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Let Me Buy Before I Die! A Study on Consumers' Panic Buying Behaviours During the Covid-19 Pandemic

Bırakın Ölmeden Önce Satın Alayım! Covid-19 Salgını Sürecinde Tüketicilerin Satın Alma Davranışları Üzerine Bir Araştırma

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Abstract: As known, purchasing behaviour is one of the study fields which business world and academics have studied dramatically. Therefore, scholars or researchers in this field have developed various models, approaches to find out why and how the consumers make their purchasing decisions. Although classical models try to explain the reasons why we purchase and the reasons underlying our decisions to buy something, modern models try to explain the process of purchasing anything rather than finding out the reasons why the consumers buy. Many factors such as circumstances, time period, psychological or physiological state of a person etc. all affect the purchasing behaviour of a consumer. In everyday life, we make our buying decisions regarding to our needs and desires. On the contrary, during extraordinary time periods like natural disasters, pandemic, war etc. it is all about to survive. Rather than buying something unnecessary, consumers try to buy urgent and critical needs that will be required in that process definitely. This study is not aiming to find out how the consumers display purchasing behaviours in everyday life but what factors lie beneath the consumers' panic buying decisions and whether these factors influence purchasing decisions during the Covid-19 pandemic. In this sense, an online survey is applied on 300 participants residing in Sivas. The participants are selected randomly and the findings obtained from the survey are analyzed through SPSS program. The ethical permission is obtained from the ethical committee of Sivas Cumhuriyet University. The study is important both for business world and academia as the Covid-19 Pandemic is still effective in almost every country in the world and influence the everyday life from many aspects.

Structured Abstract: Covid-19 pandemic is classified as an infectious and fatal disease. It first broke out in Wuhan, China in December, 2019 and has spreaded to 215 countries in the world today. Although, it has symptoms like a cold or influenza, its impacts are far more than the science world expected. Millions of people have been infected since the day it broke out and the death rates are increasing progressively day by day. Science world haven't found any cure or remedy for the virus yet. However, some precautions have been taken

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in order to prevent the virus to spread rapidly like lockdown or some precautions are suggested in societies firmly like social distance. Millions of people have had to stay at their homes and a life style like home confinement has emerged. Along with the news saying the virus is infectious and fatal, millions of people pours in supermarkets or shopping malls in order to stockpile the things like toilet paper or bottled water. The terror and panic that the people felt led them directly to panic buying behaviour. Panic buying occurs when negative feelings like fear, panic, and feelings of uncertainty influence behaviour leading people buying more things than usual. This type of consumer behaviour is more common to be observed during periods of crisis and disruptive events, like natural disasters, as well as public and personal health emergency (Lins and Aquino, 2020: 1). Covid-19 pandemic has created not only health but also economic crises all over the world. As an atmosphere of panic and fear incapsulate humans, they are prone to act like a herd. Herd behaviour and bandwagon effect are two psychological behaviour in which the individual behaves under the impact of his surroundings and the others. When the herd behaviour and panic buying collide with each other, many unwanted consequences have arisen in societies like killing someone for a roll of toilet paper. This research aims at gathering data from the consumers aged 18 and over to find out their panic buying behaviours. As known, with the Covid-19 pandemic, consumers, producers and marketers have all undergone a long and tough process. Since the consumers have rushed to shopping malls and supermarkets, some product categories have run out so supply disruptions have emerged. Also, as the working hours are shortened and the salaries are decreased, consumers' power of purchasing has decreased as well. The consumers spend their most of time at home so they can't go out for shopping easily. They have started to use mobile applications to give their shopping orders. These factors above are all effective on consumers' buying decisions. Therefore, this research is carried out to reveal what factors lie beneath the consumers' panic buying decisions and whether these factors influence purchasing decisions during the Covid-19 pandemic. The research tries to find correlations between panic buying and demographic features of the participants living in Sivas. In this context, a survey which is prepared and tested beforehand is applied online on 304 participants in Sivas. According to results of the pilot study which is done on 50 participants, reliability level of pre-test is found out as 0.859 (Cronbach's Alpha=0,859). Besides, according to the result of factor analysis, no questions out of 16 were omitted out. The items are categorized into four main titles and varimax rotation method is used for the item loads. The participants are selected considering random sampling method. The findings obtained from the survey are analyzed through a statistical application named SPSS. The study is important both for business world and academia as the Covid-19 Pandemic is still effective in almost every country in the world and influence the everyday life in many aspects. As a result of the research carried out on the participants aged 18 and over in Sivas, following results can be highlighted. The rate of the answer given to the question "There is a change in my shopping habits in the last six months" is an interesting result for us (70,4%). This shows us that Covid-19 pandemic process has changed consumers' shopping habits. This is because as the life styles have changed, primary necessities and requirements are different from before. It is also seen that there is an increase in the frequency of participants' shopping on the internet in the pandemic process. As a result of this increase, it is seen that the use of mobile applications has increased as well (66,1%). The consumers were tend to use mobile applications to shop and buy anything in this pandemic process. Moreover, the most frequently used mobile application category in pandemic process is banking and finance (78,0%) and the most frequently preferred purchasing category is staple food (food-beverage). These results show that in the pandemic process, the consumers mostly used mobile applications to get banking services. What the consumers buy as product category is staple food (food and beverage) (76,6%). As for the T-test results, there is a linear correlation between the change in purchasing habits in the last six months and panic buying behaviour ($p=0,000<0,05$). Similarly, there is a correlation between the person who does the shopping at home in the last six months and panic buying behaviour ($p=0,028<0,05$). It is also remarkable that there is a linear correlation between panic buying behaviour and the change in the use of mobile applications in the last six months ($p=0,00<0,05$). It is known that for the last few months, consumers have had to stay at home. They have to give their shopping orders at their homes on the internet. Therefore, they have a change in their purchasing behaviours. Besides, while staying at home, the role of shopper namely, who gives the purchasing decision at home has changed. This is also seen in the results of the study. Another remarkable outcome of this pandemic process is seen on the change in the use of mobile applications. The consumers started to use mobile applications more than the time period before the pandemic. According to the ANOVA test results, It is found out that there are linear correlations between panic buying behaviours and the residence where the participants' mostly live ($p=0,022<0,05$), educational status ($p=0,000<0,05$), shopping habits before the pandemic ($p=0,023<0,05$), shopping habits after the pandemic ($p=0,028<0,05$), frequency of shopping on the internet ($p=0,004<0,05$), the

use of mobile applications during the pandemic process ($p=0,004<0,05$) and the most purchased product/service category during the pandemic process ($p=0,009<0,05$). Panic buying is a popular subject to study on by the academia and business world nowadays. This study is aiming at explaining the various factors lying beneath panic buying yet it is limited to the participants living in Sivas. However, it can be carried out on the consumers living in Turkey. Therefore, the differing consumer profiles which is reshaped by the Covid-19 Pandemic in Turkey can be mapped and revealed. The results of suggested research can be shared with public and private institutions.

Keywords: Public Relations, Purchasing, Purchasing Behaviour, Panic Buying, Covid-19, Pandemic

Öz: Bilindiği üzere, satın alma davranışı gerek iş dünyası gerek akademik camia tarafından üzerinde yoğun bir şekilde çalışılan konulardan bir tanesidir. Bu sebeple, bu alanda araştırmalar yürüten akademisyenler ve araştırmacılar tüketicilerin neden ve nasıl satın alma davranışında bulunduklarını ortaya koymak için çeşitli modeller ve yaklaşımlar geliştirmişlerdir. Klasik modeller neden satın alma davranışında bulunduğumuzun ve bir şeyi satın alma kararımızın arkasındaki nedenleri açıklamaya çalışırken, modern modeller satın almaya sebep olan nedenleri ortaya çıkarmak yerine satın alma sürecini açıklamaya çalışmaktadır. Koşullar, zaman, kişinin psikolojik veya fizyolojik durumu vb. pek çok etmen bir tüketicinin satın alma davranışını etkilemektedir. Gündelik hayatta, satın alma kararlarımızı ihtiyaç veya isteklerimize göre veririz. Doğal felaketler, salgın, savaş vb. olağanüstü durumlarda ise, her şey hayatta kalmak ile ilgilidir. Gereksiz bir şey satın almaktan ziyade, tüketiciler o süreçte ihtiyaç duyacakları acil ve önemli ihtiyaçlarını satın almaya çalışmaktadır. Bu çalışma, tüketicilerin gündelik yaşamda ne şekilde satın alma davranışında bulunduklarını ortaya çıkarmayı hedeflemektedir, aksine Covid-19 salgınının etkisi altında olduğumuz şu süreçte tüketicilerin panik satın alma eyleminde bulunmalarının arkasındaki faktörleri ve bu faktörlerin satın alma davranışı üzerindeki etkilerini ortaya koymayı hedeflemektedir. Bu bağlamda, Sivas'ta ikamet etmekte olan 304 katılımcıya online ortamda anket uygulanmıştır. Katılımcılar tesadüfi örneklem yöntemiyle belirlenmiş ve anketlerden elde edilen bulgular SPSS programı aracılığıyla analiz edilmiştir. Çalışmada kullanılacak anket için, Sivas Cumhuriyet Üniversitesi bünyesinde yer alan etik kuruldan izin alınmıştır. Covid-19 salgınının dünya üzerinde hala etkisini göstermesi ve hayatı her açıdan etkilediği şu süreçte gerek ticari işletmeler gerek akademik camia için önem taşımaktadır.

Anahtar Kelimeler: Halkla İlişkiler, Satın Alma, Satın Alma Davranışı, Panik Satın Alma, Covid-19, Pandemi

Literature Background

Why do we buy? is the question which has been asked for a long time by the marketers. The answer lies deep inside our minds. As human being, we give most of our buying decisions on purpose yet there are some times that we can not stop panicking and act carelessly. Natural disasters like flood, tornadoes or earthquakes, wars, epidemics or other human related crises are the circumstances we feel the need to act quickly and take the control of the situation.

Panic buying is a kind of human behaviour occurring during distressing and uncertain circumstances or time periods. According to Cambridge Dictionary, panic buying is “a situation in which many people suddenly buy as much food, fuel, etc. as they can because they are worried about something bad that may happen” (www.dictionary.cambridge.org). Likewise, Oxford learners' Dictionary defines panic buying as “the act of buying large quantities of everyday items such as food, fuel, etc. because of concerns about them running out or prices rising” (www.oxfordlearnersdictionary.com). Both definitions show that panic buying is an act of buying something/things quickly and without thinking carefully as the person is afraid that a particular situation will become worse.

Dholakia (2020) states that “the panic buying phenomenon is a complex and pernicious consumer behavior, fuelled by a set of multiple and non-overlapping motivations and psychological processes. Once it sets in, it is difficult to break the vicious cycle of irrational excessive purchasing”. Unlike to impulsive or compulsive buying, panic buying is a specific, herd behaviour

that is mainly triggered by a disaster or health crisis (Yuen, Wang, Ma and Li, 2020: 3). Herd mentality helps panic buying grow bigger. The experts say the fact that panic buying is happening at all can prompt people to participate. Because when individual panic buying plays out collectively, that's what can lead to price gouging, or low supplies for high-risk individuals who need things like face masks more than the general population does (Lufkin, 2020).

Epidemics and similar disasters pose a threat to human health and affect people in terms of social and psychological aspects. Anxiety, panic, uncertainty and risk create an individual, social and universal culture of fear (Yıldırım, 2020: 1331). 2020 made a big surprise to the whole world by breaking out an infectious and fatal virus. It first appeared in Wuhan, China in 2019. Day by day, progressively it began to spread all the world via transportation. Lauren M. Sauer, the director of operations with the Johns Hopkins Office of Critical Event Preparedness and Response and director of research with the Johns Hopkins Biocontainment Unit describes Coronavirus as following: "COVID-19 is the disease caused by the new coronavirus that emerged in China in December 2019. COVID-19 symptoms include cough, fever or chills, shortness of breath or difficulty breathing, muscle or body aches, sore throat, new loss of taste or smell, diarrhea, headache, fatigue, nausea or vomiting and congestion or runny nose. COVID-19 can be severe, and some cases have caused death." (www.hopkinsmedicine.org). According to the World Health Organization (WHO):

"Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness. The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow)" (www.who.int).

As of 16 July 2020, Covid-19 has affected more than 13.676.494 million people across 215 countries and territories, and 586,122 people have died from the disease and 8,027,660 have recovered. As for Turkey, 215,940 cases have been recorded, 5,419 people have died and 197,733 people have recovered so far (www.worldometers.info). The virus continues to spread rapidly despite the global precautions (Avcioğlu Kalebek and Özdemir, 2020: 57). Wearing face mask, bewaring social distance, washing hands frequently and staying home are some of the precautions that are suggested to prevent it.

Panic buying has emerged as reliable a feature of the coronavirus epidemic as a fever or dry cough (Altstedter and Hong, 2020). Consumer panic buying associated with disruptive events like Covid-19 epidemic where many consumers buy unusually large amounts of product to avoid possible future shortage (Shou, Xiong and Shen, 2013: 2). As Taylor states "panic buying is fuelled by anxiety, and a willingness to go to lengths to quell those fears: like queueing for hours or buying way more than you need. We've seen this before throughout history". Back in 1962 during the Cuban missile crisis, when nuclear war seemed imminent, American families filled their basements with enough canned goods and bottled water to survive an atomic blast (Lufkin, 2020).

According to Besson (2020), the pandemic has drastically altered consumers' routines, it has created a renewed sense of community as well. The connectedness began as people voiced their concerns with panic buying and its impact on vulnerable populations due to underlying socioeconomic inequalities. Dholakia (2020) clarifies the reasons why consumers panic buy as follows:

1. Consumers panic buy to secure essentials for the immediate future.
2. Fear and anxiety are the driving forces to panic buy so consumers want to alleviate fear and anxiety and to take control over at least one aspect of lives.

3. As a character of herd behavior, consumers react in response to other people's panic buying. In other words, in the situation of panic buying, consumers' purchase decisions are often influenced by their peers' choices (Zheng, Shou and Yang, 2020: 3)
4. Finally, consumers panic buy as a behavior response to future (perceived) scarcity.

On the other hand, Sim, Chua, Vieta and Fernandez (2020) state that there are several possible explanations for panic buying. First, it could be a manifestation of underlying conflict between desire to maintain regular routines versus uncertainty of duration of the pandemic limiting access to daily necessities, which leads to anxiety and panic buying to assuage the conflict. Second, it is a way of coping with a stressful unmet situation (with constant news of rising numbers of infected individuals and deaths worldwide) whereby one's survival and that of the community are at stake during country lock-downs. The coping response is then an act of period of time. Third, it could be a reaction in response to one's loss of control about the future and social pressures to conform to similar behaviours. According to the study done by Yuen, Wang, Ma and Li (2020), panic buying is influenced by (1) individuals' perception of the threat of the health crisis and scarcity of products; (2) fear of the unknown, which is caused by negative emotions and uncertainty; (3) coping behaviour, which views panic buying as a venue to relieve anxiety and regain control over the crisis; and (4) social psychological factors, which account for the influence of the social network of an individual.

Tsao, Raj and Yu (2018: 1) state that "panic buying due to supply disruptions is a common problem in the fast moving environments of today, with causes including adverse weather conditions, strikes, natural disasters, and changes in government policies". This point of view puts the blame of panic buying on supply disruptions. Consumers are apt to get panicked prior to upcoming disasters or epidemics therefore they tend to shop till the shelves are empty.

With the outbreak of Covid-19 Pandemic, panic buying has brought about some social disorders in communities. For instance, in many countries, panic buying has created medical product shortages and this has led fraudsters to fill the gaps as consumers diversify their sourcing beyond their pre-existing networks. Even in countries regarded Stringent Regulatory Authorities, markets have been flooded with counterfeit health and sanitary products. In early March, Europol (the EU's law enforcement agency) confiscated 34,000 counterfeit surgical masks in just one coordinated operation. The agency also reported that (Besson, 2020):

- A European firm ordered some €6.6 million (\$7.3 million) worth of protective masks and disinfection gel from a company in Singapore — which never arrived.
- A German government shipment of millions of masks from Kenya never turned up.

The Netherlands recently recalled millions of defective masks bought from China.

- Nielson carried out a survey which aims to find what the consumers purchase during the outbreak (the week ending 14 March) in the United Kingdom and compared these findings to the same period last year. See the graphic below.

KEY CATEGORY GROWTH: WEEK ENDING 14 MARCH

Graphic 1

Source: <https://www.foodnavigator.com/Article/2020/03/27/Panic-buying-amid-coronavirus-fears-How-much-are-we-spending-and-why-is-it-a-problem#>, Accessed, 23.06.2020.

As seen on the graphic, what the consumers purchased most during the week ending 14 March is childrens medicine, UHT milk comes second and adult analgesics comes third. Apart from sales of staple food items (Pasta increasing by 168%, Canned Pasta by 148%, Canned Meat by 147% and packet soup by 118%), health, beauty, toiletries and baby care items sales increased significantly during this period of time.

Above all, panic buying can stem from many factors. These factors can be diversified from psychological ones to the environmental ones. Fear of scarcity and losing control over the environment, insecurity (which could be because of fear), social learning, exacerbation of anxiety, the basic primitive response of humans are the core factors responsible for the panic buying phenomenon (Arafat, Kar, Marthoenis, Sharma, Apu and Kabir, 2020).

Methodology And Findings

The study which is done to find out consumers' panic buying behaviours is carried out through general survey model and the analyses of comparative relationship between dependent-independent variables are revealed. An online survey via Google forms is applied on 304 consumers aged 18 and above living in Sivas between the dates 29.06.2020 and 10.07.2020. The ethical permission is obtained from the ethical committee of Sivas Cumhuriyet University. The applied questionnaire includes 3 sections and 31 questions. In the first section demographic questions, in the second section, questions about consumers' purchasing behaviours before and during the pandemic and in the third section, questions measuring the participants' panic buying behaviours are included. The scale prepared to measure panic buying behaviour has 16 questions with likert style response consisting of five options (1=strongly disagree, 5= strongly agree) and 4 dimensions. The survey is carried out on a pilot group of 50 participants beforehand and as a result of pre-tests, the questionnaire is rearranged before applying on the main sample. After the pre-test, the data obtained from the survey is analyzed through SPSS program and the following analyses are done like descriptive and factor analysis, bivariate (pearson) correlation, T-Test and Anova.

The research questions which are aimed to answer are as follows:

Question 1. What drives the participants to panick buy?

Question 2. What do the participants panick buy during the Covid-19 Pandemic?

Question 3. What changes does the Covid-19 Pandemic bring to the participants' daily life?

Question 4. How do the participants' purchase during the Covid-19 Pandemic?

Question 5. During the Covid-19 Pandemic, do the participants' shopping habits change?

Findings

According to results of the pilot study which is done on 50 participants of main group, reliability level of pre-test is found out as 85% (Cronbach's Alpha=0,859). Besides, according to the result of factor analysis, no questions out of 16 were omitted out. The items are categorized into 4 main titles and varimax rotation method is used for the item loads.

Table 1: Factor Analysis of Participants' Panic Buying Levels

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,773
Bartlett's Test of Sphericity	Approx. Chi-Square	437,716
	Sd	120
	Sig. (p)	,000

As seen, the value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy is found out as ,773 and this shows that the data set is appropriate and well expressed. The high value here shows that common variance numbers which are formed by variables is high and so the the factor analysis is appropriate.

Bartlett's Test of Sphericity which is tested for the variables whether they are correlated with eachother or not is found out as a satisfying value (437,716). The meaningfulness level of this value shows that the factor analysis is appropriate (sig=0,00<0,10). Factor analysis tests are done to evaluate item loads with other methods.

Table 2: Factor Analysis of Participants' Panic Buying Levels

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Toplam	% of Variance	Cumulative %	Toplam	% of Variance	Cumulative %	Toplam	% of Variance	Cumulative %
1	5,899	36,870	36,870	5,899	36,870	36,870	4,067	25,421	25,421
2	1,888	11,800	48,670	1,888	11,800	48,670	2,375	14,843	40,264
3	1,542	9,635	58,305	1,542	9,635	58,305	2,298	14,362	54,626
4	1,231	7,694	65,999	1,231	7,694	65,999	1,820	11,373	65,999
5	,947	5,916	71,916						
6	,810	5,061	76,977						
7	,790	4,938	81,915						
8	,634	3,962	85,877						
9	,536	3,349	89,226						
10	,439	2,741	91,967						
11	,382	2,389	94,355						
12	,301	1,879	96,234						
13	,217	1,356	97,590						
14	,174	1,089	98,679						
15	,131	,817	99,496						
16	,081	,504	100,000						

It is clearly seen that 16 items in the scale reveal the 65,999% of the variable which is aimed to measure. As a result of this analysis, four components the eigenvalues of which are above 1. The first component expresses the 36,870%, the second one expresses 11,800%, the third one expresses 9,635% and the fourth one expresses 7,694% of the feature that is required to be measured. This scale expresses the 65,999% of the feature that is supposed to be measured in total. Besides, it is checked and controlled through scree plot graphic that all the items in the scale are accumulated into the four categories.

Table 3: Descriptive Analyses and Factor Loads of Panic Buying Levels

	Mean	Standard Deviation	Factor Loads
PANIC BUYING AND TENDENCY TOWARDS BUYING			
The fear that I feel for the products I need during the Covid-19 Pandemic makes me buy more.	2,3889	1,18825	,744
I started to shop on the internet during the Covid-19 Pandemic process.	3,2037	1,27944	,570
Owing to the Covid-19 Pandemic process, I started to stockpile because of fear and panic.	2,6111	1,21960	,741
When I think about the fundamental products are running out, I panic so I prefer to buy them in wholesale.	2,2407	1,08045	,849
During the Covid-19 Pandemic process, fear makes me buy more than I need.	2,3519	1,10158	,800
During the Covid-19 Pandemic process, feelings of fear and anxiety influence my purchasing habits.	2,9074	1,16988	,600
During the Covid-19 Pandemic process, I have difficulty in buying the things I need.	2,5000	1,05955	,667
PANIC BUYING AND TENDENCY TOWARDS PRACTICE ECONOMY			
During the Covid-19 Pandemic process, I tended to buy cheap products.	2,7593	1,24287	,864
During the Covid-19 Pandemic process, I buy the most reasonable and economic products regardless of other choices.	2,9259	1,28639	,748
PANIC BUYING AND SELF-CONFIDENCE			
During the Covid-19 Pandemic process, I want to make sure that I have enough products at home.	3,8333	,92655	,465
During the Covid-19 Pandemic process, the fear and panic that I feel affect me negatively.	3,3519	1,10158	,701
There is an increase in my expenses of health and supplementary food because of the Covid-19 Pandemic process.	3,3333	1,24385	,346
There is an increase in my expenses of sport equipment and weight control products because of Covid-19 Pandemic process.	2,8148	1,18280	,640
PANIC BUYING AND PRODUCT RELIABILITY			
I started to seek for information on social media platforms before I buy a product or service.	3,6296	1,30740	,632
During the Covid-19 Pandemic process, I avoid consuming processed food.	3,5741	1,14269	,498
During the Covid-19 Pandemic process, I make my own bread at home.	2,6852	1,31499	,695

Extraction values which show the common variance of each item in the scale are found out to be appropriate. None of the values are required to be omitted. All the 16 items in the scale have vast majority of common variance so there is no need to omit any item from the scale. The initial value is always 1,0 in the table which shows how much variance of factors revealed as a result of the analysis.

Table 4: Test of Normal Distribution

	Kolmogorov-Smirnov			Shapiro-Wilk		
	İstatistik	Sd	Sig.(p)	İstatistik	Sd	Sig.(p)
Scale Average	,043	304	,200	,994	304	,285

Normal distribution test which is done for the obtained data to find out which analyses are to be applied shows that the data is appropriate for the normal distribution (Kolmogorov-Smirnov ve Shapiro-Wilk test değerleri $p=0,200 > 0,05$ ve $p=0,285 > 0,05$). Parametric tests are done as the data is appropriate for the normal distribution and necessary analyses are carried out. When the participants are analyzed in terms of demographic variables, it is seen that 59,9% of female and 38,8% male participants attended the survey. The participants' average age is 34,4 and their average income is 5064,47. 28,3% of the participants' live in metropol, 58,6% of them live in city, 8,6% of them live in town and 3,0% of the participants live in village.

The participants' educational background is as follows:

Primary School: 2,7%, Secondary School: 2,3%, High School: 24,3%, Bachelor/Collage Graduate: 10,9%, Bachelor Degree: 42,4%, Master Degree: 10,5% and PhD, 6,9%.

Table 5: The Distribution of the Participants' Frequency of Shopping Before and After the Pandemic

	BEFORE PANDEMIC		AFTER PANDEMIC	
	Frequency	Percentage	Frequency	Percentage (%)
No answer	4	1,3	4	1,3
Once/Twice a week	113	37,2	60	19,7
Once a month	29	9,5	42	13,8
Once in six months in bulk	1	,3	3	1,0
As long as I need	157	51,6	195	64,1
Total	304	100,0	304	100,0

It is seen that there is a change in participants' purchasing habits before and after the pandemic. The results of ANOVA tests which are done to see the change more accurately are below. When both of the tables are evaluated together, it is possible to say that pandemic has caused a decrease in participants' frequency of purchasing. It is inevitable to say that this is the result of restrictions to go out. As the public is constantly warned not to go out in this pandemic process, this is observed in the people's purchasing behaviours because there is a distinctive decrease.

Table 6: Participants' General Situation During The Pandemic

		Frekans	Yüzde
Participants' Financial Situations During the Pandemic	Blank	4	1,3
	I have not had any revenue loss.	99	32,6
	I have not had any revenue loss but I have had some saving.	98	32,2
	The revenue loss I had influenced my habits partially.	55	18,1
	The revenue loss I had influenced my habits profoundly.	48	15,8
	Total	304	100,0
A Change in The Buying Habits in The Last Six Months	Blank	4	1,3
	Yes.	214	70,4
	No.	86	28,3
	Total	304	100,0
A Change in The Person Who Does The Shopping in The Last Six Months	Blank	4	1,3
	Yes.	137	45,1
	No.	163	53,6
	Total	304	100,0
The Frequency of Shopping on the Internet	Blank	7	2,3
	Once/Twice a week	29	9,5
	Once in a month	58	19,1
	Once in six months in wholesale	6	2,0
	As long as I need	204	67,1
	Total	304	100,0
The Situation in the Last Six Months	Blank	5	1,6
	With the Pandemic, in the last six months I bought once or more on the internet	226	74,3
	In the last six months with the pandemic I didn't buy anything on the internet	73	24,0
	Total	304	100,0
The Use of Mobile Phone Applications	Blank	4	1,3
	Yes	201	66,1
	No.	99	32,6
	Total	304	100,0
E-Services Used During The Pandemic Process	Blank	9	3,0
	Banking-Finance	237	78,0
	Insurance	1	,3
	Education	40	13,2
	Health	6	2,0
	Online Travel and Trip	5	1,6
	Shopping	3	1,0
	Agenda-News	3	1,0
	Total	304	100,0
The Most Frequently Purchased Category in the Pandemic Process	Blank	3	1,0
	Staple Food (Food-Beverage)	233	76,6
	Cleaning and Hygiene Products	22	7,2
	Food and Vitamin Supplements	3	1,0
	Electronics and Computer	6	2,0
	Mother and Child	2	,7
	Cosmetics and Personal Care	12	3,9
	Sport	4	1,3
	Books and Magazines	9	3,0
	Fashion and Clothing (Textile)	10	3,3
	Total	304	100,0

One of the remarkable data about the participants' general information in the pandemic process in the table above is participants' answer (Yes) about the question "There is a change in my shopping habits in the last six months". The rate of participants' answer for this question is 70,4%. However, It is seen that there is no change in the person who shops at home in the last six months. It is also seen that there is an increase in the frequency of participants' shopping on the internet in the pandemic process. As a result of this increase, it is seen that the use of mobile applications has increased as well (66,1%). Moreover, the most frequently used mobile application category in pandemic process is banking and finance (78,0%) and the most frequently preferred purchasing category is staple food (food-beverage) (76,6%).

Table 7: The Comparison of Participants' Panic Buying Behaviour Scale Scores Pertaining to General Features and Attitudes (T TEST)

Features and Attitudes	n	Panic Buying Behaviour Scale Total Score
Gender		
Female	182	45,45±10,49
Male	118	44,09±10,50
t=	1,098	
p=	0,273	
The Change of shopping habits in the last six months		
Yes.	214	46,81±9,84
No.	86	40,03±10,50
t=	5,289	
p=	0,000	
The change in person who does the shopping in the last six months		
Yes.	137	46,17±11,47
No.	163	43,77±9,47
t=	1,987	
p=	0,028	
The change in the use of mobile applications in the last six months		
Yes.	201	46,56±9,90
No.	99	41,42±10,82
t=	4,101	
p=	0,00	
General shopping on the internet in the last six months		
With the Pandemic, in the last six months I bought once or more on the internet	226	45,26±10,43
In the last six months with the pandemic I didn't buy anything on the internet.	73	43,47±10,53
t=	1,265	
p=	0,207	

There is no correlation between the participants' gender and panic buying behaviour ($p=0,273>0,05$). It is possible to say that the main reason why there is no change pertaining to gender is the general effect of pandemic process. There is a linear correlation between the change in purchasing habits in the last six months and panic buying behaviour ($p=0,000<0,05$). Similarly, there is a correlation between the person who does the shopping at home in the last six months and panic buying behaviour ($p=0,028<0,05$). It is also remarkable that there is a linear correlation between panic buying behaviour and the change in the use of mobile applications in the last six months ($p=0,00<0,05$). It is also stunning that there is no correlation between the increase in the frequency of shopping on the internet in the last six months and panic buying behaviour ($p=0,207>0,05$). The change in the shopping habits on the internet before the pandemic process may be considered to influence this result.

Table 8: The Comparison of Participants' Panic Buying Behaviour Scale Scores pertaining to Age and Income (CORRELATION)

Age and Income	n	Panic Buying Behaviour Scale Total Score
Age	304	34,47±10,79
Scale Total Score	304	44,60±11,05
p=	0,903	
Income	304	5064,47±
Scale Total Score	304	44,60±11,05
p=	0,633	

In order to determine participants' age and income levels, the data are collected as continuous variable and Pearson Correlation is used in order to find out correlation. There are no correlation between panic buying behaviour and age ($p=0,903>0,05$) and income ($p=0,633>0,05$). General effect of pandemic process is seen here.

Table 9: Multiple Group Comparison (ANOVA) of Participants' Panic Buying Behaviour Scale Scores pertaining to General Features and Attitudes

		Sum of Squares	Degree of Freedom	Mean-squares	F	Sig.(p)
The Place where the participants reside	Inter Groups	34,952	50	,699	1,424	,022
	Inside the Groups	124,153	253	,491		
	Total	159,105	303			
Educational status	Inter Groups	168,629	50	3,373	1,981	,000
	Inside the Groups	430,727	253	1,702		
	Total	599,355	303			
Revenue loss and shopping	Inter Groups	70,833	50	1,417	1,258	,131
	Inside the Groups	284,799	253	1,126		
	Total	355,632	303			
Shopping before the pandemic	Inter Groups	145,526	50	2,911	1,507	,023
	Inside the Groups	488,672	253	1,932		
	Total	634,197	303			
Shopping after the pandemic	Inter Groups	115,729	50	2,315	1,479	,028
	Inside the Groups	395,820	253	1,565		
	Total	511,549	303			
Frequency of shopping on the internet	Inter Groups	107,802	50	2,156	1,713	,004
	Inside the Groups	318,431	253	1,259		
	Total	426,234	303			
Use of mobile applications during the pandemic process	Inter Groups	115,992	50	2,320	1,727	,004
	Inside the Groups	339,890	253	1,343		
	Total	455,882	303			
Purchasing category during the pandemic process	Inter Groups	262,008	50	5,240	,946	,009
	Inside the Groups	1400,831	253	5,537		
	Total	1662,839	303			

Multiple Group Comparison is done for the multiple choice questions asked to the participants. It is found out that there are linear correlations between panic buying behaviours and the residence where the participants' mostly live ($p=0,022<0,05$), educational status ($p=0,000<0,05$), shopping habits before the pandemic ($p=0,023<0,05$), shopping habits after the pandemic ($p=0,028<0,05$), frequency of shopping on the internet ($p=0,004<0,05$), the use of mobile applications during the pandemic process ($p=0,004<0,05$) and the most purchased product/service category during the pandemic process ($p=0,009<0,05$). Apart from these results above, there are no correlations between panic buying behaviour and the change in habits pertaining to revenue loss ($p=0,131>0,05$).

Conclusion

It has been for months that we are passing through a really difficult time period. Covid-19 pandemic made life for all of us restricted and we have to obey the rules that came out with this pandemic. Along with the life styles that have to be changed during the pandemic, purchasing behaviour has to be changed as well. Being the most witnessed purchasing behaviour in the pandemic process, panic buying has been the widespread subject on which academics or business world are working profoundly. It is because is an issue that matters governments, publics, all the humanity in short. The governments went on many regulations or restrictions in this time period and the business

world suffered from both profit loss and demand surplus. However, consumers in many countries suffered from supply disruptions or supply deficits. In order to find out how this pandemic influence the consumers and the reasons lying beneath the consumers' panic buying behaviours, this research is carried out to make contribution to the literature on this issue.

Coronavirus is still widespread and continuing to spread all over the world. Turkey is one of the countries that suffer from this nuisance. Although the first wave has not completely wiped out, the number of the cases and deaths has diminished dramatically. On the contrary, the number of recoveries has increased. There are many cases almost all the cities of Turkey and Sivas is one of these cities that encountered the deathly face of Coronavirus. There have been many changes observed in the consumers' purchasing behaviours since the outbreak of the Covid-19. As a result of restrictions to go out, consumers were to stay at home. They did and managed all their daily errands, shoppings, payments etc. at homes on the internet. This has led the consumers change their shopping habits or buying behaviours. As a result of the research carried out on the participants aged 18 and above in Sivas, following results are the remarkable ones to highlight. The rate of the answer given to the question "There is a change in my shopping habits in the last six months" is an interesting result for us (70,4%). This shows us that Covid-19 pandemic process has changed consumers' shopping habits. This is because as the life styles have changed, primary necessities and requirements are different from before. It is also seen that there is an increase in the frequency of participants' shopping on the internet in the pandemic process. As a result of this increase, it is seen that the use of mobile applications has increased as well (66,1%). The consumers were tend to use mobile applications to shop and buy anything in this pandemic process. Moreover, the most frequently used mobile application category in pandemic process is banking and finance (78,0%) and the most frequently preferred purchasing category is staple food (food-beverage). These results show that in the pandemic process, the consumers mostly used mobile applications to get banking services. What the consumers buy as product category is staple food (food and beverage) (76,6%).

As for the T-test results, there is a linear correlation between the change in purchasing habits in the last six months and panic buying behaviour ($p=0,000<0,05$). Similarly, there is a correlation between the person who does the shopping at home in the last six months and panic buying behaviour ($p=0,028<0,05$). It is also remarkable that there is a linear correlation between panic buying behaviour and the change in the use of mobile applications in the last six months ($p=0,00<0,05$). It is known that for the last few months, consumers have had to stay at home. They have to give their shopping orders at their home on the internet. Therefore, they have had a change in their purchasing behaviours. Besides, while staying at home, the role of shopper namely, who gives the purchasing decision at home has changed. This is also seen in the results of the study. Another remarkable outcome of this pandemic process is seen on the change in the use of mobile applications. The consumers started to use mobile applications more than the time period before the pandemic.

According to the ANOVA test results, It is found out that there are linear correlations between panic buying behaviours and the residence where the participants' mostly live ($p=0,022<0,05$), educational status ($p=0,000<0,05$), shopping habits before the pandemic ($p=0,023<0,05$), shopping habits after the pandemic ($p=0,028<0,05$), frequency of shopping on the internet ($p=0,004<0,05$), the use of mobile applications during the pandemic process ($p=0,004<0,05$) and the most purchased product/service category during the pandemic process ($p=0,009<0,05$).

As being human, we are vulnerable to many threats and risks. Natural disasters, accidents, wars, crises, pandemics etc. are among these threats and risks. Having broken out in Wuhan, China in 2019, Covid-19 Pandemic is witnessed almost every country in the world nowadays. The pandemic has changed almost everything from our daily life styles to our purchasing behaviours. Panic buying is a popular subject to study by the academics and business world. This study is aiming at explaining the various factors lying beneath panic buying and limited to the participants living in

Sivas. However, it can be carried out on the consumers living in Turkey or can be studied from different aspects.

References

- Altstedter, A. and Hong, J. (2020). Why rational people are panic buying as Coronavirus spreads. Retrieved from: <https://www.bloomberg.com/news/articles/2020-03-10/why-rational-people-are-panic-buying-as-coronavirus-spreads>, (Accessed: 7 April 2020).
- Arafat, S., Kar, S. K., Marthoenis, M., Sharma, P., Hoque Apu, E., & Kabir, R. (2020). Psychological underpinning of panic buying during pandemic (COVID-19). *Psychiatry research*, 289, 113061. Advance online publication. <https://doi.org/10.1016/j.psychres.2020.113061>
- Avcıoğlu Kalebek, N., Özdemir, G. (2020). Covid-19 Pandemisinin giyim kuşama tematik yansımaları: Maske Kullanımı. *Turkish Studies*, 15(4), 57-68. <https://dx.doi.org/10.7827/TurkishStudies.43966>
- Besson, E. K. (2020). COVID-19 (coronavirus): Panic buying and its impact on global health supply chains, <https://blogs.worldbank.org/health/covid-19-coronavirus-panic-buying-and-its-impact-global-health-supply-chains>, Accessed: 14.06.2020.
- Dholakia, U., 2020. Why are we panic buying during the coronavirus pandemic? Sci. Behind Behav. <https://www.psychologytoday.com/sg/blog/the-science-behind-behavior/202003/why-are-we-panic-buying-during-the-coronavirus-pandemic>.
- Lins, S. and Aquino, S. D. (2020). Building a Panic Buying Scale (PBS) during COVID-19: Initial psychometric properties. (*manuscript in preparation*).
- Tsao, Y.-C., Raj, P. V. R. P., and Yu, V. (2018). Product substitution in different weights and brands considering customer segmentation and panic buying behavior. *Industrial Marketing Management*. pp. 1-12. <https://dx.doi.org/10.1016/j.indmarman.2018.09.004>
- Shou, B., Xiong, H., & Shen, X. M. (2013). *Consumer Panic buying and quota policy under supply disruptions*. Working paper. Hong Kong: City University of Hong Kong.
- Sim, K., Chua, H. C., Vieta, E. and Fernandez, G. (2020). The anatomy of panic buying related to the current COVID-19 pandemic. *Psychiatry Research*, Elsevier, <https://reader.elsevier.com/reader/sd/pii/S0165178120308349?token=60D86912A1CAACB3214DAB5E71B6C9C1534DD9DB500BE673EAE2EBC25B6F338CF99B35D3FCD7F7842DD97F27087ADBD0>
- Southey, F. (2020). Panic Buying amid coronavirus fears: How much are we spending... and why is it a problem?, <https://www.foodnavigator.com/Article/2020/03/27/Panic-buying-amid-coronavirus-fears-How-much-are-we-spending-and-why-is-it-a-problem#>, Accessed, 23.06.2020.
- Yıldırım, S. (2020). Salgınların sosyal-psikolojik görünümü: Covid-19 (Koronavirüs) pandemi örneği. *Turkish Studies*, 15(4), 1331-1351. <https://dx.doi.org/10.7827/TurkishStudies.43585>
- Yuen, K. F., Wang, X., Ma, F. and Li, K. X. (2020). The Psychological causes of panic buying following a health crises, *International Journal of Environmental Research and Public Health*, 17, 3513, 1-14, <https://dx.doi.org/10.3390/ijerph17103513>
- Zheng, R., Shou, B., and Yang, J. (2020). Supply disruption management under consumer panic buying and social learning effects, *Omega* doi: <https://doi.org/10.1016/j.omega.2020.102238>.

<https://dictionary.cambridge.org/tr/sözlük/ingilizce/panic-buying>, Accessed date: 15.06.2020

<https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus>, Accessed:
15.07.2020

<https://www.oxfordlearnersdictionaries.com/definition/english/panic-buying?q=Panic+Buying>,
Accessed: 15.06.2020

<https://www.worldometers.info>, Accessed: 17.06.2020

https://www.who.int/health-topics/coronavirus#tab=tab_1 Accessed: 15.07.2020