods that are scarce due to the COVID-19 pandemic can become increasingly addicted to CB behavior. Therefore, we hypothesize that

H3. Consumer panic buying has an influence on compulsive buying behavior

### **The Moderation of Religion**

Indonesian society is an ethnically and religiously diverse society. There are six official religions in Indonesia. Religion is the “belief in certain religious

values practiced by an individual” (Paiva et al., 2020). There is some evidence to support the idea that religion influences behavior. The literature found reveals a significant relationship between religion and various aspects of consumption. In recent years, a substantial literature has accumulated on the relationship between religion and consumer behavior, particularly on panic buying (PB) and compulsive buying (CB). At this point, it is vital to consider a review of research on religion that examines its relationship to consumer behavior.

Many experts concluded that it was a religious obligation to consume goods under the jurisdiction of their religion and only permitted by God (Suleman et al., 2021). The role of religion can influence consumer attitudes and behavior, including the influence on purchasing decisions. Religion as a driving factor for ethical consumption behavior and reducing food waste is essential because most people in the world are affiliated with some form of religion. Religion is known to change human behavior in many ways (Filippini and Srinivasan, 2019). Religion can provide social support and as a social norm related to its adherents. These social norms may include beliefs, attitudes, and practices considered ‘proper’ and would be shared at various levels of adherents of a religion. Religion is being used as a guide in dealing with the COVID-19 pandemic. People may begin to solve problems spiritually during the pandemic and thereby gain relief from the psychological stress associated with danger (Jaspal et al., 2020a).

On the one hand, compulsive buying (CB) could drive toward personal difficulties, such as financial problems, guilt, regret, and anxiety. In addition, compulsive buyers are more likely to engage in secrecy and concealment (Weinstein et al., 2015). On the other hand, compulsive buying (CB) could cause a significant public health challenge, resulting in increased anxiety in the community, shortages of vital goods, and an impact on more vulnerable groups in society (Carrick, 2020). The COVID-19 pandemic appears to be a significant trigger for compulsive buying, so religion can overcome all problems of panic buying and compulsive buying behavior (Hall, 2020).

In the context of religion (Hoetoro and Hannaf, 2019) defined “the extent to which a person adheres to religious values, beliefs, and practices and uses them in everyday life.” Furthermore, he found a difference between those who committed to religion and those with moderate to less religious commitment. In line with the era of COVID-19, the role of religiosity seems to be increasingly crucial in whether compulsive buying and panic buying can be controlled (Singh et al., 2021a). So we hypothesize that;

H4a. Religion moderates the relationship between anxiety behavior and PB behavior.

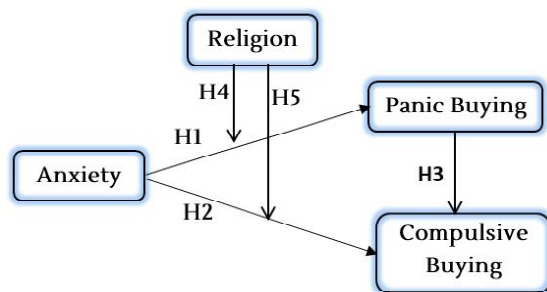


Figure 1. Research Conceptual

H4b. Religion moderates the relationship between anxiety behavior and CB behavior

Figure 1 shows the conceptual framework that we tested to browse the influence of the anxiety variable on panic buying behavior and compulsive buying behavior by relating the role of the religious variable as a mediator.

**METHOD**

**Sample for The Study**

The population of this study is consumers who have done excessive shopping during the pandemic. This research is intended for consumers who live in Surabaya, Sidoarjo, Jember, Malang, Kediri regency, Banyuwangi regency, Gresik regency, Nganjuk regency, Ponorogo regency, Jombang regency, and Magetan regency. These cities were chosen because those cities and regencies had a high number category of COVID-19 cases in East Java, Indonesia. As of September 24, 2021, 283.127 cases in

total, which consisted of 66.370 cases in Surabaya, 15.381 cases in Malang city, and 201.376, with most of the cases found in other regencies, including Sidoarjo, Jember, Malang, Kediri, Banyuwangi, Gresik, Nganjuk, and another regency in East Java (Department of Communication and Information of East Java Province, 2021). Due to the increasing cases and daily transmission rates, the government is forcing these cities to implement large-scale social restrictions.

The sample was selected using a convenience sampling technique. Namely, it was considered able to provide information about the factors that caused them to buy large quantities of essential household goods such as oil, masks, hand sanitizers, and others. Online sampling was also conducted to reach the targeted population through social interactions with initial subjects in the network (Atkinson and Flint, 2001). Reaching a large number of respondents is possible with online data-gathering techniques. Various media channels, including Messenger, WhatsApp, email, and other applications, are employed to connect with potential responders.

500 participants participated in the study, and 334 participants agreed to participate, representing a satisfactory response rate of 66.8 percent. Table 1 provides an overview of the respondents’ overall profiles.

The closed-structured questionnaire method was applied to collect the data. In addition, the questionnaire was developed to be simple and straightforward so that respondents could easily read and quickly answer the questionnaire without losing motivation to participate in the research. In addition, we mentioned that the participants would be kept confidential and their participation would be voluntary in the questionnaire to increase the response rate.

The item measurement scale was designed as reflective and adapted from previous research while using slight modifications for the context of this study (Table 2). After we designed the questionnaire, we tested the fifteen respondents by asking them to answer the questions and provide comments on the wording of the questions. Based on their comments, we made some minor modifications. A five-point

Likert scale from “strongly disagree” to “strongly agree” was adopted to measure all constructs. All constructs in this study were operationalized as reflective constructs and adapted from previous research.

**Table 1. The respondent Characteristic N=334**

Category	Frequency	Percent (%)
Male	109	33
Female	225	67
<b>Age</b>		
25-35 years	110	33
36-46 years	114	34
47-57 years	69	21
>57 years	41	12
<b>Education</b>		
High school	140	42
Diploma/Certificate	75	22
Bachelor	65	19
Postgraduate	54	16
<b>Profession</b>		
Private employee	29	9
Teacher	45	13
Lecturer	55	16
Government employee	69	21
others	139	42
<b>Religion</b>		
Islam	167	50
Cristian	41	12
Catholic	55	16
Hindu	40	12
Buddha	24	7
Kong Hu Cu	7	2
<b>Marital Status</b>		
Single	213	64
Married	121	36
Others		
<b>Income</b>		
<2 million	21	6
2 – 4 million	159	48
4 – 6 million	91	27
>6 million	63	19

The construct “*anxiety*” was measured by adapting seven items from (Spitzer et al., 2006). They stated operational is an internal state of distress. Anxiety disorders include panic disorder, generalized anxiety disorder, obsessive-compulsive disorder, social anxiety disorder, and specific phobias. This anxiety disorder usually coexists with other psychiatric conditions, especially major depressive disorder. “*Panic Buying*” (PB) was measured by adapting five items forms (Lins and Aquino, 2020). Operational is a person’s behavior in buying and hoarding goods in large quantities because of fear of scarcity because they are worried that something bad will happen or price increases in the future and because of conditions of uncertainty. With this behavior, people tend to hoard basic food items, especially when a shortage (rice, sugar, cooking oil, etc.) during a crisis, and other necessities that can help them survive when a shortage is expected. The nine measurement items for “*Compulsive Buying*” (CB) were from (Gallagher et al., 2017). The operational is a person’s behavior that describes anxiety. This purchase treatment will reduce stress and neutralize anxiety or fear related to obsessions. As for the mediator variable “religion,” seven items were adapted from (Singh et al., 2021b). The operational of religion is an individual’s religious knowledge to control his passions and desires in various ways. This religious knowledge provides standard guidelines for a person to live life. When the individual fails to fulfill morals, feelings of guilt always follow his behavior. Knowledge and level of religious belief have an impact on economic activity. Personal qualities such as work ethic, frugality, and honesty are these values that have an impact on economic activity. Descriptive consumer demographic variables were performed using frequency analysis. In addition, to analyze measurement models such as validity and reliability tests and to test the structural model of this study, PLS-SEM was applied in this research, this model is in line with (Faisol, 2017); (Faisol et al., 2021); (Faisol and Aliami, 2022).

**Table 2. Items of Indicators**

<b>The anxiety</b>		<b>sources</b>
How often have you been bothered by the following problems?		
Anx_1	The feel condition nervous, anxious, or on edge	Spitzer et al., 2006
Anx_2	To be so restless that it was hard to sit still	
Anx_3	The feel of afraid as if something awful might have happened	
Anx_4	Be easily annoyed or irritable	
Anx_5	Always be very worried about different things	
<b>Panic Buying behavior</b>		<b>sources</b>
PB_1	My fears strongly drive me to buy things to stock up on at home	Linns and Aquino, 2020
PB_2	The fear of not having the product I need makes me buy more stuff	
PB_3	My fear prompted me to buy more than usual.	
PB_4	Panic made me buy more goods than usual	
PB_5	Panic occurs when I think that an important product might run out, so I prefer to buy it in bulk	
<b>Compulsive Buying behavior</b>		<b>sources</b>
CB_1	When I don't need anything, I often buy a lot of things	Gallagher et al., 2017
CB_2	When I'm upset, disappointed, depressed, or angry, I often have a buying party	
CB_3	Even though I can't afford it, I often buy things	
CB_4	I feel compelled to shop and shop, even though I don't have the time or money.	
CB_5	I don't feel guilty or ashamed after I have a buying party.	
CB_6	I don't feel anxious after I go shopping	
CB_7	I get a lot of fun shopping	
CB_8	I often feel compelled to shop	
CB_9	I feel "get high" when I go shopping	
<b>Religion</b>		<b>sources</b>
REL_1	I think it is very important to spend time alone to pray and think about my religion	Sing et al., 2021
REL_2	In my opinion, religion gives me comfort during difficulties and sorrows in life	
REL_3	I feel myself religious, but my beliefs do not affect my daily life	
REL_4	My whole life is always based on my religion	
REL_5	I always try a lot to live my life based on my religion	
REL_6	I enjoy reading and learning about my religion	
REL_7	I always pray to God, especially for peace and happiness	

**RESULT**

The main objective of this research is to analyze the effect of the anxiety experienced by consumers during the COVID-19 pandemic on their buying style and examine their compulsive buying behavior. Furthermore, to know more about the role

of religiosity as the mediator in the relationship between anxiety with panic buying and compulsive buying behavior.

There are two tests carried out to answer this goal. The first is the measurement model, and the second is the structural model. The measurement



model consists of the validity and the reliability test. The validity test involved convergent and discriminant validity. The structural model used the path coefficient, the variance explained ( $R^2$ ), and the effect size ( $f^2$ ), and we also checked the variance inflation factor (VIF).

In detail, Table 3 presents the output of the composite reliability (CR), Cronbach's alpha ( $\alpha$ ) as a

manifestation of reliability measurement. Then, the loading factor ( $\lambda$ ) and average variance extracted (AVE) as the manifestation of the convergent validity. The rule of thumb for loading factor  $> 0,5$  (Costello and Osborne, 2005); (Hair et al., 2013); (Hair et al., 2017), CR must be  $> 0,7$ , and AVE must be  $> 0,5$  (Hair et al., 2014); and Cronbach alpha ( $\alpha$ ) must be  $> 0,7$  (Hair et al., 2017).

**Table 3. The Convergent Validity and Reliability**

Construct	Indicators	Convergent Validity		Reliability	
		$\lambda$	AVE	$\alpha$	CR
Anxiety	AX1	0,775	0,744	0,766	0,782
	AX2	0,704			
	AX3	0,617			
	AX4	0,801			
	AX5	0,647			
	AX6	0,812			
	AX7	0,814			
Panic Buying	PB1	0,755	0,726	0,854	0,833
	PB2	0,734			
	PB3	0,613			
	PB4	0,637			
	PB5	0,712			
Compulsive Buying	CBy1	0,766	0,811	0,791	0,891
	CBy2	0,811			
	CBy3	0,824			
	CBy4	0,701			
	CBy5	0,734			
	CBy6	0,823			
	CBy7	0,866			
	CBy8	0,808			
	CBy9	0,851			
Religion	RL1	0,613	0,798	0,722	0,836
	RL2	0,825			
	RL3	0,564			
	RL4	0,578			
	RL5	0,877			
	RL6	0,743			
	RL7	0,812			

Sources: Data survey (2021)

Note: ( $\lambda$  = factors loading; AVE = average variance extracted;  $\alpha$  = Cronbach alpha; CR = composite reliability)

**Table 4. The Discriminant Validity**

Variable	Anxiety	PB	CB	Religion
Anxiety	0,337			
Panic Buying (PB)	0,413	0,643		
Compulsive Buying (CB)	0,423	0,139	0,309	
Religion	0,345	0,603	0,611	0,248

Sources: Data Processed (2021)

Based on the outer model test (Table 3 and 4), the result presents the score of loading factor is > 0.5 and the AVE score is > 0.5. Therefore, it statistically indicates adequate convergent validity. Then the composite reliability (CR) and Cronbach’s alpha values of all variables were greater than 0.7, as recommended by (Hair et al., 2017). Moreover, the discriminant validity was then tested using the heterotrait-monotrait ratio (HTMT) correlation criteria. Table 4 showed all values lower than the HTMT threshold of 0.85. This value follows the opinion of (Kline, 2016), which shows that discrimi-

nant validity is determined for the constructs in this study.

To test the structural model and hypothesis, this research applied the significance of the path coefficient, the variance explained (R<sup>2</sup>), and the variables’ effect size (f<sup>2</sup>). We also checked the multicollinearity issues of the model by applying the variance inflation factor (VIF). The result showed the VIF value from 1.000 to 1.033, which is less than the threshold value of 5 (Hair et al., 2017); (Diamantopoulos and Siguaw, 2006), in detail, presented in Table 5.

**Table 5. The result of The Hypothesis Test**

Hypothesis	Std. Beta	Std. Error	t-values	p-values	LLCI	ULCI	VIF	R2	f2	Q2
ANX → PB	0.217	0.053	3.542	0.000	0.074	0.287	1.000	0.043	0.045	
ANX → CB	0.199	0.059	3.349	0.000	0.076	0.287	1.052		0.054	0.027
PB → CB	0.353	0.057	3.524	0.000	0.287	0.462	1.033	0.192	0.153	0.089
ANX*REL → PB	-0.127	0.052	1.974	0.056	0.099	0.247				
ANX*REL → BC	-0.232	0.219	1.967	0.045	0.281	0.267				

Sources: Data Processed (2021)

Note: ANX = anxiety; PB = panic buying; CB – compulsive buying; REL= religion

**Hypotheses Results**

Hypothesis 1: Anxiety has an effect on panic buying behavior

Anxiety is defined as a condition that manifests as emotions of tension, worry, and discomfort associated with an uncertain future event that is not always likely to occur. Leung et al. (2021) stated that

anxiety is an unpleasant emotion, such as feelings of restlessness, confusion, and anxiety characterized by the extent of worry. Herjanto et al. (2021) stated anxiety might develop when people encounter difficult experiences in the past, such as failing an exam. It can also develop as a result of illogical ideas. Based on the test, anxiety has an effect sig-

nificantly on panic buying. They were statistically proven by the path coefficient value ( $\beta = 0.217$ ,  $p$ -value = 0.000). It shows that anxiety positively affects the occurrence of panic buying behavior. It means that the higher the nature of panic or anxiety, the higher the panic buying will occur. So, hypothesis 1 in this study is accepted. This result supports previous research such as (Modi et al., 2021); (Arafat et al., 2021), who found that anxiety behavior significantly affects panic buying. They confirmed that somebody felt panicked easily during Covid-19 because they could not anticipate the condition. Someone becomes increasingly restless due to their worries about the pandemic's impact on the supply of essential supplies and other items, which causes them to panic purchase. (Arafat et al., 2021) Many individuals stock up on food and other necessities in case anything horrible happens. According to this survey, some respondents experienced stress if they could not purchase items like other essential household necessities. These unpleasant emotions encourage consumers to purchase additional goods to satisfy their psychological requirements during the epidemic. This is due to their desire for security, where having enough of a certain commodity might make them feel less anxious (Arafat et al., 2021)

Hypothesis 2: Anxiety has an effect on compulsive buying

Based on Maccarrone-Eaglen and Schofield (2020), someone with high-stress levels would like to buy compulsively. Consumers think that if they don't buy an item at that time, they may lose it entirely, which can lead to unplanned buying behavior or commonly known as compulsive buying ( $\beta = 0.199$ ,  $p$ -value = 0.000). The result found that the anxiety consumer significantly affected compulsive buying. It demonstrates that anxiety qualities have a considerable favourable impact on wanting to buy compulsively. This result suggests that the more anxiety someone has, the more they like to engage in shopping compulsively. So, hypothesis 2 is accepted in this investigation. The findings of this investigation are backed up by Jaspal et al. (2020a); (Çelik and Köse 2021). They confirmed the factors that influence compulsive buying is the presence of

negative emotions involving feelings of depression, unpleasant circumstances, and resulting in a lack of control over buying desires.

Hypothesis 3: Panic buying has a positive impact on compulsive buying

Billore and Anisimova (2021) stated that Panic buying is consumer behavior when buying large quantities to avoid scarcity in the future. This behavior is also known as hoarding behavior. This behavior occurs due to avoid future supply shortages. Table 5 demonstrates that the hypothesis testing findings show that the panic buying has an effect on compulsive buying directly. Statistically is shown ( $\beta = 0.353$ ,  $p$ -value = 0.000). It means that the more panic buying the respondents do, the more likely they are to develop obsessive buying habits. As a result, hypothesis 3 is accepted in this investigation. This finding supports the research by (Tarka, 2020); (Otero-López et al., 2021) that uses the logistic regression analysis with a sample of 1093 Spanish University Students applied the research and found that panic buying positively affects compulsive buying. His research is in line with the concept that the more often a person does panic buying in the long term, the more likely he is to become a buyer with excessive buying behavior, which can lead to persistent compulsive buying tendencies. That study applies a logistic regression model with a large sample, while this latest study applies the role of religion as a mediator model

Hypothesis 4: Religion has a role in moderating anxiety behavior and panic buying.

Religiosity is "the level to which an individual holds and practices religious principles." According to (Saroglou, Delpierre, and Dernelle 2004), religion shapes a person's value structure, which determines their attitudes and conduct. Sohaib and Kang (2014) discovered that religiosity promotes consumer behavior through interpersonal trust. Existing research has looked at how religion influences some constructs such as risk perception (He et al., 2013), materialism (Pace, 2013), about consumer decision-making styles (Islam and Chandrasekaran, 2019), about ethical behavior (Srivastava et al., 2018), about

environmental concern (Felix et al., 2018), and consumption patterns (Minton et al., 2019). The findings of the hypothesis testing show the variable of religion has a role in moderating the relationship between anxiety and panic buying. Statistically is shown as ( $\beta = -0.127$ , p-value 0.056). It means that the more significant religious adherence respondents have, the better equipped they are to suppress and minimize the link between anxiety and panic buying behavior. As a result, hypothesis 4 is accepted in this investigation. This is in line with some researches like (Singh et al., 2021a) showed there is a negative relationship between intrinsic religiosity and uncontrollable buying constructs. This is also supported (Karaduman, 2016); (Minton et al., 2019); (Islam and Chandrasekaran, 2019); (Jaspal et al., 2020a)

Hypothesis 5: Religion has a role in moderating anxiety and compulsive buying.

Consumer fright might occasionally generate unexpected buying behavior in the age of the Covid-19 outbreak. Panic buying is described as consumer behavior involving buying huge quantities of things to avoid future shortages. People continued to make purchases despite the increasing hysteria. Consumers' anxiousness heightens their impulse to overpay and make compulsive purchases. Religion teaches that needs should take precedence over desires in satisfying life's needs and that a religious person should shop fairly, that is, not less or more than is necessary. Filippini and Srinivasan (2019) stated that religion could affect consumer attitudes and behavior, including shopping decisions. Religion as a motivating element for ethical consumption and food waste reduction. Religion is well-known for its ability to influence human behavior in various positive ways. The findings of the hypothesis testing show the variable of religion has a role in moderating the relationship between anxiety behavior and compulsive buying ( $\beta = -0.232$ , p-value 0.045). It means that the more religious adherence a person has, the better able they are to suppress and lessen the link between anxiety and compulsive buying behavior. As a result, hypothesis 5 is accepted in this investigation. This finding does support the previous research (Pace, 2013) that found Buddhism reduces

materialism directly. This investigation is also in line with (Muhamad and Mizerski, 2010) that religious psychology offers a holistic view of factors mediating religious influences on consumer behaviors. This study is closed related to the research of (Alam et al., 2011); (Agarwala et al., 2019); (Habib et al., 2020).

## DISCUSSION

Based on the SOR theory, which translates how consumers respond to the stimulus of a pandemic environment. In the model, a stimulus organism response (SOR) suggests various aspects of the environment that together affect the individual's internal state and, in turn, encourage a person's behavior. This statement is relevant to the relationship between consumer anxiety due to the pandemic, panic buying, and compulsive buying. This study develops a conceptual model in which the role of religion moderates the influence of individual anxiety on panic buying and compulsive buying behavior. The results showed that consumer anxiety affects panic and compulsive buying behavior. Not only that, but it also explains how panic buying affects an individual's compulsive buying behavior. These results confirm the link between consumer anxiety, panic buying, and compulsive buying that occurred in several urban districts in East Java with a high rate of COVID cases in East Java, Indonesia. The effects are in line with the previous investigations such as those (Felix et al., 2018); (Minton et al., 2019); (Sharma et al., 2020); (Eva et al., 2021); (Omar et al., 2021); (Singh et al., 2021a) which verify the link between the anxiety, panic buying and compulsive buying, but those study did not reveal the role of religion. In addition, the results also show that the role of religion is proven to be a mediator in the intercourse between anxiety, panic buying and compulsive buying.

The results of this study strengthen the opinion expressed by (Borzooei et al., 2014) in their findings which confirmed that religion is emphasized as the essential element influencing customer purchase intentions (Musadik and Azmi, 2017) also confirmed that affiliation with the religion, the commitment of the religious, the motivation of the religious, the

knowledge of the religious, and the awareness of the social impact of a particular religion are components of religion that can influence consumer behavior.

## **CONCLUSION**

Based on the test results used, this research supports the assumption that religion has an influence and role in the link between anxiety and buying decisions. Therefore, it is true that, even in Islam, consumer behavior is regulated by religious orders. It supports the view that religion has the ability to influence consumer attitudes and behavior, including shopping decisions. Religion as a motivating element for ethical consumption, reduction of food waste, and influencing human behavior in various positive ways.

Based on the view (Habib et al., 2020) that religion provides a holistic view in understanding the factors that influence consumer behavior, he emphasized that religion has a role in exceptional cases such as buying basic household needs. This is in accordance with religious beliefs, as in Islamic verses that instruct Muslims to obey Allah's instructions and to spend money sparingly (Borzooei et al., 2014), (Hoetoro and Hannaf, 2019).

This study also illustrates that someone who has high religiosity does not have a compulsive buying tendency. This finding seems to provide more knowledge of the literature, namely that religious individuals tend to behave more maturely and responsibly.

In the end, it can be said that religious beliefs have a major role in moderating the relationship between consumer anxiety toward panic buying and compulsive buying decisions. This finding has formed a new model of consumer behavior. These results provide support for the fifth hypothesis. The more religiously compliant a customer is, the more likely they are to suppress and decrease obsessive shopping.

## **LIMITATIONS**

The limitations of this research are: first, the collected data was done only through an online survey. It depends on the respondents' understanding.

Second, the scope is only talking about the impact of anxiety on panic buying and compulsive buying that is mediated by religion. Thirdly, the research model may be very simple.

## **IMPLICATIONS**

The compulsive buying behavior and panic buying of individuals, who are basically consumers, both in psychology and the business discipline, which is a social science, are discussed with an interdisciplinary perspective. The study has provided a helpful research framework that highlights how religion can mediate the relationship between consumer anxiety on panic buying and compulsive buying behavior in a religious community in Indonesia during the Covid-19 pandemic. These results have implications for understanding how people react to encourage personal qualities like work ethic, thriftiness, and honesty. These values have an impact on economic activity. All these characteristics, together known as *akhlaq*, serve as a guide for the religious community in adjusting their consumption behavior to uphold moral usefulness.

## **RECOMMENDATIONS**

This research investigates the influence of consumer anxiety on PB and CB behavior in the COVID-19 era, with the role of religiosity as a moderator. Further research can consider the research model, the combination of theory, and the scope of other variables such as government intervention, regulation, and income and may include other psychological variables such as subjective norms, and acculturation attitudes.

In addition, mixed methods designs are likely to offer additional insight into the interactions of the investigated variables. The hope is that it will provide more complete information for companies, and relevant government agencies, such as the Ministry of Trade, to provide effective policy interventions to reduce the negative impact of PB and CB.

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