ECONOMIC BEHAVIOR OF CONSUMERS DURING INSTABILITY

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Abstract: The new millennium faced a COVID-19 pandemic and a war in Ukraine, which is much more than a crisis, as these incidents have unpredictably changed our entire way of life. As the analysis of economic sales data showed, this dramatic scenario had a substantial impact on the spending levels of specific categories of consumers. A study of consumers' economic behavior in times of instability has been conducted to understand these changes better. During a recession, consumers have a strong tendency to change their purchasing behavior because of the financial challenges of unstable conditions. They become more selective and focus only on what they consider necessary for survival. Thus, consumer preferences have changed, the approach to consumption has changed, and initial needs and, above all, security needs have come to the fore. Unstable conditions bring companies many visible problems but far fewer apparent solutions. Therefore, a modern business must consider configurations in consumer behavior in a dangerous environment to function effectively. This study aims to determine the economic behavior of consumers facing instability based on the dependence of psychological and economic factors through regression analysis and a survey. Research methods: comparative analysis; systematization; generalization; survey; regression analysis. Based on the survey, we found that the first reaction of consumers faced with instability is a sharp reduction in costs and the transition to the savings mode. The conducted regression analysis reflects the value of the determination coefficient, indicating that the model explains 60 % of consumers' economic behavior during instability and explains the change in costs for the items of the first and second necessities. The study found significant differences between "Changes of Spending on Essentials" and "Changes in Spending on Essentials", $t(3832) = 11{,}99$ $p < 0{,}001$. We found that spending on essentials increased by 90,66%, while the average increase for second necessities was 36,09 %. The study results provided new evidence regarding the role of psychological factors affecting spending on first and second necessities, expanding our knowledge of previous changes in consumer behavior during instability.

Keywords: Economic behavior, consumers, conditions of instability.

1 Introduction

Modern society is quite dynamic and is characterized by a series of radical socio-economic changes. Their consequences are transforming social relations' matrix in various spheres of life. Accordingly, a new socio-economic environment is formed. It is characterized by changes in the needs, interests, and value orientations of different segments of the population, which are reflected in a certain way in their economic behavior (Kudrynska, Butylina 2018).

Economic crises have repeatedly been a point of instability and led to differentiated changes in the lives of entrepreneurs and consumers, where the last note different changes regarding their economic behavior in buying goods. Therefore, consumer behavior during instability is a significant area of research, especially in the last few years with the various upheavals and changes in the global economy (Stefura, 2010).

Amid historically difficult economic conditions, indicators of consumer financial vulnerability have increased in 2020, specifically unemployment (Financial Times, 2020), bad debt (The Times, 2020), and financial stress (Columbia University Irving Medical Center, 2020). These conditions have resulted in a significant increase in consumers' economic behavior when faced with instability (Deloitte, 2020).

Nevertheless, understanding the psychological factors governing consumers' product-selection behavior can be vital for two main reasons. First, this research can expand our understanding of the basis for consumers' behavior changes due to instability. Second, the findings could help develop new marketing strategies that consider psychological factors to meet real consumers' needs (Rajagopal, 2020).

On the one hand, companies could use this knowledge to increase sales within unstable environments (Diebner et al., 2020). Moreover, understanding consumers' needs could significantly improve market preparedness for future pandemics and emergencies (Song et al., 2020; Hesham et al., 2021). In addition, consumers could take advantage of the readiness of this new market to respond to their present needs.

When instability conditions emerge, factors such as anxiety and perceived lack of necessities could be reduced (Arafat et al., 2020), while consumers' well-being and positive feelings of well-being could be maintained (Gelderman et al., 2019). Two main aspects are new to this study. First, based on previous research finding that volatility conditions affect consumers' willingness to purchase necessities and other necessities differently (Larson, Shin, 2018; Durante, Laran, 2016), we adopted an approach and separate necessities and non-essentials. Second, given the unprecedented instability conditions, we adopted an integrative approach to investigate the role of psychological factors and conscious economic stability in consumer behavior (Di Crosta et al., 2021).

Therefore, it is relevant to deepen the scientific understanding of consumers' economic behavior when facing instability.

This study aims to determine the consumers' economic behavior during instability based on the dependence of psychological and economic factors through regression analysis and a survey.

The research tasks of this article are:

1. To analyze the current state of Ukrainians' consumer moods.
2. To distinguish between changes in expenditures on first and second necessity goods.
3. To establish consumers' strategic intentions under unpredictable deterioration of the monetary situation in conditions of instability.
4. To survey consumers to assess their economic behavior when faced with instability.
5. To conduct regression analysis to reflect the consumers' economic behavior under conditions of instability based on the dependence of psychological and economic factors.
6. To analyze the model of consumers' economic behavior under conditions of instability.

2 Literature review

The current economic environment is negative, and many consumers are cutting back on spending and will continue to do so until they feel some financial stability (Stefura, 2010). A consumer is a person who identifies a need or desire and makes a purchase, and then disposes of the purchased product in the consumption process (Grundey, 2009). There are no two identical consumers, as all are influenced by differentiated internal and external factors that shape their behavior.

Consumer behavior is an essential and ongoing decision-making process for seeking, acquiring, using, evaluating, and disposing of goods and services (Valaskova et al., 2015). Flatters and Willmott (2009) argue that consumers try to maximize utility, pleasure, or joy by purchasing consumer goods. Approaches to explaining consumer behavior fall into three groups (Valaskova et al., 2015): mental, based on the relationship between the mentality and consumer behavior; sociological approach, focusing on consumer reactions in different situations or how various social circumstances influence behavior, social leaders; and economical approach, focusing on basic knowledge of microeconomics, in which consumers determine their demands (Mehta et al., 2020).

Recent studies have shown that consumer behavior has become a factor directly affecting business performance, although, for over 300 years, economists such as Nicholas Bernoulli, John von Neumann, and Oscar Morgenstern have studied the basics of consumer decision-making (Cornescu, Adam, 2015). A theory of utility was created to understand the consumers, in other words, their decisions, according to which the consumer is an "economic and rational individual" (Zinkhan, 1992) who shows only concern for himself. The theory of utility provided a theoretical framework for analyzing decision-making under uncertainty. According to this theory, people choose outcomes that increase their well-being.

Traditionalist economists analyzed human behavior rather rigidly (full rationality), from a purely economic perspective (standard economics), without considering psychological and sociological aspects. However, recent studies (Kahneman and Tversky, 1979) indicate that consumers are not entirely rational. First, the utility model was found to be seriously flawed. Later, Herbert Simon developed the concept of "pleasure" (Simon, 1977), according to which their cognitive and emotional capacities limit the individuals' rationality.

Perspective theory, a contribution of Daniel Kahneman and Amos Tversky, describes particular economic behavior that cannot be explained by previously developed theories that significantly endorse predictions of decision making. In approaching consumer behavior, behavioral economics elements are indispensable. However, we believe that the basic elements of standard theory should not be neglected. Thus, only a harmonization of concepts related to consumer behavior, as revealed by the two economic approaches, can help us define a sufficiently comprehensive view of consumers and their behavior in the face of instability (Cornescu, Adam, 2015).

Amalia et al. (2012) explained that consumers are not the same, and not all consumers perceive a situation with negative consequences, such as economic or any other crisis, in the same way. The latest trends in consumer behavior emerge in the face of instability. The most critical factors modeling consumer behavior during instability are attitudes toward risk and perceptions.

Existing studies point to changes in consumer behavior during crises with a significant difference in the utility model. For example, a study by Flatters and Willmott (2009) identified several new trends during crises, including a simplification of demand due to limited supply during the emergency, tending to continue after the crisis, when people buy simpler goods with high value. The researchers proved the impact of the recession on consumer sentiment and trends in their study to be critical. The most significant trends of the recession include the demand for simplicity, indicating that consumers seek uncomplicated, valuable products and services that simplify their lives and focus on acting in a company where consumers resent unlawful behavior and unethical company behavior (Mehta et al., 2020).

During a recession, but predominantly afterward, the purchasing behavior of all types of consumers undergoes dramatic changes (from the companies' perspective), which are determined by various important factors. Pop, Rosca (2009), and Perriman et al. (2010) find that the most obvious factor is uncertainty about the future. During a downturn, many unexpected changes cause consumers to feel insecure. They question the nature of future events and, therefore, become much more cautious in their approach to certain expenditures.

Perriman et al. (2010) divide factors influencing the consumers' economic behavior under instability into internal and external categories. Internal factors refer to consumers' psychological and personal characteristics when making a purchase. External factors relate to the changes that consumers are forced to complete due to environmental influences. They are independent of them and are very hard to control.

Since the labor market is volatile, unemployment rates fluctuate (especially rising) during instability. As a result, companies make increasingly smaller profits, consumers feel danger regarding their employment, and they become careful in spending. Zurawicki and Braidot (2005) highlight two types of reactions among consumers: reactive and proactive. The reactive response includes consumption adaptation because consumers give up some unnecessary expenses or postpone them, reevaluate their needs, and change their priorities. Proactive response refers to temporary measures, such as liquidating assets, using savings, additional credits, or searching for a second job (Stefura, 2010).

Previous studies of consumer psychology and behavioral economics have shown that several psychological factors affect consumer behavior differently (Durante, Laran, 2016). Consumers' behavior changes can occur for various reasons, including personal, economic, psychological, contextual, and social factors. However, due to unstable conditions, such as a pandemic outbreak or natural disaster, some factors significantly impact consumer behavior more than others. Situations that potentially disrupt social life or threaten public health have produced intense consumer behavior changes. Panic buying is an emerging phenomenon in which fear and panic affect consumer behavior, causing people to buy more things than usual, as an example (Lins, Aquino, 2020). Specifically, panic buying has been defined as a group behavior that occurs when consumers buy a significant number of products in anticipation of, during, or after a disaster. A recent review of the psychological causes of panic buying highlighted that such changes in consumer behavior occur when purchasing decisions are impaired by negative emotions such as fear and anxiety (Yuen et al., 2020).

In the context of the COVID-19 pandemic, Lins and Aquino (2020) showed that panic buying was positively correlated with impulse buying. It has been defined as a complex purchasing behavior where decision-making speed precludes thoughtful and purposeful consideration of alternative information and choices (Yuen et al., 2020).

We could argue that during an uncertain threatening situation, such as a crisis or pandemic, a primitive part of the human brain prompts people to engage in behaviors that are (perceived) as necessary for survival (Chua et al., 2021). Moreover, these primitive instinctive behaviors can precede rational decision-making, impacting normal consumer behavior. Therefore, the essential primitive people's reactions are the main factor responsible for changing consumer behavior during a crisis (Gelderman et al., 2019).

In particular, fear and anxiety arise from feelings of uncertainty and instability, which are factors that drive these behavioral changes (Hendrix, Brinkman, 2013). These response processes may encourage people to shop for a sense of security, comfort, and instant escape, which may also serve as a compensatory mechanism for stress relief. In turn, the studies have shown that stress is a crucial factor influencing consumer behavior. Earlier studies have shown that consumers can withdraw and become passive in response to stress, and this reaction of inaction can lead to a decrease in purchases. However, some studies indicate that stress can lead to an active response, increasing impulsive spending behavior (Landau et al., 2011; Burroughs, Rindfleisch, 2002; Duhachek, 2005).

Therefore, the problem of consumers' economic behavior during instability is not fully reflected in scientific publications in the form of theoretical studies and practical explorations. Hence, the issue of research on consumers' economic behavior during instability remains relevant and open for further analysis.

3 Methods and Materials

The realization of this study's aims implies the use of the following research methods:

- systematization of the leading consumers' strategic intentions in the unpredictable deterioration of financial conditions during instability;
- systematic and logical analysis, the method of information synthesis, and the generalization of the latest scientific literature concerning the model of consumers' economic behavior during instability;
- the method of comparison to differentiate changes in expenditures on primary and secondary necessities;
- generalization of statistical data published by national governments and reporting organizations to establish an assessment and current analysis of Ukrainians' consumer attitudes.

Regression analysis was used to reflect the consumers' economic behavior during instability, based on the dependence on the psychological and economic factors.

A descriptive statistic was conducted to determine the individual attributes and assess the consumers' economic behavior during instability, whose data were provided by a survey using MS Forms Pro. The survey was conducted to determine consumers' economic behavior when faced with instability. An online survey was conducted from April 22 until June 20, 2022. We enrolled a total of 4100 participants, to begin with. For this survey, we took a rigorous approach by excluding 100 participants over the age of 64 because they were vested in retirement benefits and were considered a specific population from an economic perspective that was not comparable to the rest of the sample. In addition, we excluded 181 participants who did not report spending money before unstable conditions to buy necessities and / or other items. Thus, we included 3819 participants (69,3 % women, 30,7 % men) in this study. All participants provided written informed consent before completing the survey. The study was conducted following the ethical standards of the Declaration of Helsinki. Participants did not receive monetary or any other compensation for their participation. We focused on two scales for this study: essential and second necessity goods, to investigate consumers' behavior regarding different products.

Table 1: Two scales for researching consumers' behavior on different products

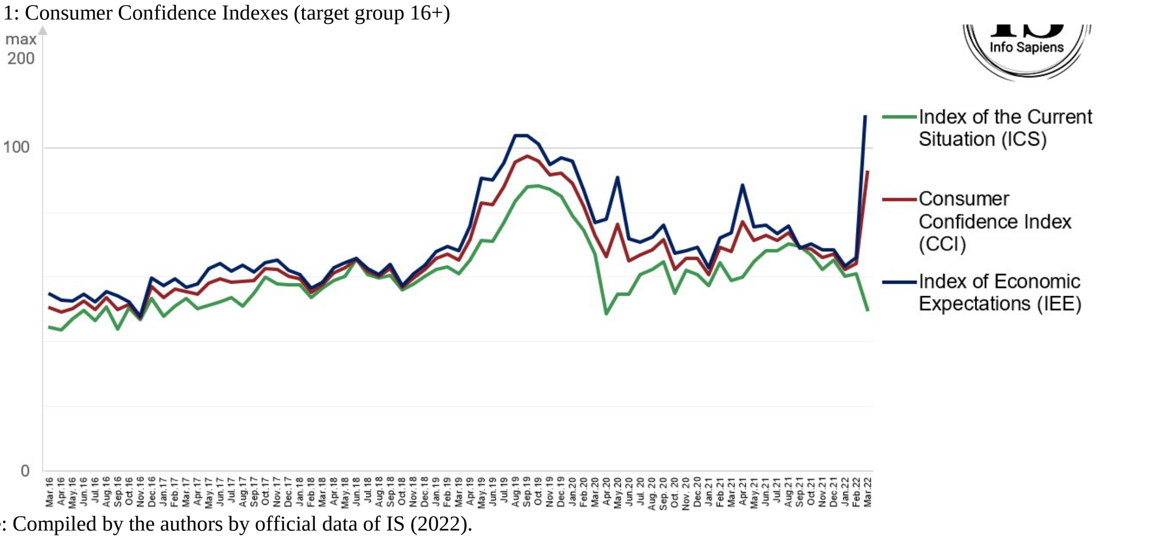
Goods	Question
Essential Goods	1. I felt the need to buy more goods
	2. I believe that I impulsively bought basic necessities
	3. I felt the need to buy more basic necessities (e.g., food, health and wellness products, personal care products, household cleaning products) than before
	4. If you don't already have all the necessities, how much would you be willing to spend to purchase these products?
	5. I have felt the need to buy products I did not need before
Second necessity goods	1. How useful do you think non-essential items would be when buying them?
	2. Have you bought any products that are considered unnecessary?
	3. I felt the need to buy more non-essential items (such as entertainment products) than before

Source: Compiled by the authors.

4 Results

According to Info Sapiens "Ukrainians' Consumer Confidence Index", conducted by Info Sapiens with financial support from Dragon Capital, in March 2022, the index of Ukrainians' consumer confidence increased and reached 92,4 points. The index growth is caused by the increase of all its components, except for the propensity to consume index, which decreased by 34,7 points (see Figure 1).

Figure 1: Consumer Confidence Indexes (target group 16+)



Source: Compiled by the authors by official data of IS (2022).

In March 2022, the Consumer Confidence Index (CCI) is 92,4, which is a 28,3 point increase compared to February 2022. The Index of Current Situation (ICS) decreased to 49,9, which is 11,2 points lower than in February 2022. The components of this index changed as follows:

- the Current Personal Financial Situation Index (x1) is 71,2, which is 12,4 points higher than in February 2022;
- the Consumer Propensity Index (x5) decreased by 34,7 points to 28,6.

In March, the Economic Expectations Index (EEI) rose to 120,8, which is 54,6 points higher than in February 2022. The components of this index changed as follows:

- the Expected Personal Wealth Change Index (x2) is 87,1, which is 20,2 points higher than in February 2022;
- the Country's Economic Development Expectations Index for the next year (x3) in March is 116,1, which is 61,2 points higher than in the previous month;
- the Country's Economic Development Expectations Index for the next 5 years (x4) increased by 82,5 points compared to the previous month and stands at 159,1 (see Table 2).

Table 2: Dynamics of the Consumer Confidence Index in Ukraine (target group 16+)

Month, year	Consumer Confidence Index (CCI)	Index of the Current Situation (ICS)	Index of Economic Expectations (IEE)	Index of Expectations of Changes in Unemployment (IECU)	Index of Inflationary Expectations (IIE)	Index Devaluation Expectations (IDE)
03’22	92,4	49,9	120,8	134,3	169,6	136,7
02’22	64,1	61,1	66,1	136,7	192,6	156,5
03’21	67,8	58,9	73,7	148,1	187,8	134,3

Source: Compiled by the authors by official data of IS (2022).

In March, the Unemployment Expectations Index decreased by 2,3 points and is 134,3. The Inflation Expectations Index fell by 23 points and is 169,6. On the other hand, Ukrainians’ expectations concerning the exchange rate of hryvnia in the next three months have improved: the Devaluation Expectations Index has decreased by 19,8 points and is equal to 136,7.

In March, the Consumer Confidence Index is at its peak since 2014, approaching the values of autumn 2019, when it almost crossed the mark of 100, which would mean the transition to an upbeat assessment of the economic situation. That’s a paradox, given the war, but it comes from the index’s construction and Ukrainians’ expectations. CCI is affected on 2 / 5 by the current situation assessment, which has fallen significantly during the war. It is now at the level of April 2020, when COVID 2019 began in Ukraine and 2015–2016. But 3 / 5 of the index is influenced by economic expectations for six to five years, and it is out of scale, reaching 120,8 points. This result indicates that 92 % of Ukrainians believe that Ukraine will be able to repel an attack by Russia. At the same time, Ukrainians are more optimistic about economic development in the long term than in the short term.

Considering “Changes in Total Spending”, our results showed that in our sampling, total spending increased by an average of 60,49 % due to instability conditions. In addition, significant differences were found between “Changes of Spending on Essentials” and “Changes in Spending on Essentials”, t (3832) = 11,99 p < 0,001. Indeed, spending on essentials increased by 90,66 %, while the average increase for second necessities was only 36,09 %. The average values and standard deviations are presented in Table 3.

Table 3: Average value and standard deviation of the variables in the study

Value	Average value	Average increase
Changes in overall expenses	60.49	156.21
Changes in secondary necessities expenses	36.09	246.13
Changes in spending on necessities	90.66	199.85
Essential goods	44.77	19.94
Secondary goods	26.52	21.15

Source: Compiled by the authors.

Table 4 shows the results of regression modeling to reflect the consumers’ economic behavior during the instability between psychological and economic factors:

$$\textit{Economic behavior in instability} = (-2{,}13) + 102{,}13 * \text{Psychological factors} + 86{,}21 * \text{Economic factors}$$

The model parameters are statistically significant, as indicated by t Stat values of 17,82 and 10,54 and P-value scores of 0,000000000000081 and 0,0000000000003.

Table 4: Regression modeling results

Regression Statistics								
Multiple R	0,78							
R Square	0,61							
Adjusted R Square	0,60							
Standard Error	15,30							
Observations	14							
ANOVA								
	df	**SS**	**MS**		**F**		**Significance F**	
Regression	1	10215,05	10215,05		43,63		0,00000036	
Residual	28	6556,18	234,15					
Total	29	16771,23						
	Coefficients	**Standard Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95 %**	**Lower 95,0 %**	**Upper 95,0 %**
Intercept	-2,13	0,32	-6,61	0,00000037	-2,79	-1,47	-2,79	-1,47
Psychological factors	102,13	5,73	17,82	0,000000000000081	90,40	113,87	90,40	113,87
Economic factors	86,21	8,18	10,54	0,00000000003	69,46	102,97	69,46	102,97

Source: Compiled by the authors.

The value of the determination coefficient indicates that the model explains 60 % of consumers’ economic behavior during instability and explains changes in expenditures on primary and secondary necessities. It suggests that there are still a significant number of other influencing factors on consumers’ economic behavior during instability, which are not included in the regression model. Thus, changes in people’s spending levels were related to their attitudes and feelings about specific products.

The conducted research revealed the following typical actions that characterize the consumers' propensity for one or another strategy of economic behavior under conditions of instability (see Table 5). The first reaction of consumers during instability is a sharp reduction in costs and the transition to the savings mode, which is confirmed by the data in the table and the fact that, for example, in conditions of instability, many consumers refuse to take expensive trips abroad in favor of domestic tourism.

Table 5: Consumers' strategic intentions in the face of unpredictable deterioration of financial situation during instability

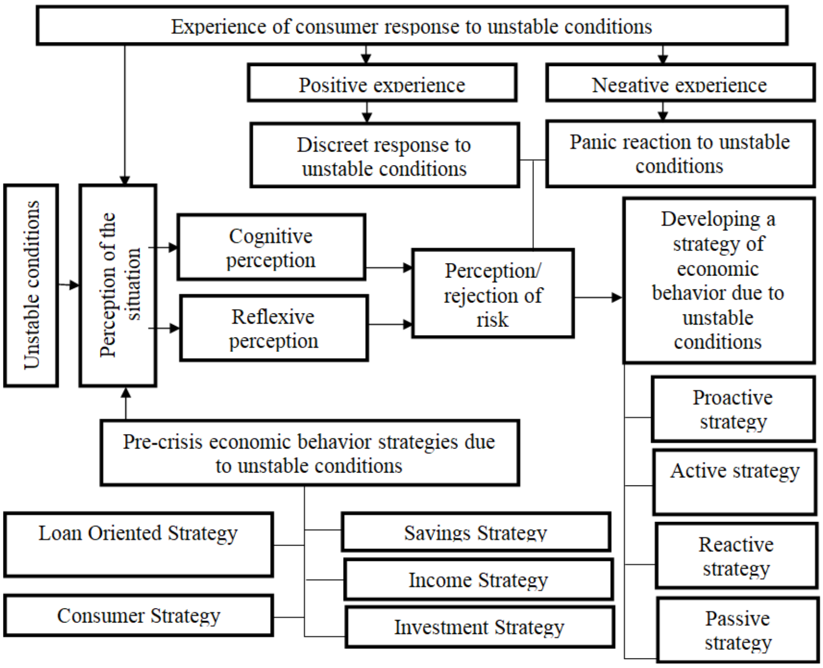
Intentions	%
I will cut back sharply on spending, save money on everything	36,2
I will try to find other or better sources of income	32,4
I will take a bank loan or lend money from friends and relatives	24,5
I will rely on the care of other family members and try to get free financial help from my relatives	14,7
I will seek help from the state social security system	13,3
I will spend my own savings (cash, bank deposits, etc.)	10,1
I will sell part of my property (belongings, furniture, car, etc.)	6,4
I will try to get reimbursement from private insurance	5,1
I will seek uncompensated cash assistance from my employer	4,3
I will try to get money from selling, renting out real estate	3,9
Hard to answer	5,8

Source: Compiled by the authors.

Based on the above experimental data and theoretical approaches, it is possible to build a generalized model of consumers' economic behavior during instability, allowing the development of an interaction algorithm with different consumers' groups (see Figure 2).

5 Discussion

Figure 2: Generalized model of consumers' economic behavior during instability



Source: Compiled by the authors.

The research findings on consumers' economic behavior in the face of instability led to the following conclusions. We were interested in separating essential and non-essential products because previous research has shown that such a distinction helps better understand consumers' behavior (Larson, Shin, 2018; Durante, Laran, 2016).

First, our results indicate a 61 % increase in spending levels during instability compared to average spending. In addition, spending levels increased differently for purchases of essential goods (91 %) and second necessities (36 %).

Second, we partially investigated consumers' behavior, which included indicators related to psychological and economic need to buy. Our results showed that changes in consumer behavior were positively associated with changes in spending levels in an unstable environment.

Finally, we focused on consumers' strategic intentions in the face of unpredictable financial deterioration under volatile conditions, which may explain psychological changes in consumer behavior. In this context, we confirmed our hypothesis about the role of the identified psychological factors in predicting consumers' behavior during instability.

In addition, our findings confirmed the importance of separating essential from non-essential goods, as we found that they had different psychological backgrounds. Finally, regarding the cost level study, our results are consistent with sales data reporting that consumers' priorities became more focused on essentials, including food, hygiene, and cleaning supplies during instability (Di Crosta et al., 2021).

Thus, the research confirmed a greater tendency to buy essential goods in times of instability. Consequently, consumers will face new challenges because the potential to change the consumers' economic behavior during instability is quite high; an in-depth study will lead to increased attention to the influence of psychological factors on consumers' economic behavior during instability.

6 Conclusion

The study of consumers' economic behavior, when faced with instability, led to the following conclusions. First, the results of this study showed that unstable conditions have a significant impact on consumer behavior. In our sample, this influence led to an increase in spending, which was accompanied by an increase in the psychological need to buy both essential and second necessity goods. In addition, our results showed that psychological factors predicted these changes in consumers' behavior.

Consequently, consumer behavior under the influence of irrational emotions makes adjustments, making predictions less reliable. In particular, pessimistic expectations and panic of the population lead to actions that ultimately harm the financial stability of the banking system. Therefore, under uncertainty and risk, a comprehensive approach is needed to include behavioral factors in the consideration, and we should use methods with stochastic elements for their assessment and prediction.

The results obtained during the study allow us to identify areas for further exploration of the research of scientific methodological and practical foundations for the study of consumers' economic behavior amid instability. The functional significance of the study is to ensure that we can use the conclusions and recommendations developed by the author and proposed in the article to avoid high costs of essential and second necessity goods during instability and make rational purchases by consumers.

Future investigations may focus on analyzing the evolution of consumers' behavior. Since our study focused on people's perceptions of changes in spending, we did not know how reliable these estimates are, and objective assessments of changes in the amount of money spent in volatile conditions may diverge from subjective views. Consequently, this study represents one of the first attempts to examine changes in consumer behavior under volatile conditions from a behavioral economic perspective, providing a thorough analysis of the factors that entail changes in consumers' behavior. Moreover, this research fits into a growing body of studies that help increase consumers' economic and psychological preparedness in the face of future unstable conditions.

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Primary Paper Section: A

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