Article

The Impact of Scarcity of Medical Protective Products on Chinese Consumers' Impulsive Purchasing during the COVID-19 Epidemic in China

Jingjing Zhang ^{1,*} , Nan Jiang ¹, Jason James Turner ² and Saeed Pahlevan Sharif ¹

¹ Business and Law School, Taylor's University, Subang Jaya 47500, Malaysia; Nan.Jiang@taylors.edu.my (N.J.); saeed.sharif@taylors.edu.my (S.P.S.)

² Business School, Asia Pacific University of Technology & Innovation, Bukit Jalil, Kuala Lumpur 57000, Malaysia; jasonturner@staffemail.apu.edu.my

* Correspondence: zhangjingjing@sd.taylors.edu.my; Tel.: +601-7636-0370

Abstract: In 2020, during the peak period of the COVID-19 outbreak in China, the scarcity of medical protective products significantly influenced consumers' impulsive purchasing and affected the public order. It is important to identify the effect of scarcity on consumers' impulsive purchasing during this difficult time. However, scant research has been conducted on the impact of scarcity of medical protective products on Chinese consumers' impulsive purchasing. This paper investigates the impact of the scarcity of medical protective products on consumers' impulsive purchasing during the pandemic in China based on the theories of scarcity, S-O-R and bandwagon effect. Simultaneously, this study identifies the different mediating mechanisms (fear of missing out and perception) and the moderation (bandwagon) in the relationship between scarcity and impulsive purchasing. Finally, 509 validity data were collected by using an online questionnaire, and SmartPLS was used for data analysis. The findings present that the fear of missing out, perception and bandwagon dominate the scarcity effect on impulsive purchasing. The findings provide more information on consumers' impulsive purchasing in the context of scarcity of medical protective products. Marketers and the Chinese government can adopt measures to reduce their effect, which may help maintain the public order during the epidemic.

Keywords: scarcity; impulsive purchasing; bandwagon; fear of missing out; perceived quality; perceived cost; perceived value

Citation: Zhang, J.; Jiang, N.; Turner, J.J.; Pahlevan Sharif, S. The Impact of Scarcity of Medical Protective Products on Chinese Consumers' Impulsive Purchasing during the COVID-19 Epidemic in China.

Sustainability **2021**, *13*, 9749. <https://doi.org/10.3390/su13179749>

Academic Editor: Lester Johnson

Received: 29 July 2021

Accepted: 23 August 2021

Published: 30 August 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

The global economy, market and public health have all taken a big hit with the spread of COVID-19 [1–3]. China was the first country to be affected by it. Even though the Chinese government was very quick in taking preventive actions, the number of infected and the dead quickly rose. For example, in a span of only half a month (31 January to 16 February 2020), the number of confirmed positive cases shot up from 9720 to 68,584—a 700% increase, while the number of dead increased from 213 to 1666—an increase even faster than the infection itself [4]. This situation pushed the country and its nationals into a state of high anxiety [5–7], especially when no specific therapeutic medicine nor any clinically approved vaccines were available for preventing COVID-19 at such an early stage of outbreak in China [8].

Another reason to exacerbate the situation in China was the scarcity of medical protective products due to huge demand [9,10]. For example, the 180 million masks that were produced everyday could not cater to the extremely high daily demand of 900 million masks [11]. Consequently, China faced a significant challenge of scarce medical protective products, such as face masks, alcohol, protective suit, disinfectants, medical gloves and goggles, etc. [12]. This scarcity propelled people to rush to purchase them,

which in turn made these products, which were vital for healthcare professionals, extremely insufficient [13] and wasted resources (e.g., consumers stored large amounts of disinfectant that can be used for years) [8]. Hence, this study aimed at identifying how the scarcity of medical protective products affected consumers' impulsive purchasing behaviour.

A few previous empirical research have conducted a comprehensive analysis on the scarcity of medical protective products on Chinese consumers' impulsive purchasing, as current studies have generally used only single way for examining the scarcity effect on consumers' impulsive purchasing, such as the mediating mechanism of perceived arousal [14,15]. The single way of scarcity effect, which even though has been widely used in explaining impulsive purchasing, appears to provide an incomplete explanation of the scarcity effect on impulsive purchasing. The S-O-R (stimulus, organism and response) model indicated that environment stimulus can affect response through two ways: affection and cognition of the organism [15,16]. It indicated that the extent of different mediating mechanisms in influencing consumers' impulsive purchasing during scarcity is not clearly defined. Thus, this research will identify how scarcity through both cognition (perception) and affection (fear of missing out) influences impulsive purchasing based on the theories of scarcity, S-O-R and the bandwagon effect.

Moreover, scarcity signals bandwagon consumption [17,18]. Bandwagon consumption was vehemently visible during periods of lockdown due to COVID-19 [19–21]. This brings social and economic issues [22]. For example, people followed others in purchasing face masks [23], which caused wastage of resources, affected the market and reduced efficiency of resource allocation [24,25]. Moreover, the bandwagon effect is one of the external reasons that may motivate consumers' demand or even trigger surplus demand [26], creating more scarcity and thereby magnifying the effect of scarcity. Hence, it can be asserted that the scarcity effect may depend on the level of bandwagon consumption.

Hence, this study aims to identify the scarcity effect on consumers' impulsive purchasing with bandwagon consumption moderating this relationship. This study has the following objectives:

- To integrate relevant constructs from the theory of scarcity, S-O-R and bandwagon effect to develop multiple ways for explaining the scarcity effect on consumers' impulsive purchasing;
- To find the influences of scarcity on impulsive purchasing by examining mediating ways such as fear of missing out and perception (perceived quality, perceived cost and perceived value);
- To examine the relationships between scarcity and perceived quality;
- To assess the mediating effect of perceived cost on the relationship between perceived quality and perceived value and the mediating effect of the fear of missing out on the relationship between scarcity and impulsive purchasing;
- To find the moderating effect of bandwagon on the relationship between scarcity and impulsive purchasing;
- To test the relationship between perceived value and impulsive purchasing.

Taken together, the study offers new insights on how and to what extent scarcity influences impulsive purchasing. The findings could be helpful for the government and managers to better respond to the crisis of COVID-19.

2. Literature Review

2.1. Scarcity Model

Scarcity originates from an imbalance between demand and supply, resulting in a shortage of resources [27]. In marketing, scarcity could be defined as a product available for a limited time or quantity [28,29]. Limited product availability can be communicated to consumers by using written statement or a visual statement [30,31]. Limited time means a product offer will expire after a predefined time [28,32,33]. This research focuses on a limited quantity of medical protective products due to overwhelming demand. This research uses the scarcity model developed by Wu et al. (2012) [34], which discusses how

scarcity affects purchase intention through consumer value perception. It is linked with the S-O-R model in which the organism (O) responds to cues such as perceived value, perceived quality and perceived risk [35]. Since this study aims to identify different ways in which scarcity affects impulsive purchasing, therefore, the scarcity model fits well for this study.

2.2. S-O-R Model

The S-O-R model explains the relationship between stimulus and response by the mediation of organism [15,16,36,37]. It is also used to explain consumers' impulsive behaviour [38–40]. The S-O-R theory postulates that stimuli from the environment affect an individual's affective (emotion) and cognitive (perception) reactions, which in turn influence individual behaviour [15,16,35]. For this study, the scarcity of medical protective products refers to the stimuli and the multiple ways or mediating mechanisms (fear of missing out and perception) that are evoked within an organism, while impulsive purchasing represents the response.

2.3. Bandwagon Effect

Bandwagon effect refers to people performing certain actions because other people are performing them [41,42]. In marketing, the bandwagon effect describes the action of adopting the same behaviours and attitudes as the group or the class a consumer wants to identify with [43,44]. In general, the bandwagon effect generated by demand-induced scarcity is a dynamic and social process studied within a range of behavioural sciences [45,46]. Thus, it is utilised in the context of the scarcity of medical protective products.

2.4. Relationship between Scarcity and Perceived Quality

Perceived quality is the consumer's subjective appraisal of the perceived function, reliability and workmanship of a product [47,48]. Based on the scarcity-expensiveness-desirability (S-E-D) model [49], a product that is scarce has a higher perceived quality than non-scarce ones [48–50]. However, some research asserted that there is no positive relationship between scarcity and perceived quality. For example, Gierl and Huettl [51] argue that supply-side scarcity of non-conspicuous consumption products (e.g., yoghurt, shampoo, soap bar, etc.) seems to have no effect on Germans' perceived quality.

The consumption values, attitudes and behaviours differ between countries of the west and the east [52]. In the same vein, the relationship between scarcity and perceived quality may differ in different contexts. For example, Chinese consumers tend to believe the 'rare is good' [52,53]. This research focuses on the scarcity of medical protective products in China. Therefore, based on the above, Hypothesis 1 is proposed.

Hypothesis 1 (H1). *Scarcity positively and significantly influences the perceived quality of medical protective products in China.*

2.5. Relationship between Scarcity, Fear of Missing out and Impulsive Purchasing

Generally, fear of missing out (FOMO) is described as an emotion [54–56]. It is the consumer's anxiety about missing a chance or experience that others are having [1,57]. In this study, FOMO is defined as the fear of missing opportunities for purchasing medical protective products. On a different note, impulsive purchasing has been recently defined as a spontaneous, immediate purchase of a product without any thoughtful, deliberate consideration of its alternative or future implications [58,59]. Impulsive purchasing is also called unplanned buying [60,61] or irrational behaviour [13,62]. Facing the scarcity of medical protective products during COVID-19, most consumers feared missing the opportunity to purchase medical protective products. thus, they rushed to buy them [63,64]. This view is supported by Zhang et al. [56], who found the effect of perceived scarcity on choice mediated by FOMO.

Scarcity induces consumers to make a choice between buying now or missing out on the purchase opportunity [65]. Scarcity positively influences FOMO [55,66]. It is also found that FOMO strongly influences buying decisions [1] and directly influences consumers' impulsive purchasing [67]. It indicates that there might be a positive relationship between scarcity, FOMO and impulsive purchasing. From the S-O-R model perspective, stimulus from the environment affects an individual's emotion and then ultimately influences an individual behaviour [15]. Therefore, based on the above, Hypothesis 2 is proposed.

Hypothesis 2 (H2). *Fear of missing out (FOMO) mediates the relationship between scarcity and impulsive purchasing of medical protective products in China.*

2.6. Relationship between Perceived Quality, Perceived Cost and Perceived Value

Perceived cost refers to a combination of the product price and costs associated with its acquisition and use [68]. It includes both monetary cost and non-monetary cost [69–71]. Perceived value is the consumer's overall assessment of a product/service's utility based on perceptions of what is received against what is given [72]. Perceived quality, perceived cost and perceived value all form a meaningful part of the scarcity model [34]. Consumers tend to take high scarcity as a signal for higher quality [51,73]. Scarce products are believed to be of good quality, therefore, need to cost more [49,74]. The more consumers spend on a scarce product, the more is it considered valuable [34]. In other words, scarcity of a product positively influences its perceived quality, which in turn may positively influence perceived cost, while perceived cost positively influences perceived value. Hence, perceived cost positively mediates the relationship between perceived quality and perceived value in the context of scarcity. Therefore, Hypothesis 3 is proposed.

Hypothesis 3 (H3). *Perceived cost mediates the relationship between perceived quality and perceived value of medical protective products in China.*

2.7. Relationship between Scarcity, Bandwagon Effect and Impulsive Purchasing

Scarcity generates a bandwagon effect [17,75]. Demand scarcity, in particular, always has a connection with the bandwagon effect [17,33]. The bandwagon effect can result in demand acceleration, which in turn, causes greater demand led scarcity of products [76]. While scarcity does have an effect on impulsive purchasing [77,78], the influence of demand scarcity may also depend on the bandwagon effect [18,51]. It can be explained as scarcity affecting impulsive purchasing moderated by the bandwagon effect. Therefore, Hypothesis 4 is proposed.

Hypothesis 4 (H4). *Bandwagon moderates the impact of scarcity towards impulsive purchasing of medical protective products in China.*

2.8. Relationship between Perceived Value and Impulsive Purchasing

Previous research on COVID-19 has mentioned the perceived value and Chinese consumers' impulsive purchasing based on cognitive-affective personality system theory [7] and the cross-border model [79] and has explained that perceived value results in Chinese consumers' online impulsive purchasing of medical protective products through foreign e-commerce platforms during COVID-19 [79]. However, the current research is based on the scarcity model, S-O-R model, bandwagon effect, the relationship between perceived value and impulsive purchasing in the context of COVID-19. Therefore, Hypothesis 5 is proposed. The Figure 1 present all hypotheses in the conceptual model.

Hypothesis 5 (H5). *Perceived value is positively and significantly influencing impulsive purchasing of medical protective products in China.*

Figure 1. Hypothesized Conceptual model.

3. Research Methodology

3.1. Measurement and Scale

An online self-reported questionnaire was used for data collection. All the questions were drafted to reflect the peak of the COVID-19 outbreak in China. Scarcity (5 items), perceived quality (5 items) and perceived value (4 items) were taken from Wu et al. [34]; bandwagon (4 items) from Mainolfi [41]; FOMO (5 items) from Kaur [80]; perceived cost (10 items) from Zheng et al. [81]; and impulsive purchasing (9 items) from Ho and Lim [62]. A seven-point Likert scale was used for all items (where 1 = strongly disagree and 7 = strongly agree) on the guides of Cacciolatti and Lee [82], Firman et al. [83] and Joensuu-Salo et al. [84]. The 42 items on the questionnaires are presented in the Appendix A.

The structural equation model (SEM) was used for analysis with full information estimation method using the Smart PLS 3 software, as SEM is one of the most preferred methods by marketing researchers to assess new theoretical models involving multiple complex social constructs [71], and PLS-SEM is capable of in-depth statistical analysis and is suitable to estimate complex models with many constructs [85,86]. The complexity of this present model with a total of 7 variables, 2 of which are mediators and 1 of which is a moderator, rendering this research suitable for PLS-SEM. Moreover, the assessment of a PLS model includes 2 components: the measurement model and the structural model [87]. For the research model in this study, it was evaluated based on its outer model (measurement model), followed by the inner model (structural model).

3.2. Sampling Design and Data Collection

The research targeted Chinese consumers living in China. Convenience sampling was performed to collect samples due to the large population of China and the lockdown during the epidemic, which means that it is difficult to distribute the questionnaire face-to-face.

All data were gathered in a COVID-secure method via social media (e.g., WeChat and QQ) because there are many Chinese individuals in the chat groups who come from different regions in China. A link to the questionnaire was shared on social media every 3 days (between 4 January and 2 March in 2020) which helped in collecting around 1500 responses. After sorting through the data, 509 questionnaires (34%) were found usable (see Table 1). According to Hair et al. (2017, p. 24) [85], the minimum sample size should equal to “ten times the largest number of structural paths directed at a particular construct in the structural model”. Given that there were 7 variables in the research model and using this argument of 10 times the number of variables, the minimum sample size for this study would arguably be 70. An alternative method for determining the minimum sample size is by using the power analysis, which allows researchers to know exactly the sample required to achieve a certain level of statistical power. As a result, this study used G*Power V3.1.9.2 software to calculate that an appropriate sample size would be a minimum of 77. However, identifying a minimum sample size does not necessarily result in representativeness, with a larger sample size capable of reducing sampling error. Based on current views from most empirical research, a sample size of 500 would be suitable for research to obtain high validity and reliable data with high statistical power [88–90].

Table 1. Demographic profile of the respondents.

Measure	Item	Frequency	Percent%
Gender	Male	221	43.4
	Female	288	56.6
Age	25 and under	138	27.1
	26–35	220	43.2
	36–45	93	18.3
	46–55	43	8.4
	56 over	15	2.9
Occupation	Public official	231	45.4
	Unemployed	40	7.9
	Retired	12	2.4
	Student	107	21
	Other	119	23.4
Income (RMB)	2500 or less	157	30.8
	2501–3500	114	22.4
	3501–4500	91	17.9
	4501–5500	73	14.3
	5501–6500	31	6.1
	6501 and above	43	8.4
Education Level	High school (including technical secondary school) and lower	97	19.1
	College degree	164	32.2
	Graduate degree	205	40.3
	Postgraduate degree and higher	43	8.4
You are a medical worker	Yes	41	8.1
	No	468	91.9
Medical protective products are scarcity	Yes	371	72.9
	No	138	27.1
The high price of medical protective products	Yes	392	77
	No	117	23
Total		509	100

4. Analysis and Discussion

4.1. Measurement Model

The first step in evaluating PLS-SEM results involves investigating the measurement model (outer model). The measurement model is used to assess the relationships between the indicator variables and their corresponding construct. It determines what indicators to

use for constructing measurement and the directional relationship between construct and indicators [85,91].

Table 2 shows the total result of reliability and validity. All values of CR and Cronbach's Alpha (CA) met the expected value, i.e., higher than 0.7; the values of AVE were above 0.5 [91,92]. The discriminant validity is also achieved since the value of AVE for each construct is more than the squared correlation between constructs [78]. These results indicate good internal reliability and validity of the constructs.

Table 2. Measurement model results.

Constructs	CA	CR	AVE	Discriminate Validity						
FOMO	0.873	0.922	0.797	0.893						
Bandwagon	0.880	0.918	0.736	0.576	0.858					
Impulsive Purchasing	0.908	0.932	0.732	0.521	0.572	0.855				
Perceived Quality	0.925	0.944	0.770	0.435	0.488	0.469	0.878			
Perceived Cost	0.900	0.930	0.770	0.527	0.510	0.557	0.456	0.878		
Perceived Value	0.830	0.888	0.666	0.537	0.599	0.509	0.541	0.555	0.816	
Scarcity	0.880	0.912	0.675	0.492	0.525	0.493	0.515	0.639	0.535	0.822

4.2. Structural Model

After satisfactory measurement model assessment, the next step is assessing the structural model (inner model) [85]. Each hypothesis is associated with a causal link in the structural model, while path coefficients are generally used to evaluate the hypothesized relationships within the structural model [85].

In general, the *t*-value decides the statistical significance of the coefficient [85,93]. Commonly used critical values for two-tailed tests are 1.65 (significance level = 10%), 1.96 (significance level = 5%) and 2.57 (significance level = 1%) [85]. As observed in Table 3, 'scarcity→perceived quality' path with values ($\beta = 0.515$, *t*-value = 12.390) means that H1 is supported. Moreover, the path 'scarcity→bandwagon→impulse purchasing' has values H4 ($\beta = 0.136$, *t*-value = 3.679), meaning H4 is supported. Finally, the path 'perceived value→impulsive purchasing' with values ($\beta = 0.115$, *t*-value = 1.967) means that H5 is supported.

Table 3. Path Coefficient.

Hypotheses	Path	Std. Beta (β)	t-Value	Result
H1	Scarcity→Perceived quality	0.515	12.390	Supported
H2	Scarcity→Impulsive purchasing			Supported
	Total effect	0.338	6.426	
	Direct effect	0.224	4.003	
	Indirect effect	0.082	3.003	
H3	Perceived quality→Perceived value			Supported
	Total effect	0.541	13.547	
	Direct effect	0.364	7.510	
	Indirect effect	0.177	6.613	
H4	Moderating Effect 1→Impulsive purchasing	0.136	3.679	Supported
H5	Perceived value→Impulsive purchasing	0.115	1.967	Supported

Table 3 shows the mediation effect of fear of missing out and perceived cost. It shows the indirect effect 'scarcity→FOMO→impulsive purchasing' is significant ($\beta = 0.082$, *t*-value = 3.003). The direct effect 'scarcity→impulsive purchasing' is significant ($\beta = 0.224$, *t*-value = 4.003). Moreover, the total effect 'scarcity→impulsive purchasing' is ($\beta = 0.338$, *t*-value = 6.426). It shows a partial mediation for the 'scarcity→FOMO→impulsive purchasing' path.

Moreover, the results of the path ‘perceived quality → perceived cost → perceived value’ shows ($\beta = 0.364$, t -value = 7.510) for direct effect and ($\beta = 0.177$, t -value = 6.613) for indirect effect. Moreover, the total effect ‘perceived quality → perceived value’ has ($\beta = 0.541$, t -value = 13.547). It shows a complementary partial mediation, which means perceived cost positively and significantly complementary partially mediates the relationship between perceived quality and perceived value, thereby supporting H2 and H3. To conclude, all the five hypotheses are supported.

4.3. Discussion

This research examined the effect of the scarcity of medical protective products on Chinese consumers’ impulsive purchasing in the context of COVID-19 outbreak. The structural model measurement revealed support for all the hypotheses. These findings show that scarcity has a positive and significant relationship with perceived quality, suggesting a higher perceived quality with greater scarcity of medical protective products. This finding is consistent with the scarcity-expensiveness-desirability (S-E-D) model in which a scarce product enhances its perceived quality [94].

Fear of missing out was found to play a mediating role in the relationship between scarcity and impulsive purchasing. This means that the greater scarcity of medical products increases consumers’ fear of missing out on the opportunity of possessing the products, in turn, making consumers more impulsive in purchasing medical protective products. The S-O-R model supports this finding that stimuli from the environment affect an individual’s emotions, which can influence behaviour [15].

Moreover, the perceived cost was found to positively, but partially, mediate the relationship between perceived quality and perceived value. That is, consumer’s perceived cost of purchasing and using a medical protective product mediated the impact of perceived quality on the perceived value during the COVID-19 outbreak in China. This is supported by Chen and Sun [74], Nazlan et al. [95] and Lynn [49], who posit that scarce products are of good quality, and thus need to cost more. Similar, Wu et al. [34] argues that consumers think that the higher the product costs, the more valuable the product will be. This finding shows that consumers may believe that the scarce product that costs more is more valuable. As a result, the organization may adjust the pricing to create more profit and to attract more consumer purchase intention by using the scarcity strategy.

Next, this study indicated that the bandwagon effect moderates the relationship between scarcity of medical protective products and impulsive purchasing. This means that the impact of scarcity of medical protective products on consumers’ impulsive purchasing depends on the level of the bandwagon effect. Higher levels of bandwagon effect create a greater impulsive purchasing due to scarcity and vice versa. This discovery is supported by previous studies, that is, the impact of demand scarcity may also depend on the bandwagon effect [18,51]. Based on this result, the marketer may wish to maximize the scarcity effect on consumers’ purchasing by creating the environment of the bandwagon effect. For example, the organization can create a phenomenon where many consumers queue up to buy products outside the store, making consumers think that this product has been recognized by many other consumers. The more consumers line up, the higher the degree of following the trend, which in turn may increase the scarcity effect and eventually attract more consumers’ attention.

Furthermore, perceived value positively influences consumers’ impulsive purchasing habits relative to medical protective products. This means that the higher the perceived value of medical protective products, the more impulsive the consumers will be. This is consistent with Lin et al. [19], who found that perceived value resulted in Chinese consumers’ impulsive purchasing of medical protective products online during COVID-19.

Finally, this research model explained the process of consumers’ impulsive purchasing. Due to the fact that impulsive consumption behaviour can effectively promote consumption and alleviate the impact of the COVID-19 on economic activities (or ultimately economic survival, as consumers’ impulsive purchasing accounts for a large proportion of the

sales) [96,97], this research model may take the research forward. It can provide managerial and academic insights for the government and marketers in the post-pandemic market, assisting them as they attempt to recover the national economy and encourage consumption and market engagement. Through arousing consumers' 'fear of missing out' and increasing consumers' perceived value and the level of scarcity of products, consumers could be encouraged to engage in impulsive purchasing behaviour and further consumerism.

5. Contributions

These findings provide several theoretical contributions to the academic literature for scarcity, fear of missing out, impulsive purchasing and the bandwagon effect. It provides support for the S-O-R model as a method for explaining the impact of scarcity on consumers' impulsive purchasing. To date, most previous studies have focused on identifying a single way for explaining the scarcity effect on impulsive purchasing. This study identified mediating effects of emotion (fear of missing out) and perception between scarcity and impulsive purchasing. This research also contributes to the literature on the bandwagon effect by introducing it as a moderator between scarcity and impulsive purchasing. Moreover, it enriches the current knowledge of scarcity and impulsive purchasing by developing a new model to capture the scarcity effect.

This research illustrated two different paths of scarcity effect on consumers' impulsive purchasing, which can allow marketers to know more about the scarcity effect in order to devise their strategies accordingly. Marketers may focus on different mediating mechanisms (emotion or perception) to maximize the scarcity effect on consumers' purchase intention. Moreover, a marketer may prefer to consider the bandwagon effect since higher levels of bandwagon effects may increase the scarcity effect on consumers' impulsive purchasing. For example, a marketer may ask consumers to queue in line (to create an atmosphere of bandwagon effect) to attract more consumers.

This research has important practical implications for the Chinese government. It will help maintain social order and help in controlling the market in advance when facing emergency public affairs. For example, the government may take measures to prevent the bandwagon effect, which may reduce further scarcity of medical protective products. Furthermore, the government can adopt methods to reduce consumers' impulsive purchasing by minimizing consumers' fear of missing out, by rationing the quantity of medical protective products according to population demographics or by using publicity tools to lessen the fear of missing out. Such methods can result in decreasing consumers' impulsive purchasing, which may ultimately be helpful for the government for managing public order.

This research has performed an intensive analysis of the scarcity effect on impulsive consumers' purchasing. It can help consumers realize that scarcity can be a marketing tactic that can result in irrational purchasing. Hence, it can help consumers in terms of avoiding irrational purchases by overcoming their emotions. On a separate note, it may also help consumers save money, as scarce products are generally higher priced [61,75].

6. Limitation and Future Research

Regarding the limitations of this research, 509 validity questionnaires were collected in China, which were restrained by time, lockdown and budget. The responses cannot represent all Chinese consumers' opinions as China has a huge population. Secondly, the 'organism' represents both affective and cognitive, meaning that they have different dimensions. However, this study only focuses on the fear of missing out (affective) and perception (cognitive) as the mediator. Thirdly, this study was cross-sectional in nature. Cross-sectional research design, at its best, can only be interpreted in as a correlational term. That is, it limits the causal conclusions that can be drawn from the results.

For further research, since the results of this study are directly relevant only to one specific product category, generalisation of the findings beyond the object tested should be performed more cautiously. Researchers may prefer to investigate the scarcity and

impulsive purchasing behaviour in other industries or products in the context of COVID-19 that were made scarce as a result of consumers' panic buying. The sample size, which although large enough to generate meaningful results, would benefit from being larger, arguably taking into account other regions in China to provide a wider comparative study in China. This will be addressed as part of a wider comparative study in China. Moreover, owing to the different situations of COVID-19 and culture in other countries, a comparative research study between different countries or periods in the same country can also be conducted. Furthermore, future research can introduce different constructs related to scarcity effects to enhance the comprehensiveness and explanatory power of the model.

Author Contributions: Conceptualization, J.Z., N.J. and J.J.T.; methodology, J.Z.; software, J.Z.; validation, J.Z., N.J., J.J.T. and S.P.S.; formal analysis, J.Z.; investigation, J.Z.; resources, J.Z.; data curation, J.Z.; writing—original draft preparation, J.Z.; writing—review and editing, J.Z., N.J., J.J.T.; visualization, J.Z., N.J. and J.J.T.; supervision, N.J., J.J.T. and S.P.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Ethics Committee of Taylor's University (HEC 2020/039 and final received on 30 May 2020).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Survey Questionnaires.

Construct	Measurement Items
Scarcity	(1) I think that the current supply of the medical protective products is small. (2) I think the medical protective products is selling out soon. (3) I think that many people will buy medical protective products. (4) I feel that the shortage of medical protective products will cause many people to buy. (5) I think the supplies only limit the number of masks for each person and will cause a lot of people to buy.
Bandwagon	(1) I buy medical protective products to be integrated into the social group I aspire to. (2) I only choose the medical protective products that others buy. (3) I like owning the medical protective products worn by others. (4) I buy very popular products.
Perceived quality	(1) The medical protective products are reliable. (2) The medical protective products would be of high workmanship. (3) The medical protective products would be of good quality. (4) The medical protective products would be dependable. (5) The medical protective products are durable.
Fear of Missing out	(1) I am anxious when missing the chance to get the medical protective products. (2) Keep tabs on others. (3) Worried when others buy the medical protective products. (4) I fear of others stocking up the medical protective products. (5) Follow others' shopping pattern.

Table A1. Cont.

Perceived cost	(1) The medical protective products purchased may not perform as expected (such as poor quality, fake products and second-hand products)
	(2) The unqualified medical protective products have a negative effect on the body (quality and material).
	(3) The potential loss of the current cost of the medical protective products as well as additional charges in the future (e.g., the possibility that the products may need to be repaired, be changed or difficult receive money back).
	(4) False or fraudulent online information causes that the medical protective products purchased online do not meet the expectations.
	(5) Loss of money if the credit card information is hacked when purchasing the medical protective products online.
	(6) Online shopping, not receiving the medical protective products on time due to long delivery time or products is damaged during the delivery.
	(7) Waste time researching information and purchasing when finally making a bad purchasing decision.
	(8) The pressure from the friends or family if the medical protective products purchased online fails.
	(9) Loss of self-esteem or disappointment from the frustration of not achieving a buying goal.
	(10) When purchasing the medical protective products online, personal information will be collected without their consent when giving one's credit card number online or from the use of cookies and web bugs.
Perceived value	(1) I think the medical protective products are good value for the money.
	(2) The expected price for the medical protective products is acceptable.
	(3) The medical protective products are considered to be a good buy.
	(4) The medical protective products appear to be valuable.
Impulsive purchasing	(1) I often buy scarce medical protective products spontaneously.
	(2) "Just do it" describes the way I buy things.
	(3) I often buy scarce medical protective products without thinking.
	(4) "I see it, I buy it" describes me.
	(5) "Buy now, think about it later" describes me.
	(6) Sometimes I feel like buying medical protective products at the spur-of-the moment.
	(7) I buy medical protective products according to how I feel at the moment.
	(8) I carefully plan most of my purchases.
	(9) Sometimes I am a bit reckless about purchasing medical protective products.

References

- Abel, J.P.; Buff, C.L.; Burr, S.A. Social media and the fear of missing out: Scale development and assessment. *J. Bus. Econ. Res.* **2016**, *4*, 33–44. [\[CrossRef\]](#)
- Fardin, M.A. COVID-19 and anxiety: A review of psychological impacts of infectious disease outbreaks. *Arch. Clin. Infect. Dis.* **2020**, *15*, e102779. [\[CrossRef\]](#)
- Feng, K.; Hubacek, K.; Pfister, S.; Yu, Y.; Sun, L. Virtual scarce water in China. *Environ. Sci. Technol.* **2014**, *48*, 7704–7713. [\[CrossRef\]](#)
- World Health Organization. Coronavirus Disease 2019 (COVID-19): Situation Report 2020. Available online: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports> (accessed on 2 March 2020).
- Chen, X.; Liu, T.; Li, P.; Wei, W.; Chao, M. The relationship between media involvement and death anxiety of self-quarantined people in the COVID-19 outbreak in China: The mediating roles of empathy and sympathy. *OMEGA J. Death Dying* **2020**. [\[CrossRef\]](#)
- Liu, Q.; Zhao, G.; Ji, B.; Liu, Y.; Zhang, J.; Mou, Q.; Shi, T. Analysis of the Influence of the Psychology Changes of Fear Induced by the COVID-19 Epidemic on the Body. *World J. Acupunct. Moxibustion* **2020**, (in press).
- Xiao, X.; Zhu, X.; Fu, S.; Hu, Y.; Li, X.; Xiao, J. Psychological impact of healthcare workers in China during COVID-19 pneumonia epidemic: A multicenter cross-sectional survey investigation. *J. Affect. Disord.* **2020**, *274*, 405–410. [\[CrossRef\]](#)
- Li, M.; Zhao, T.; Huang, E.; Li, J. How does a public health emergency motivate people's impulsive consumption? An empirical study during the COVID-19 outbreak in China. *Int. J. Environ. Res. Public Health* **2020**, *17*, 5019. [\[CrossRef\]](#)
- Lee, S.A.; Mathis, A.A.; Jobe, M.C.; Pappalardo, E.A. Clinically significant fear and anxiety of COVID-19: A psychometric examination of the Coronavirus Anxiety Scale. *Psychiatry Res.* **2020**, *290*, 113112. [\[CrossRef\]](#)
- Xiang, Y.T.; Zhao, Y.J.; Liu, Z.H.; Li, X.H.; Zhao, N.; Cheung, T.; Ng, C.H. The COVID-19 outbreak and psychiatric hospitals in China: Managing challenges through mental health service reform. *Int. J. Biol. Sci.* **2020**, *16*, 1741. [\[CrossRef\]](#)
- Wang, M.W.; Zhou, M.Y.; Ji, G.H.; Ye, L.; Cheng, Y.R.; Feng, Z.H.; Chen, J. Mask crisis during the COVID-19 outbreak. *Eur. Rev. Med. Pharm. Sci.* **2020**, *24*, 3397–3399.
- Wu, H.; Huang, J.; Zhang, C.J.; He, Z.; Ming, W.K. Facemask shortage and the coronavirus disease (COVID-19) outbreak: Reflection on public health measures. *MedRxiv* **2020**, *21*, 100329. [\[CrossRef\]](#) [\[PubMed\]](#)
- Wu, J.J.; Chien, S.H. Impulsive purchase, approach-avoidance effect, emotional account influence in online-to-offline services. *J. Adv. Inf. Technol.* **2019**, *10*, 35–40. [\[CrossRef\]](#)

14. Islam, T.; Pitafi, A.H.; Arya, V.; Wang, Y.; Akhtar, N.; Mubarik, S.; Xiaobei, L. Panic buying in the COVID-19 pandemic: A multi-country examination. *J. Retail. Consum. Serv.* **2021**, *59*, 102357. [\[CrossRef\]](#)
15. Wu, Y.L.; Li, E.Y. Marketing mix, customer value, and customer loyalty in social commerce: A stimulus-organism-response perspective. *Internet Res.* **2018**, *28*, 74–104. [\[CrossRef\]](#)
16. Lee, H.J.; Yun, Z.S. Consumers' perceptions of organic food attributes and cognitive and affective attitudes as determinants of their purchase intentions toward organic food. *Food Qual. Prefer.* **2015**, *39*, 259–267. [\[CrossRef\]](#)
17. Ku, H.H.; Kuo, C.C.; Yang, Y.T.; Chung, T.S. Decision-contextual and individual influences on scarcity effects. *Eur. J. Mark.* **2013**, *47*, 1314–1332. [\[CrossRef\]](#)
18. Sharma, P.; Roy, R. Looking beyond first-person effects (FPEs) in the influence of scarcity appeals in advertising: A replication and extension of Eisend (2008). *J. Advert.* **2016**, *45*, 78–84. [\[CrossRef\]](#)
19. Baddeley, M. Hoarding in the age of COVID-19. *J. Behav. Econ. Policy* **2020**, *4*, 69–75.
20. Kuruppu, G.N.; De Zoysa, A. COVID-19 and Panic Buying: An Examination of the Impact of Behavioural Biases. *Soc. Sci. Humanit. Open* **2020**. [\[CrossRef\]](#)
21. Labad, J.; González-Rodríguez, A.; Cobo, J.; Puntí, J.; Farré, J.M. A systematic review and realist synthesis on toilet paper hoarding: COVID or not COVID, that is the question. *PeerJ*. **2021**, *9*, e10771. [\[CrossRef\]](#)
22. Çelik, I.K.; Eru, O.; Cop, R. The effects of consumers' FOMO tendencies on impulse buying and the effects of impulse buying on post-purchase regret: An investigation on retail stores. *BRAIN. Broad Res. Artif. Intell. Neurosci.* **2019**, *10*, 124–138.
23. Chen, A.; Shi, Y. The impact of risk appetite on public purchasing behavior: Taking the purchase of masks as an example. *Sci. Technol. Rev.* **2020**, *38*, 86–92.
24. How to Protect the Rights and Interests of Buying Masks? The Reminder of Henan Consumers Association. Available online: <https://4g.dahe.cn/news/20200219600294> (accessed on 9 May 2021).
25. Shanxi Consumers Association: Unite You and Me to Overcome Difficulties (COVID-19) Together. Available online: http://www.ce.cn/cysc/newmain/yc/jsxw/202002/04/t20200204_34216658.shtml (accessed on 9 May 2021).
26. Chaudhuri, H.R.; Majumdar, S. Of diamonds and desires: Understanding conspicuous consumption from a contemporary marketing perspective. *Acad. Mark. Sci. Rev.* **2006**, *11*, 1–18.
27. Kristofferson, K.; McFerran, B.; Morales, A.C.; Dahl, D.W. The dark side of scarcity promotions: How exposure to limited-quantity promotions can induce aggression. *J. Consum. Res.* **2017**, *43*, 683–706. [\[CrossRef\]](#)
28. Chen, T.Y.; Yeh, T.L.; Wang, Y.J. The drivers of desirability in scarcity marketing. *Asia Pac. J. Mark. Logist.* **2020**, *33*, 924–944. [\[CrossRef\]](#)
29. Jang, W.E.; Ko, Y.J.; Morris, J.D.; Chang, Y. Scarcity message effects on consumption behavior: Limited edition product considerations. *Psychol. Mark.* **2015**, *32*, 989–1001. [\[CrossRef\]](#)
30. Cassidy, N.G. The Effect of Scarcity Types on Consumer Preference in the High-End Sneaker Market. Ph.D. Thesis, Appalachian State University, Boone, NC, USA, 2018.
31. Jeong, H.J.; Kwon, K.N. The effectiveness of two online persuasion claims: Limited product availability and product popularity. *J. Promot. Manag.* **2012**, *18*, 83–99. [\[CrossRef\]](#)
32. Friedrich, T.; Figl, K. Consumers' perceptions of different scarcity cues on e-commerce websites. In Proceedings of the 39th International Conference on Information Systems (ICIS), San Francisco, CA, USA, 13–16 December 2018.
33. Trinh Anh, K. Scarcity Effects on Consumer Purchase Intention in the Context of E-Commerce. Master's Thesis, Aalto University School of Business, Espoo, Finland, 2014.
34. Wu, W.Y.; Lu, H.Y.; Wu, Y.Y.; Fu, C.S. The effects of product scarcity and consumers' need for uniqueness on purchase intention. *Int. J. Consum. Stud.* **2012**, *36*, 263–274. [\[CrossRef\]](#)
35. Kim, J.; Lennon, S.J. Effects of reputation and website quality on online consumers' emotion, perceived risk and purchase intention. *J. Res. Interact. Mark.* **2013**, *7*, 33–56. [\[CrossRef\]](#)
36. Kawaf, F.; Tagg, S. Online shopping environments in fashion shopping: An SOR based review. *Mark. Rev.* **2012**, *12*, 161–180. [\[CrossRef\]](#)
37. Woodworth, R.S. *Dynamic Psychology*; Clark University Press: Worcester, MA, USA, 1928.
38. Bharathi, K.; Sudha, S. Store Ambiance Influence on Consumer Impulsive Buying Behavior towards Apparel: SOR Model. *Indian J. Public Health Res. Dev.* **2017**, *8*, 4140. [\[CrossRef\]](#)
39. Chopdar, P.K.; Balakrishnan, J. Consumers response towards mobile commerce applications: Sor approach. *Int. J. Inf. Manag.* **2020**, *53*, 102106. [\[CrossRef\]](#)
40. Floh, A.; Madlberger, M. The role of atmospheric cues in online impulse-buying behavior. *Electron. Commer. Res. Appl.* **2013**, *12*, 425–439. [\[CrossRef\]](#)
41. Mainolfi, G. Exploring materialistic bandwagon behaviour in online fashion consumption: A survey of Chinese luxury consumers. *J. Bus. Res.* **2020**, *120*, 286–293. [\[CrossRef\]](#)
42. Park, K.; Ha, J.; Park, J.Y. An experimental investigation on the determinants of online hotel booking intention. *J. Hosp. Mark. Manag.* **2017**, *26*, 627–643. [\[CrossRef\]](#)
43. Shayan, S.; Aneela, M.; Akram, M.S.; Ronika, C. Do luxury brands successfully entice consumers? The role of bandwagon effect. *Int. Mark. Rev.* **2017**, *34*, 498–513.
44. Tynan, C.; McKechnie, S.; Chhuon, C. Co-creating value for luxury brands. *J. Bus. Res.* **2010**, *63*, 1156–1163. [\[CrossRef\]](#)

45. Fu, W.W.; Sim, C.C. Aggregate bandwagon effect on online videos' viewership: Value uncertainty, popularity cues, and heuristics. *J. Am. Soc. Inf. Sci. Technol.* **2011**, *62*, 2382–2395. [\[CrossRef\]](#)
46. Maxwell, A. Bandwagon effect and network externalities in market demand. *Asian J. Manag. Res.* **2014**, *4*, 527–532.
47. Saleem, A.; Ghafar, A.; Ibrahim, M.; Yousuf, M.; Ahmed, N. Product perceived quality and purchase intention with consumer satisfaction. *Glob. J. Manag. Bus. Res.* **2015**, *15*, 21.
48. Shuey, K.N. The Effects of Discount Level and Scarcity on the Perceived Product Value in Email Advertising. Ph.D. Thesis, Texas Tech University, Lubbock, TX, USA, 2014.
49. Lynn, M. Scarcity's enhancement of desirability: The role of naive economic theories. *Basic Appl. Soc. Psychol.* **1992**, *13*, 67–78. [\[CrossRef\]](#)
50. Cremer, S.; Loebbecke, C. Selling goods on e-commerce platforms: The impact of scarcity messages. *Electron. Commer. Res. Appl.* **2021**, *47*, 101039. [\[CrossRef\]](#)
51. Gierl, H.; Huettl, V. Are scarce products always more attractive? The interaction of different types of scarcity signals with products' suitability for conspicuous consumption. *Int. J. Res. Mark.* **2010**, *27*, 225–235. [\[CrossRef\]](#)
52. Rahman, O.; Fung, B.C.; Chen, Z.; Gao, X. A cross-national study of apparel consumer preferences and the role of product-evaluative cues. *Asia Pac. J. Mark. Logist.* **2017**, *29*, 796–812.
53. Ye, T. What is value of investing? Buy paintings of Van Gogh, buy houses which is scarce. *Real Estate Guide* **2019**, *7*, 16–17.
54. Hayran, C.; Anik, L.; Gürhan-Canli, Z. A threat to loyalty: Fear of missing out (FOMO) leads to reluctance to repeat current experiences. *PLoS ONE* **2020**, *15*, e0232318. [\[CrossRef\]](#)
55. Hodgkinson, C. Fear of Missing Out' (FOMO) marketing appeals: A conceptual model. *J. Mark. Commun.* **2019**, *25*, 65–88. [\[CrossRef\]](#)
56. Zhang, Z.; Jiménez, F.R.; Cicala, J.E. Fear of missing out scale: A self-concept perspective. *Psychol. Mark.* **2020**, *37*, 1619–1634. [\[CrossRef\]](#)
57. Riordan, B.C.; Flett, J.A.M.; Hunter, J.A.; Scarf, D.; Conner, T.S. Fear of missing Out (FOMO): The relationship between FOMO, alcohol use, and alcohol-related consequences in college students. *Ann. Neurosci. Psychol.* **2015**, *2*, 1–7. [\[CrossRef\]](#)
58. Moon, M.A.; Farooq, A.; Kiran, M. Social shopping motivations of impulsive and compulsive buying behaviors. *UW J. Manag. Sci.* **2017**, *1*, 15–27.
59. Pradhan, V. Study on impulsive buying behavior among consumers in supermarket in Kathmandu Valley. *J. Bus. Soc. Sci. Res.* **2016**, *1*, 215–233. [\[CrossRef\]](#)
60. Kalla, S.M.; Arora, A.P. Impulse buying: A literature review. *Glob. Bus. Rev.* **2011**, *12*, 145–157. [\[CrossRef\]](#)
61. Lim, P.L.; Yazdanifard, R. What internal and external factors influence impulsive buying behavior in online shopping? *Glob. J. Manag. Bus. Res.* **2015**, *15*, 25–32.
62. Ho, S.Y.; Lim, K.H. Nudging moods to induce unplanned purchases in imperfect mobile personalization contexts. *MIS Q.* **2018**, *42*, 57–778. [\[CrossRef\]](#)
63. Mertens, G.; Gerritsen, L.; Duijndam, S.; Saleminck, E.; Engelhard, I.M. Fear of the coronavirus (COVID-19): Predictors in an online study conducted in March 2020. *J. Anxiety Disord.* **2020**, *74*, 102258. [\[CrossRef\]](#) [\[PubMed\]](#)
64. Swennen, G.R.; Pottel, L.; Haers, P.E. Custom-made 3D-printed face masks in case of pandemic crisis situations with a lack of commercially available FFP2/3 masks. *Int. J. Oral Maxillofac. Surg.* **2020**, *49*, 673–677. [\[CrossRef\]](#)
65. Shi, X.; Li, F.; Chumnumpan, P. The use of product scarcity in marketing. *Eur. J. Mark.* **2020**, *54*, 380–418. [\[CrossRef\]](#)
66. Föbker, N. Can You Resist? The Influence of Limited-Time Scarcity and Limited-Supply Scarcity on Females and Males in Hotel Booking Apps. Master's Thesis, University of Twente, Twente, The Netherlands, 2018.
67. Aydin, H. Explaining the effects of fear of missing the developments in social media (Fomo) on Instinctive Purchases by self-determination theory. *Int. J. Econ. Adm. Stud.* **2018**, *17*, 415–426.
68. Rajh, S.P. Comparison of perceived value structural models. *Market/Tržište* **2012**, *24*, 117–133.
69. Abu-Salim, T.; Onyia, O.P.; Harrison, T.; Lindsay, V. Effects of perceived cost, service quality, and customer satisfaction on health insurance service continuance. *J. Financ. Serv. Mark.* **2017**, *22*, 173–186. [\[CrossRef\]](#)
70. Lizin, S.; Van Passel, S.; Schreurs, E. Farmers' perceived cost of land use restrictions: A simulated purchasing experiments. *Land Use Policy* **2015**, *46*, 115–124. [\[CrossRef\]](#)
71. Wang, S.; Wang, J.; Li, J.; Wang, J.; Liang, L. Policy implications for promoting the adoption of electric vehicles: Do consumer's knowledge, perceived risk and financial incentive policy matter? *Transp. Res. Part A Policy Pract.* **2018**, *117*, 58–69. [\[CrossRef\]](#)
72. Chahal, H.; Kumari, N. Consumer perceived value. *Int. J. Pharm. Healthc. Mark.* **2012**, *6*, 167–190. [\[CrossRef\]](#)
73. Parker, J.R.; Lehmann, D.R. When shelf-based scarcity impacts consumer preferences. *J. Retail.* **2011**, *87*, 142–155. [\[CrossRef\]](#)
74. Chen, H.J.; Sun, T.H. Clarifying the impact of product scarcity and perceived uniqueness in buyers' purchase behaviour of games of limited-amount version. *Asia Pac. J. Mark. Logist.* **2014**, *26*, 232–249. [\[CrossRef\]](#)
75. Van Herpen, E.; Pieters, R.; Zeelenberg, M. When demand accelerates demand: Trailing the bandwagon. *J. Consum. Psychol.* **2009**, *19*, 302–312. [\[CrossRef\]](#)
76. Li, C.; Wang, Y.; Lv, X.; Li, H. To buy or not to buy? The effect of time scarcity and travel experience on tourists' impulse buying. *Ann. Tour. Res.* **2021**, *86*, 103083. [\[CrossRef\]](#)
77. Cook, S.C.; Yurchisin, J. Fast fashion environments: Consumer's heaven or retailer's nightmare? *Int. J. Retail. Distrib. Manag.* **2017**, *45*, 143–157. [\[CrossRef\]](#)

78. Gupta, S.; Gentry, J.W. Should I buy, hoard, or hide? -consumers' responses to perceived scarcity. *Int. Rev. Retail. Distrib. Consum. Res.* **2019**, *29*, 178–197. [[CrossRef](#)]
79. Lin, L.W.; Yan, S.R.; Zhou, J.L.; Kaluri, R. *Cross-Border Shopping on Consumer Satisfaction Survey—The Case of COVID-19 was Analyzed*; Scholars Middle East Publishers: Dubai, United Arab Emirates, 2020.
80. Kaur, K. Impact of the First Phase of Movement Control Order during the COVID-19 pandemic in Malaysia on purchasing behavior of Malaysian Consumers Kamaljeet Kaur^{1*}, Mageswari Kunasegaran², Jaspal Singh³, Selvi Salome⁴, and Sukjeet Kaur Sandhu⁵. *Horizon* **2020**, *2*, 131–144.
81. Zheng, L.; Favier, M.; Huang, P.; Coat, F. Chinese consumer perceived risk and risk relievers in e-shopping for clothing. *J. Electron. Commer. Res.* **2012**, *13*, 255.
82. Cacciolatti, L.; Lee, S.H. Revisiting the relationship between marketing capabilities and firm performance: The moderating role of market orientation, marketing strategy and organisational power. *J. Bus. Res.* **2016**, *69*, 5597–5610. [[CrossRef](#)]
83. Firman, A.; Putra, A.H.P.K.; Mustapa, Z.; Ilyas, G.B.; Karim, K. Re-conceptualization of Business Model for Marketing Nowadays: Theory and Implications. *J. Asian Financ. Econ. Bus.* **2020**, *7*, 279–291. [[CrossRef](#)]
84. Joensuu-Salo, S.; Sorama, K.; Viljamaa, A.; Varamäki, E. Firm performance among internationalized SMEs: The interplay of market orientation, marketing capability and digitalization. *Adm. Sci.* **2018**, *8*, 31. [[CrossRef](#)]
85. Hair, J.F.; Hult, G.T.M.; Ringle, C.M.; Sarstedt, M. *A Primer on Partial Least Squares Structural Equation Modeling*, 2nd ed.; Sage: Thousand Oaks, CA, USA, 2017.
86. Nitzl, C.; Roldan, J.L.; Cepeda, G. Mediation analysis in partial least squares path modeling: Helping researchers discuss more sophisticated models. *Ind. Manag. Data Syst.* **2016**, *119*, 1849–1864. [[CrossRef](#)]
87. Hair, J.F.; Ringle, C.M.; Sarstedt, M. PLS-SEM: Indeed a silver bullet. *J. Mark. Theory Pract.* **2011**, *19*, 139–152. [[CrossRef](#)]
88. Al Serhan, O. The Impact of Religiously Motivated Boycotts on Brand Loyalty among Transnational Consumers. Ph.D. Thesis, Cardiff Metropolitan University, Cardiff, UK, 2016.
89. Chong, A.Y.L. Understanding mobile commerce continuance intentions: An empirical analysis of Chinese consumers. *J. Comput. Inf. Syst.* **2013**, *53*, 22–30. [[CrossRef](#)]
90. Hair, J.F.; Black, W.C.; Babin, B.J.; Anderson, R.E. *Multivariate Data Analysis*, 7th ed.; Prentice Hall: Upper Saddle River, NJ, USA, 2010.
91. Hair Jr, J.; Sarstedt, M.; Hopkins, L.; Kuppelwieser, V. Partial Least Squares Structural Equation Modelling (PLS-SEM) an emerging tool in business research. *Eur. Bus. Rev.* **2014**, *26*, 106–121. [[CrossRef](#)]
92. Hair, J.F.; Sarstedt, M.; Ringle, C.M.; Mena, J.A. An assessment of the use of partial least squares structural equation modelling in marketing research. *J. Acad. Mark. Sci.* **2012**, *40*, 414–433. [[CrossRef](#)]
93. Urbach, N.; Ahlemann, F. Structural equation modeling in information systems research using partial least squares. *J. Inf. Technol. Theory Appl.* **2010**, *11*, 5–40.
94. Loxton, M.; Truskett, R.; Scarf, B.; Sindone, L.; Baldry, G.; Zhao, Y. Consumer behaviour during crises: Preliminary research on how coronavirus has manifested consumer panic buying, herd mentality, changing discretionary spending and the role of the media in influencing behaviour. *J. Risk Financ. Manag.* **2020**, *13*, 166. [[CrossRef](#)]
95. Nazlan, N.H.; Tanford, S.; Raab, C.; Choi, C. The influence of scarcity cues and price bundling on menu item selection. *J. Foodserv. Bus. Res.* **2018**, *21*, 420–439. [[CrossRef](#)]
96. Modin, Z.; Smith, Q. Impulsive Buying Behavior during the COVID-19 Pandemic. Master's Thesis, Mid Sweden University, Sundsvall, Sweden, 2020.
97. Zhang, W.; Leng, X.; Liu, S. Research on mobile impulse purchase intention in the perspective of system users during COVID-19. *Pers. Ubiquitous Comput.* **2020**, *12*, 1–9. [[CrossRef](#)] [[PubMed](#)]