Health-Seeking Consumer: Cognitive Dissonance Encountered After Panic Buying

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Abstract

This study aims to specify whether the "health-seeking" consumers' information overload and cyberchondria that arise as a result of the information they acquire, cause panic buying and whether this buying can later cause cognitive dissonance. The study sample, for which an online survey method was preferred, consisted of consumers aged 18 years and older who stated that they made panic buying due to health concerns. Structural equation modeling and mediation analyses were utilized to analyze the data in the study, which included 400 participants. The findings showed that seeking health information has an effect on information overload; both information and communication overload have an effect on cyberchondria; cyberchondria has an effect on panic buying and cognitive dissonance dimensions. Panic buying has an effect on cognitive dissonance dimensions and has a mediating effect between cyberchondria and cognitive dissonance dimensions. People's health concerns are continuous, which is, in turn, lead to a cycle of seeking information. With this foresight, the research investigates consumers' panic buying. However, the proposed research model does not end with panic buying. Within the scope of the research, the cognitive dissonance, as a consumer reaction that may occur after panic buying, will be discussed and interpreted. It is thought that not ending the research model with panic buying behavior and examining the cognitive dissonance that expresses consumer inconstancy after this buying will contribute to the literature.

Keywords: Health-Related Information, Overload, Cyberchondria, Panic Buying, Cognitive Dissonance

Sağlık Arayışındaki Tüketici: Panik Satın Alımlar Sonrası Yaşanan Bilişsel Uyumsuzluk

Öz

Bu çalışma "sağlık arayışındaki" tüketicilerin, aşırı bilgi yükünün ve edindikleri bilgilerin bir sonucu olarak ortaya çıkan siberkondrinin panik satın alımları ve bu satın alımların ise sonrasında bilişsel uyumsuzluğu ortaya çıkarıp çıkarmadığını belirlemeyi amaçlamaktadır. Çevrimiçi anket yönteminin tercih edildiği araştırmanın örneklemini sağlıklarına ilişkin kaygıları nedeniyle panik satın alımlar yaptığını ifade eden 18 yaş ve üzeri tüketiciler oluşturmuştur. 400 katılımcının yer aldığı araştırmada verilerin analizinde yapısal eşitlik modellemesi ve aracılık analizlerinden yararlanılmıştır. Bulgular, sağlık bilgisi arayışının aşırı bilgi yüklemesi üzerinde, hem bilgi hem de iletişim aşırı yüklemesinin siberkondri üzerinde, siberkondrinin panik satın alma ve bilişsel uyumsuzluk boyutları üzerinde etkili olduğunu göstermiştir. Panik satın alma, bilişsel uyumsuzluk boyutları üzerinde etkili, siberkondri ve bilişsel uyumsuzluk boyutları arasında aracılık etkisine sahiptir. Bireylerin sağlıklarına ilişkin kaygıları süreklilik arz etmektedir. Bu ise bir döngü şeklinde bilgi arayışına yol açmaktadır. Bu öngörüyle araştırma, tüketicilerin panik satın almalarını araştırmaktadır. Ancak, önerilen araştırma modeli panik satın alma ile son bulmamaktadır. Araştırma kapsamında panik satın alımlar sonrasında ortaya çıkabilecek bir tüketici tepkisi olarak bilişsel çelişki değişkeni tartışılacak ve yorumlanacaktır. Araştırma modelinin panik satın alma davranışı ile sonlandırılmaması ve bu satın almalar sonrasındaki tüketici kararsızlığını ifade eden bilişsel çelişkilerin de irdelenmesinin literatüre katkı sağlayacağı düşünülmektedir.

Anahtar Kelimeler: Sağlıkla İlgili Bilgi, Aşırı Yük, Siberkondri, Panik Satın Alma, Bilişsel Uyumsuzluk

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Introduction

Nowadays, particularly with the effect of COVID-19, consumers' health-related searches have increased on the internet. This process has been accompanied by consumers being heavily confronted with an excessive amount of information (Bermes, 2021). One of the adverse consequences of combing through multiple sources of information is information overload (Soroya, Farooq, Mahmood, Isoaho & Zara, 2021). This term means the acquisition of a large amount of information (Cited by, Eppler & Mengis, 2004). Almost everyone experiences some degree of health anxiety. However, excessive health anxiety can harm the individual (Asmundson & Taylor, 2020). Elevated levels of anxiety lead to continuous and repetitive information searches on the internet (Starcevic & Berle, 2015). Too much information and the lack of reliable sources for this information can increase the risk of online searches for health information turning into cyberchondria by causing information overload in the individual (Laato, Islam, Farooq, & Dhir, 2020a). This may have some psychological consequences. It was assumed in this study that one of these psychological consequences is panic buying. Panic buying is a safety-seeking behavior among people (Jungmann & Witthöft, 2020). This is due to panic buys being a highly preferred type of purchase, particularly at the breaking points in consumers' lives. During such periods in their lives, consumers have used their purchases as a defense mechanism, and since this pandemic period has increased their levels of anxiety, consumers have been more likely to buy products they do not need or buy much more than they will use (Islam et al., 2021). The important matter at this stage is that the individual panic buys in line with negative emotions such as anxiety. Therefore, consumer behavior after panic buying should also be investigated. In this respect, the cognitive dissonance variable, which explains post-purchase conflicts, is considered as the output variable of the research model. Cognitive dissonance arises when an individual holds two different cognitions that are incompatible with each other. This situation creates discomfort in the consumer (Festinger, 1957; Wang, He, Xu, & Zhang 2020).

A person's search and concern for their health is a continuous concept and the perceived risk associated with health has always been high. Because no matter the name and source of the problems related to health, the person will continue their search on their disease and/or doubts regardless of time, place, or situation. Therefore, this study discussed the online consumer search for health-related information, which was led by the internet and social media tools, as the main media from which this consumer group obtains information. These channels were preferred as they are areas where there is a large amount of information flow, which is

constantly updated, and therefore false and fake information spreads as rapidly as that which is accurate and reliable. One of the topics discussed is whether the online consumer search for health-related information risks information overload, both in terms of information and communication, due to the reasons mentioned and being influenced by circulating information. At this stage, based on the relevant assumption, another research question is whether these searches lead to "panic buying" with increased levels of anxiety in the individual. Upon examination of the literature, it can be seen that studies are available on the research variables mentioned. However, the point that differentiates the present research from similar research is that the proposed research model does not end with panic buying. The focus is on the response of the consumer after this buying. Throughout the COVID-19 pandemic, many consumers experienced panic buying by turning to basic product groups, purchasing products uncontrollably and in large quantities, and being introduced to new products - that they were uncertain about - in line with their searches. But what about afterward? At this point, that is the question that makes the study valuable. Panic buying is a concept that has continuity with searches for health-related information. Because unpredictable situations will always be present in people's lives, the responses after this buying should be understood. In this respect, it is thought that useful suggestions can be presented to both consumers and businesses for understanding the new consumer profile, as well as contributing to future studies.

1. Conceptual Background

1.1. Health-Related Information

Health information-seeking behavior is the use of various actions and methods with the purpose of obtaining health-related information (Mills & Todorova, 2016). Health-related internet use has two dimensions. The first is to seek health and medical information, and the other is the use of the internet to convey health-related problems (Ahadzadeh, Sharif, Ong, & Khong, 2015). According to Cline and Haynes (2001), users not only regard the internet as an important health information source but also use it to communicate in the healthcare field. Farooq, Laato, Islam, and Isoaho (2021)'s study revealed that social media and other internet sources and websites have created information overload during COVID-19. Kalantari, Valizadeh-Haghi, Shahbodaghi, and Zayeri (2021) declared that online health-related information searching can help individuals take decisions about their health and medicine, and control and manage their illness, but it may also lead to health anxiety and cyberchondria.

For existing research, the rapid increase in communication between social media networks and individuals has made the information provided by the internet almost as important as being examined by a doctor. Specific to the COVID-19 period, when anxiety and uncertainties concerning the health of individuals are at an all-time high, factors such as quarantine periods and the uncertainties of this disease have both increased the perceived health risk and made individuals use online channels and platforms as their main source of gathering the desired reliable information. Consumers with a health risk perceived as high try to access information from every source and will reach a certain satisfaction at some point. Their endless and repeated searches mean that the reliability of the information cannot be established, and they will communicate with other individuals or experts through social media. This will create both an information and communication overload on the individual. Thus, the following hypotheses have been formulated by this assumption accordingly.

- H1: Health-related information has an effect on consumers' overload.
  - H1a: Consumers' health information-seeking has an effect on consumers' information overload.
  - H1b: Consumers' internet use for communication has an effect on consumers' communication overload.

1.2. Overload

According to Eppler and Mengis (2004), information overload is a condition in which information seekers face too much information, which exceeds their information processing capacity, leading to the weakening of the decision-making mechanism by factors such as stress and anxiety. The popularity of online channels and platforms, too much information present on these online channels and platforms, the spread of social networks, rapid changes in the technological features of social network sites (SNS) (Lee, Son & Kim, 2016), as well as continuous online interaction with other users (Matthes, Karsay, Schmuck & Stevic, 2020) have led to overload and its different forms. For instance, there are three dimensions proposed by Karr-Wisniewski and Lu (2010). According to the researchers, the combination of these three dimensions constitutes the general term of "technology overload." These dimensions are:

Information overload arising when the information exceeds the information seekers capacity; communication overload arising from the interruption of the information seekers by various communication media; system feature overload arising from an increase in usage

complexity with the addition of new features to technological resources (Karr-Wisniewski & Lu, 2010, p. 1063; Whelan, Islam & Brooks, 2017, pp. 1-2).

Laato et al. (2020a) revealed that online information source exposure causes information overload and cyberchondria in their study examining unusual consumer behaviors throughout the COVID-19 pandemic. Besides this, information overload is a strong predictor of cyberchondria. Again, Laato, Islam, Islam, and Whelan (2020b) proposed a research model that explains why unconfirmed COVID-19 information is shared via social media. Findings obtained in line with the proposed model support the hypothesis of the present study since the researchers concluded that information overload affects cyberchondria related to COVID-19.

Consumers, who search for information on online channels for the purposes of "health information-seeking" and "internet use for communication" may reach "information fullness" after a certain point. Information and communication overload may cause the consumer to be dissatisfied with, and suspicious of, the information obtained and thus may cause the level of anxiety to increase. The following hypotheses have been developed by this assumption accordingly.

- H2: Consumers' overload has an effect on cyberchondria.
    - H2a: Consumers' information overload has an effect on consumers' cyberchondria.
    - H2b: Consumers' communication overload has an effect on consumers' cyberchondria.

1.3. Cyberchondria

Cyberchondria is making excessive or repeated online searches for health-related information associated with an individual's increasing level of health anxiety or stress (Starcevic, Schimmenti, Billieux & Berle, 2020, p. 53). Cyberchondria derives directly from the term "hypochondriasis," and this term refers to an intense level of health anxiety (Starcevic & Berle, 2015). Starcevic, Fallon, Uhlenhuth, and Pathak (1994) stated in their study about this term that it can lead to panic disorder. Individuals with health anxiety conduct online health research to reduce their anxiety and distress levels. The continuation and increase in their anxiety will lead to the emergence of safety behaviors (Brown, Skelly & Chew- Graham, 2020). Jungmann and Witthöft (2020) suggested that cyberchondria is associated with the current pandemic virus anxiety, and they determined that it acts as a moderator in the relationship with general health anxiety. It appeared to Upadhyay and Pandey (2020) that

cyberchondria is related to health anxiety, risky internet use, obsessive-compulsive disorder, general health suggestions relating to functional defacement, and changed medical care usage. Lastly, Alflayyeh (2020) determined that the pandemic situation variable is an antecedent of online information source exposure. Besides this, online information source exposure is effective on cyberchondria and perceived severity. The intention to make unusual purchases was the output variable for Alflayyeh's (2020) study. In line with this, perceived severity and cyberchondria increase the need to make unusual purchases. The following hypotheses have been developed by this assumption accordingly.

- H3: Consumers' cyberchondria has an effect on consumers' panic buying.
- H4: Consumers' cyberchondria has an effect on consumers' cognitive dissonance.
    - H4a: Consumers' cyberchondria has an effect on the "emotional" dimension.
    - H4b: Consumers' cyberchondria has an effect on the "wisdom of purchase" dimension.
    - H4c: Consumers' cyberchondria has an effect on the "concern over deal" dimension.

1.4. Panic Buying

Panic buying refers to the sudden increases in purchasing of one or more basic product/product groups beyond regular needs. Panic buying is often triggered by crises such as disasters or epidemics which result in an imbalance between supply and demand (Arafat et al., 2020, p. 100). In other words, it explains consumers' reactions to disasters. In this response, consumers make purchases after a disaster or by perceiving a situation as a disaster (Islam et al., 2021). Since the perceived threat is high, the tendency to buy is also extreme in panic buying. Herein, consumers tend to buy more than usual (Lins & Aquino, 2020). In addition to this, consumers' high anxiety lines up with a sense of urgency, so they want to secure coveted items. Panic buying is a sporadic and goal-directed activity in which individuals tend to favor staple commodities. This situation is a co-occurrence with hoarding behavior and compulsive buying (Taylor, 2021). Throughout the COVID-19 pandemic, panic buying has been a common purchasing behavior and has been experienced by people in many countries. In this direction, some researchers have shared the results of their panic buying research. According to Kuruppu and de Zoysa (2020), panic buying is irrational and unusual consumer behavior; Wang and Na (2020) revealed that consumers who are in a bad mood tend to buy more, and they are also more likely to hoard food. At the same time, researchers also stated that the panic buying motives stemmed from the herd and the desire to effect control during the COVID-19 process.

According to the research results, panic buying is supported by bad moods and herd psychology. Sim, Chua, Vieta, and Fernandez (2020) mentioned that there may be several reasons for panic buying behavior. The first of these is the conflict between the individual's desire to maintain their routine and the uncertainty of the pandemic process. Second, it is a way of coping with a stressful and unprecedented situation in which the individual faces lockdowns with their very survival at stake. Third, the individual develops a reaction to the loss of control of the future and social pressures by complying with similar behavior.

Within the scope of the study, it is thought that consumers feel conflicted after their panic buying, which was based on basic emotions such as anxiety, uncertainty, and fear. In other words, the consumer is not completely sure of the purchases or at least has strong feelings that they cannot come to a conclusion based on the information they have, which may later lead to cognitive dissonance in the consumer. Thus, the following hypotheses have been developed.

- H5: Consumers' panic buying has an effect on consumers' cognitive dissonance.
  - H5a: Consumers' panic buying has an effect on the "emotional" dimension.
  - H5b: Consumers' panic buying has an effect on the "wisdom of purchase" dimension.
  - H5c: Consumers' panic buying has an effect on the "concern over deal" dimension.
- H6: Consumers' panic buying has a mediating effect between consumers' cyberchondria and consumers' cognitive dissonance.
  - H6a: Consumers' panic buying has a mediating effect between consumers' cyberchondria and the "emotional" dimension.
  - H6b: Consumers' panic buying has a mediating effect between consumers' cyberchondria and the "wisdom of purchase" dimension.
  - H6c: Consumers' panic buying has a mediating effect between consumers' cyberchondria and the "concern over deal" dimension.

1.5. Cognitive Dissonance

The Cognitive Dissonance Theory, which was developed by Festinger (1957), explains one or more inconsistencies leading to cognitive dissonance. Festinger (1957) also explains the concept as the dissonance between two alternatives, each of which has positive and negative aspects, which occurs after the decision. According to Chakraborty, Kumar, Upadhyay, and Dwivedi (2020), cognitive dissonance is the individual's perceived inconsistency towards an

object or situation. Cognitive dissonance can be experienced in different ways at different stages of the decision-making process (Soutar & Sweeney, 2003) and it has been studied at pre-purchase as well as post-purchase. The current study focuses on post-purchase cognitive dissonance after panic buying. Post-purchase cognitive dissonance is the outcome of purchasing unknown products and afterward doubting the purchase decision (Sweeney, Hausknecht & Soutar, 2000). This generally occurs when there is dissonance between the chosen alternatives' negative traits and the unchosen alternatives' positive traits (Pólya, Kengyel & Budai, 2021). Sweeney et al. (2000, p. 380) stated that post-purchase cognitive dissonance falls into three main dimensions. These dimensions are as follows:

Wisdom of purchase: An individual's realization after the purchase that they do not need the product or did not select the appropriate product. Emotional dissonance: An individual's psychological discomfort after the purchase decision. Concern over deal: An individual's dissonance regarding sales staff. The consumer experiences cognitive dissonance caused by a change in attitude under the influence of sales staff.

Throughout the pandemic, consumers have faced many questions and concerns. Previous empirical findings suggest that the uncertainty associated with COVID-19 causes cognitive dissonance among consumers (Li, Meng, Song, Zheng & Zhu, 2020; Song, Yao & Wen, 2021). To resolve cognitive dissonance, individuals have either voluntarily or compulsorily embraced social distancing and have seen virtual networks as a solution to this dissonance in combating stress due to isolation (Chakraborty et al., 2020). In this period, individuals exposed to large amounts of discrepant information experienced cognitive dissonance (Singh, 2020). Song et al. (2021) discussed the information avoidance behaviors of consumers in the COVID-19 pandemic process. The findings show that information avoidance is negatively related to preventive behaviors. Thus, inconsistencies in the quality of information can lead to conflicting cognitions. As a result of their study, Fischer et al. (2020) suggested that interventions such as elaboration of possible consequences during the COVID-19 pandemic, induction of cognitive dissonance, addressing next of kin and others, and receiving advice following severity judgments improve individuals' health-preserving attitudes. Finally, in a study conducted with semi-structured interviews, Sharma et al. (2020) stated that the flow of information during COVID-19 leads to anxiety, caution, and knowledge while misinfodemics cause panic, distrust, and confusion. The research model, which is developed in line with the theoretical explanations above, is shown in Figure 1.

Figure 1: Research Model
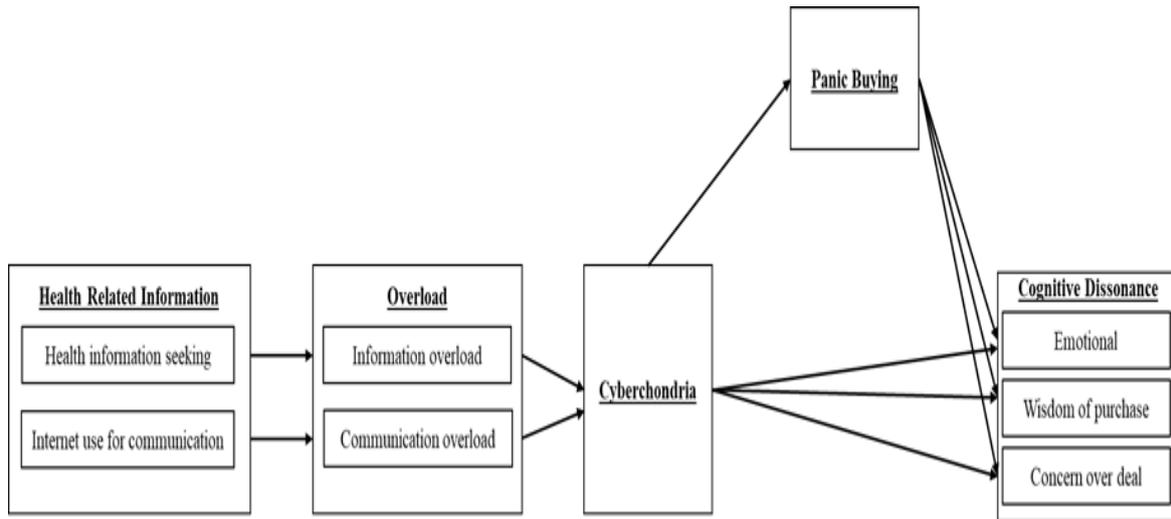
2. Methodology

2.1. Sampling

The main population consisted of consumers aged 18 and above and looked at panic buying as a consequence of health anxiety in Turkey. Before starting the study, ethics committee approval was received from Atatürk University Department of Social and Human Sciences Ethics Committee (Date: 14.12.2020, Decision Number: 105). Within the scope of the study, in which the convenience sampling method was preferred. Online survey method was applied to acquire primary data. According to the $n=\frac{\pi(1-\pi)}{(e/Z)^{2}}$ formulation (Kurtuluş, 2010, p. 67), the sample size was calculated as minimum n=384 at a 95% confidence interval and 5% margin of error.

Panic buying caused by consumers' health anxiety is a filter for continuing the survey. The data was collected through the research company between 23.12.2020-08.01.2021 dates and reached 1841 participants. But with the elimination of the surveys of participants who answered "no" to the filter question, and those incomplete and incorrect, 400 questionnaires were evaluated.

2.2. Data Collection Method, Measures, and Procedures

The survey form consists of three main groups. Firstly, as a filter question, the participants were asked, "Have you made panic buying in product/product groups related to your health?".

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The second group was about the research variables, and the scales in the literature were used for these groups. The scales included in the study were adapted within the scope of the research by using the following studies and presented in Table 1.

Table 1: Research Scales

Scales and dimensions	Adapted From	Total Item
Health-related information • Health information-seeking (11 items) • Internet use for communication (5 items)	Ahadzadeh et al. (2015)	16
Overload • Information overload (3 items) • Communication overload (4 items)	Karr-Wisniewski & Lu's (2010)	7
Cyberchondria	Jokić-Begić, Mikac, Čuržik, & Jokić (2019)	4
Panic buying	Lins & Aquino (2020)	7
Cognitive dissonance • Emotional (15 items) • Wisdom of purchase (4 items) • Concern over deal (3 items)	Sweeney et al. (2000)	22

The last group was created to determine the demographic characteristics of the participants.

The Likert-type scale was used as the measuring method (5 = totally agree to 1 = strongly disagree). In the analyses of the data, SPSS and AMOS programs were used. Descriptive statistics, exploratory factor analysis, Harman's single-factor test, confirmatory factor analysis, structural equation modeling, and mediation tests were utilized as the analyses method.

3. Results

3.1. Demographic Statistics

Participants are generally, female (61.5%), aged between 29 to 39 (37.0%), married (60.0%), bachelor's degree level (67.8%), private sector employee (37.3%), and with a 2001-4000 Turkish lira monthly income.

3.2. Reliability Analysis Results

For internal consistency, reliability analysis was applied. A Cronbach alpha value (α) of > 0.70 indicates that the scale has adequate internal consistency (Cortina, 1993). According to reliability analysis results, health-related information was $\alpha=0.909$; overload was $\alpha=0.802$, and one item was eliminated. Cyberchondria was $\alpha=0.854$ and one item was eliminated. Panic buying was $\alpha=0.930$. Cognitive dissonance was $\alpha=0.968$. Therefore, the research scales have adequate internal consistency.

3.3. Exploratory Factor Analysis (EFA) and Harman's Single-Factor Analysis Results

By the Exploratory Factor Analysis (EFA) application, the aim was to determine whether the research scales had a similar dimensional distribution (Fabrigar, Wegener, MacCallum & Strahan 1999). Besides this, Harman's single-factor analysis was used to determine whether all items are loaded under a single factor for single dimension research variables (Eichhorn, 2014). When taking sample size into consideration, factor loads were taken as 0.40 and above. EFA results are presented in Table 2.

Table 2: EFA Results

	Factor loading (Range from)	% Variance	Eigenvalues
Health-related information			
Factor 1: Health information-seeking (α=0.899)	0.798-0.564	35.875	5.022
Factor 2: Internet use for communication (α=0.835)	0.861-0.718	21.790	3.051
Overload			
Factor 1: Communication overload (α=0.770)	0.834-0.779	40.632	2.032
Factor 2: Information overload (α=0.804)	0.898-0.873	34.107	1.075
Cognitive dissonance			
Factor 1: Emotional (α=0.967)	0.830-0.659	42.321	9.311
Factor 2: Wisdom of purchase (α=0.927)	0.853-0.783	20.968	4.613

After the EFA, the original factor structure has been preserved for both health-related information, overload, and cognitive dissonance. Health-related information showed 2 dimensions (explained as 57.665% of the total variance and two items were removed), overload showed 2 dimensions (explained as 74.739% of the total variance and one item was removed) and cognitive dissonance showed 3 dimensions (explained as 74.031% of the total variance and no item was removed) of factor distribution. Harman's single-factor analysis results used for one-dimensional structures are presented in Table 3.

Table 3: Harman's Single-Factor Analysis

	Factor loading (Range From)	% Variance	Eigenvalues
Cyberchondria (α=0.854)	0.871-0.775	66.467	1.994
Panic buying (α=0.930)	0.919-0.670	66.367	4.646

According to Harman's single-factor analysis results, the original single-factor structure has been preserved for both cyberchondria and panic buying. Cyberchondria from one-dimensional structures has been explained as 66.467% total variance. Meanwhile, panic buying has been explained as 66.367% total variance. No item was eliminated from either dimension.

3.4. Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) was used for construct validation. In the direction of CFA results, convergent and discriminant validity can be interpreted (Brown & Moore, 2012). CFA results are presented in Table 4.

It was ascertained that the goodness of fit indices for the scales were not at an acceptable level in the course of this analysis, and the suggested modifications have been made accordingly. 5 items in health information-seeking, 3 items in panic buying, 8 items in emotional dimension, and 2 items in the wisdom of purchase, which were not statistically suitable were eliminated from the analysis. After the modifications, acceptable fit indices have been reached. The values are as follows: X^2/df: 1.530, GFI: 0.904, AGFI: 0.883, RMR: 0.040, RMSEA: 0.036, CFI: 0.971, NNFI: 0.966, NFI: 0.921.

In addition to this, generally in terms of the internal consistency α >0.70 (Nunnally, 1978); in terms of convergent validity CR > 0.70, and AVE > 0.50 (Hair, Black, Babin & Anderson, 2014) and in terms of discriminant validity AVE values of research constructs are higher than these constructs squared correlations (Fornell & Larcker, 1981; Henseler, 2017).

According to the results, it can be said that the constructs generally have internal consistency, and convergent and discriminant validity.

Table 4: Reliability, Validity and Correlations of Constructs

	α	CR	AVE	MSV	MaxR(H)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Wisdom of purchase (1)	0.930	0.930	0.870	0.672	0.932	**0.933[1]**								
Health information-seeking (2)	0.782	0.795	0.437	0.413	0.799	0.062[2]	**0.661**							
Internet use for communication (3)	0.835	0.840	0.570	0.413	0.862	0.009	0.643	**0.755**						
Communication overload (4)	0.770	0.774	0.534	0.349	0.779	0.425	-0.061	-0.058	**0.731**					
Information overload (5)	0.804	0.808	0.679	0.371	0.826	0.285	-0.152	-0.194	0.591	**0.824**				
Cyberchondria (6)	0.854	0.856	0.665	0.371	0.859	0.459	0.023	-0.049	0.576	0.609	**0.816**			
Panic Buying (7)	0.922	0.923	0.751	0.197	0.942	0.388	0.212	0.267	0.226	0.073	0.293	**0.866**		
Emotional (8)	0.929	0.931	0.657	0.419	0.934	0.609	0.084	0.128	0.404	0.267	0.470	0.444	**0.811**	
Concern over deal (9)	0.920	0.920	0.794	0.672	0.921	0.820	0.118	0.083	0.479	0.338	0.513	0.325	0.647	**0.891**

Table Note: α= Cronbach alpha, CR = composite reliability; AVE = average variance extracted; MSV = maximum shared variance; MaxR(H) = maximum reliability (H) and [1]= square root of AVE, [2]= Correlations.

3.5. Research Model Testing

Figure 2: Research Model Testing
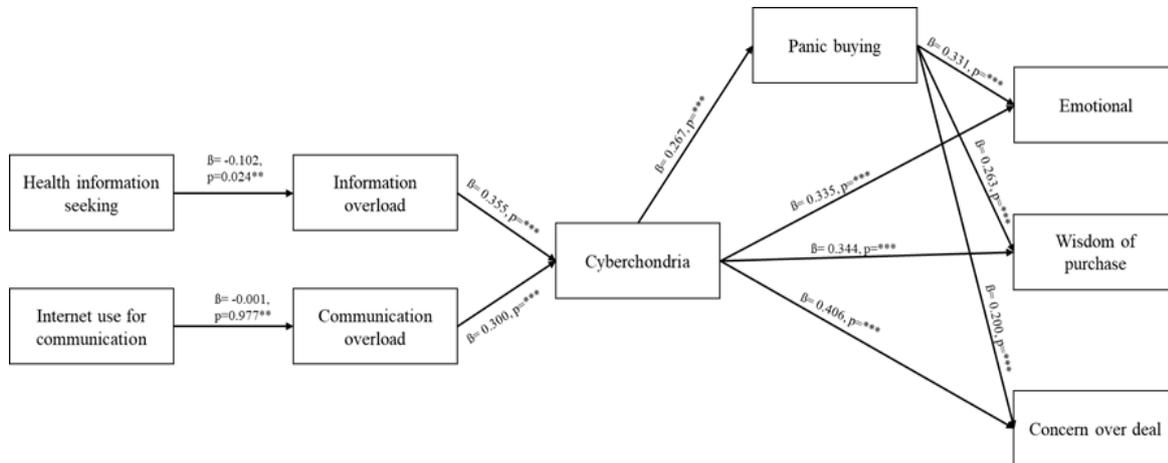
Notes: ß= standardized regression weight, ** *p*= at the 0.05 level, ***p<0.001.

Model testing fit values are X²/df: 4.151, GFI: 0.958, AGFI: 0.906, RMR: 0.071, RMSEA: 0.089, CFI: 0.948, NNFI: 0.906, NFI: 0.933.

According to research model testing results:

H1 hypothesis was partially supported. H1a hypothesis (t values= -2.249, p=0.024, ß= -0.102) was supported. According to the H1 hypothesis, as health information-seeking increases, information overload decreases. This result can be interpreted as follows: the conscious consumers, who are in health information-seeking mode, search consciously on the internet. As consumers who are focused on accurate and reliable sources get the right information, their information overload will decrease. H1b hypothesis (t values= -0.029, p= 0.977, ß= -0.001) was not supported.

H2 hypothesis was supported. H2a (t values= 7.547, p=***, ß= 0.355), H2b (t values= 6.379, p=***, ß= 0.300) hypotheses were supported. Health-related risks are often threatening and concerning for consumers. Consumers' anxiety levels increase in this risk category. While the consumer's anxiety and related search for information increase with the emergence and/or possibility of a disease for which diagnostics and treatment methods are known, in an unknown and new emerging disease (such as a pandemic), consumer anxiety, concern, uncertainty, and the search for information will increase further. Because in such cases sharing too much information which is unverifiable and from too many sources, along with misinformation and

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inconsistency between shared information all increase both the consumers' information and communication overload. This increases the risk of cyberchondria.

H3 (t values= 5.525, p= ***, ß= 0.267) hypothesis was supported. The consumer behavior with an increased anxiety level is to take measures for the present condition to reduce and/or eliminate the risk. For this reason, consumers will lose control and tend to purchase products that they do not need and/or are unsure of the benefits and functions, or they will buy more products than they should.

H4 hypothesis was supported. H4a (t values= 7.598, p= ***, ß= 0.335), H4b (t values= 7.567, p= ***, ß= 0.344) and H4c (t values= 9.007, p= ***, ß= 0.406) hypotheses were supported. H4a hypothesis can be interpreted as follows: consumer anxiety puts emotional pressure on them. The increasing level of anxiety causes constant and repeated health information-seeking behavior. It is also possible to think of this situation as a cycle. The flow of new health-related information will increase the level of anxiety. This will reveal emotional discomfort in the consumer and create a cognitive dissonance over the decisions taken. For the H4b hypothesis, similar to the H4a hypothesis, consumers who are overriding the anxiety level despite logic are in a state of uncertainty and logical inconsistency. Therefore, consumers will have suspicions about the products they have bought both before and after the purchase. This creates a state of cognitive dissonance. Lastly in terms of H4c hypothesis: There is consumer uncertainty in unusual periods. Consumers are open to other individual and group influences. One of the factors that shape consumer behavior is sales staff. Consumers are suspicious of decisions made under the influence of a salesperson. This category can be considered as online support specific to COVID-19.

H5 hypothesis was supported. H5a hypothesis (t values= 7.510, p= ***, ß= 0.331), H5b hypothesis (t values= 5.802, p= ***, ß= 0.263), H5c hypothesis (t values= 4.431, p= ***, ß= 0.200) were supported. For H5a: Consumers purchase with the survival instinct. Therefore, psychological discomfort, which existed before the purchase, continues and increases after the purchase. For H5b: situational factors influence consumer behavior. External environmental conditions (such as the pandemic) differentiate consumer behavior when compared to normal times. Because the consumer is passing through an unusual period. Therefore, their purchases are also unusual. Because a product that generates low-interest levels when purchased in normal times becomes a high involvement product in such unprecedented periods. Purchased products and surplus consumption are perceived by consumers as a kind of "escape route." Therefore, the consumer attempts a kind of self-questioning after the purchase. Consumers wonder

whether they really need the product(s) which they have bought in a panic, and they experience cognitive dissonance after purchasing. Lastly, for H5c, there is a peer influence in panic buying and herd psychology is dominant in these buying types. At this point, information or a recommendation given by the salesperson that other consumers are also purchasing a product or a product group may direct consumers to purchase with herd psychology. Since products are purchased hurriedly and, in a panic, post-purchase cognitive dissonance increases. This category can be considered as online support specific to COVID-19.

3.6. Mediation Analysis

In this study, it was assumed that the panic buying variable will strengthen the effect of cyberchondria on cognitive dissonance. Accordingly, the mediating effect of panic buying between cyberchondria, and the three cognitive dissonance dimensions were investigated. The findings are presented in Table 5.

Table 5: Mediation Analysis

Mediator Variable Hypotheses	Direct Effect	Direct Effect with Mediator Variable	Sobel Test Results
H6a Hypothesis	Cyberchondria-Emotional ß=0.423, t values= 9.324, p=***	Cyberchondria-**Panic Buying-**Emotional ß=0.335, t values = 7.598, p=***	Sobel test statistics= 4.450 p= 0.000
H6b Hypothesis	Cyberchondria- Wisdom of purchase ß=0.414, t values = 9.081, p=***	Cyberchondria-**Panic Buying-**Wisdom of purchase ß=0.344, t values =7.567, p=***	Sobel test statistics= 4.001 p= 0.000
H6c Hypothesis	Cyberchondria- Concern over deal ß=0.459, t values = 10.320, p=***	Cyberchondria- **Panic Buying-**Concern over deal ß=0.406, t values =9.007, p=***	Sobel test statistics= 3.456 p= 0.000

Table Note: ß= standardized regression weight, ***$p<0.001$.

Fit values for direct effect model: X^2 /df: 3.488, GFI: 0.969, AGFI: 0.929, RMR: 0.063, RMSEA: 0.079, CFI: 0.964, NNFI: 0.936, NFI: 0.950.

In mediator testing, the conditions of Baron and Kenny's (1986) approach were provided, and partial mediation was determined in all three mediation models. As a next step, the significance of the mediating effect (Sobel, 1982) was aimed to be determined. In line with

the Sobel test result, the partial mediating effects of the panic buying variable were confirmed. H6 and the sub-hypotheses, which are H6a, H6b, and H6c, were supported.

For H6a, consumers who are anxious about their health and are constantly seeking new health-related information to eliminate their anxiety, in other words, who are in a high level of cyberchondria, will engage in panic buying. The reasoning is this: to eliminate their concerns and feel safe in terms of their health. Panic buying will strengthen the emotional discomfort and increase negative emotions and cognitive dissonance.

For H6b, consumers with high levels of anxiety will gravitate towards unplanned purchases. When affected by their panic level, consumers who make instant and sudden purchases without thinking them through will experience more cognitive dissonance. Because the purchase is made with a sudden impulse. Consumers cannot evaluate alternative and perhaps better options or deduce anything about the benefits, or otherwise, of the product. So, they will ask themselves more about whether they have bought the right product or, in general terms, query the appropriateness of the purchase decision.

For H6c, as in the case of COVID-19, there is a period in which we cannot be independent from the external environment, especially when online communications and information flows are indispensable and carry much greater importance. This is why consumer reactions and attitudes are open to the effects of other individuals with whom they interact. Specific to COVID-19, face-to-face communication has become particularly limited due to social distancing rules and lockdowns. Therefore, direct encounters with salespeople in the traditional retail environment are almost nonexistent. An isolated new lifestyle has been formed. However, the flow of information from a reliable source is important in this sense. With the influence of a reliable online sales force, consumers will mostly not regret their purchasing decisions. The salesforce has insufficient information to give worthwhile advice as it is a new situation of which they have no experience. This may lead to misdirection of the consumer. At this point, the effects of information sources and reference groups whose accuracy cannot be ascertained by consumers, lead to decisions to buy with herd psychology and will increase cognitive dissonance in terms of the "concern over deal" dimension.

Discussion

In line with the research findings:

It has been determined that when consumers' health information-seeking has an effect on information overload, internet use for communication has no effect on communication

overload. In line with this result, it can be said that consumers' search for information affects information overload, especially during a pandemic and/or a disaster such as COVID-19. When the results obtained were evaluated together with the studies in the literature, similar results were obtained to the study of Crook, Stephens, Pastorek, Mackert, and Donovan (2016) in terms of the effect of perceived knowledge about health on information overload. In addition, similar results were obtained to the study Chae, Lee, and Jensen (2016) in the sense of the negative relation of health information used in active media and cancer information overload. Besides, in terms of the negative relationship between information overload and health information-seeking, similar results were obtained to the study of Jensen et al. (2017). In addition to these researches, Soroya et al., (2021)'s study has found that information-seeking is positively related to the frequency of exposure to mass media, print media, and other internet sources. McMullan, Berle, Arnáez, and Starcevic (2019) concluded that there is a positive correlation between health anxiety and online health information-seeking, and between health anxiety and cyberchondria.

Another result is that of information overload's effect on cyberchondria. In line with this result, the exposure of people to excessive amounts of health information will disturb or confuse them. When the result was evaluated together with the literature, Laato et al. (2020a), stated that information overload increased cyberchondria within the context of COVID-19. Another variable that influences cyberchondria is communication overload. The information burden on the consumer was experienced by other individuals who were contacted about their shared experiences, as well as secondary sources. Cyberchondria is triggered as a result of everyone sharing all information "as if it is true" in online environments where intense communication is experienced. The result is a new finding in the relevant literature.

Another finding is that cyberchondria influences panic buying. In the scope of the study, the health risk which stands out, in particular, leads directly to target-oriented unplanned behavior without consumer thinking and without going through a purchasing decision-making process stage. When the obtained result is considered together with the literature, according to Starcevic and Berle (2015), cyberchondria is a safety behavior and it leads to more anxiety or distress. At this point, "distress" is in relation to online health searches and has negative outcomes. Tendency to panic is one of them. Besides this, Laato et al. (2020a) stated that cyberchondria increased the intention of unusual buying behavior.

The effect of cyberchondria on all three dimensions of cognitive dissonance, which was investigated as one of the original points of the study, was confirmed in light of the research

findings. According to cognitive dissonance theory, consumers who are exposed to information about the perceived risks are expected to experience cognitive dissonance processes afterward. Therefore, the individual will review their previous cognitions and change them according to the new information (Gaspar et al., 2016). The consumer who constantly and repeatedly seeks information will not feel emotionally comfortable, will consider whether their decisions are wise or not, and will be open to both reference group and salesperson influence.

Cognitive dissonance of consumers as a result of panic purchases is another outcome that can be evaluated in terms of the contribution of the research to the literature. The consumer will make inconsistent evaluations in the light of negative emotions such as tension, anxiety, and fear, and this will create emotional inconsistency. For example, Shou, Xiong, and Shen, (2013) stated that consumers' irrational hoarding behavior is a result of panic buying. Again, based on a similar starting point, the consumer whose search continues for internal and external information does not concentrate on the product's qualities. Consumers have tended to buy under the influence of many factors, such as the inner environment, comments of other consumers, and expert opinions. At this point, post-purchase regret may also arise.

Finally, the mediating effect of panic buying behavior between cyberchondria, and cognitive dissonance was examined, and this effect was confirmed after the analysis. Consumers do not find the information which they have obtained to be sufficient in the cyberchondria situation. This is a factor that increases consumer perceived risk and uncertainty. To reduce these factors, consumers will seek more information and want to avoid information that may lead to cognitive dissonance (Pan, Xu & Wu, 2017). According to Fergus (2013), searching for medical information on the internet has the potential to bring about higher levels of uncertainty and thus increase health anxiety. Consumers who constantly evaluate their health and perhaps self-diagnoses (Schulte, 2016) are thoroughly panicked and the possibility of experiencing cognitive dissonance after purchases increases. At the same time, consumers in a dilemma experience ambivalence and question their decision. Consumers who seek information about their health do it within rational limits, become more literate about health services and health problems, take better decisions and act upon them (Chen, 2020). However, unusual situations, such as pandemics consumer decision-making is made under conditions of risk and uncertainty. For this reason, there is also irrational behavior involved in the decisions which are taken. Since there is no logical evaluation, there is a constant "wondering" in the consumer's mind. Confusion is encountered at the individual and social levels (Reynolds & Seeger, 2005). Because salesperson/expert opinions are often effective on consumers'

purchasing decisions in panic buying (Zheng, Shou & Yang, 2020) and the consumer purchasing while acting with the herd, they then experience greater cognitive dissonance.

Implications

Research results show that consumers will not experience an information burden if they get information from the right sources. The internet provides the correct transfer of information from reliable sources and positively affects consumers, but it also spreads information that is inaccurate and will cause panic in the community.

Fake news and the spread of misinformation, consciously or unconsciously, have affected the masses. This situation has been experienced recently through the example of COVID-19. The main recommendation of the research should be the education of the public, not only for a pandemic but for all disasters and natural disasters. In the age of information and communication, consumers should be properly informed through messages and public service announcements via the media channels commonly used by all members of society. Public awareness and social support will increase compliance with the rules on the basis of both measures to be taken and consumption.

Different consumers in society have different perspectives to each other. This will affect the search for information and purchases made. Consumer profiles of those who frequently visit the relevant pages can be determined, and the web pages formatted accordingly. Thus, consumer panic can be avoided, and the necessary guidance can be given to stop inappropriate and excessive consumption and to consult experts. Approval by a suitable health institution, ministry, scientific board, etc., as well as expert information/explanations can be provided. Getting support from experts in terms of balancing and/or at least minimizing the health risks of the consumer will help establish the correct evaluation criteria for consumers who are exposed to the influence of the reference group.

At the same time, because of word of mouth and e-word of mouth being spread defectively or incorrectly, the consumer with a high anxiety risk of cyberchondria was pushed into making panic purchases. In addition to training and creating a conscious consumer profile, in order to keep the consumer calm general information about product stocks can be explained by the companies with the support of the relevant experts.

During the pandemic, when online shopping increases the consumer approach to these channels will be more positive so it can be suggested to businesses that they are more active in online channels. In order to prevent the panic, cognitive incompatibility, and fear that occur

during pandemics, companies should be flexible and adopt innovative approaches. In this period, businesses that provide a fast return to their consumers through online channels, find faster solutions to consumer problems, and are at the forefront in speed and variety can come out on top in the new normal era.

Another suggestion should be presented in terms of post-purchase regret. In pandemic and disaster periods, the consumer develops unfavorable emotions along with the tension of adapting to unexpected conditions, anxiety, and the uncertainty of not knowing what will happen next. At this point, the important practices are: to calm the consumer; to convey confident messages in every aspect as a business; and to receive support from opinion leaders, as they are quite open to the reference group effect. To ensure that consumers who always have "wondering" in mind and are constantly questioning themselves about the decisions they make, planning their shopping would help. Since the usual consumer mindset is disabled, being the first brand and/or business that comes to mind in an unusual period will be beneficial in eliminating these "wonderings". In service industries, creating a "strong brand identity", making a robust promise to the consumer, and fulfilling it constitute the most important step that can be taken. At this point, conveying the test results to be presented to the consumer from trusted sources and conveying expert opinions will create consumer trust and ensure faster acceptance in the market of new product suggestions.

In conclusion, with COVID-19, there is now a much more digital consumer profile. Specific to COVID-19, social distancing rules and lockdowns have made the consumer more individual, lonely, and isolated. The new digital consumer prefers to have no contact. Therefore, rather than face-to-face communication, making the impact of experts and the sales force technology-based, meeting and guiding the wishes and needs of the consumer without bringing them into the store and/or into a service environment, will be among the winning strategies. Chatbots, online support lines, and "remote and video" meetings with individual customer representatives will be among the strategies that can be employed.

Limitations and Future Research

Consumers who declared that they made a panic purchase in this period formed the main population of the research. No product group was focused on within the scope of the study, and the consumer was asked to evaluate the panic purchases made in this period and their behaviors afterward. For this reason, the study cannot be generalized in terms of consumers who do not make panic purchases and/or a specific product group.

Although panic purchases have accelerated during the COVID-19 period, they can also occur in a disaster and natural disaster-like situation. Therefore, as stated above, the research model can be evaluated in the sense of a certain product group or product groups in future studies. At the same time, in addition to panic purchases, which are considered as unusual consumer behaviors, different purchasing styles can be handled, and self-isolation and social distancing behaviors of the consumer can be investigated as output variables, considering the COVID-19 effect.

When the COVID-19 period is evaluated, it is seen that the psychological factors, emotions, uncertainty, anxiety, concern, perceived control, etc. of the consumer are at the forefront. These variables' mediator and moderator effects can be examined. In addition to psychological factors, the demographic characteristics of the consumer can be considered as another factor that affects their purchases and preferences. Consumers can be grouped with cluster analysis and moderator variable tests, each group can be evaluated in the sense of information-seeking, information density, and purchasing styles, and suggestions can be made for the development of marketing mixes for businesses.

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