

Research on the Intrinsic Influencing Factors of Individual Irrational Buying Behavior under Public Health Emergencies

-- Taking the CUG Community as an Example

Zihui Han

School of Public Administration, China University of Geosciences, Wuhan, China

2914466180@edu.cn

Abstract. After the outbreak of New Crown Pneumonia, the rush shopping triggered by the epidemic continued, which brought shocks and challenges to the epidemic prevention and control order and public crisis management. Based on the individual behavioral decision-making model, this paper empirically investigated the intrinsic influencing factors of individual rush behavior under the epidemic using binary logistic analysis, and concluded that individual irrational rush behavior under the public health emergencies was associated with individual's gender, age, education level, satisfaction with community epidemic prevention and control work, individual's sensitivity to media reports, individual's response to surrounding. The study concluded that individuals' irrational rush behavior was related to seven factors: gender, age, education level, satisfaction with community epidemic prevention, individual's sensitivity to media reports, individual's reaction to the nervous behavior of the surrounding people, and individual's knowledge about the epidemic, and finally proposed new people-oriented public crisis response strategies.

Keywords: Public Health Events; Emergency Management; Irrationality; Individual Snapping Behavior.

1. Introduction

At the beginning of 2020, a global outbreak of New Coronary Pneumonia (COVID-19) has brought a great impact on people's lives. Due to the suddenness and unpredictability of the epidemic, it makes people anxious and panic-stricken, thus triggering the occurrence of various mass rush events, such as toilet paper rush events in the United States and Japan, and the rush events of masks and Shuanghuanglian in China, which will not only cause the scarcity of social materials, but also have a large negative impact on the stability and security of society.

The public is both the subject of crisis response and the main participant of the snapping behavior [1], so their decision-making behavior constitutes a dynamic factor that affects the management effect. Therefore, it is important to explore the factors that lead to the irrational purchasing behavior of the public in the new crown situation to reasonably guide the public behavior in the crisis situation.

In this context, based on the individual behavioral decision model, this paper uses literature research method and questionnaire survey method to investigate the influencing factors of individual purchasing behavior decision under the influence of the New Crown pneumonia epidemic, combining questionnaire survey data and binary logistic regression analysis method to identify the significant factors affecting individual irrational purchasing behavior decision, and The study also proposes recommendations based on the emergency management perspective, which is expected to help public crisis management departments to effectively prevent and efficiently respond to the rush behavior under the limited time and resource constraints.

2. Review of the Literature

Academic research on the system science of emergent snapping events has been gradually formed and developed since 2003, and in recent years, with the outbreak of the new crown pneumonia epidemic, the research on the decision making of individuals' snapping behavior under emergent

events has been further developed. Currently, scholars at home and abroad mainly conduct research in the following two aspects:

2.1 Influencing Factors of Irrational Snapping Behavior

Generally speaking, the factors influencing irrational purchasing behavior under emergencies are mainly divided into two categories: endogenous and exogenous factors. The endogenous factors are mainly the enhancement of individual risk perception and herd mentality[2], while the exogenous factors are mainly the imbalance between the supply of goods in the market and individual demand during emergencies [3] [4].

The endogenous factors play a direct influence on the degree of risk perception of individuals, which in turn affects their irrational snapping behavior. Currently, scholars generally agree that the intrinsic causes affecting individuals' snapping behavior are mainly age, gender, income level, herd mentality, individuals' satisfaction with information disclosure, and individuals' trust in the government [5-8].

Arafat et al. [4] collected media reports with the keyword "panic buying" and found that the sense of scarcity and price increase expectation were the important factors leading to panic buying, Wang et al. probit model study, and found that the amount of food available to the public is the main factor influencing food hoarding.

2.2 Social Intervention Mechanism of Irrational Snapping Behavior

In response to irrational snapping behavior, scholars have proposed different social intervention mechanisms to address it, involving mainly the government, enterprises and individuals [9].

In terms of government, Lu Wengang et al [10] proposed a series of collaborative governance initiatives such as strengthening the unified dispatch of emergency supplies and disclosing epidemic information through multiple channels. Junmei Chen [11] argued that the government could control the occurrence of panic rush in terms of identifying vulnerable groups and pacifying them, and monitoring the market of essential goods.

In terms of enterprises, Zhou Xin [1] suggested that enterprises should establish self-restraint mechanisms and consciously comply with market rules. Lu Wengang [10] pointed out that enterprises should sell emergency commodities reasonably and should strictly prohibit enterprises' price-inflating behavior.

On the individual side, scholars have proved through research that reducing social isolation [12] can reduce the occurrence of irrational behaviors. Li Han [13] pointed out that group belonging can help enhance the public's sense of security in emergencies and reduce irrational group behaviors.

2.3 Research Review

In summary, scholars at home and abroad have conducted studies from different perspectives, such as the influencing factors of irrational rush behavior and social intervention mechanisms, and in general, the studies are relatively mature. However, at the level of influencing factors, most scholars have studied both internal and external factors, while few scholars have made detailed studies on internal factors. In addition, few scholars have mentioned the role of the community as the first line of defense in preventing and responding to panic buying in the domestic and international literature. Therefore, this paper is innovative in studying the factors influencing individuals' irrational purchasing behavior from the perspective of individual risk perceptions, and incorporating individual satisfaction with community prevention and control as an influencing factor.

3. Research Hypothesis and Model Construction

3.1 Formulation of Research Hypothesis

The main reason for individual risk behavior in an epidemic is the individual's risk perception of a public health emergency - the new crown epidemic. The greater the perceived risk of the event, the more likely it is to produce panic buying behavior like "herd behavior". Based on the individual behavioral decision scale and individual risk perception scale proposed by Slovic [14] and Sun Dayong [15], this paper proposes three hypotheses in terms of individual factors, social factors, and event characteristics factors.

3.1.1 Personal Factors

Generally speaking, people with different age, gender, personality and knowledge experience perform significantly differently when facing a crisis [16].

Hypothesis A1: Gender affects individual behavioral decisions and women have a higher level of risk perception and are more likely to participate in a rush than men;

Hypothesis A2: age level affects individual behavioral decision making and the lower the age level, the greater the likelihood of participating in snapping;

Hypothesis A3: education level affects individual behavioral decisions, and the higher the education level, the less likely it is to participate in the rush;

Hypothesis A4: the cognitive judgment of the epidemic affects individual behavioral decision to rush to buy, and the more pessimistic the cognitive judgment, the greater the possibility of participating in the rush to buy;

3.1.2 Social Factors

The influence of social factors on individuals' behavioral decisions comes mainly from the degree of trust in the government [17], community epidemic prevention efforts [18], media coverage, and the influence of people around them.

Hypothesis B1: the degree of trust of individuals in the government influences individual behavioral decisions, and the higher the degree of trust, the less likely to participate in the rush;

Hypothesis B2: Individuals' satisfaction with community epidemic prevention affects their purchasing snatching behavior, and the more satisfied they are with community epidemic prevention, the less likely they are to participate in snatching;

Hypothesis B3: Individuals' sensitivity to media coverage affects their behavioral decisions, and the more sensitive they are to media coverage, the more likely they are to participate in snapping;

Hypothesis B4: the degree of individual's reaction to the nervous behavior of the surrounding crowd will influence their behavioral decisions, and the stronger the reaction, the more likely they are to rush the purchase;

3.1.3 Event Characteristic Factors

An individual's fear of a crisis event is also related to the risk characteristics of the crisis itself [19]. For example, whether the cause of the event is clear, whether the loss of the event outcome is clear, and whether the event has an unknown nature.

Hypothesis C1: The degree of individuals' knowledge related to the epidemic affects their behavioral decisions, and the more knowledgeable they are about the epidemic, the less likely they are to participate in the rush;

Hypothesis C2: Individuals' expectation of the duration of the epidemic affects their behavioral decisions, and the longer the expected duration, the more likely they are to participate in the rush;

3.2 Model Construction

According to the above hypotheses, this paper constructs a "model of individual behavioral decision influencing factors", as shown in Figure 1.

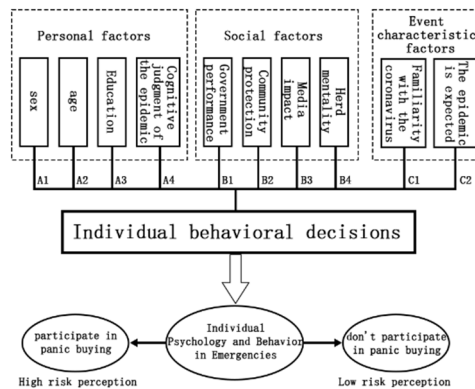


Figure 1. Model of factors influencing individual behavioral decision making

4. Empirical Analysis of the Factors Influencing Individual Behavioral Decision Making --Taking the Community of CUGan Example

4.1 Selection of Variables

Table 1. Results of individual risk perception survey

Variable Name	Classification Indicators	Proportion (%)
X1 Gender	Male = 1	53.1
	Female = 2	46.9
X2 Age	Under 18 years old = 1	4.42
	18-25 years old = 2	55.31
	26-40=3	16.81
	Above 40 = 4	23.45
X3 Literacy	Undergraduate = 1	16.37
	Undergraduate = 2	60.18
	Graduate student and above = 3	23.45
Is X4 avoidable	Not very easy to avoid = 1	48.67
	Easier to avoid = 2	51.33
X5 Government Performance	Basic mistrust = 1	12.39
	Basic trust = 2	87.61
X6 Community Protection	Basic dissatisfaction = 1	26.99
	Basic satisfaction = 2	73.01
X7 Media Impact	Higher impact = 1	68.58
	Not much impact = 2	31.42
X8 herd mentality	Higher impact = 1	65.04
	Not much impact = 2	34.96
X9 familiarity with the new crown virus	Not really sure = 1	21.68
	More clear = 2	78.32
X10 outbreak continues to be expected	Long-term coexistence = 1	81.42
	Short-term end = 2	18.58

According to the model of "individual behavioral decision-making factors" and the research results of Xi Juzhe [20] and Sun Dayong [15], the researcher constructed the "individual behavioral decision-making factors scale", which contains three dimensions and ten independent variables. "The ten variables are the ten variables were: (1) personal factor dimension: X1 gender, X2 age, X3 education level, X4 avoidability; (2) social factor dimension: X5 government performance, X6 community

protection, X7 media influence, X8 herd mentality (3) event characteristic factor dimension: X9 familiarity, X10 future expectations.

4.2 Data Sources and Descriptive Statistics

In this study, "whether to participate in the purchase" was used as the dependent variable Y, which is a bivariate response variable with a value of 1 or 0. Y=1: participate in the purchase; Y=0: do not participate in the purchase.

A total of 226 questionnaires were collected in this survey, of which 224 were valid, with an efficiency rate of 99.12%. Table 1 reflects the distribution of the respondents of this survey, it can be seen that the survey sample has an appropriate proportion of gender, the proportion of each education and age group is more reasonable, and the data distribution basically meets the requirements of the sampling survey.

4.3 Binary Logistic Analysis

4.3.1 Model Assumptions

The probability of Y=1 is P, then the probability of Y=0 is 1-p. Taking the ratio p/(1-p) as the natural logarithm yields ln(p/(1-p)), which is the logit transformation of p, and noting it as logitP, the logitP takes values in the range from -∞ to +∞. Using logitP as the dependent variable, a linear regression equation is established

$$\log \text{itP} = \alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n \quad (1)$$

$$P = \frac{\exp(\alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n)}{1 + \exp(\alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n)} \quad (2)$$

The model is a logistic regression model, and the maximum likelihood estimation method is used for parameter estimation in the fit. The parameter α in the model is a constant term, and the parameter βi is called the logistic regression coefficient.

4.3.2 Maximum Likelihood Estimation of the Two-valued Dependent Variable Model

Assume that the sample data obtained is $(X_{j1}, X_{j2}, \dots, X_{jn}; Y_j)$, where $j = 1, 2, \dots, m$, then

$$P(Y_j = 1) = \pi_j = \frac{\exp(\alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n)}{1 + \exp(\alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n)} \quad (3)$$

$$P(Y_j = 0) = 1 - \pi_j \quad (4)$$

The probability density function of Y_j can further be expressed as

$$F(Y_j) = \pi_j^{Y_j} (1 - \pi_j)^{1 - Y_j} \quad (5)$$

Among them, $Y_j = 0, 1; j = 1, 2, \dots, m$

The maximum likelihood function of Y_j is:

$$L = \prod_{j=1}^m F(Y_j) = \prod_{j=1}^m \pi_j^{Y_j} (1 - \pi_j)^{1 - Y_j} \quad (6)$$

Then the log-likelihood function is

$$LL = \sum_{j=1}^n [Y_j \ln \pi_j + (1 - Y_j) \ln(1 - \pi_j)] \quad (7)$$

$$\text{Set: } \frac{\partial LL}{\partial \alpha} \sum_m \left[\frac{Y_j}{\pi_j} \frac{\partial \pi_j}{\partial \alpha} - \frac{1 - Y_j}{1 - \pi_j} \frac{\partial \pi_j}{\partial \alpha} \right] = 0 \quad (8)$$

$$\frac{\partial LL}{\partial \beta_1} \sum_m \left[\frac{Y_j}{\pi_j} \frac{\partial \pi_j}{\partial \alpha} - \frac{1 - Y_j}{1 - \pi_j} \frac{\partial \pi_j}{\partial \alpha} \right] = 0 \quad (9)$$

$$\dots\dots \frac{\partial LL}{\partial \beta_n} \sum_m \left[\frac{Y_j}{\pi_j} \frac{\partial \pi_j}{\partial \alpha} - \frac{1 - Y_j}{1 - \pi_j} \frac{\partial \pi_j}{\partial \alpha} \right] = 0 \quad (10)$$

Also tested: $\frac{\partial^2 LL}{\partial \alpha^2} < 0, \frac{\partial^2 LL}{\partial \beta_1^2} < 0, \frac{\partial^2 LL}{\partial \beta_2^2} < 0, \dots, \frac{\partial^2 LL}{\partial \beta_n^2} < 0$

One can then find the parameter estimates $\hat{\alpha}, \hat{\beta}_1, \dots, \hat{\beta}_n$.

4.4 Results of Empirical Tests

Table 2. Model parameters after four-round optimization

		Regression coefficient B	Standard Error	Wald	Degree of freedom	Significance	Exp(B)
Step 1	X1	-1.032	0.520	0.002	1	0.067	0.978
	X2	0.488	0.404	1.455	1	0.228	1.629
	X3	-0.181	0.497	0.134	1	0.315	0.834
	X4	1.709	0.624	7.509	1	0.006	5.522
	X5	1.492	1.799	0.688	1	0.407	4.446
	X6	0.577	0.729	0.625	1	0.429	1.780
	X7	0.998	0.514	3.771	1	0.052	2.712
	X8	2.298	0.570	16.282	1	0.000	9.958
	X9	-1.324	0.645	4.211	1	0.040	0.266
	X10	-0.091	0.615	0.022	1	0.883	0.913
	Constants	-14.032	4.393	10.204	1	0.001	0.000
Step 2	X1	-1.022	0.520	0.002	1	0.072	0.398
	X2	0.490	0.402	1.483	1	0.223	1.632
	X3	-0.183	0.495	0.138	1	0.006	5.512
	X4	1.707	0.622	7.522	1	0.711	0.832
	X5	1.494	1.797	0.692	1	0.406	4.455
	X6	0.567	0.696	0.665	1	0.415	1.764
	X7	1.003	0.501	4.012	1	0.045	2.726
	X8	2.301	0.567	16.492	1	0.000	9.982
	X9	-1.320	0.637	4.293	1	0.038	0.267
	Constants	-14.069	4.302	10.695	1	0.001	0.000
	Step 3	X1	-1.125	0.520	0.002	1	0.067
X2		0.500	0.398	1.579	1	0.209	1.648
X3		-0.191	0.492	0.150	1	0.407	4.488
X5		1.501	1.810	0.688	1	0.698	0.826
X6		0.584	0.688	0.720	1	0.396	1.793
X7		1.005	0.501	4.027	1	0.045	2.731
X8		2.299	0.567	16.465	1	0.000	9.963
X9		-1.301	0.623	4.357	1	0.037	0.272
Constants		-14.221	4.213	11.393	1	0.001	0.000
Step 4		X1	-1.245	0.6380	3.813	1	0.04
X2	0.420	0.339	1.536	1	0.018	1.521	
X3	-0.279	0.274	1.037	1	0.006	0.969	
X6	0.550	0.683	0.648	1	0.021	1.733	
X7	1.050	0.487	4.652	1	0.031	2.858	
X8	2.280	0.565	16.287	1	0.000	9.777	
X9	-1.357	0.607	4.998	1	0.025	0.257	
Constants	-14.416	4.228	11.625	1	0.001	0.000	

Note: Variables entered in step 1: X1 gender, X2 age, X3 literacy, X4 avoidability, X5 government performance, X6 community protection, X7 media influence, X8 followership, X9 familiarity, X10 future expectations

The Backward:LR method in Logit regression is chosen for this test. First, all variables are allowed to enter the regression equation, and then the independent variables with insignificant effects are removed according to the probability test of the statistic estimated by the great likelihood ($P < 0.5$) to optimize the model fitting effect. If the significance indicator P of the log-likelihood ratio test

corresponding to the statistic is less than 0.05, it indicates that the independent variable has a significant effect on the dependent variable. The significance of the model was found to be $P < 0.05$ by Omnibus Tests of Model Coefficients test, indicating that the model is significant overall. The chi-square value of the Hosmer & Lemeshow test was 8.3 and the significance was 0.405 ($P > 0.05$), indicating that the model fit is good and the data results are significant. This test was performed using SPSS 24.0 statistical software, and the final results were obtained after four rounds of optimization testing and screening as shown in Table 2.

4.5 Analysis of Results and Hypothesis Testing

4.5.1 Analysis of Overall Results

After four rounds of optimization, the three insignificant independent variables X10, X4, and X5 were gradually eliminated to optimize the fitting effect of the model, and the remaining seven independent variables were finally obtained, and whether the p-value corresponding to the independent variables was less than 0.05 was used to determine whether they had a significant effect on the dependent variable, so the independent variables X1, X2, X3, X6, X7, X8, and X9 had a significant effect on the dependent variable, i.e., the hypotheses A1, A2, A3, B1, B2, B4, and C1 hold. The absolute value of the regression coefficient β indicates the magnitude of the influence of the independent variables, so the influences are, in descending order, X8 herd mentality, X9 familiarity, X1 gender, X7 media influence, X6 community protection, and X2 literacy. The significant influencing factors are explained below in this order:

4.5.2 Analysis of Significant Influencing Factors

(1) The degree of individual response to the nervous behavior of the surrounding crowd

The degree of herding psychological influence x8 influence: From the test results Table 7, the Wald test results infinitely converge to 0. The influence of variable x8 is significant and statistically significant, indicating that the behavior of the surrounding crowd will also directly affect the behavioral decisions of individuals. Faced with the sudden outbreak of the new crown epidemic, the snapping behavior of the surrounding crowd will be contagious to a certain extent. Therefore, hypothesis B4 holds.

(2) Individuals' knowledge about the epidemic

Familiarity with the new crown virus x9 influence: From Table 7, the coefficient of variable x12 is -1.357, and the Wald test result $P = 0.025$, the influence of variable x9 is significant and statistically significant, indicating that whether individuals are familiar with the new crown virus will directly affect individuals' behavioral decisions. The new crown virus is unknown to individuals, so the fear of the virus in individuals' minds will increase significantly, and the corresponding irrational snapping behavior will be generated. Therefore, hypothesis C1 holds.

(3) Gender

Gender x1 influence: from Table 7, the coefficient of the variable is -1.245, and the Wald test result $P = 0.04 < 0.05$, indicating that the influence of the variable x1 is significant and statistically significant. From Table 6, the ratio $\exp(B) = 0.288$, indicating that males are 0.288 times more likely to produce snatching behavior in the new crown epidemic than females, i.e., females are $1/0.288 = 3.472$ times more likely than males, so hypothesis A1 holds.

(4) Individual sensitivity to media reports

The influence of media influence degree X7: As can be seen from Table 7, the Wald test result of media influence degree X7, $P = 0.031 < 0.05$, has a coefficient of 1.05, indicating that media reports have a significant influence on individual behavioral decision making, and the more sensitive individuals are to media reports, the higher the degree of fear. Under the new crown epidemic, the media is a bridge of communication between the subjects responding to the crisis, but some media make excessive exaggerations in order to create topics and focus, which may stimulate people's fear and produce corresponding snapping behavior. So hypothesis B3 holds.

(5) Satisfaction with community epidemic prevention

From the influence of the degree of recognition of community epidemic prevention x_6 : From Table 7, the coefficient of variable x_6 is -0.550, and the Wald test result $P=0.017<0.05$, the influence of variable x_6 is significant, which indicates that the performance of the community in the crisis event will directly affect the behavioral decision of individuals in the new crown epidemic. Therefore, hypothesis B2 holds.

(6) Age

Age x_2 influence: From Table 7, the coefficient of the variable is 0.42;, Wald test result $P=0.018<0.05$, indicating that the influence of the variable x_2 is more significant and statistically significant. Individuals with higher age levels may have more experience in crisis management and be more calm and collected when facing public crises, while individuals with lower ages are prone to panic due to less experience in crisis management. Therefore, hypothesis A2 holds.

(7) Literacy

Effect of literacy X_3 : From Table 7, the coefficient of variable x_3 is 1.696, and the Wald test result $P=0.006<0.05$, the effect of variable x_3 is significant, which may be because the residents with high literacy in the community of CUG are mainly students and teaching staff, and the epidemic has limited impact on their lives, and their salaries and lives are guaranteed. In contrast, residents with low education are mainly logistics and security personnel, with lower wages and engaged in production activities, which are severely affected in the epidemic and are more likely to make a rush. So hypothesis A3 holds.

5. Conclusions and Recommendations - Constructing a People-Centered Public Crisis Response Strategy

From the above analysis, it can be seen that after the optimization test, after eliminating the variables X_4 , X_5 , and X_{10} which have insignificant effects, the independent variables X_1 , X_2 , X_3 , X_6 , X_7 , X_8 , and X_9 have significant effects on individuals' decision of snapping behavior, so whether individuals will participate in snapping in the context of the new crown epidemic will be affected by gender, age, education level, satisfaction with community epidemic prevention work, individuals' sensitivity to media reports, the degree of individual's reaction to the nervous behavior of surrounding people, the degree of individual's knowledge related to the epidemic, and other seven factors.

In order to reduce the degree of public panic about public health emergencies and thus reduce the occurrence of irrational rush behaviors, we propose the following aspects:

5.1 Strengthening Public Education on Crisis Quality

First, we should improve the crisis education legislation and promote the national crisis education from top to bottom. Secondly, human-centered crisis education training should be carried out to improve the necessary emergency knowledge reserve of citizens. Finally, the public crisis is a manifestation of the public's psychological crisis, which reveals the fragile psychological ability of the public, so the public should carry out psychological assistance for crisis response, such as the establishment of professional psychological counseling institutions.

5.2 Build a People-oriented Information Communication Strategy

In a public crisis, the public's demand for information is stronger than normal, therefore, enhancing information communication in a crisis is an important means to guide the orderly dissemination of correct information and eliminate social panic. On the one hand, the government information disclosure system should be standardized to ensure that information is open and transparent as early as possible. At the same time, relevant experts should also be encouraged to disclose the nature of crisis events and prevention and control measures to the public more often, so as to reduce the snapping behavior triggered by the lack of public knowledge. On the other hand, we should regulate media reports and raise the awareness of social responsibility of the media. First, the content of media reports should be regulated through various systems to improve the credibility of information; second,

the media and the government should quickly build communication channels to guide and control public opinion when a crisis event occurs.

5.3 Improve the Emergency Resource Guarantee System

Irrational purchasing behavior is actually the panic buying behavior of the actors in the crisis state because they are overly worried about the shortage of resources and rising prices. Therefore, it is necessary to establish a perfect emergency supply system. First of all, a market monitoring and early warning system for essential commodities should be activated to detect and report abnormal fluctuations in a timely manner. Secondly, a sound reserve system for important necessities should be established to increase the variety and scale of reserves to ensure the supply of materials in a state of public crisis.

5.4 Increase the Supervision of Commodity Prices

On the one hand, we should gradually establish and improve the market price monitoring and early warning system for essential commodities and drugs and other commodities, and monitor and forecast alerts and provide timely feedback on problems that may cause market price disorder. On the other hand, should improve the price information release system and price reporting system, enhance the price information to guide the role of regulation, timely business unlawful behavior to stop.

5.5 Building a New Model of People-oriented Community Public Crisis Response

From the data analysis, it is known that public satisfaction with the community's epidemic prevention policy affects individual snapping behavior, so the community should improve its emergency response capability. First, it should improve the community public crisis early warning mechanism as soon as possible. Crisis rescue personnel should be professionally trained in normal times to overcome residents' fears and reduce the occurrence of irrational behaviors. Secondly. Communities should understand the public's social psychology and behavior in a timely manner when formulating strategies to deal with public crises, adopt soft control measures, consider residents' demands, and build harmonious communities.

References

- [1] Zhou Xin. A study on the factors influencing the decision of individual purchasing behavior in a public crisis [D]. University of Science and Technology of China, 2011.
- [2] Zhao Jianfang, Ma Donghua, Liu Yong et al. The influence of perceived risk of the new coronary pneumonia epidemic on hoarding behavior: the mediating role of security and the moderating role of life history strategies[J]. Chinese Journal of Clinical Psychology, 2022, 30(04): 856-860. DOI: 10.16128/j.cnki.1005-3611.2022.04.020.
- [3] Forbes S. L. Post-disaster consumption: analysis from the 2011 Christchurch earthquake [J]. International Review of Retail, Distribution and Consumer Research, 2017, 27: 28-42.
- [4] Arafat S., Kar S., Menon V., Alradie-Mohamed A., Mukherjee S., Kaliamoorthy C., Kabir R. Responsible Factors of Panic Buying: An Observation from Online Media Reports[J]. Frontiers in Public Health, 2020, 8: 603894.
- [5] Luo Y, Xian W D, Sun L Y. Analysis of the characteristics and influencing factors of food rush under emergency events: A questionnaire survey based on consumers in 21 large and medium-sized cities in Sichuan Province[J]. China Rural Economy, 2011, 5: 45-56.
- [6] Xie Liren, Chen Junmei, Zhang Mingjin. Research on the identification of vulnerable groups of sudden rush under public crisis [J]. Journal of Xi'an University of Technology, 2013, 33(5): 403-407.
- [7] Zhou L. Research on the mechanism of group behavior evolution in mass emergencies [D]. University of Science and Technology of China, 2014.
- [8] Zheng R, Shou B Y, Yang J. Supply disruption management under consumer panic buying and social learning effects [J]. Omega, 2020: <https://doi.org/10.1016/j.omega>.

- [9] Wang H., Holly H. Panic buying? Food hoarding during the pandemic period with city lockdown [J]. 2916-2925.
- [10] Lu WG, Au HWQ. Collaborative governance of emergency supplies in the context of emergencies: a case study of the prevention and control of the Newcastle pneumonia epidemic[J]. Administrative Science Forum,2020,No.63(03):4-10.
- [11] Chen JM. Research on the identification of vulnerable groups of sudden rush and its influencing factors[D]. Xi'an University of Technology, 2013.
- [12] Gardiner C., Geldenhuys G., Gott M. Interventions to reduce social isolation and loneliness among older people: an integrative review[J]. Health & Social Care in the Community, 2018, 26(2):147-157.
- [13] Li Han. Research on the mechanism of creating public safety in major emergencies and countermeasures [D]. University of Electronic Science and Technology,2016.
- [14] Slovic, p., perception of risk[J]. Science, 1987, 280-285.
- [15] Sun, D. Y. A model and empirical study of individual disaster fear perception based on logit modeling[J]. Management Review,2006(10):48-53+64.
- [16] Sun Doyong. Research on individual and group behavioral decision making in sudden social public crisis events[D]. University of Defense Science and Technology, 2005.
- [17] Sun Yuhong, et al. Facing the crisis, Beijing, CITIC Press, 2004.
- [18] Huang Rong. From disaster reporting to risk communication [J]. China Journal of Radio and Television, 2010(08):49-50.
- [19] Chen Lan. Research on the factors influencing individual irrational rush behavior under unconventional emergencies[D]. Southwest Jiaotong University,201.
- [20] Xi Juzhe, She Zhuang, Ju Kang, Zhao Jingjing, Hou Xiangling, Peng Yanan, Li Yan, Zuo Zhihong. Development and validation of risk perception scale for new crown pneumonia epidemic[J]. Journal of Capital Normal University (Social Science Edition),2020(04):131-141.