UNIVERSITY OF TWENTE.

The impact of perceived depression, anxiety, loneliness and worry on consumer behavior and buying patterns during the COVID-19 pandemic

An exploratory study

MASTER THESIS

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Management Summary

The COVID-19 pandemic has made a big impact on economy and society. Various consumer behavior changes were documented since March 11, 2020 when the World Health Organization (WHO) declared the coronavirus, named COVID-19 a global pandemic. In this study we have aimed to investigate the influence factors on consumer behavior during the COVID-19 pandemic in a systematic literature review and then, to measure the factor's influence on additional purchasing of necessity goods and the preference between online shopping and brick-and-mortar shopping.

In our research a systematic literature review was made, using the (SLR) methodology guidelines by Kitchenham (2004), revising 240 articles on documented consumer behavior switches during the COVID-19 pandemic. After collecting and summarizing the articles, we have investigated the most mentioned influencing factor (fear) and broke it down to emotions which induced fear during the pandemic. To see how it affected on students' consumer behavior regarding additional necessity goods purchasing and their preference between online and brick-and-mortar shops a research was performed. The research was conducted via an online survey in Qualtrics, using a 5-point Likert scale and the data analysis was carried out in SPSS Statistics Software using correlations, u test and regression. In total, we got 55 valid responses (24 male. 29 female and 2 non-binary/ third gender, age was ranging between 19 and 38, with an average of 24) for our survey after excluding participants who left a field out. Results show that surveyed students' consumer behavior was indeed impacted by various emotions which were affected by the COVID-19 pandemic. Perceived worry showed a significant correlation with additional shopping. It indicates that the research has aligned with the theoretical findings in the concept of worry had an influence on additional shopping. Our research also aligned with the theoretical findings when measuring online shopping preference, out of the four measured emotions only anxiety had an influence on online shopping preference. This research is original in the concept of investigating students' consumer behavior with the most influencing factor during the COVID-19 pandemic.

Limited number of research articles on consumer behavior during the COVID-19 pandemic were available for this study. Most of the studies on consumer behavior were based on stockpiling and the other articles were unique in their own categories. There are still lack of studies on varieties of consumer behavior during the COVID-19 pandemic. Access to data before COVID-19 analyzing students' consumer behavior was also limited. Another possible limitation was the fact of continuously changing news nowadays regarding the COVID-19 pandemic, which could have an effect on the respondents depending on the content of the news. The systematic literature review can be a great help in itself for theory and further research. The research can encourage marketers to target their advertisements according to their goal, increasing influences on perceived worry to stimulate people on additional necessity goods shopping or to define their advertisements better to avoid additional necessity goods shopping and to avoid scarcity of products. Media can also use the information to define better their

communication and avoid panic buying behavior. IT marketers can also use anxiety as a factor on online shopping preference and target their business plans accordingly. It was interesting to see that while in most of the emotions male and female respondents had the same responses, females have perceived more anxiety and worry during the COVID-19 pandemic than males. In further studies, it can be also an interesting point to study. The research can also be projected to bigger populations. Due to the made extensive literature review, one has many options to conduct a study on consumer behavior impacted by the COVID-19 pandemic. Also, possible research gaps were reported such as lack of articles on other countries than the documented ones, studies on consumer behavior on different age groups and more studies on consumer behavior switches during the COVID-19 pandemic.

Keywords: CONSUMER BEHAVIOR, NECESSITY GOODS, DEPRESSION, ANXIETY, LONELINESS, WORRY

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Chapter 1 - Introduction

In the digital era, technology changes rapidly and to keep customers satisfied, businesses have to keep up with the changes (Cascio & Montealegre, 2016). Businesses are looking to embrace digital transformation; to remain competitive they must change and adapt to new technological solutions to satisfy and increase customer experience in traditional situations and in digital marketing. Managers have to keep track of the changes in consumer behavior in order to develop the right marketing plans for their products (Huang, Chang & Narayanan, 2015). To get the right improvements online, marketers have to analyze consumer behavior by collecting data.

On March 11, 2020, the World Health Organization (WHO) declared the coronavirus, named COVID-19 a global pandemic (Cucinotta et al, 2020). Nowadays, one of the biggest challenges of society is to slow down the infection rate of the virus. Countries have made several restrictions, including shutting down schools and several different activities (Gupta et al, 2020). On December 15, 2020, the Dutch government has tightened its lockdown restrictions, more measurements have taken place, including the closing of non-essential shops. Since then, online purchase has risen in the Netherland.

The virus has made a big impact on the economic performance of the world and has influenced the people psychologically. The impact of the virus has reached everybody. Because of the negative effects of COVID-19, people's mood has changed (Mention et al, 2020). Compared to the period before a pandemic, people are experiencing a higher level of anxiety, depression and indignation in real-life and it also affects consumer behavior (Campbell et al., 2020). The psychology of the consumers has a big role in the consumer behavior in digital marketing (Foxall, 1994).

1.1. Research problem, research issues and contributions

During the pandemic, the society has witnessed drastic consumer behavior switches such as panic buying, hoarding or avoidance behavior. In the revised articles for the literature review, in which consumer behavior is analyzed during the COVID-19 pandemic, panic buying, impulse buying or hoarding, were the most researched topics (on Appendix A, the topics of the researches can be seen). One of the main influencing factors of the documented consumer behavior switches was fear. Several documents (Ahmed et al., 2020 and Naeem 2020) documented fear as a factor induced by depression, anxiety, loneliness or worry.

Because of the pandemic, financial situations have changed in the Netherlands. There are less possibilities for students for side jobs and nevertheless, a lot of students have also lost their jobs. Besides the financial trouble, students have also less chance to socialize because of the pandemic regulations. These aspects can greatly affect psychological factors**. In this Master Thesis, we would like to see if the students' buying behavior regarding the necessary products was impacted during the**

pandemic. This research was approached by the most used factor, which was found after conducting the literature review. To answer the research question, we broke down the research question into sub-questions. These are:

- Did depression, anxiety, worry or loneliness have an influence on students' mood?
- Did the analyzed emotions influence students in additional purchasing regarding necessity goods?
- Did the ongoing pandemic change students' preference between online and brick-and-mortar shopping?

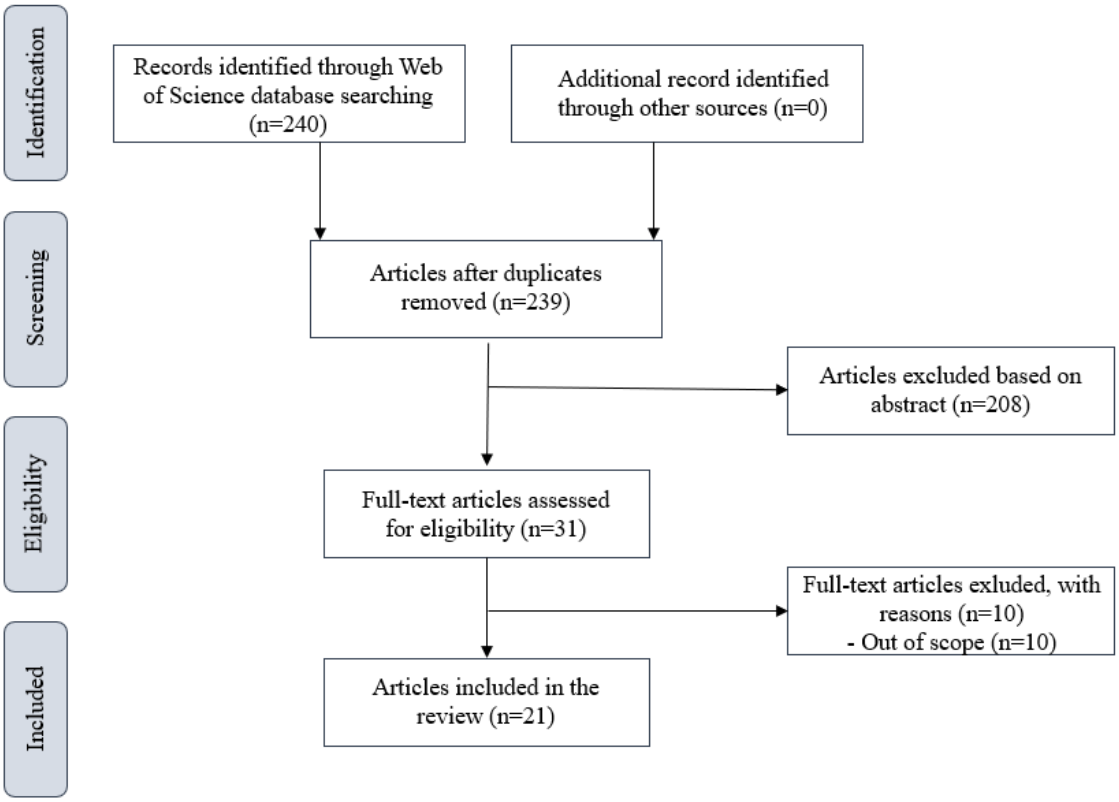
Students' priorities could drastically change during the pandemic. Products which have been previously purchased in brick-and-mortar shops are not available currently, people stay more at home and do not go out. Students meet with less people, get influenced less by others. The main goal of the study is to explore if the most documented influencing factor had an impact on students' consumer behavior regarding necessity products. To examine students' consumer behavior, an online survey was conducted.

With the collection of influencing factors, one can see, what factors were explored till now and can easier see what should be explored more. For researchers and for businessmen it is essential to study consumer behavior to adjust further studies or future business plans and to understand human reactions towards a pandemic regarding shopping. There are limited studies on consumer behavior during a crisis and there is a big research gap in studies when it comes studying consumer behavior in Dutch regions during the pandemic. The research of the study can help in further studies regarding consumer behavior in crisis or the impact of COVID-19. Consumer behavior is an important part of marketing that marketers have to be aware of in order to make successful business decisions. COVID-19 has become a global pandemic in 2020 and it is still having an impact on people's life. Therefore, it is justified to explore and learn more about the changes regarding consumer behavior during the COVID-19 pandemic.

Chapter 2 - Research issues

Since the pandemic is still affecting the life of individuals, it is difficult to gauge till when does it last. To get a deeper insight of consumer behavior during the COVID-19 pandemic a systematic literature review was conducted. The systematic literature review was built for revising articles based on COVID-19. In total, 240 articles were found in the databases of Web of Science by searching for words such as "coronavirus", "corona" or "customer behavior" in an advanced search. After selecting the years and language (from the year of 2019 and in English), the inclusion criteria (certain categories of articles) and the exclusion criteria (source categories that were not relevant for the research) narrowed the number of articles down to 21 (see Table 1 below). Then those 21 articles were revised and categorized into influencing factors (internal and external) and outcomes.

Table 1. **PRISMA flow diagram of the search process of the literatures. The search process was conducted on the 29th of March, 2021.**



Source: developed for this research' literature review.

2.1. Main focuses of the previous studies on consumer behavior during the COVID-19 pandemic

In total, 21 articles were included in the research process. 14 articles from 2020 and 7 articles from 2021. The focuses of the articles were collected from key words and the topics of the articles (see

Appendix A). Stockpiling and its alternatives were in focus of examining consumer behavior during the pandemic in 11 articles. Stockpiling or hoarding can be seen as the action when people tend to purchase great number of products out of emotions. Stockpiling can be also associated with panic buying during the pandemic (Dammeyer, 2020; Prentice et al., 2020). Impulse buying is not always influenced by negative feeling, while panic buying is (Lins et al., 2020). However, during the COVID-19 pandemic the described impulse buying behaviors are all influenced by only negative emotions. Therefore, these two behaviors are under the same focus category. People were doing panic buying in many places, indulging in impulse buying behavior (Ahmed et al., 2020). In the paper of Ahmed et al. (2020) and Islam et al., (2021) it was discussed that impulse buying helps customers fighting with low confidence and negative emotional states.

Most of the articles collected data via questionnaires, some even used Amazon Mechanical Turk. Out of the 21 articles, three were conducted via telephonic interviews and two were conducted based on other literatures. The last article was conducted based on other sampling method, such as public opinion dissemination (see Appendix B for visual representation). From the results of the articles' focuses we can see that there is limited amount of research on consumer behavior during the COVID-19 pandemic, and the most amount of research was analyzing the panic buying behavior.

2.2. Important consumer behavior switches and influencing factors that were documented during the COVID-19 pandemic

On the table below we see the summarized findings of the articles. On Table 2. we can see the different outcomes of consumer behavior and their significantly influencing factors from the focus category of Panic buying/ Stockpiling/ Impulse buying/ Hoarding and the rest of the focus categories and their influencing factors. The rest of the focus categories' researches were conducted in various parts of the world while most of the panic buying behavior or impulse buying behavior articles are based on the United Kingdom or the United States.

Table 2. **Found documented consumer behaviors and their significantly influencing factors**

Reference	Target group(s)	Observed Influencing factor(s)	Documented Consumer behavior Outcome(s)
Ahmed et al., 2020	U.S. citizens	Fear of complete lockdown Peers buying Scarcity of foods & Essential items on shelves Limited supply of food & Essential goods Panic buying US stimulus checks	Impulse buying behavior
Dammeyer, 2020	Respondents from Denmark and the United Kingdom	Action (moderated by Gender, Social Dominance Orientation and Health Literacy) Panic (moderated by Level of education, Extraversion, Openness to experience)	Stockpiling behavior
Islam et al., 2021	Respondents from the U.S., India, China and Pakistan	Perceived arousal level (influenced by fear of scarcity among consumers)	Impulsive and obsessive buying behaviors
Kim et al., 2020	U.S. citizens	Perception of threat (moderated by the preciseness of the information)	Irrational behavior (Stockpiling)
Kirk et al., 2020	Based on other literatures	Perceived need for the threatened object Perceived threat Product scarcity	Consumer hoarding behavior
		Maintaining social connectedness Motivation in engaging DIY projects Response to the actions of brands	Consumer coping behavior
		Experiences gained during COVID-19	Consumer adapting behavior
Laato et al., 2020	Finnish respondents	Intention to self-isolate	Unusual purchase behavior (Panic buying)
Li et al., 2020	Based on China	Shortage probability Panic	Panic buying behavior

Naeem, 2020	Respondents from the United Kingdom	Uncertainties Perception of risks Institutional communication Global uncertainty proof through social media	Stockpiling behavior
Naeem 2021	UK consumers	Perceived fear of illness Fear of shortage of supply Fear of high prices Fear of COVID-19 Fear of empty shelves	Impulse buying behavior
Naeem et al., 2021	Participants from the UK	Social practice (includes materials and meanings) Uniformity (includes herding and competition) Stampeding (includes scarcity and anxious reaction)	Panic buying behavior
Prentice et al., 2020	Respondents from the United States and Australia	Government influence Media influence Peer influence	Panic buying behavior
Abdulmuhsin et al., 2021	Research included people in Turkey	The perception of COVID-19 Personal Control	Avoidance behavior
Akhtar et al., 2020	Citizens of China	Consumers' psychological reactance Trust on government	Choice freedom satisfaction Resistance to persuasion
Alhaimer, 2021	Citizens of Kuwait	Attitudes (moderated by negatively influencing convenience risk, positively influencing risk severity, risk susceptibility and risk formal penalties)	Online Behavior
Baicu et al., 2020	Respondents from Romania	Attitude towards internet and mobile banking (influenced by perception of COVID-19 pandemic, perceived utility of internet and mobile banking, ease of use of internet and mobile banking and trust in banks	Consumer behavior in retail banking
Campbell et al., 2020	Based on other literatures	Ontological insecurity (possibly influenced by socioeconomic status, racial and economic inequality, access to basic health care, shopping options and platforms, digital access, mortality salience, uncertainty, scarcity, loss of control etc.)	Consumer behavior on threat-induced disruption

Mehrolia et al., 2020	Participants from India	Frequency of purchase Perceived threat Perceived benefit Product involvement	Self-protective behavior
Milakovic, 2021	Respondents from the Republic of Croatia	Consumer vulnerability Consumer adaptability Consumer resilience	Consumer behavior in consumer satisfaction and repurchase
Minton et al., 2020	Participants from Amazon's Mechanical Turk	Pandemic concern Religiosity	Stability-seeking consumption
Oderkerken-Schröder et al., 2020	Active users of a companion robot	Lack of intimacy Lack of relationships Lack of interactions	Negative engagement behavior
Youn et al., 2021	Citizens of the U.S.	Beliefs (influenced by threat and coping appraisal); attitude, behavior control and subjective norm	Channel switching behavior

Source: developed systematic literature review for this research.

Impulse buying behavior & Panic buying behavior

By panic buying, we refer to the abnormal consumption behaviors of a group, usually caused by a certain natural disaster or social event (Li et al., 2020). During the pandemic, panic buying was also associated with impulsive consumption behavior (Li et al., 2020) or hoarding (Kirk et al., 2020). During the analysis of impulse behavior Ahmed et al., (2020) studied the factors of "fear of complete lockdown", "peers buying", "scarcity of food & essential items in shelves", "limited supply of food & essential goods", "panic buying" and "US stimulus checks", highlighting "fear of complete lockdown" and "panic buying" as essential factors. Their findings show that these are playing important role in the impulse buying behavior of US citizens. Excessive social media has an influence on impulse buying also in the U.S., China and Pakistan (Islam et al., 2021). Findings also show that misuse of news by social media can also generate abnormal purchase patterns (Ahmed et al. 2020; Naeem, 2020; Prentice et al., 2020). Naeem (2020), explains that messages from governments and health institutions, such as stay at home or sneeze in your elbow, also cause fear and uncertainty, resulting in stockpiling. In fact, Kim et al., (2020) and Naeem (2020), examines how the use of information can influence undesirable behavior, the article explains that the level of preciseness of information moderates the effect. According to Laato et al., (2020), self-isolation intention also plays a big role in unusual purchasing behavior.

Panic buying behavior can be also investigated in other ways. Dammeyer (2020), examined consumer behavior from two ways, action and panic. In action the researcher included gender, social dominance orientation and health literacy factors and in panic, level of education, extraversion and openness to experience were included. Kirk et al., (2020) called this behavior consumer hoarding behavior, but when defining it, got similar outcomes as stockpiling.

Coping Behavior

Kirk et al., (2020), mentions coping behavior when examining consumer behavior during COVID-19 pandemic. Coping behavior depends on how one can maintain social connectedness during possible lockdowns, how one can be motivated to engage in creative projects and at coping behavior the response to the actions of brands changes too (Kirk et al., 2020).

Adapting behavior

Many consumers adapt to changes, turning less re-active and more resilient over time (Kirk et al., 2020). The experiences gained during the COVID-19 are vital factors in adapting behavior, shows how people adapt to new circumstances caused by COVID-19 with the gained experiences.

Avoidance behavior

Avoidance behavior emerges during an anxious time of period while not accepting the core cause of anxiety (Abdulmuhsin et al., 2021). During COVID-19 the degree of taking measures, the level of anxiety and avoidance behaviors have increased. In the study of Abdulmuhsin et al., (2021) researchers were examining whether participants were thinking about COVID-19 as a conspiracy or not, among others.

Choice freedom satisfaction & Resistance to persuasion

Akhtar et al., (2020), employed psychological reactance theory in a conceptual framework to study consumers' psychological reactance to restrictions made during the COVID-19 pandemic. The article has two outcomes, choice freedom satisfaction and resistance to persuasion.

Online Behavior

The research of Alhaimer, (2021) investigates the impacts of risk factors triggered by panic and fear. Factors, such as needs of people and efforts related ones are neglected in the study because the researchers believe, they are dysfunctional during the pandemic. The research examines the compelling factors which influence attitudes and then online behavior.

Consumer behavior in retail banking

Baicu et al., (2020) made a research over consumer behavior in retail banking, using survey, filled out by Romanian citizens. In the survey the attitude towards internet and mobile banking was analyzed and

explains that the level of the mobile and internet banking services consumption increased during the COVID-19 pandemic.

Consumer behavior on threat-induced disruption

When one's normal and average life is disrupted, insecurity, uncertainty and anxiety is anticipated (Campbell et al., 2020). Campbell et al., (2020) is investigating the various external threat that may disrupt the individual's life.

Self-protective behavior

Self-protective behavior happens when one takes defensive actions to lower vulnerability to risk (Mehrolia et al., 2020). The level of self-protective behavior has also increased during COVID-19, anxiety can lead to the behavior (Mehrolia et al., 2020). In the study of Mehrolia et al., (2020) individuals' self-protecting behavior was measured via online food ordering research.

Consumer behavior in consumer satisfaction and repurchase

Milakovic (2020), explores consumer behavior during the pandemic using social cognitive theory. The study investigates the impacts of consumer resilience, vulnerability and adaptability. The article found these factors important for consumer satisfaction and repurchase during the COVID-19 pandemic.

Stability-seeking consumption

In a state of stability-seeking consumption, consumers make up their unfulfilled needs with purchases (Minton et al., 2020). The purpose of the study of Minton et al., 2020 is to seek answers for the relationship of religiosity and stability-seeking consumption. In their findings, it is shown that higher the level of religiosity, the higher the level of purchasing during uncertain times.

Negative engagement behavior

The article from Oderkerken-Schröder et al., (2020) defines that the lack of intimacy, the lack of relationships and the lack of interactions during the COVID-19 pandemic could result in negative engagement behavior.

Channel Switching Behavior

Fashion consumers' channel switching to online stores was studied by Youn et al., (2021) during the COVID-19 pandemic. Results show that consumers' beliefs and therefore intentions for switching were influenced by altruistic fear and perceived severity of COVID-19 and self-efficacy and response efficacy of channel switching.

2.3. Hypotheses development

During the literature review it was seen that fear had an impact on most of the documented consumer behavior switches during the COVID-19 pandemic. Ahmed et al., (2020) and Naeem (2020) highlights it as a key factor when analyzing consumer behavior during COVID-19. Islam et al., (2021),

Abdulmuhsin et al., (2021) and Naeem et al., (2021) defines that fear is induced by individuals' anxiety. Li et al., (2020), Youn et al., (2021) and Akhtar et al., (2020) mentions worry as a coefficient. Oderkerken-Schröder (2020), describes that the people who are perceiving loneliness, experiencing fear. Minton et al., (2020) and Campbell et al., (2020) suggests depression as a possible inducing factor for fear. Therefore, we have divided fear into four elements, depression, anxiety, worry and loneliness.

In the results of the literature review we can see that most of the documented consumer behaviors are related to panic buying (see Appendix A). People wanted to and still want to provide necessities for their families and it starts with providing the necessity goods. In this research we would like to see if the key elements of the most highlighted factor had an impact on purchasing necessity products among students. Therefore, the following hypotheses are proposed:

H1. Perceived depression has a positive and significant impact on the amount of shopping for necessity products during the COIVD-19 pandemic.

In this hypothesis we measure if perceived depression during COVID-19 had an influence on additional shopping among students. We take depression as the independent variable and additional shopping as the dependent variable.

H2. Perceived anxiety has a positive and significant impact on the amount of shopping for necessity products during the COIVD-19 pandemic.

In the next hypothesis above, we would like to see if perceived anxiety had an influence on additional shopping during the pandemic. We take anxiety as the independent variable and additional shopping as the dependent variable in our hypothesis.

H3. Perceived loneliness has a positive and significant impact on the amount of shopping for necessity products during the COIVD-19 pandemic.

In the hypothesis of perceived loneliness, we measure perceived loneliness as the independent variable and additional shopping as the dependent variable.

H4. Perceived worry has a positive and significant impact on the amount of shopping for necessity products during the COIVD-19 pandemic.

In our last hypothesis connected to additional shopping, we would like to see if perceived worry had a positive impact on additional shopping during the COVID-19 pandemic among students. For this hypothesis we used perceived worry as the independent variable and additional shopping as the dependent variable.

Different mental states can cause various consumer behavior changes. To see if there is a preference between brick-and-mortar or online shopping regarding necessity products, we have proposed the following hypotheses:

H5. Depression during COVID-19 has a positive and significant influence on preferring online shopping more than shopping in brick-and-mortar shops.

With the mentioned hypothesis above we would like to see if perceived depression had an influence on the preference of online shopping. We take depression as the independent variable and preference as the dependent variable.

H6. Anxiety during COVID-19 has a positive and significant influence on preferring online shopping more than shopping in brick-and-mortar shops.

Anxiety was mentioned many times in articles. With the hypothesis above we would like to see if perceived anxiety during the COVID-19 pandemic had an influence on shopping preference among students. We take anxiety as the independent variable and shopping preference as the dependent variable.

H7. Loneliness during COVID-19 has a positive and significant influence on preferring online shopping more than shopping in brick-and-mortar shops.

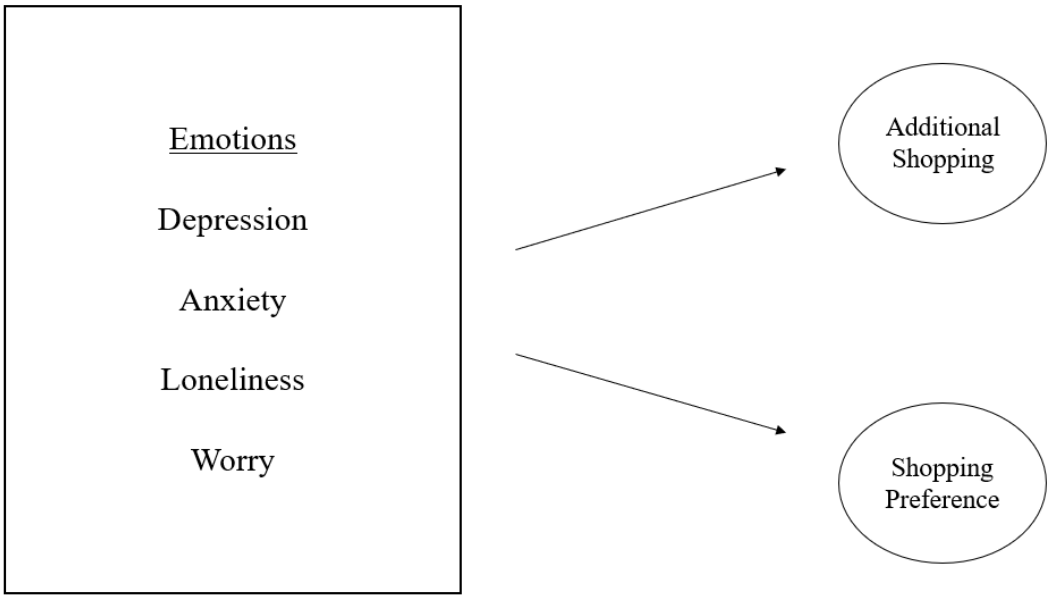
In the hypothesis of perceived loneliness, we would like to measure if perceived loneliness had an influence on shopping preference among students. We take perceived loneliness as the independent variable and shopping preference as the dependent variable.

H8. Worry during COVID-19 has a positive and significant influence on preferring online shopping more than shopping in brick-and-mortar shops.

In our last hypothesis we would like to see if worry had a positive influence on online shopping preference during the COVID-19 pandemic among students. Therefore, we take perceived worry as the independent variable and shopping preference as the dependent variable.

From the literature review we have taken fear as a crucial factor when it comes to analyze consumer behavior during the COVID-19 pandemic. That is why, it is important to include analyzing emotions that could induce fear. One can also see from the review that people's main concern was the necessity products considering how many articles were written about impulse or panic buying behavior. Therefore, a research is conducted on if the pandemic had an impact on students' mood, and if the state of emotions played a role in influencing shopping habits regarding necessity products.

Figure 1. **The model of the proposed hypotheses, taking emotions as the independent variables and additional shopping and shopping preference as the dependent variables**



Source: developed for this research.

Chapter 3 - Methodology

3.1. Literature review

To conduct the research a systematic literature review was structured to see the already documented consumer behavior changes. To guide the literature search and to set the protocols, systematic literature review (SLR) methodology guidelines by Kitchenham (2004) were used. Articles focused on consumer behavior during the COVID-19 pandemic, were selected and revised. This excessive systematic review is built on a conceptual framework dividing research papers first into focus categories, then emphasizing and comparing the various documented behavior outcomes of the articles. Since the target groups of the articles were from various lands, we have chosen the most mentioned influencing factor (fear) and divided it into its inducing emotions (mentioned by articles). Because it was a research gap, it was decided to see if students from the University of Twente perceived these emotions, and if so, did it influence them regarding purchasing necessity goods and do these emotions have a positive relationship on their preference between online and brick-and-mortar shops. To get answers, hypotheses were made.

3.2. Survey

An online survey was conducted to tests the hypotheses via Qualtrics. Ethical approval was requested for the online survey on the 21th of May, 2021 and was approved on the 11th of June, 2021. Ethical approval was given to conduct the study by the BMS Ethical Committee. The data was collected from 15 of June, 2021 to 20th of June, 2021. Due to corona measurements being still in force, the limited time and unfeasibility to give every participant the same chance to fill out the survey, convenience sampling method was used. This nonprobability sampling method justifies the characteristics of the participants only (Babbie, 2014). Therefore, the researcher of this study does know that the results of the conducted survey cannot overgeneralize the gotten results for the entire population (student of University of Twente). To ensure that the participant is from the right sample, in the introduction part of the survey respondents had to consent to voluntarily participate and to being part of the given sample (University of Twente student, have a valid student card, not an exchange student) before they could go further.

To reduce biases, anonymity was guaranteed and an e-mail address was given for further questions. The statements were clear and understandable. Leading questions were avoided. Demographics such as age, gender and students' faculty were built-in. Inclusion criteria was students from the University of Twente with a valid student card. Exclusion criteria was exchange students and respondents who did not fill in all the fields on the survey. The survey consisted of in total 15 statements such as "During the COVID-19 pandemic I have started to feel depressed." where students could answer on a 5-point Likert scale; ranging from (1) was "Strongly agree" and (5) was "Strongly disagree".

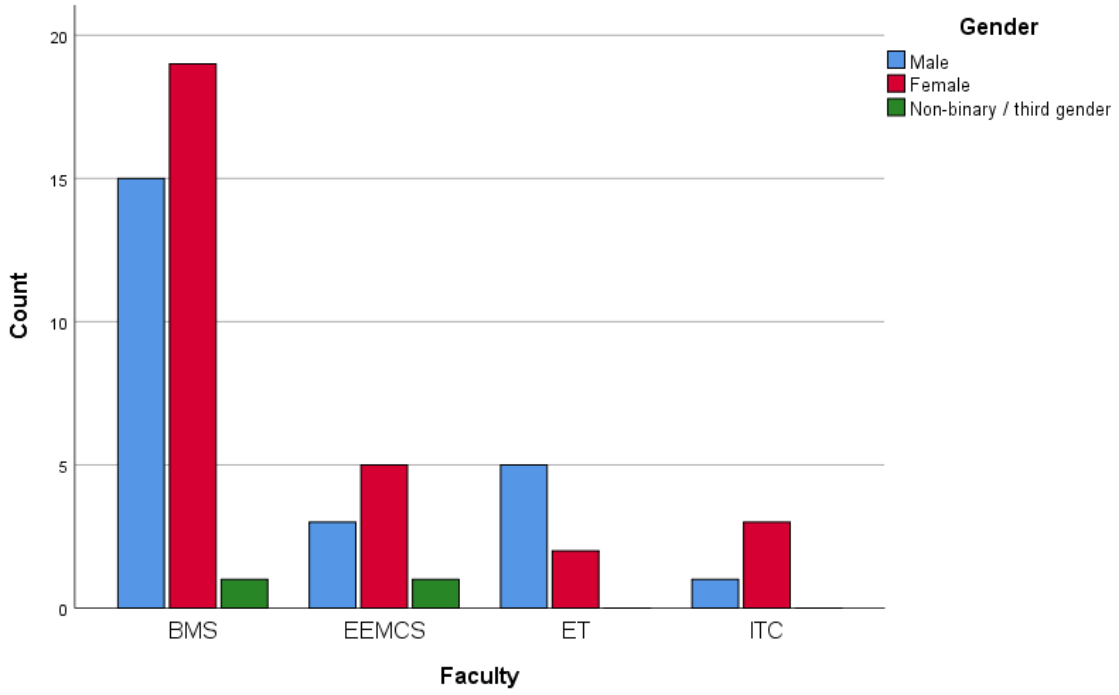
3.3. Analysis

To assess the appropriate tests, a normality test was conducted in the beginning of the analysis. The *p* value was below 0.05 in every scenario, therefore further measurements were carried out based on non-normal distribution. For correlation measurements, Spearman correlations were used. In a correlation the empirical relationship between two variables is measured (Babbie,2014). To illustrate and measure the difference between two independent groups, Mann-Whitney U tests were run. When the null hypothesis in the measurement was rejected, there was a difference between the two groups. To get a mathematical description of the relationship between two variables (Babbie, 2014), for example in what proportion each of the emotions explained additional shopping, Ordinal logistic regression was used.

Chapter 4 - Analysis of data

The data was gathered through convenience sampling on different social platforms such as Facebook and WhatsApp. The analysis of data was analyzed and carried out in SPSS Statistics software. In the online survey made in Qualtrics we got 67 responses and after excluding surveys that had missing fields, we got 55 valid responses in total. Respondents' age was ranging between 19 and 38, with an average of 24. Among the respondents, 24 declared himself as male, 29 female and 2 non-binary/ third gender. On the table below, we can see that most of the respondents were students from the faculty of Behavioural, Management and Social sciences (BMS), others were from Electrical Engineering, Mathematics and Computer Science (EEMCS), Engineering Technology (ET) and Geo-Information Science and Earth Observation (ITS). There were no respondents from the faculty of Science and Technology (TNW). Before measuring the relationship between the variables, we have tested the normality (see Appendix C). The *p*-value was lower than 0.05. Therefore, our data follow non-normal distribution.

Table 3. **The number of respondents divided into gender and faculty**



Source: developed for this research in SPSS.

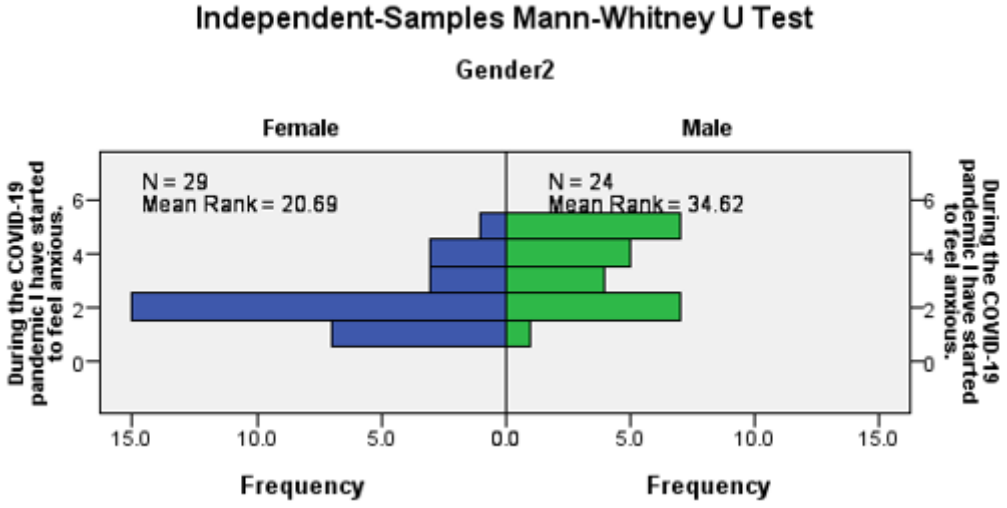
For a reliable survey, before sending out, the survey was tested by three people with different backgrounds from each other but has the same features as the sample to ensure that it was understandable. In the phase of the pre-test, participants were asked to interpret the questions. The interpretations were compared with the auditor's thoughts. **For reliable data analysis, we have run a Cronbach's alpha, a measure of internal consistency, measurement and got .93 as results**. Therefore, we can conclude that the survey and the data were reliable.

For face validity, people were asked to review the survey if it aligned with the intended topic. As for the content validity, the format and the font size of the survey was appropriate and the instructions of the survey was clear to the participants. The measured items have an alignment with the theoretical findings, depression, anxiety, loneliness and worry has an influence on additional shopping and the preference on online purchasing. Therefore, we can conclude that the survey and measured data has also a valid construct.

4.1. Results

The questioned students have answered that COVID-19 has impacted their mood on average of 1.75 (between "Strongly agree" and "Somewhat agree") with a .844 standard deviation. All of the measured emotions had a positive and significant correlation with the impacted mood. Among the questioned emotions only with anxiety and worry we found significant difference between male and female participants (the amount of non-binary/ third gender respondents was too small to take into account). While the number of responses showed a normal distribution among the male respondents, the females' responses were peaking at "Somewhat agree" (2). The same result was evaluated for worry. Female respondents chose "Somewhat agree" the most.

Table 4. **Frequency of answers to the statement of anxiety.**



Source: developed for this research in SPSS.

To test the relationship between the emotions and additional shopping and online preference, regression was used. Multiple linear regression assumes normal distribution in data. Because our data follow non-normal distribution, we used Ordinal logistic regression models (OLR) to determine the relationship between the dependent variables (DVs) such as additional shopping and online preference and the independent variables (IVs), such as depression, anxiety, worry and loneliness.

For our first regression model we took depression, anxiety, worry and loneliness as independent variables (IVs) and additional shopping as dependent variable (DV) and ran OLR model in SPSS. In the gotten results, The Model Fitting Information table indicates that the predictors have significant influence on our model (*p* value is lower than .05). Therefore, the independent variables have an influence on the dependent variable, according to our data.

Table 5. **Model Fitting Information, the results show a significant association between the variables**

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	145.957			
Final	125.558	20.399	5	.001

Link function: Logit.

Source: developed for this research in SPSS.

The Goodness-of-Fit model plays an important role in the model building procedure. The next table tells us if our model fits the data well or not. The null hypothesis indicates that the model is good. On the Goodness-of-Fit model our results (the *p* values) are higher than .05, therefore we do not reject the null hypothesis and our observed data are consistent with the fitted model.

Table 6. **Goodness-of-Fit model, the results indicates that the data are consistent with the fitted model**

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	135.718	147	.738
Deviance	109.498	147	.991

Link function: Logit.

Source: developed for this research in SPSS.

On Table 7. below, we see the results of the Ordinal logistic regression. Perceived depression (IV) has explained additional shopping (DV) in 16.6% (R^2=.166). However, the relationship between additional

shopping (DV) and perceived depression (IV) was not significant (p=.620, higher than .05). Therefore, our **first hypothesis (H1) "Perceived depression has a positive and significant impact on the amount of shopping for necessity products during the COIVD-19 pandemic." was rejected.**

In the next hypothesis, we wanted to see if perceived anxiety had an influence on additional shopping during the pandemic. We took anxiety as the independent variable (IV) and additional shopping as the dependent variable (DV) in our hypothesis. In the results, anxiety explains additional shopping in 29.2% (R^2=.292), but the relationship between anxiety and additional shopping is not significant *(*p=.389, higher than .05). To conclude, **(H2) hypothesis, "Perceived anxiety has a positive and significant impact on the amount of shopping for necessity products during the COIVD-19 pandemic." was rejected**.

Loneliness had a negative effect on additional shopping (R^2=-.351) and the relationship between loneliness (IV) and additional shopping (DV) was not significant (p=.185, higher than .05). Therefore, **(H3), "Perceived loneliness has a positive and significant impact on the amount of shopping for necessity products during the COIVD-19 pandemic." was rejected.**

In our last hypothesis connecting to additional shopping, we measured perceived worry as the independent variable (IV) and additional shopping as the dependent variable (DV). The relationship between worry and additional shopping was significant (p=.012, lower than .05) and worry has explained additional shopping in 84% (R^2=.84). Therefore, **(H4) "Perceived worry has a positive and significant impact on the amount of shopping for necessity products during the COIVD-19 pandemic." was accepted.**

Table 7. **Parameter Estimates, the core of the output, explaining the relationships between the variables**

Parameter Estimates

							95% Confidence Interval	
		Estimate	Std. Error	Wald	df	Sig.	Lower Bound	Upper Bound
Threshold	[Additionalshopping = 1]	-.385	.771	.249	1	.617	-1.897	1.126
	[Additionalshopping = 2]	1.477	.718	4.223	1	.040	.068	2.885
	[Additionalshopping = 3]	2.261	.749	9.109	1	.003	.793	3.729
	[Additionalshopping = 4]	3.820	.888	18.526	1	.000	2.081	5.560
Location	Depression	.166	.334	.246	1	.620	-.489	.821
	Anxiety	.292	.339	.741	1	.389	-.373	.957
	Worry	.840	.332	6.382	1	.012	.188	1.491
	Loneliness	-.351	.264	1.759	1	.185	-.869	.168
	[Gender2=1,00]	-.003	.625	.000	1	.997	-1.227	1.222
	[Gender2=2,00]	0[a]	.	.	0	.	.	.

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Source: developed for this research in SPSS.

In our second regression model we took depression, anxiety, worry and loneliness as independent variables (IVs) and online preference as the dependent variable (DV). In the gotten results, The Model Fitting Information table indicates that the independent variables have significant influence on our model (p=.002, lower than .05). Therefore, there is a significant association between the variables.

Table 8. **Model Fitting Information, the results show a significant association between the variables**

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	150.228			
Final	131.830	18.398	5	.002

Link function: Logit.

Source: developed for this research in SPSS.

The next table tells us if our model fits the data well or not. The null hypothesis indicates that the model is good. On the Goodness-of-Fit model our results (the *p* values) are higher than .05, therefore we do not reject the null hypothesis and our observed data are consistent with the fitted model.

Table 9. **Goodness-of-Fit model, the results indicates that the data are consistent with the fitted model**

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	135.863	147	.735
Deviance	116.006	147	.972

Link function: Logit.

Source: developed for this research in SPSS.

On Table 10 below, we see the results of the second OLR model. Perceived depression (IV) had a negative effect on online preference (DV) with a score of R^2=-.559 and the relationship between online preference (DV) and perceived depression (IV) was not significant (*p*=.102, higher than .05). Therefore, **(H5) "Depression during COVID-19 has a positive and significant influence on preferring online shopping more than shopping in brick-and-mortar shops" was rejected.**

In our next hypothesis we wanted to see if perceived anxiety during the COVID-19 pandemic had an influence on shopping preference among students. We took anxiety as the independent variable (IV)

and shopping preference as the dependent variable (DV). In the results, anxiety has a score of R^2=1.282 and the relationship between anxiety and online preference is significant *(p*=.001, lower than .05). To conclude, (**H6) "Anxiety during COVID-19 has a positive and significant influence on preferring online shopping more than shopping in brick-and-mortar shops" was accepted.**

Loneliness had a negative effect on online preference (R^2=-.193) and the relationship between loneliness (IV) and online preference (DV) was not significant (*p*=.450, higher than .05). Therefore, **(H7), "Loneliness during COVID-19 has a positive and significant influence on preferring online shopping more than shopping in brick-and-mortar shops" was rejected.**

In our last hypothesis connecting to online preference, we measured perceived worry as the independent variable (IV) and online preference as the dependent variable (DV). The relationship between worry and online preference was not significant (*p*=.682, higher than .05) and worry had a score of R^2=-.130 in explaining the relationship between the two variables. Therefore, **(H8) "Worry during COVID-19 has a positive and significant influence on preferring online shopping more than shopping in brick-and-mortar shops." was rejected.**

Table 10. **Parameter Estimates, the core of the output, explaining the relationships between the variables**

Parameter Estimates

							95% Confidence Interval	
		Estimate	Std. Error	Wald	df	Sig.	Lower Bound	Upper Bound
Threshold	[Onlinepreference = 1]	-.834	.711	1.375	1	.241	-2.229	.560
	[Onlinepreference = 2]	.253	.678	.139	1	.709	-1.076	1.582
	[Onlinepreference = 3]	1.224	.697	3.088	1	.079	-.141	2.589
	[Onlinepreference = 4]	2.528	.769	10.820	1	.001	1.022	4.034
Location	Depression	-.559	.342	2.669	1	.102	-1.229	.111
	Anxiety	1.282	.387	10.954	1	.001	.523	2.042
	Worry	-.130	.317	.168	1	.682	-.751	.491
	Loneliness	-.193	.256	.570	1	.450	-.694	.308
	[Gender2=1,00]	.143	.622	.053	1	.818	-1.076	1.363
	[Gender2=2,00]	0[a]	.	.	0	.	.	.

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Source: developed for this research in SPSS.

Chapter 5 - Conclusion and implications

5.1. Conclusion about the literature review and about the research

The systematic literature review focused on the already documented switches of consumer behavior and their influences. In the review most of the literatures were based on panic buying or impulse buying behavior. Interesting to see, that most of the literatures written on panic buying or impulse buying behaviors are based on UK or US respondents, while in other focus categories the geography of the participants was various. The most used influencing factor was fear. Fear might be the considered universal factor for all of the consumer behavior switches. In the research, not fear, but emotions which induced fear according to the articles were analyzed to see if they had an impact on students' consumer behavior.

In the beginning of the research, we have proposed three sub-questions. Our first sub-question was "Did depression, anxiety, worry or loneliness have an influence on students' mood?". People have answered "Somewhat agree" on average when they were asked if the pandemic has affected their mood. When the different emotions were explicitly stated such as "During the COVID-19 pandemic I have started to feel depressed", respondents have answered 2.67 to depression, 2.71 to anxiety, 2.35 to worry and 2.42 to loneliness on average on a 5-point Likert scale where (1) was "Strongly agree" and (5) was "Strongly disagree". It was interesting to see that while in most of the emotions male and female respondents had the same responses, females have perceived more anxiety and worry during the COVID-19 pandemic than males. In further studies, it can be also an interesting point to study. "Did the analyzed emotions influence students in additional purchasing regarding necessity goods?" – while in many articles all four of the documented emotions played a big role in influencing consumer behavior, our research on students showed that only worry played a significant role in additional shopping. Therefore, the answer would be yes, worry did influence additional necessity goods shopping and it was a relatively big influence. Lastly, for our last sub-question, "Did the ongoing pandemic change students' preference between online and brick-and-mortar shopping?" our results showed that only anxiety had a positive and significant correlation with the preference of online shopping. To conclude, when it comes to preferring online shops against brick-and-mortar shops, anxiety had an impact among the questioned students during the COVID-19 pandemic.

In total, we can conclude that surveyed students' consumer behavior was indeed impacted by various emotions which were affected by the COVID-19 pandemic. Perceived worry showed a significant correlation with additional shopping. It indicates that the research has aligned with the theoretical findings in the concept of worry had an influence on additional shopping. Our research also aligned with the theoretical findings when measuring online shopping preference, out of the four measured emotions anxiety had an influence on online shopping preference.

5.2. Implications

The research has confirmed how important it is to include internal factors in consumer behavior researches especially when it comes to a worldwide pandemic. The systematic literature review can be a great help in itself for theory and further researches. There are also implications for the practical use of this study. First of all, when it comes to additional shopping, our study can give useful guide to marketers for targeting their advertisements according to their goal, increasing influences on perceived worry to stimulate people on additional necessity goods shopping or to define their advertisements better to avoid additional necessity goods shopping and to avoid scarcity of products. Furthermore, from the study it was revealed that worry had an influence on additional necessity goods shopping, with further researches it has the possibility to have similar results on other goods categories, giving marketers a good concept for their business strategies. Media can use the information to define better their communication and avoid panic buying behavior. Second of all, IT marketers can also use anxiety as a factor on online shopping preference and target their business plans accordingly.

5.3. Limitations and further studies

There was limited number of research available for this study. Most of the studies on consumer behavior were based on stockpiling and the other articles were unique in their own categories. There are still lack of studies on varieties of consumer behavior during the COVID-19 pandemic. Access to data before COVID-19 analyzing students' consumer behavior was also limited. Another possible limitation was the fact of continuously changing news nowadays regarding the COVID-19 pandemic, which could have an effect on the respondents depending on the content of the news.

With the collection of influencing factors, one can see, what factors were explored till now and can easier see what should be explored more. This research focused only on one influencing factor (divided into four inducing emotions) but it is possible to explore more. The research can be projected to bigger populations. Due to the extensive literature review, one has many options to conduct a study on consumer behavior impacted by the COVID-19 pandemic. Also, possible research gaps were reported such as lack of articles on other countries than the documented ones, studies on consumer behavior on different age groups and more studies on consumer behavior switches during the COVID-19 pandemic. For researchers and for businessmen it is essential to study consumer behavior to adjust further studies or future business plans and to understand human reactions towards a pandemic regarding shopping. This conducted research can help in the understanding of the importance of internal factors and factors in total.

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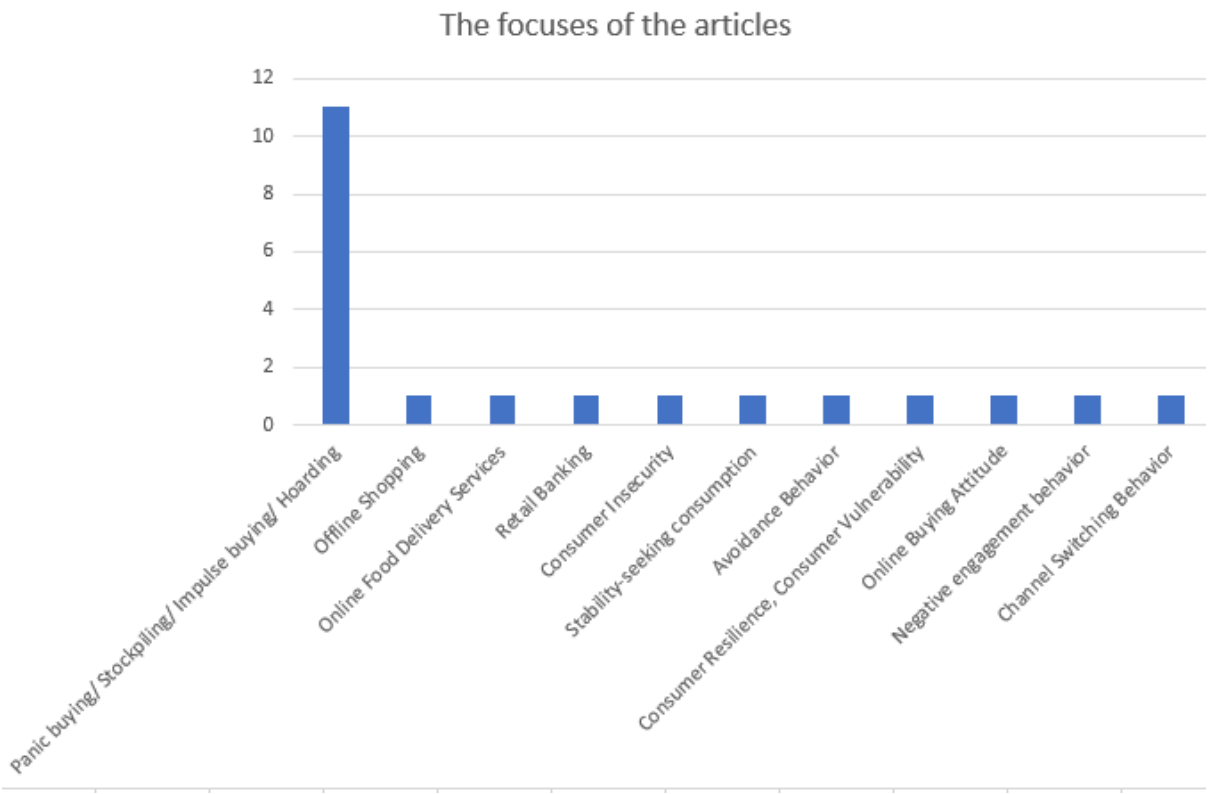
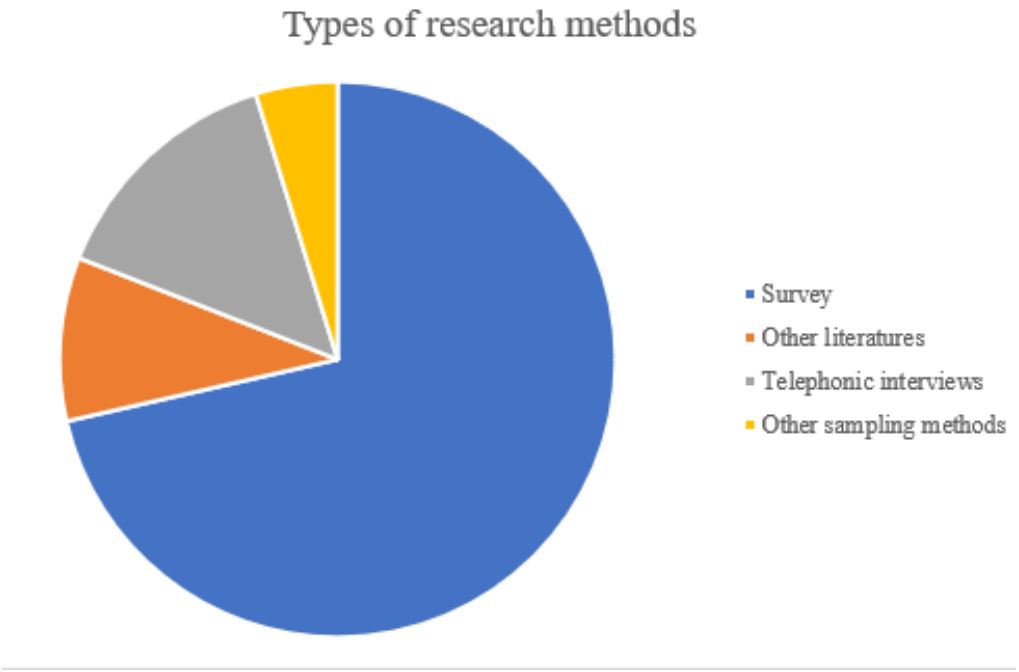
Appendices

Appendix A: The focuses of the articles. Categorized by key words and topics.



Appendix B: The types of research methods. Most of the researches were conducted via surveys



Appendix C: Normality tests of the variables

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
The COVID-19 pandemic had an impact on my mood.	.291	55	.000	.724	55	.000
During the COVID-19 pandemic I have started to feel depressed.	.299	55	.000	.852	55	.000
During the COVID-19 pandemic I have started to feel anxious.	.289	55	.000	.853	55	.000
During the COVID-19 pandemic I have started to feel worried.	.321	55	.000	.820	55	.000
During the COVID-19 pandemic I have started to feel lonely.	.285	55	.000	.843	55	.000
During the pandemic, my emotions have influenced the amount of purchased necessity goods.	.181	55	.000	.890	55	.000
During the pandemic I have purchased more necessity goods because I have felt depressed.	.271	55	.000	.817	55	.000
During the pandemic I have purchased more necessity goods because I have felt anxious.	.284	55	.000	.786	55	.000
During the pandemic I have purchased more necessity goods because I have felt lonely.	.274	55	.000	.794	55	.000
During the pandemic I have purchased more necessity goods because I have felt worried.	.270	55	.000	.801	55	.000
Because of the perceived emotions regarding the impacts of the pandemic I prefer purchasing necessity goods online more than in brick-and-mortar shops.	.195	55	.000	.881	55	.000

Because of perceived depression regarding the impacts of the pandemic I prefer purchasing necessity goods online more than in brick-and-mortar shops.	.240	55	.000	.820	55	.000
Because of the perceived anxiety regarding the impacts of the pandemic I prefer purchasing necessity goods online more than in brick-and-mortar shops.	.212	55	.000	.855	55	.000
Because of the perceived loneliness regarding the impacts of the pandemic I prefer purchasing necessity goods online more than in brick-and-mortar shops.	.270	55	.000	.801	55	.000
Because of the perceived worry regarding the impacts of the pandemic I prefer purchasing necessity goods online more than in brick-and-mortar shops.	.208	55	.000	.866	55	.000

a. Lilliefors Significance Correction

Appendix F: The used survey

Default Question Block

Q14 Dear Reader,

Welcome to my study on consumer behavior changes during the COVID-19 pandemic among students of the University of Twente. The study is done by Tímea Érdi-Krausz from the Faculty of Behavioral, Management and Social Sciences at the University of Twente. The study will take you approximately less than 5 minutes to complete.

The participation of the study is entirely voluntary and you can withdraw at any time. There are no wrong or right answers and your answers in this study will remain confidential. Please choose the answer option that you believe fits the best for you. There are no risks associated with this study. Your data will be treated confidentially. The provided data will be processed in an anonymized way and therefore will be decreasing the traceability of the respondent. Moreover, the data will be handled confidentially and anonymously and thus, will not be shared with any third parties.

If you have any questions regarding the study now or in the future, please do not hesitate to contact: t.v.erdi-krausz@student.utwente.nl

Please note that by going further in this study, you consent that you:

- voluntarily agree to participate in this study

- you are a student of University of Twente with a valid student ID

- you are not an exchange student

Thank you.

I consent to participate in this study

Q22 My age

Q21 My gender

Male

Female

Non-binary / third gender

Prefer not to say

Q23 My faculty

On March 11, 2020, the World Health Organization (WHO) declared the coronavirus, named COVID-19 a global pandemic. We are curious how it had an impact on you.

Q1 The COVID-19 pandemic had an impact on my mood.

Strongly agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Strongly disagree

Q2 During the COVID-19 pandemic I have started to feel depressed.

Strongly agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Strongly disagree

Q3 During the COVID-19 pandemic I have started to feel anxious.

Strongly agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Strongly disagree

Q4 During the COVID-19 pandemic I have started to feel worried.

Strongly agree

Somewhat agree

- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q5 During the COVID-19 pandemic I have started to feel lonely.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q6 During the pandemic, my emotions have influenced the amount of purchased necessity goods.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q7 During the pandemic I have purchased more necessity goods because I have felt depressed.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q8 During the pandemic I have purchased more necessity goods because I have felt anxious.

- Strongly agree
- Somewhat agree

- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q9 During the pandemic I have purchased more necessity goods because I have felt lonely.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q10 During the pandemic I have purchased more necessity goods because I have felt worried.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q11 Because of the perceived emotions regarding the impacts of the pandemic I prefer purchasing necessity goods online more than in brick-and-mortar shops.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q13 Because of perceived depression regarding the impacts of the pandemic I prefer purchasing necessity goods online more than in brick-and-mortar shops.

- Strongly agree
- Somewhat agree

- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q16 Because of the perceived anxiety regarding the impacts of the pandemic I prefer purchasing necessity goods online more than in brick-and-mortar shops.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q17 Because of the perceived loneliness regarding the impacts of the pandemic I prefer purchasing necessity goods online more than in brick-and-mortar shops.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q19 Because of the perceived worry regarding the impacts of the pandemic I prefer purchasing necessity goods online more than in brick-and-mortar shops.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Appendix E: The gotten raw data

StartDate	Q14	Q22	Q21	Q23	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q13	Q16	Q17	Q19
14/06/2021 09:44	1																		
15/06/2021 04:44	1																		
15/06/2021 04:51	1	21	2	BMS	1	2	2	2	1	2	2	4	1	4	4	4	4	4	4
15/06/2021 04:51	1	23	2	BMS	1	1	1	2	2	1	1	3	2	2	2	3	3	3	2
15/06/2021 04:53	1	29	2	BMS	2	4	4	2	2	2	4	4	2	2	4	4	4	4	2
15/06/2021 04:53	1	24	2	Bms	2	4	2	1	3	1	5	4	5	4	3	3	2	4	2
15/06/2021 04:51	1	25	2	IBS	1	2	2	2	3	2	4	4	4	4	1	2	1	3	1
15/06/2021 05:22	1	23	1	ET	1	2	1	1	2	2	3	2	4	3	4	5	5	5	5
15/06/2021 15:13	1	23	2	Behavioural management and social sciences	2	3	3	1	2	1	3	5	2	4	5	5	5	5	4
15/06/2021 15:35	1	24	2	EEMCS and BMS engineering	2	2	2	1	1	5	5	5	5	5	2	3	2	3	2
15/06/2021 15:37	1	23	2	technology	1	2	2	1	1	3	5	5	5	5	5	5	5	5	5
15/06/2021 15:40	1		1	ET	4	5	5	4	5	5	5	5	5	5	3	5	5	5	3
15/06/2021 15:40	1	21	1	EEMCS	1	2	2	3	2	4	4	4	4	4	2	2	2	2	2
15/06/2021 15:44	1	21	1	EEMCS	1	3	4	2	4	4	5	5	5	5		5	5	5	5
16/06/2021 02:24	1	28	2	Geo information															
16/06/2021 02:30	1	26	2	Urban planning	1	1	1	2	3	3	2	2	3	2	1	2	3	3	3
16/06/2021 04:43	1	27	2	NRM	1	1	1	2	3	2	3	1	3	4	3	4	2	5	3
16/06/2021 07:19	1	38	1	ITC	1	2	2	2	2	3	3	3	3	3	4	4	4	4	4
16/06/2021 11:23	1	29	1	BA	1	2	2	3	2	3	5	5	5	5	1	2	1	5	1
16/06/2021 12:53	1	24	1	BMS	2	2	2	2	2	4	5	5	5	5	4	4	2	5	2
16/06/2021 16:16	1	24	2	Bem	2	2	2	1	3	4	4	4	4	4	4	4	4	4	4
17/06/2021 12:24	1	24	1	Engineering Technology	1	5	5	5	5	2	5	5	5	5	5	5	5	5	5
17/06/2021 12:27	1	24	1	BmS	2	2	2	2	2	4	3	4	4	3	4	4	4	4	4
17/06/2021 13:19	1		2	Civil engineering	2	5	5	5	3	5	5	5	5	5	5	5	5	5	5
15/06/2021 15:59	1	29	2	ITC	2	1	2	1	1	2	2	3	1	4	4	2	2	5	2
17/06/2021 14:23	1	25	2	BMS	1	1	1	1	1	2	2	2	3	3	1	2	2	3	2
17/06/2021 14:33	1	24	2	EEMCS	1	4	4	2	2	4	5	5	5	5	2	5	5	4	4
17/06/2021 14:43	1	19	1	CE	2	3	4	4	2	5	5	5	5	5	4	5	5	4	2

17/06/2021 15:02	1	20	1	Civil Engineering	2	2	3	3	2	5	5	5	5	5	3	3	3	3	3
17/06/2021 15:06	1	20	1	Civil engineering	2	4	4	4	2	5	5	5	5	5	3	4	4	4	4
17/06/2021 15:21	1	20	2	BMS	1	1	2	1	1	2	2	4	2	4	2	2	4	4	4
17/06/2021 15:46	1	23	1	EEMCS	1	1	2	3	1	4	5	5	5	5	5	5	5	5	5
17/06/2021 18:16	1	19	3	eemcs	1	2	2	2	1	3	3	4	5	3	3	3	3	3	3
17/06/2021 23:04	1	26	2	EEMCS	2	4	2	2	5	3	5	5	5	5	1	5	4	5	2
18/06/2021 01:26	1	24	2	EEMCS	2	2	3	4	1	5	5	5	5	5	5	5	5	5	5
18/06/2021 01:32	1	23	1	EEMCS	3	5	5	5	5	4	5	5	5	5	3	5	5	5	5
18/06/2021 01:58	1	21	2	BMS	2	5	5	4	5	5	5	5	5	5	5	5	5	5	5
18/06/2021 02:01	1	20	2	EEMCS	1	1	1	1	1	3	3	3	3	3	4	4	4	4	4
18/06/2021 10:26	1	22	2	BMS	1	2	4	2	5	4	4	5	5	4	5	5	5	5	5
19/06/2021 04:17	1	22	1	BMS	2	5	5	4	4	5	5	5	5	5	5	5	5	5	5
19/06/2021 04:19	1	22	2	Bms	1	1	1	2	1	1	1	4	1	4	4	4	4	4	4
19/06/2021 04:21	1	28	1	Business Administration	2	2	3	1	2	2	3	3	3	3	3	3	2	2	4
19/06/2021 04:26	1	23	2	BMS	1	2	1	1	1	5	5	5	5	5	5	5	5	5	5
19/06/2021 04:22	1	25	1	BMS	2	4	4	4	2	4	3	5	3	5	3	5	2	5	2
19/06/2021 04:28	1	23	1	BMS	2	3	5	2	2	4	5	5	3	5	5	5	5	5	5
19/06/2021 04:30	1	26	1	Bms	2	3	3	3	4	2	5	5	5	5	5	5	5	5	5
19/06/2021 04:30	1	24	2	BMS	2	2	2	1	1	1	1	3	1	2	1	2	3	2	3
19/06/2021 04:40	1	25	1	Premaster Business Administration	2	2	5	5	3	5	5	5	5	5	5	5	5	5	5
19/06/2021 04:42	1	23	2	BMS	1	2	2	2	2	2	2	2	1	2	1	3	1	4	2
19/06/2021 04:51	1	23	1	BMS, BA	4	5	4	5	3	5	5	5	5	5	3	5	4	5	4
19/06/2021 04:55	1	31	3	Business administration	1	2	2	2	2	3	3	3	3	3	4	4	4	4	4
19/06/2021 04:54	1	22	1	BMS	2	4	4	2	4	2	4	4	4	4	4	4	4	4	4
19/06/2021 04:57	1		2	UT	2	3	3	2	3	2	5	5	5	5	5	5	5	5	2
19/06/2021 04:48	1	24	2	BMS	2	2	2	2	2	4	5	5	5	5	4	4	4	4	4
19/06/2021 05:07	1	24	1	BA	5	5	5	5	2	5	5	5	5	5	5	5	5	5	5
19/06/2021 05:14	1	23	2	BMS	2	4	3	2	5	2	3	3	3	3	2	3	2	5	3
19/06/2021 05:18	1	26	1	BMS	1	2	3	2	3	3	3	4	4	4	3	3	3	3	3
19/06/2021 05:42	1	22	2	BMS	4	4	2	2	4	5	5	5	5	5	1	5	2	5	2
19/06/2021 06:41	1	24	2	Behavioural, Management and	2	4	2	2	4	4	4	4	4	4	2	2	2	2	2

19/06/2021 07:04	1	24	1	social science Behavioural Sciences	3	4	5	2	2	5	5	5	5	5	5	5	5	5	5
19/06/2021 08:57	1	22	1	MBA	2	2	2	2	2	3	4	4	4	4	3	3	3	3	3
19/06/2021 08:59	1	24	2	BMS	2	4	2	2	2	4	4	4	4	4	2	4	2	4	2
17/06/2021 13:26	1	21	1	ET															
19/06/2021 07:20	1	24	2	BMS															
19/06/2021 05:52	1	25	1	BMS															
19/06/2021 05:37	1																		
19/06/2021 06:45	1	26	1	Bms															