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Understanding Panic Buying During COVID-19: How Fear and Perceived Socioeconomic Consequences Shape Consumer Behavior

Comprender las compras de pánico durante la COVID-19: cómo el miedo y las consecuencias socioeconómicas percibidas moldean el comportamiento del consumidor.

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ABSTRACT

This study examines the psychological and socioeconomic mechanisms underlying panic buying behavior during the COVID-19 pandemic. Data from 300 Istanbul residents were collected through an online survey and analyzed using structural equation modeling (SEM). Results show that fear of COVID-19 significantly increased perceived socioeconomic consequences and panic buying, while socioeconomic consequences emerged as the strongest predictor of panic buying and partially mediated the relationship between fear and this behavior. In contrast, compulsive checking and anti-vaccine attitudes showed no significant effects on panic buying. The model explained 53.9% of the variance in panic buying. The findings suggest that panic buying is not merely an emotional reaction to fear but a cognitively mediated response to anticipated scarcity and economic uncertainty. This perspective extends the understanding of crisis consumer behavior beyond pandemic settings to contexts such as inflation, supply chain disruptions, and other situations involving economic threat and supply uncertainty. The study highlights the importance of transparent supply-chain communication and economic reassurance strategies for governments and retailers during periods of crisis.

Keywords: Panic buying; Consumer behavior; Perceived scarcity; Economic uncertainty; Crisis consumption; SDG.

JEL Code: D12, D91, I12, E21, Z13

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RESUMEN

Este estudio examina los mecanismos psicológicos y socioeconómicos subyacentes al comportamiento de compra por pánico durante la pandemia de COVID-19. Se recopilaron datos de 300 residentes de Estambul mediante una encuesta en línea y se analizaron mediante modelos de ecuaciones estructurales (SEM). Los resultados muestran que el miedo a la COVID-19 aumentó significativamente la percepción de consecuencias socioeconómicas y la compra por pánico; asimismo, las consecuencias socioeconómicas surgieron como el predictor más fuerte de la compra por pánico y mediaron parcialmente la relación entre el miedo y dicho comportamiento. Por el contrario, la comprobación compulsiva y las actitudes antivacunas no mostraron efectos significativos en la compra por pánico. El modelo explicó el 53,9 % de la varianza de la compra por pánico. Los hallazgos sugieren que la compra por pánico no es meramente una reacción emocional ante el miedo, sino una respuesta mediada cognitivamente ante la escasez prevista y la incertidumbre económica. Esta perspectiva amplía la comprensión del comportamiento del consumidor en situaciones de crisis, trasciende el ámbito de la pandemia para abarcar contextos como la inflación, las interrupciones en la cadena de suministro y otras que implican amenazas económicas e incertidumbre en el abastecimiento. El estudio subraya la importancia de una comunicación transparente sobre la cadena de suministro y de estrategias para transmitir seguridad económica por parte de los gobiernos y los minoristas durante las crisis.

Palabras clave: Compras de pánico; Comportamiento del consumidor; Escasez percibida; Incertidumbre económica; Consumo en situaciones de crisis; ODS.

Código JEL: D12, D91, I12, E21, Z13

INTRODUCTION

The global COVID-19 pandemic emerged in December 2019 in Wuhan, China, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), and rapidly escalated into a worldwide health crisis by early 2020 (World Health Organization, 2020a). As fear and uncertainty spread alongside the virus, panic buying emerged as a prominent consumer response — the excessive stockpiling of basic goods that disrupted supply chains and deepened social and economic instability.

Although this study is empirically grounded in the COVID-19 context, the psychological and socioeconomic mechanisms it examines are not unique to pandemics. Comparable patterns of fear-driven stockpiling have been documented across a range of crisis contexts, including natural disasters (Kulemeka, 2010), supply chain disruptions (Sterman & Dogan, 2015), and inflationary episodes (Erdem et al., 2003). The critical activating condition appears to be perceived economic vulnerability and anticipated scarcity — not the specific nature of the crisis itself. Understanding these mechanisms therefore carries implications beyond the pandemic period, including for future public-health emergencies, commodity shocks, and economic crises.

Türkiye recorded its first confirmed COVID-19 case in March 2020, and Istanbul quickly became the country's most affected city. The pandemic unfolded against a backdrop of pre-existing economic vulnerabilities — including persistent inflation exceeding 15% and a sharply depreciating currency — which amplified public concern about resource availability and supply continuity (Pınar, 2022; Voyvoda, 2020).

This economic fragility makes Türkiye a theoretically important context for studying panic buying: when pre-existing financial insecurity is high, even moderate fear activation may be sufficient to trigger acute socioeconomic worry and subsequent stockpiling behavior. Prior studies consistently confirm that fear, anxiety, and perceived scarcity are key drivers of panic buying across various national contexts (Akhrani et al., 2020; Nasiha & Akhrani, 2020; Omar et al., 2021; Taylor, 2021; Schmidt et al., 2021; Seih et al., 2021). However, the specific mechanisms through which fear translates into excessive purchasing behavior remain insufficiently understood, particularly in economically vulnerable settings.

During the pandemic, widespread fear and uncertainty also gave rise to anti-vaccine attitudes, fueled by misinformation, conspiracy theories, and distrust of health authorities (Lazarus et al., 2020; Roozenbeek et al., 2020; Sallam et al., 2021). The present study incorporates anti-vaccine attitudes as a variable to examine whether fear of COVID-19 is associated with vaccine resistance, and whether such attitudes, in turn, relate to panic buying behavior.

Existing research has largely tested the direct relationship between COVID-19 fear and panic buying without adequately examining the underlying psychological and socioeconomic pathways — particularly concerns about inflation, unemployment, and supply disruption that were especially salient in Türkiye. Additionally, compulsive information-seeking behaviors (COVID-19 compulsive checking) and their role in shaping consumer behavior have not been systematically investigated in the Turkish context. This study addresses these gaps by examining fear of COVID-19 and compulsive checking as antecedent factors, and COVID-19 socioeconomic consequences and anti-vaccine attitudes as potential mediators, with panic buying as the outcome variable.

This study makes three specific contributions to the crisis-consumption literature. First, it provides the first SEM-based empirical evidence from Türkiye that COVID-19 socioeconomic consequences partially mediate the fear–panic buying relationship, reframing panic buying as a cognitively mediated, economically driven response rather than a purely impulsive behavior. Second, it empirically distinguishes panic buying from anti-vaccination attitudes as psychologically separate crisis responses, demonstrating that fear of COVID-19 can simultaneously drive stockpiling via socioeconomic worry and vaccine resistance via institutional distrust. Third, by showing that the socioeconomic mediation pathway is amplified under conditions of pre-existing economic vulnerability—as observed in Türkiye in 2021—the study provides boundary-condition evidence suggesting that this mechanism may generalize to other crisis contexts characterized by economic fragility, including inflationary shocks and supply chain disruptions.

The primary objective of this study is to examine the psychological and socioeconomic factors behind panic buying among Turkish consumers during the COVID-19 pandemic. To this end, the study addresses the following research questions.

- Does fear of COVID-19 directly influence panic buying, COVID-19 socioeconomic consequences, and anti-vaccine attitudes?
- Does COVID-19 compulsive checking directly influence panic buying, COVID-19 socioeconomic consequences, and anti-vaccine attitudes?
- Do COVID-19 socioeconomic consequences and anti-vaccine attitudes predict panic buying?
- Do COVID-19 socioeconomic consequences and anti-vaccine attitudes mediate the relationships between fear of COVID-19, compulsive checking, and panic buying?

Through these inquiries, the research seeks to provide empirical evidence from Türkiye to contribute to and extend the existing literature on consumer behavior under crisis conditions. This study focuses on Istanbul — Türkiye's largest and most COVID-affected city — where

the crisis-specific and short-lived nature of panic buying made the pandemic an ideal context for empirical investigation. Data were collected from 300 adult residents via online survey during March–April 2021, which, while sufficient for SEM analysis, limits geographic representativeness and precludes causal inference due to the cross-sectional design. Future studies are encouraged to adopt longitudinal designs and broader, more diverse samples.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Economic Context: COVID-19 and Türkiye

The COVID-19 pandemic generated unprecedented global economic disruption, characterized by supply chain breakdowns, rising unemployment, and inflationary pressures—particularly in the service sector (Baldwin & di Mauro, 2020; Açıkgöz & Günay, 2020). These conditions created fertile ground for panic buying, as consumers facing economic uncertainty sought to secure essential goods before anticipated shortages or price increases materialized.

In Türkiye, these pressures were especially acute. Despite recording a modest 1.8% growth rate in 2020, the country experienced significant inflation, a depreciating lira, and a sharp contraction in consumer confidence (Voyvoda, 2020; Pınar, 2022). The pandemic's arrival in March 2020 triggered immediate behavioral shifts: demand for face masks surged, prices rose tenfold within days, and shelves emptied as panic buying spread rapidly. Government interventions — including ID-based purchasing limits and price ceilings — struggled to contain these pressures (Pınar, 2022).

This economic backdrop is central to understanding why Turkish consumers may have been particularly susceptible to fear-driven stockpiling: pre-existing financial vulnerability lowered the threshold at which COVID-19 fear activated concerns about resource access and supply stability. This combination of elevated fear and pre-existing economic fragility makes Türkiye a theoretically important context for testing the socioeconomic mediation pathway — and for examining whether this mechanism generalizes to non-pandemic crisis contexts characterized by similar conditions.

Panic Buying: Definitions and Explanations

Panic buying refers to the excessive accumulation of storable goods — such as food, cleaning supplies, and medication — during crisis periods, far beyond normal consumption needs (Keane & Neal, 2021). While partly driven by psychological motivations such as the desire to restore a sense of control (Barnes et al., 2020), panic buying also reflects rational economic reasoning: consumers stockpile when they anticipate supply disruptions, rising prices, or restricted store access (Erdem et al., 2003). Hoarding and panic buying are recognized

responses to perceived supply disruptions across various crisis contexts, including natural disasters and pandemics (Kulemeka, 2010; Kawashima et al., 2012; Wang & Hao, 2020). During COVID-19, these behaviors were further intensified by city lockdowns, movement restrictions, and fear of virus transmission, encompassing both rational responses to genuine supply chain risks and irrational reactions driven by anxiety, herd mentality, and loss of perceived control (Sterman & Dogan, 2015; Sim et al., 2020; Yuen et al., 2020; Arafat et al., 2020a, 2020b).

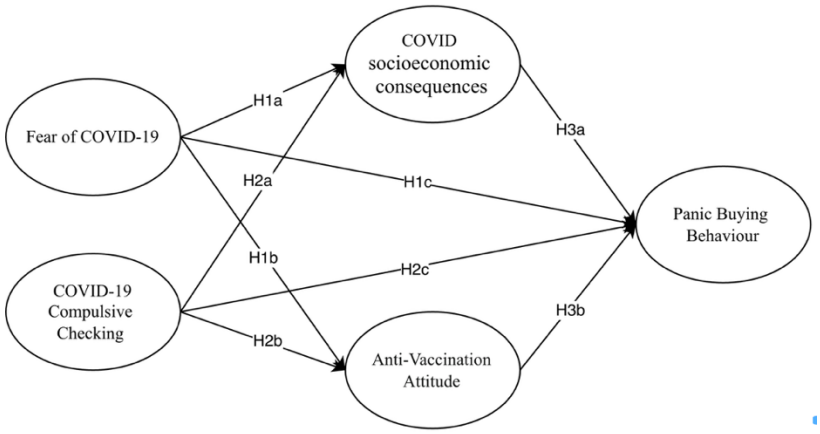
Theoretical Background

A substantial body of theoretical literature has sought to explain panic buying in crisis contexts. Frameworks such as Threat Appraisal Theory and the Health Belief Model position panic buying as a protective response driven by perceived severity and vulnerability (Chua et al., 2021). Compensatory Control Theory suggests that anxiety reduces individuals' sense of control, prompting excessive purchasing as a means of restoring it (Barnes et al., 2020). Social influence perspectives, including Social Learning Theory and crowd psychology, highlight the role of observational cues and media exposure in amplifying stockpiling behavior (Taylor, 2021; Bülbül et al., 2026). Scarcity-based frameworks further emphasize that perceived resource unavailability — whether real or anticipated — serves as a primary behavioral trigger (Omar et al., 2021).

While these theories collectively illuminate the psychological and social underpinnings of panic buying, no single framework fully captures the phenomenon's multidimensional nature, particularly in contexts shaped by acute socioeconomic vulnerability. Rather than anchoring the analysis within one theoretical tradition, the present study draws on this broader theoretical landscape as a conceptual foundation.

The empirical model tested here is inductively grounded in the existing literature and guided by the relationships identified across prior quantitative studies (Figure 1). This approach is consistent with established practice in behavioral consumer research, where theoretically informed but empirically driven models are widely used to examine complex, context-dependent phenomena (Hair et al., 2010; Hayes, 2018). Importantly, while the theoretical frameworks reviewed here were largely developed and tested in pandemic contexts, the underlying mechanisms — threat appraisal, compensatory control, and scarcity perception — are not crisis-specific. The same theoretical logic applies to supply chain disruptions, inflationary episodes, and future public-health emergencies, making this study's empirical findings relevant beyond the COVID-19 context.

Figure 1
The Conceptual Framework of COVID-19 Fear and Panic Buying



Source: Own elaboration.

COVID-19 Fear's Effect on COVID Socioeconomic Consequences

COVID-19 fear has been consistently linked to heightened socioeconomic worry across multiple national contexts. Mertens et al. (2020) identify fear of socioeconomic consequences — including job loss, income reduction, poverty, and economic recession — as a core dimension of COVID-19 fear, alongside fear of infection and product shortages. Economic vulnerability and sudden income losses significantly intensify stress and anxiety during lockdown periods (Sarfraz et al., 2022; Salameh et al., 2020), while perceptions that the economic consequences of pandemic restrictions are being underestimated further amplify public concern (Codagnone et al., 2020; Mishra et al., 2020). In Türkiye, where pre-existing inflation and currency depreciation heightened financial insecurity, COVID-19 fear was particularly likely to activate acute concerns about supply access and economic stability. Building on this evidence, the present study proposes:

H1a: COVID-19 Fear Positively Affects COVID Socioeconomic Consequences.

COVID-19 Fear's Effect on Anti-Vaccination Attitudes

The relationship between COVID-19 fear and vaccination attitudes is complex and context-dependent. While fear of infection generally promotes vaccine acceptance by heightening perceived vulnerability (Bendau et al., 2021; Mertens et al., 2022; Nazlı et al., 2021), this pattern reverses when fear is accompanied by existential anxiety, conspiracy beliefs, or mistrust of health authorities and pharmaceutical companies (Scrima et al., 2021; Adamus et al., 2021).

Under such conditions — particularly when anti-vaccination attitudes are assessed through dimensions of institutional distrust and concerns about commercial profiteering, as in the

VAX scale — heightened COVID-19 fear may paradoxically reinforce vaccine resistance rather than acceptance (Choi et al., 2022; Scrima et al., 2021). Given the high levels of misinformation and institutional skepticism observed during the pandemic, the present study proposes:

H1b: COVID-19 Fear Positively Affects Anti-Vaccination Attitudes.

COVID-19 Fear's Effect on Panic Buying

The COVID-19 pandemic generated widespread fear, anxiety, and stigma across populations, driven by the virus's high contagiousness and mortality (Ahorsu et al., 2022; Guan et al., 2020). Fear in the context of infectious disease is closely tied to perceived transmission risk, morbidity, and mortality, and tends to amplify psychosocial distress (Pappas et al., 2009). This heightened fear environment directly shaped consumer behavior, most notably by triggering panic buying as a protective response to perceived threat and anticipated scarcity.

Empirical evidence consistently identifies COVID-19 fear as a primary driver of panic buying. Fear was found to be the dominant predictor of panic buying, outweighing institutional trust (Akhrani et al., 2020; Nasiha & Akhrani, 2020). Anxiety fully mediated the relationship between uncertainty, perceived scarcity, and panic buying (Omar et al., 2021), while media exposure and intolerance of uncertainty amplified fear-driven purchasing (Schmidt et al., 2021).

Notably, COVID-19 fear triggered panic buying particularly through economic concerns (Seih et al., 2021), and extended lockdowns transformed stockpiling from a functional response into a psychological coping mechanism (Badgaiyan & Verma, 2015; Wu et al., 2021). Building on this evidence, the present study proposes:

H1c: COVID-19 Fear Positively Affects Panic Buying Behavior.

Compulsive Checking's Effect on Panic Buying

During the COVID-19 pandemic, many individuals engaged in repetitive information-seeking behaviors — such as constantly monitoring news updates, checking case numbers, and following pandemic-related social media content. Collectively referred to as compulsive checking, these behaviors represent a maladaptive response to uncertainty rooted in intolerance of ambiguity: individuals repeatedly seek information to reduce uncertainty, yet this paradoxically amplifies anxiety and perceived threat rather than alleviating it (Carleton, 2016; Taylor et al., 2020a).

Excessive media consumption during the pandemic was associated with heightened anxiety, increased threat perception, and greater psychological distress (Garfin et al., 2020). In the

context of panic buying, individuals who frequently monitor pandemic-related news are more likely to perceive scarcity and supply disruption, which may trigger excessive purchasing behavior (Naeem, 2021). Although qualitative and logical reasoning support this relationship, it has not yet been tested with quantitative empirical data in the Turkish context. The present study therefore proposes:

H2c: COVID-19 Compulsive Checking Positively Affects Panic Buying.

COVID-19 Compulsive Checking's Effect on Anti-Vaccination Attitudes

COVID-19 compulsive checking significantly influences anti-vaccination attitudes through information overload and misinformation exposure. Although moderate information seeking can heighten risk perception and encourage protective behaviors, compulsive checking frequently results in heightened anxiety and exposure to misinformation, all of which contribute to stronger anti-vaccination attitudes (Taylor et al., 2020b).

Excessive digital media search for COVID-19 information amplifies conspiracy beliefs and reduces vaccination intention through increased risk misperception (Gao et al., 2023). Furthermore, COVID-19 stress factors, including compulsive checking, have been linked to greater vaccine hesitancy via structural pathways (Batley et al., 2024). Based on this reasoning, the following hypothesis is proposed:

H2b: COVID-19 Compulsive Checking Positively Affects Anti-Vaccination Attitudes.

Compulsive Checking's Effect on COVID Socioeconomic Consequences

Compulsive checking, as a sub-dimension of COVID-19 Stress Syndrome, is theoretically linked to heightened socioeconomic worry (Taylor et al., 2020b). Concerns about financial strain and job loss represent a distinct yet interconnected facet of pandemic-related distress and substantially contribute to overall COVID-19 stress levels (Codagnone et al., 2020).

Although compulsive checking and socioeconomic worry are correlated within the syndrome ($r = .49–.53$; Taylor et al., 2020a), empirical research directly examining the directional relationship between these constructs remains limited. Theoretically, excessive information monitoring can exacerbate cognitive biases and information overload, thereby heightening threat perception regarding financial stability and supply availability. Based on this reasoning, the present study proposes:

H2a: COVID-19 Compulsive Checking Positively Affects COVID Socioeconomic Consequences.

COVID Socioeconomic Consequences' Effect on Panic Buying

Socioeconomic worry has been consistently identified as a significant driver of panic buying during the COVID-19 pandemic. Individuals who perceived economic consequences—including supply shortages, rising unemployment, and financial collapse—as underestimated reported substantially higher stockpiling tendencies (Codagnone et al., 2020; Mishra et al., 2020). Financial vulnerability further amplified this effect: job insecurity and fear of impoverishment intensified stress responses that translated directly into compensatory panic buying (Sarfraz et al., 2022; Salameh et al., 2020). More directly, COVID-19 fear was found to trigger panic buying primarily through economic concerns, with socioeconomic worry functioning as the key mediating pathway between pandemic fear and excessive purchasing (Seih et al., 2021; Omar et al., 2021; Baldwin & di Mauro, 2020). Based on this evidence, the present study proposes:

H3a: COVID Socioeconomic Consequences Positively Affect Panic Buying Behavior.

Anti-Vaccination Attitudes' Effect on Panic Buying

Anti-vaccination attitudes and panic buying share overlapping psychological roots, including heightened risk perception, institutional distrust, susceptibility to misinformation, and fear-driven reactance (Hornsey et al., 2018; Fasce et al., 2023; Ann & Baumann, 2023). Individuals with anti-vaccination attitudes frequently exhibit conspiratorial thinking and resistance to official guidance — psychological profiles similarly associated with panic buying driven by loss of control and distrust (Pertwee et al., 2022).

Misinformation exposure serves as a key shared driver, with social media-induced fear simultaneously exacerbating both stockpiling and vaccine refusal (Ruggeri et al., 2024; Hita et al., 2022). Although direct empirical links between these constructs remain scarce, the convergence of shared psychological mechanisms suggests a positive predictive relationship. Based on this reasoning, the present study proposes:

H3b: Anti-Vaccination Attitudes Positively Affect Panic Buying Behavior.

Mediating Effects of COVID Socioeconomic Consequences and Vaccination Attitudes

Building on the direct relationships established above, this study further examines whether COVID Socioeconomic Consequences and anti-vaccination attitudes function as mediating mechanisms linking COVID-19 fear and compulsive checking to panic buying. Mediation analysis enables the identification of indirect pathways through which antecedent variables influence outcomes (Hayes, 2018; Preacher & Hayes, 2008). The following hypotheses are derived from the combinations of direct relationships proposed in the preceding sections:

H4a: COVID Socioeconomic Consequences mediates the relationship between COVID-19 fear and panic buying.

H4b: Anti-vaccination attitudes mediate the relationship between COVID-19 fear and panic buying.

H4c: COVID-19 socioeconomic consequences mediate the relationship between compulsive checking and panic buying.

H4d: Anti-vaccination attitudes mediate the relationship between compulsive checking and panic buying.

The VAX Scale's second-order factor structure adds complexity to the mediation pathways involving anti-vaccination attitudes (H4b and H4d). As vaccination attitudes are operationalized as a higher-order latent construct comprising four subscales, the mediation effects in these pathways should be interpreted with this structural complexity in mind. Testing these mediation pathways provides the first SEM-based empirical evidence in the Turkish context of the mechanisms linking crisis-induced fear to panic buying — evidence with theoretical implications extending to other economically vulnerable crisis settings.

METHODOLOGY

Research Design

This study employs a quantitative, cross-sectional survey design. Data were collected during the peak period of the COVID-19 pandemic in Türkiye (March–April 2021), as evidenced by the highest recorded daily case numbers during this period (Turkish Ministry of Health, 2021). Structural equation modeling (SEM) was used to test the proposed conceptual model because it allows simultaneous estimation of multiple relationships among latent constructs while accounting for measurement error (Hair et al., 2010). Measurement model validity, including convergent and discriminant validity, is reported to assess common method bias. Cross-sectional designs are widely used and accepted for theory-testing purposes in behavioral consumer research, enabling efficient data collection and simultaneous examination of multiple variables (Creswell & Creswell, 2018; Podsakoff et al., 2003).

Sampling Method

A convenience sampling method was employed due to the practical constraints of data collection during an active pandemic period, when access to the general population was significantly limited. Convenience sampling is appropriate when probability sampling is not

feasible and when the target population shares a common experience relevant to the research question (Etikan et al., 2016).

While this approach limits external generalizability, the sample's shared pandemic experience ensures construct relevance and internal validity. Participants were adults aged 18 and over residing in Istanbul — Türkiye's most COVID-affected city — during March–April 2021. Istanbul was selected as the research setting because it is Türkiye's most COVID-affected and economically exposed city, where pre-existing financial vulnerabilities—including inflation and currency depreciation—made consumers particularly susceptible to fear-driven stockpiling. The target sample size of 300 was determined based on SEM requirements, as a minimum of 200 observations is recommended for stable parameter estimates in models with multiple latent constructs (Hair et al., 2010; Anderson & Gerbing, 1988; Boomsma & Hoogland, 2001). Participants who had not resided in Istanbul during the relevant period, lacked direct pandemic experience, or failed to complete the survey in full were excluded from the final analysis. (Table 1)

Table 1
Demographic Characteristics of the Sample (N = 300)

Variable	Category	n	% of Total	Cumulative %
Gender	Woman	162	54.0%	54.0%
	Man	138	46.0%	100.0%
Marital Status	Married	158	52.7%	52.7%
	Single	142	47.3%	100.0%
Age	20 and below	27	9.0%	9.0%
	Between 21 – 30	88	29.3%	38.3%
	Between 31 – 40	107	35.7%	74.0%
	Between 41 – 50	53	17.7%	91.7%
	Between 51 – 60	23	7.7%	99.4%
	61 and above	2	0.7%	100.0%
Education Level	Primary, middle school	7	2.3%	2.3%
	High school	53	17.7%	20.0%
	Associate Degree	23	7.7%	27.7%
	Bachelor's	120	40.0%	67.7%
	Master's	82	27.3%	95.0%
	PhD	15	5.0%	100.0%
Monthly Income	2000 TL and below	54	18.0%	18.0%
	Between 2001 – 4000 TL	53	17.7%	35.7%
	Between 4001 – 6000 TL	75	25.0%	60.7%
	Between 6001 – 8000 TL	61	20.3%	81.0%
	8001 TL and above	57	19.0%	100.0%

Note. n = frequency count; % of Total = percentage of total sample
Source: Own elaboration.

Data Collection

The survey was developed and administered through the SurveyMonkey platform, enabling rapid data collection and access to a geographically diverse urban sample (Lefever et al., 2007). A pilot study was conducted with 45 participants prior to main data collection to assess scale reliability and improve questionnaire quality; Cronbach's alpha coefficients for all scales exceeded the .70 threshold recommended by Field (2018).

To minimize response bias, trap questions and reverse-scored items were embedded to verify respondent attention. Responses that did not meet the minimum completion time criterion or displayed uniform scores across all items were excluded. Of the 320 responses received, 20 failed validity criteria and were removed, yielding a final sample of 300 (Hair et al., 2010). The study was conducted in accordance with the Declaration of Helsinki. Participation was voluntary, informed consent was obtained before data collection, and all data were analyzed anonymously.

Measures

All independent, mediating, and dependent variables were measured using validated instruments. Fear of COVID-19 was assessed with the 7-item Fear of COVID-19 Scale (FCV-19S; Ahorsu et al., 2022), which captures emotional, physiological, and cognitive fear responses to the pandemic (α = .864); the Turkish adaptation was developed by Satici et al. (2020) and Haktanir et al. (2022).

COVID-19 Compulsive Checking was operationalized using the 6-item compulsive checking and reassurance-seeking subscale of the COVID Stress Scales (CSS; Taylor et al., 2020a), measuring repetitive information-seeking behaviors such as monitoring news and social media (α = .829); Demirgöz Bal et al. (2021) validated the Turkish version. COVID Socioeconomic Consequences were measured with the corresponding 6-item CSS subscale (Taylor et al., 2020a), assessing concerns about pandemic-related shortages of food, supplies, and medication (α = .945). Both CSS subscales were used independently, consistent with their established psychometric properties (Taylor et al., 2020a).

Vaccination Attitudes were measured using the 12-item Vaccination Attitudes Examination (VAX) Scale (Martin & Petrie, 2017). The VAX Scale comprises four first-order dimensions — mistrust of vaccine benefit, worries about unforeseen effects, concerns about commercial profiteering, and preference for natural immunity — each measured by three items, which together load onto a single second-order latent construct representing overall vaccination attitudes (α = .879; subscale α range: .726–.931).

This second-order factor structure is consistent with the original scale development and validation (Martin & Petrie, 2017); Yildiz et al. (2021) conducted the Turkish adaptation. The dependent variable, Panic Buying, was assessed with the 7-item Panic Buying Scale (PBS; Lins & Aquino, 2020), designed to capture fear- and uncertainty-driven bulk purchasing behavior (α = .959). Because no validated Turkish version was available at the time of data collection, the PBS was translated into Turkish using a standard forward-back translation procedure. The translated scale demonstrated excellent internal reliability in the present study (α = .959), providing initial evidence of its psychometric suitability for Turkish samples. All Cronbach's alpha coefficients exceeded the .70 threshold recommended by Field (2018). The scales and their items are provided in the Appendix.

Structural Equation Modeling (SEM)

Relationships among COVID-19 Fear, Compulsive Checking, COVID Socioeconomic Consequences, Vaccination Attitudes, and Panic Buying were examined through mediation analysis using structural equation modeling (SEM) in IBM SPSS AMOS 24.0. Mediation effects were assessed using 2,000 bootstrapped samples with bias-corrected 95% confidence intervals. Maximum Likelihood estimation was applied, as the normality assumption was satisfied (Collier, 2020).

The measurement model was tested prior to structural analysis. The VAX Scale was specified as a second-order factor structure, with four first-order subscales serving as indicators of the higher-order latent construct. Covariance was specified between four item-error pairs (F1–F2, F9–F10, SE4–SE6, P1–P2) based on modification indices and theoretical justification reflecting shared content overlap (Byrne, 2010; Hair et al., 2010). The measurement model demonstrated acceptable fit: $\chi^2/df = 2.055$; CFI = .919; SRMR = .072; RMSEA = .059 (Hu & Bentler, 1999). The structural model similarly yielded adequate fit: $\chi^2/df = 2.068$; CFI = .918; SRMR = .076; RMSEA = .060 (Hu & Bentler, 1999). Full results are presented in Table 4.

Measurement Model Validity

We assessed convergent and discriminant validity of the measurement model before structural analysis. Composite reliability (CR) values ranged from .826 to .959, all exceeding the recommended .70 threshold (Hair et al., 2010). Average variance extracted (AVE) values were .747 for COVID Socioeconomic Consequences and .770 for Panic Buying, both exceeding the .50 benchmark. AVE values for COVID-19 Fear (.479) and Compulsive Checking (.455) fell marginally below .50; however, given that CR values for these constructs substantially exceeded .70, construct reliability is considered acceptable (Hair et al., 2010). For the VAX Scale, given its validated second-order factor structure (Martin & Petrie, 2017), reliability was assessed at the subscale level; all four subscales demonstrated

acceptable CR values (range: .726–.931). Full reliability and validity indices are presented in Table 2.

Table 2
Cronbach's Alpha Coefficients of Scales and Subscales Used in the Study

Scale	Items	α	CR	AVE
COVID-19 Fear Scale	**7**	.864	.860	.479
COVID-19 Compulsive Checking Scale	**6**	.829	.826	.455
COVID Socioeconomic Consequences	**6**	.945	.947	.747
Vaccination Attitudes Examination (Vax) Scale	**12**	.879	.726–.931†	—
Mistrust of Vaccine Benefit	3	.931	-	-
Worries About Unforeseen Future Effects	3	.848	-	-
Concerns About Commercial Profiteering	3	.726	-	-
Preference For Natural Immunity	3	.735	-	-
Panic Buying Scale	**7**	.959	.959	.770

Source: Own elaboration. †CR reported at subscale level due to second-order factor structure.

Discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) ratio of correlations. All HTMT values fell below the conservative .85 threshold (Henseler et al., 2014), confirming that the constructs are empirically distinct (Table 3).

Table 3
Heterotrait-Monotrait (HTMT) Ratio of Correlations

	COVID Fear	Comp. Checking	COVID SE	Panic Buying
COVID-19 Fear	-			
COVID-19 Compulsive Checking	.715	-		
COVID Socioeconomic Consequences	.574	.463	-	
Panic Buying	.557	.406	.688	-

Source: Own elaboration. Note. All HTMT values below the .85 threshold indicate acceptable discriminant validity (Henseler et al., 2014)

Common Method Bias Assessment

Given the cross-sectional, self-report nature of this study, we systematically evaluated the potential for common method bias (CMB) using both procedural and statistical remedies, following the recommendations of Podsakoff et al. (2003). At the procedural level, we implemented several design-based measures prior to data collection to reduce CMB risk. Reverse-scored items were embedded throughout the questionnaire to disrupt response set tendencies. We included attention-check (trap) questions to identify and exclude inattentive respondents.

Full anonymity was guaranteed to all participants to minimize social desirability bias. Additionally, the independent, mediating, and dependent variables were presented in clearly separated sections of the survey instrument to reduce the likelihood that respondents would infer and artificially inflate associations between constructs.

At the statistical level, Harman's single-factor test was conducted by entering all scale items (N = 38) into a principal component analysis with no rotation, forcing extraction of a single component (Podsakoff et al., 2003). The single extracted factor accounted for 30.8% of the total variance — substantially below the 50% threshold commonly used as an indicator of serious common method bias. This result suggests that common method variance is unlikely to represent a significant confound in the present dataset.

Taken together, the procedural safeguards implemented at the design stage and the statistical evidence from Harman's test collectively indicate that common method bias does not pose a substantial threat to the validity of the findings reported in this study. Nevertheless, consistent with standard practice in cross-sectional behavioral research, the possibility of residual common method variance cannot be entirely eliminated.

FINDINGS

This study employed structural equation modeling (SEM) to test a conceptual model examining the psychological and socioeconomic drivers of panic buying among Turkish consumers during the COVID-19 pandemic (Table 4, Figure 2). The measurement model demonstrated acceptable fit ($\chi^2/df = 2.055$; CFI = .919; SRMR = .072; RMSEA = .059), and the structural model similarly confirmed adequate fit ($\chi^2/df = 2.068$; CFI = .918; SRMR = .076; RMSEA = .060), validating the suitability of the model for interpretation (Hair et al., 2010). Given the cross-sectional and self-report nature of this study, the findings should be interpreted as associations consistent with the proposed theoretical model rather than definitive causal relationships. Of the twelve hypotheses tested, five were supported and seven were rejected (Table 5). The model explained 53.9% of the variance in panic buying, representing strong explanatory power in behavioral research.

Table 4
Structural Equation Model Mediation Analysis Results

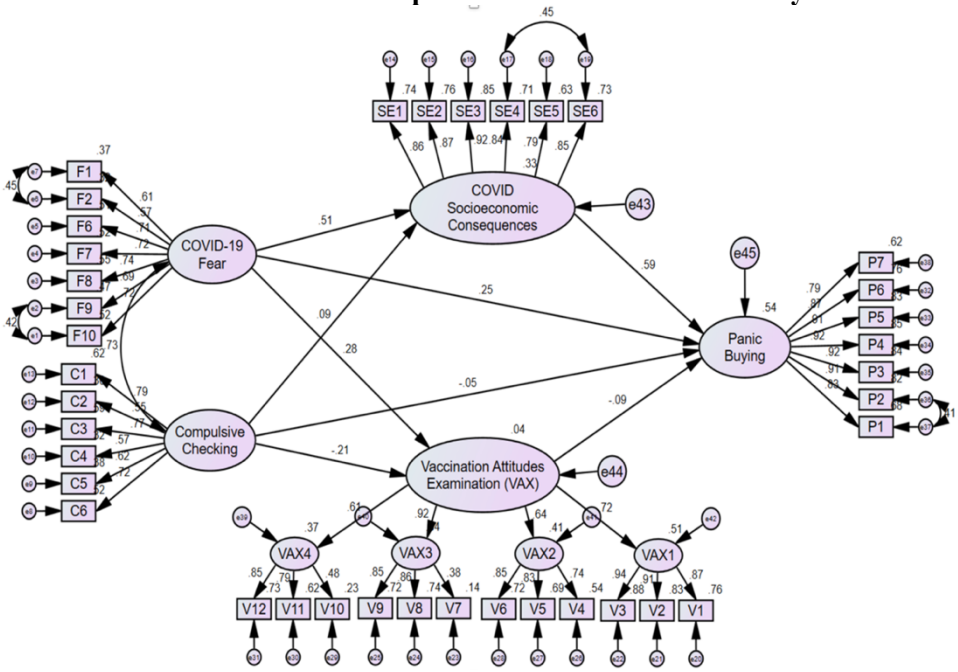
Predictor Variable		Outcome Variable	β	B	SE	t	p
COVID Fear	→	COVID SE	.508	0.600	0.118	5.101	< .001***
COVID Fear	→	Vax Attitude	.279	0.113	0.050	2.233	.026*
COVID Fear	→	Panic Buying	.250	0.309	0.111	2.795	.005**
Comp. Checking	→	COVID SE	.088	0.097	0.104	0.938	.348
Comp. Checking	→	Vax Attitude	-.205	-0.078	0.046	-1.695	.090
Comp. Checking	→	Panic Buying	-.046	-0.054	0.092	-0.589	.556
COVID SE	→	Panic Buying	.593	0.621	0.065	9.600	< .001***
Vax Attitude	→	Panic Buying	-.091	-0.280	0.154	-1.817	.069

Indirect Effects (Mediation Effects)	Total Effect	Bootstrap Confidence Interval (Lower / Upper)	p	Mediation Effect Type
Fear → COVID SE → Panic	0.373	0.166 / 0.603	.001***	Partial
Fear → Vax Attitude → Panic	-0.032	-0.119 / 0.003	.077	-
Comp. Check → COVID SE → Panic	0.060	-0.104 / 0.265	.468	-
Comp. Check → VAX → Panic	0.022	-0.006 / 0.092	.122	-

CMIN [648, N = 300] = 1340.272; p < .001; χ^2/df = 2.068;
CFI = .918; SRMR = .076; RMSEA = .060
***p < .001, **p < .01, *p < .05**

CMIN [648, N = 300] = 1340.272; p < .001; χ2/df = 2.068;
CFI = .918; SRMR = .076; RMSEA = .060
*** p < .001, ** p < .01, * p < .0
Source: Own elaboration.

Figure 2
Structural Equation Model Mediation Analysis Results



Source: Own elaboration.

Table 5
Confirmation Status of the Hypotheses

Hypotheses	Confirmed
H1a: COVID-19 fear affects COVID Socioeconomic Consequences.	Yes
H1b: COVID-19 fear affects Vaccination Attitudes.	Yes
H1c: COVID-19 fear affects Panic Buying.	Yes
H2a: COVID-19 Compulsive Checking affects COVID Socioeconomic Consequences.	No
H2b: COVID-19 Compulsive Checking affects Vaccination Attitudes.	No
H2c: COVID-19 Compulsive Checking affects Panic Buying.	No
H3a: COVID Socioeconomic Consequences affects Panic Buying.	Yes
H3b: Vaccination Attitudes affects Panic Buying.	No
H4a: COVID Socioeconomic Consequences mediates the relationship between COVID-19 fear and Panic Buying.	Yes
H4b: Vaccination Attitudes mediates the relationship between COVID-19 fear and Panic Buying.	No
H4c: COVID Socioeconomic Consequences mediates the relationship between COVID-19 Compulsive Checking and Panic Buying.	No
H4d: Vaccination Attitudes mediates the relationship between COVID-19 Compulsive Checking and Panic Buying.	No

Source: Own elaboration.

The Direct Effects of COVID-19 Fear

COVID-19 fear emerged as the central and most consistent driver across the model. It significantly and positively predicted COVID Socioeconomic Consequences ($\beta = .508$, $p < .001$), Anti-Vaccination Attitudes ($\beta = .279$, $p = .026$), and Panic Buying ($\beta = .250$, $p = .005$), supporting H1a, H1b, and H1c respectively. Together, COVID-19 fear and Compulsive Checking accounted for 33.1% of the variance in Socioeconomic Consequences, with fear being the dominant predictor. These findings suggest that COVID-19 fear extends well beyond health concerns and is associated with both economic anxieties and purchasing behavior simultaneously, consistent with Akhrani et al. (2020), Nasiha and Akhrani (2020), and Schmidt et al. (2021).

The positive relationship between COVID-19 fear and Anti-Vaccination Attitudes ($\beta = .279$) requires careful interpretation. Given that the VAX scale measures anti-vaccination attitudes (Martin & Petrie, 2017), this positive coefficient indicates that higher fear is associated with stronger anti-vaccination sentiments —a pattern that partially contradicts the broader literature, which typically associates COVID-19 fear with greater vaccine acceptance (Mertens et al., 2021; Bendau et al., 2021; Nazlı et al., 2021).

A plausible explanation is that highly fearful individuals may simultaneously distrust institutional responses, including vaccination programs, particularly in sociocultural contexts characterized by skepticism toward government health authorities (Sobierajski et al., 2023; McRee et al., 2022). However, the extremely low variance explained in Anti-Vaccination Attitudes (3.7%) indicates that COVID-19 fear and Compulsive Checking are poor predictors of anti-vaccination attitudes overall, suggesting that stable dispositional factors — such as

institutional trust, political ideology, and prior vaccination history — are the primary determinants of anti-vaccination attitudes.

The Null Effects of COVID-19 Compulsive Checking

Contrary to theoretical expectations, COVID-19 Compulsive Checking showed no significant association with any outcome variable. It failed to predict Socioeconomic Consequences ($\beta = .088$, $p = .348$), Anti-Vaccination Attitudes ($\beta = -.205$, $p = .090$), or Panic Buying ($\beta = -.046$, $p = .556$), leading to the rejection of H2a, H2b, and H2c. These null findings are noteworthy given that prior conceptual work has suggested that excessive information monitoring should amplify anxiety and panic buying behavior (Naeem, 2021; Garfin et al., 2020). Once COVID-19 fear was controlled for in the structural model, compulsive checking contributed no unique explanatory variance to any downstream outcome —a pattern consistent with structural suppression given the high intercorrelation between these two constructs within the COVID Stress Scales ($r = .53–.54$; Taylor et al., 2020a).

COVID Socioeconomic Consequences as the Strongest Predictor

COVID Socioeconomic Consequences was the single strongest direct predictor of panic buying ($\beta = .593$, $p < .001$), fully supporting H3a. The magnitude of this effect substantially exceeded the direct fear effect ($\beta = .250$), suggesting that concerns about supply chain disruptions —including grocery store closures, food shortages, and medication unavailability—show a stronger association with stockpiling behavior than the direct fear effect of the virus itself.

This finding aligns with Seih et al. (2021), who found that the economic dimension of COVID-19-related fear strongly predicted panic buying behavior. It is also consistent with the broader pattern documented by Codagnone et al. (2020), who showed that concern over the economic consequences of pandemic policy —independent of health-related fear— was a robust predictor of psychological distress, underscoring that economic threat, rather than health threat alone, operates as a distinct and consequential driver of crisis-related responses. Following Cohen's (1988) conventions for standardized effect sizes (small ≈ .10, medium ≈ .30, large ≥ .50), the .593 path coefficient observed here qualifies as a large effect.

This magnitude is broadly consistent with the strength of the economic-concern–panic-buying association reported elsewhere in the literature —for instance, Seih et al. (2021) similarly found a large bivariate correlation between the economic dimension of COVID-19-related fear and panic buying behavior ($r = .51$) in a multi-country sample. This comparatively strong association is consistent with the structural economic vulnerability of the Turkish context at the time of data collection —persistent double-digit inflation and

currency depreciation — which may have amplified the salience of economic threat relative to settings with greater macroeconomic stability.

Anti-Vaccination Attitudes did not significantly predict panic buying (β = -.091, p = .069), rejecting H3b. Although a marginal negative trend was observed, it did not reach statistical significance, indicating that anti-vaccination attitudes and panic buying are driven by psychologically distinct mechanisms —one dispositional and stable, the other situationally reactive.

The Mediating Role of COVID Socioeconomic Consequences

Bootstrap mediation analysis revealed one significant indirect effect: COVID-19 fear on panic buying via COVID Socioeconomic Consequences (B = 0.373, 95% CI [0.166, 0.603], p = .001), supporting H4a as partial mediation. Since the direct effect of COVID-19 fear on panic buying remained significant when the mediator was included (β = .250, p = .005), COVID Socioeconomic Consequences is consistent with the role of a partial mediator. The indirect effect (B = 0.373) exceeded the direct effect in magnitude, suggesting that most of the association between fear and panic buying is explained through economic threat appraisal rather than direct emotional reactivity—a pattern consistent with panic buying as a cognitively mediated, economically informed response to anticipated scarcity.

The remaining three mediation hypotheses were all rejected. The indirect effect of COVID-19 fear through Anti-Vaccination Attitudes was non-significant (B = -0.032, 95% CI [-0.119, 0.003], p = .077), rejecting H4b. The indirect effects of Compulsive Checking through Socioeconomic Consequences (B = 0.060, 95% CI [-0.104, 0.265], p = .468) and through Anti-Vaccination Attitudes (B = 0.022, 95% CI [-0.006, 0.092], p = .122) were similarly non-significant, rejecting H4c and H4d respectively. Full results are presented in Table 5.

DISCUSSION

COVID-19 Fear as the Central Driver of Crisis Consumer Behavior

The findings reinforce the central role of COVID-19 fear in shaping crisis consumer behavior. Fear was the only antecedent to show significant associations across all outcome pathways, and was positively linked to socioeconomic worry, vaccination attitudes, and panic buying— consistent with threat appraisal frameworks and prior empirical literature (Chua et al., 2021; Omar et al., 2021; Akhrani et al., 2020; Taylor, 2021).

Crucially, the present findings suggest that fear does not primarily operate through direct emotional reactivity. The larger magnitude of the indirect pathway (B = 0.373) compared to the direct effect (β = .250) is consistent with a cognitive appraisal process linking fear to

concerns about economic disruption, resource scarcity, and supply chain instability, which are in turn associated with excessive purchasing. This pattern — Fear → Economic Threat Appraisal → Behavioral Response — is consistent with panic buying as a cognitively mediated, economically informed response to anticipated scarcity rather than a purely impulsive behavior (Keane & Neal, 2021; Erdem et al., 2003).

Socioeconomic Worry as the Critical Mediating Mechanism

The partial mediation finding (H4a) is the most substantively important result of this study, identifying COVID Socioeconomic Consequences as the key explanatory variable linking pandemic fear and panic buying in this sample. This is particularly interpretable in the Turkish context: in March–April 2021, Istanbul consumers were navigating persistent inflation exceeding 15% and a depreciating lira, meaning that even moderate COVID-19 fear was associated with acute concerns about supply access and price stability (Pınar, 2022; Voyvoda, 2020). These structural economic vulnerabilities likely amplified the socioeconomic mediation pathway beyond what would be observed in more economically stable contexts, and the present study provides the first SEM-based empirical evidence of this mechanism in Türkiye.

Although this study is empirically grounded in the COVID-19 pandemic, the Fear → Socioeconomic Threat Appraisal → Panic Buying pathway is not theoretically limited to health crises. The critical activating condition is perceived economic vulnerability and anticipated scarcity — not the specific nature of the crisis. Comparable mechanisms have been documented in non-pandemic contexts: Sterman and Dogan (2015) found that phantom ordering and hoarding are associated with supply chain disruptions consistent with fear-of-shortage logic; Erdem et al. (2003) found that anticipated price increases were associated with rational stockpiling during inflationary episodes; and Kulemeka (2010) observed panic buying patterns following natural disasters, consistent with resource-scarcity appraisals. These parallels suggest that the socioeconomic mediation pathway identified in this study is likely to generalize to other crisis contexts characterized by supply uncertainty and economic threat — including commodity shocks, currency crises, and future public-health emergencies.

The boundary condition that appears to moderate the strength of this pathway is country-level economic fragility: in contexts where pre-existing inflation, income inequality, or supply chain instability are elevated, even moderate levels of fear may be associated with acute stockpiling via socioeconomic worry. Cross-national replication studies that systematically vary country-level economic indicators are therefore warranted to establish the scope conditions of this model.

The Null Effects of Compulsive Checking: Suppression and Temporal Attenuation

The complete failure of COVID-19 Compulsive Checking to predict any outcome variable is explained by two complementary mechanisms. First, structural suppression: compulsive checking and fear are highly intercorrelated within the COVID Stress Scales (r = .53–.54; Taylor et al., 2020a), and in a simultaneous SEM, shared variance is attributed to fear, leaving compulsive checking with no unique explanatory variance. Second, a temporal effect: data were collected in March–April 2021, approximately thirteen months after the pandemic's onset, by which point repetitive news-monitoring had likely become habitual and emotionally neutral — and may no longer be associated with anxiety amplification at this stage of the crisis (Carleton, 2016). Future research should examine whether compulsive checking exerts stronger effects during the acute early stages of a crisis, when information is novel, and uncertainty is at its peak.

Notably, although non-significant (p = .090), the path from Compulsive Checking to Anti-Vaccination Attitudes was unexpectedly negative (β = -.205), suggesting that intensive information-seeking may be associated with more favorable rather than more resistant anti-vaccination attitudes. This contrasts with research linking compulsive checking to misinformation exposure and vaccine hesitancy (Taylor et al., 2020b; Gao et al., 2023), and may reflect either prolonged exposure to dominant pro-vaccine media messaging during the chronic pandemic phase, or suppression by the concurrently modeled fear variable. Given its borderline significance and unexpected direction, this path warrants replication in future studies during the acute phase of a health crisis (Carleton, 2016; Batley et al., 2024).

Anti-Vaccination Attitudes as a Dispositionally Distinct Construct

It is important to distinguish between two conceptually separate findings involving vaccination attitudes. Fear of COVID-19 significantly predicted anti-vaccination attitudes (β = .279, p = .026), supporting H1b and confirming that heightened pandemic fear is associated with greater vaccine resistance — a pattern consistent with research showing that existential anxiety and institutional mistrust can paradoxically amplify vaccine hesitancy rather than reduce it (Scrima et al., 2021; Adamus et al., 2021). This finding is theoretically meaningful: it suggests that COVID-19 fear does not uniformly correspond to health-protective behavior, but is associated with both socioeconomic-driven stockpiling and distrust- and anxiety-driven resistance to vaccination.

However, anti-vaccination attitudes themselves did not significantly predict panic buying (β = -.091, p = .069), rejecting H3b and H4b. This null finding should not be interpreted as evidence that vaccination attitudes are irrelevant to crisis behavior in general — rather, it reflects a fundamental psychological distinction between the two constructs. The VAX Scale (Martin & Petrie, 2017) measures stable, trait-like dispositional attitudes toward vaccination

formed through years of socialization, whereas panic buying is an acutely state-dependent response to situationally perceived scarcity (Taylor, 2021; Omar et al., 2021).

These constructs operate at fundamentally different psychological layers —one dispositional, one situational— and the absence of a significant path from vaccination attitudes to panic buying is therefore theoretically coherent rather than anomalous. Interventions targeting panic buying, such as supply chain transparency and economic reassurance messaging, are unlikely to predictably affect vaccination attitudes, and vice versa; these phenomena require separate policy frameworks and communication strategies—a distinction that remains equally relevant in future crises, whether pandemic-related, economic, or supply-chain-driven.

International and Cross-Context Relevance

Although this study is empirically grounded in a single national context, the theoretical mechanism it identifies is not bound to Türkiye or to the COVID-19 pandemic specifically. The critical activating condition underlying the fear–panic buying relationship is perceived economic vulnerability and anticipated scarcity — not the particular nature of the crisis or the country in which it occurs. This claim is supported by convergent evidence from non-pandemic settings: fear-of-shortage logic has been documented in supply chain disruptions (Sterman & Dogan, 2015), inflationary episodes (Erdem et al., 2003), and natural disasters (Kulemeka, 2010), all of which exhibit the same underlying appraisal structure — a perceived threat translated into economic concern, which in turn drives stockpiling behavior.

The present findings suggest a testable boundary condition for this mechanism: its strength should scale with country-level economic fragility. Türkiye's macroeconomic environment during data collection—persistent double-digit inflation and currency depreciation—plausibly amplified the socioeconomic mediation pathway beyond what would be expected in more economically stable contexts. This implies that the model is likely to generalize most strongly to other economically vulnerable settings (e.g., countries experiencing high inflation, currency instability, or acute supply disruptions), while potentially showing an attenuated indirect pathway in economically stable, high-income contexts where economic threat is less chronically salient.

This positions the present study's contribution beyond a single-country case study: it offers a portable theoretical mechanism — Fear → Economic Threat Appraisal → Behavioral Response — whose applicability extends to any crisis context characterized by supply uncertainty and economic threat, including future public-health emergencies, commodity shocks, and currency crises. Cross-national replication studies that systematically vary country-level economic indicators (e.g., inflation rate, currency stability, income inequality) are the natural next step to formally establish the scope conditions of this model.

Theoretical Contributions

This study's primary theoretical contribution is the empirical validation of a sequential threat-appraisal model of crisis consumer behavior —Fear → Economic Threat Appraisal → Behavioral Response— which repositions panic buying from a direct emotional reaction to a multi-stage cognitive process in which economic threat perception, not fear itself, is the proximal driver of stockpiling. Building on this framework, the study makes several further contributions to the theoretical literature on crisis consumer behavior.

Most importantly, it provides the first empirically validated, SEM-based evidence that COVID Socioeconomic Consequences partially mediate the relationship between COVID-19 fear and panic buying in the Turkish context. By demonstrating that the indirect effect of fear through socioeconomic worry (B = 0.373) exceeds the direct effect (β = .250), the study advances theoretical models of panic buying beyond simple bivariate fear–behavior associations toward a multi-stage cognitive appraisal architecture. This is consistent with the broader threat appraisal literature (Chua et al., 2021; Omar et al., 2021) and extends it by identifying the specific cognitive content—economic threat—associated with the fear–behavior relationship.

The study also contributes by documenting the boundary conditions of compulsive checking's explanatory power. The null effects across five hypotheses in a chronic pandemic phase suggest that compulsive checking's behavioral relevance may be phase-dependent and appears weaker during prolonged pandemic exposure. This theoretical boundary condition has not been previously demonstrated empirically and points to a temporal moderation hypothesis that future research should test. Similarly, the negligible variance explained in vaccination attitudes (3.7%) contributes to ongoing theoretical debates by empirically distinguishing stable anti-vaccination dispositions from acutely state-dependent crisis behaviors, reinforcing the trait–state framework proposed by Martin and Petrie (2017).

Finally, the study's Turkish context contributes geographic and economic diversity to a literature dominated by samples from Western, economically stable contexts. The strength of the socioeconomic mediation pathway in a high-inflation, economically vulnerable urban environment suggests that the fear–panic buying relationship is not economically invariant and that structural economic conditions may vary its strength. Importantly, this theoretical insight extends beyond the pandemic: the same moderation logic applies to inflationary crises, supply chain disruptions, and future public-health emergencies —any context in which pre-existing economic vulnerability may intensify threat appraisal. Cross-national replication studies that systematically vary country-level economic indicators would substantially advance theoretical understanding of when and why socioeconomic worry mediates panic buying across different crisis types.

Practical Implications

The most direct practical implication is that reducing panic buying requires targeting socioeconomic fears, not merely health fears. If the observed association between COVID-19 fear and panic buying is explained through concerns about grocery shortages, store closures, and medication unavailability, then crisis interventions that directly address supply chain credibility may be among the most promising approaches —consistent with the finding that COVID Socioeconomic Consequences was the strongest predictor of panic buying in this model ($\beta = .593$, $p < .001$).

Governments should prioritize transparent, real-time communication about inventory levels, supply continuity, and pricing controls during crisis periods. In the Turkish context specifically, authorities should consider deploying explicit economic reassurance messaging —directly addressing concerns about inflation, shortages, and access to essential goods— alongside health-focused communications. General behavioral nudges or fear-reduction campaigns that fail to address the economic dimension are unlikely to meaningfully reduce stockpiling behavior.

For retailers, the findings suggest that visible stock rotation practices, prominent in-store and digital signaling of supply availability, and targeted limits on bulk purchasing quantities may reduce panic-buying surges during crisis periods. Retailers who allow shelves to appear depleted —even temporarily— may heighten socioeconomic worry, which is associated with additional purchasing in the present findings. Supply visibility management is therefore not merely a logistical concern but a behavioral one with direct implications for consumer psychology (Schmidt et al., 2021; Taylor, 2021).

Critically, these recommendations are not limited to pandemic contexts. The same supply chain communication and economic reassurance strategies are directly applicable during inflationary episodes —when price expectations are associated with precautionary stockpiling— and during supply disruptions, when perceived scarcity is linked to the fear → socioeconomic worry → panic buying pattern observed in this study. Governments and retailers operating in economically fragile environments should treat panic buying prevention as a standing crisis communication protocol, not merely a pandemic-specific response.

The null effects of vaccination attitudes on panic buying carry an equally important practical message: vaccine hesitancy and panic buying require entirely separate policy responses. Resources allocated to increasing vaccine uptake are unlikely to reduce panic buying, and vice versa. Policymakers and communication professionals should treat these as independent behavioral targets requiring distinct messaging frameworks, channels, and timing strategies.

Conflating them in unified crisis communication campaigns is unlikely to be effective for either outcome, based on the distinct psychological mechanisms suggested by the present findings.

Translating these findings into actionable protocols, Table 6 summarizes concrete intervention points for the three primary stakeholder groups implicated by this study, specifying the responsible actor, the recommended action, and the trigger condition under which it should be activated. This operationalization moves the discussion from general communication principles to specific, implementable crisis-response protocols.

Table 6
Operational Recommendations for Crisis Stakeholders

Actor	Action	Trigger / Timing
National/local government	Publish a public-facing supply and inventory dashboard for essential goods (food, medication, sanitation products), updated every 24–48 hours during a declared crisis period	Activated upon official crisis/emergency declaration
National/local government	Issue explicit economic reassurance communications (e.g., price-stability guarantees, anti-price-gouging enforcement statements) alongside health advisories, rather than as separate or delayed messaging	Issued concurrently with the first public health advisory, not after
Retailers	Implement visible, per-customer purchase limits on high-demand essential items	Activated when in-store inventory of a given essential category falls below a pre-defined threshold (e.g., 20% of standard stock)
Retailers	Maintain visibly full-looking shelves through rapid restocking or shelf-arrangement practices, avoiding prolonged visible depletion	Continuous practice during any period of elevated public concern, not only after shortages are reported
Retailers	Display real-time or near-real-time stock-availability signage (in-store and digital/app-based)	Activated at the onset of a supply-concern signal (e.g., panic-buying-related media coverage or search trends)
Crisis-management institutions	Separate panic-buying mitigation and health-behavior campaigns (e.g., vaccination) into distinct messaging tracks with independent timelines and channels	Standing policy, not crisis-specific

Note: The thresholds and timing intervals presented are illustrative operational examples derived from the study's theoretical framework; implementing institutions should calibrate specific values based on local context and resources.
Source: Own elaboration

Limitations

Several limitations should be acknowledged when interpreting the findings of this study:
First, the cross-sectional design prevents causal inference. Although the theoretical model proposes directionality — Fear → Socioeconomic Consequences → Panic Buying — reverse causality cannot be excluded. Panic buying itself may be associated with heightened socioeconomic fear through supply depletion cues, and socioeconomic worry may be linked to stronger fear perceptions in a reciprocal pattern. This bidirectionality means that the mediation pathway identified here should be interpreted as evidence of association and theoretical consistency rather than an established causal sequence. Longitudinal or

experimental designs are recommended for future research to establish directionality (Creswell & Creswell, 2018; Podsakoff et al., 2003).

Second, online data collection via SurveyMonkey introduced systematic selection bias by excluding older adults and lower-income populations with limited digital access. This is consequential for interpretation: the sample over-represents educated, digitally literate, middle-income urban adults — a group likely to possess greater economic resilience than the broader Istanbul population. This means the socioeconomic mediation effect observed in this study may actually be conservative: in lower-income groups, for whom financial insecurity is more acute, the association between fear, socioeconomic worry, and panic buying may be more pronounced. Additionally, self-report measures carry inherent risks of recall and social desirability bias, which may have led participants to underreport socially stigmatized behaviors such as excessive stockpiling (Lefever et al., 2007).

Third, the VAX Scale (Martin & Petrie, 2017) is a general dispositional instrument not developed for the COVID-19 context, and may not capture situational vaccine attitudes specific to the pandemic period. The extremely low variance explained in vaccination attitudes (3.7%) may therefore partly reflect this measurement limitation rather than a genuine absence of structural relationships. Future research should employ COVID-19-specific vaccination attitude measures to retest these pathways.

Fourth, COVID-19 Compulsive Checking was incorporated on theoretical grounds; however, its null findings may partly reflect multicollinearity with COVID-19 fear — given their high intercorrelation within the COVID Stress Scales ($r = .53–.54$; Taylor et al., 2020a) — rather than a genuine absence of effect, and should be interpreted with caution. Additionally, data were collected in March–April 2021, approximately thirteen months after the pandemic's onset, when compulsive checking may have become habitual and emotionally neutral. These null findings may therefore not generalize to the acute early stages of a crisis, when information novelty is high and compulsive checking is more likely to be associated with heightened anxiety and stronger behavioral responses.

Fifth, the sample is geographically restricted to 300 Istanbul adults recruited via convenience sampling. Istanbul is Türkiye's most economically exposed and densely populated city, meaning the strength of the socioeconomic mediation pathway observed here may not generalize even within Türkiye: consumers in smaller cities or rural areas, with different economic exposures and supply chain experiences, may exhibit weaker or differently patterned associations. More broadly, the findings reflect Türkiye's specific macroeconomic conditions — persistent inflation and currency depreciation — and the socioeconomic mediation effect may be attenuated in more economically stable national contexts. Cross-

national replication using probability sampling is necessary to establish the generalizability of these findings (Hair et al., 2010; Etikan et al., 2016).

Future studies should employ probability sampling, longitudinal designs, broader geographic coverage, and COVID-19-specific measures of vaccination attitudes to address these limitations and further consolidate the conclusions of this study.

CONCLUSIONS

This study examined the psychological and socioeconomic drivers of panic buying among Turkish consumers during the COVID-19 pandemic, with particular focus on the mediating roles of COVID Socioeconomic Consequences and vaccination attitudes. Using structural equation modeling (SEM) with data collected from 300 Istanbul residents in March–April 2021, the model explained 53.9% of the variance in panic buying behavior — a level of explanatory power that is notable within the behavioral research literature.

The central finding of this study is that COVID-19 fear does not appear as a simple, direct antecedent of panic buying. Instead, the strongest observed association between fear and stockpiling was explained through socioeconomic worry — specifically, concerns about grocery shortages, store closures, and medication unavailability. The indirect effect of COVID-19 fear on panic buying via COVID Socioeconomic Consequences ($B = 0.373$, 95% CI [0.166, 0.603], $p = .001$) exceeded the direct effect ($\beta = .250$), supporting partial mediation and suggesting that panic buying may be better understood as a cognitively mediated, economically informed response rather than a purely impulsive or irrational behavior. COVID Socioeconomic Consequences also emerged as the strongest direct predictor of panic buying in the model ($\beta = .593$, $p < .001$), substantially outpacing the direct fear effect in magnitude.

These results carry particular interpretive weight in the Turkish urban context. Istanbul consumers in 2021 were already navigating persistent inflation and a depreciating currency, meaning that even moderate COVID-19 fear was associated with acute concerns about supply access and price stability. As discussed in Section 5.5, this structural economic vulnerability likely strengthened the socioeconomic mediation pathway beyond what would be observed in more economically stable settings, and the underlying mechanism is theoretically applicable to crisis contexts well beyond the COVID-19 pandemic.

Contrary to theoretical expectations, COVID-19 Compulsive Checking failed to predict any outcome variable in the model. Once COVID-19 fear was controlled for, compulsive checking contributed no unique explanatory variance to socioeconomic worry, vaccination

attitudes, or panic buying. This pattern of null findings — consistent across all five related hypotheses — suggests that by the chronic phase of the pandemic, repetitive news-monitoring had become habitual and emotionally neutral, and may no longer be associated with anxiety amplification at this stage of the crisis. Future research should test whether compulsive checking exerts stronger behavioral effects during the acute early stages of a crisis, when information is novel, and uncertainty is at its peak —a temporal moderation hypothesis with implications beyond pandemic contexts.

Vaccination attitudes, measured via the dispositional VAX Scale, showed no significant relationship with panic buying ($\beta = -.091$, $p = .069$) and did not mediate any pathway in the model. This finding underscores a theoretically important distinction: anti-vaccination beliefs are stable, trait-like dispositions formed over years of socialization, whereas panic buying is an acutely state-dependent behavioral response to perceived scarcity. These two phenomena, while both prominent during the COVID-19 pandemic, reflect fundamentally different psychological mechanisms and require entirely separate policy responses. Interventions effective at reducing stockpiling are unlikely to predictably affect vaccine hesitancy, and vice versa — a distinction that remains equally relevant in future public-health crises.

From a practical standpoint, the findings suggest that governments and retailers seeking to mitigate panic buying during future crises — whether pandemic-related, inflationary, or supply-chain-driven — should prioritize transparent, real-time communication about supply availability and pricing rather than relying solely on health-focused messaging. Strategies that directly address economic fears — such as explicit reassurances regarding inventory levels, anti-price-gouging measures, and visible stock rotation in stores — may represent promising approaches for preventing excessive purchasing across crisis types. Unified crisis communication campaigns that conflate panic buying with vaccine hesitancy are unlikely to address either behavior optimally.

In summary, this study advances the panic buying literature by providing the first SEM-based empirical evidence from Türkiye that socioeconomic worry is the critical mediating mechanism linking COVID-19 fear to stockpiling behavior. The findings suggest panic buying as a rationally motivated, cognitively mediated response to anticipated economic disruption — a pattern consistent with structural economic vulnerabilities and one that may emerge in future crises of uncertainty. Future research should address the study's limitations through longitudinal designs, probability sampling, broader geographic coverage, and COVID-19-specific measures of vaccination attitudes to further consolidate and extend these conclusions.

DECLARATIONS

Conflicts of Interest Declaration: The author declares that he has no conflicts of interest.

Author Contributions: The author was solely responsible for conceptualization, methodology, formal analysis, writing—original draft, writing—review and editing.

Declaration of Generative AI and AI-Assisted Technologies: During the preparation of this manuscript, the author used Grammarly for language and grammar checking. The author reviewed and approved the final version of the manuscript.

Informed Consent Declaration: All participants involved in this study were fully informed about the purpose and procedures of the research. Participation was entirely voluntary, and participants had the right to withdraw from the study at any time without any consequences. Before data collection, all participants provided informed consent. They were assured that their responses would remain confidential and anonymous, and that the collected data would be used solely for academic and research purposes. No personal identifying information was collected, and all data were handled in accordance with ethical research standards.

REFERENCES

Adamus, M., Čavojová, V., & Mikušková, E. (2021). Fear trumps the common good: Psychological antecedents of vaccination attitudes and behaviour. *Acta Psychologica*, 227, 103606. https://doi.org/10.1016/j.actpsy.2022.103606

Açıkgöz, Ö., & Günay, A. (2020). The early impact of the COVID-19 pandemic on the global and Turkish economy. *Turkish Journal of Medical Sciences, 50*(9), 520–526. https://doi.org/10.3906/sag-2004-6

Ahorsu, D., Lin, C., Imani, V., Saffari, M., Griffiths, M., & Pakpour, A. (2022). The fear of COVID-19 scale: Development and initial validation. *International Journal of Mental Health and Addiction, 20*(3), 1537–1545. https://doi.org/10.1007/s11469-020-00270-8

Akhrani, L., Nasiha, I., & Octaviani, A. (2020). Analysis of panic buying behavior from fear of COVID-19 and citizen trust. In *Proceedings of the 2nd Borobudur International Symposium on Humanities and Social Sciences, 18.*

Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423. https://doi.org/10.1037/0033-2909.103.3.411

Ann, S., & Baumann, O. (2023). Psychological mechanisms and interventions directed at vaccination attitudes. *Frontiers in Sociology,* 8. https://doi.org/10.3389/fsoc.2023.1076015

Arafat, S., Kar, S., Marthoenis, M., Sharma, P., Apu, E., & Kabir, R. (2020a). Psychological underpinning of panic buying during pandemic (COVID-19). *Psychiatry Research, 289*, 113061. https://doi.org/10.1016/j.psychres.2020.113061

Arafat, S., Kar, S., Menon, V., Kaliamoorthy, C., … Marthoenis, M., & Kabir, R. (2020b). Panic buying: An insight from the content analysis of media reports during COVID-19 pandemic. *Neurology, Psychiatry and Brain Research, 37*, 100–103.

Badgaiyan, A., & Verma, A. (2015). Does urge to buy impulsively differ from impulsive buying behavior? Assessing the impact of situational factors. *Journal of Retailing and Consumer Services, 22*, 145–157. https://doi.org/10.1016/j.jretconser.2014.10.002

Baldwin, R., & di Mauro, B. (Eds.). (2020). *Economics in the time of COVID-19*. CEPR Press.

Barnes, S., Lema, M., & Arnaboldi, M. (2020). Understanding panic buying during COVID-19: A text analytics approach. *Expert Systems with Applications, 169*, 114360. https://doi.org/10.1016/j.eswa.2020.114360

Batley, P., Milner, A., Kavanagh, A., & LaMontagne, A. (2024). *COVID stress factors, willingness to be vaccinated, and reasons for vaccination hesitancy amongst youth and ethnic minorities: A structural equation modeling analysis.* SAGE Open. https://doi.org/10.1177/21582440241289353

Bendau, A., Plag, J., Petzold, M., & Ströhle, A. (2021). COVID-19 vaccine hesitancy and related fears and anxiety. *International Immunopharmacology, 97,* 107724. https://doi.org/10.1016/j.intimp.2021.107724

Boomsma, A., & Hoogland, J. (2001). The robustness of LISREL modeling revisited. In R. Cudeck, S. du Toit, & D. Sörbom (Eds.), *Structural equation modeling: Present and future* (pp. 139–168). Scientific Software International.

Bülbül, N., Çayırağası, F., & Efendioglu, I. H. (2026). SORCIS Model: Social Media Marketing Dimensions, Consumer Decision-Making Styles, and Purchase Intention. *Mercados y Negocios*, (57), 107–142. https://doi.org/10.32870/myn.vi57.7998

Byrne, B. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). Routledge.

Carleton, R. (2016). Fear of the unknown: One fear to rule them all? *Journal of Anxiety Disorders, 41*, 5–21. https://doi.org/10.1016/j.janxdis.2016.03.011

Choi, J., Lieff, S., Meltzer, G., Grivel, M., Chang, V., Yang, L., & Jarlais, D. (2022). Anti-vaccine attitudes among adults in the U.S. during the COVID-19 pandemic after vaccine rollout. *Vaccines, 10*(6), 933. https://doi.org/10.3390/vaccines10060933

Chua, G., Yuen, K., Wang, X., & Wong, Y. (2021). The determinants of panic buying during COVID-19. *International Journal of Environmental Research and Public Health, 18*(6), 3247. https://doi.org/10.3390/ijerph18063247

Codagnone, C., Bogliacino, F., … Folkvord, F., & Veltri, G. (2020). Assessing concerns for the economic consequence of the COVID-19 response and mental health problems associated with economic vulnerability and negative economic shock in Italy, Spain, and the United Kingdom. *PLOS ONE, 15*(10), e0240876. https://doi.org/10.1371/journal.pone.0240876

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Lawrence Erlbaum Associates.

Collier, J. (2020). *Applied structural equation modeling using AMOS: Basic to advanced techniques.* Routledge.

Creswell, J., & Creswell, J. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

Demirgöz, M., Dişsiz, M., & Bayri, F. (2021). Validity and reliability of the Turkish version of the COVID Stress Scale. *Journal of Korean Academy of Nursing, 51*(5), 525–536. https://doi.org/10.4040/jkan.21106

Erdem, T., Imai, S., & Keane, M. (2003). Brand and quantity choice dynamics under price uncertainty. *Quantitative Marketing and Economics, 1*(1), 5–64. https://doi.org/10.1023/A:1023536326497

Etikan, I., Musa, S., & Alkassim, R. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics, 5(*1), 1–4. https://doi.org/10.11648/j.ajtas.20160501.11

Fasce, A., Schmid, P., Holford, D., Bates, L., Gurevych, I., & Lewandowsky, S. (2023). A taxonomy of anti-vaccination arguments from a systematic literature review and text modelling. *Nature Human Behaviour*, 7, 1462–1480. https://doi.org/10.1038/s41562-023-01644-3

Field, A. (2018). *Discovering statistics using IBM SPSS statistics: North American edition*. SAGE.

Gao, J., Zhang, Y., Wang, Y., Xiao, J., & Luo, H. (2023). How does digital media search for COVID-19 influence vaccination intention? The mediating roles of risk perception and conspiracy beliefs. *Vaccines, 11*(1), 114.

https://doi.org/10.3390/vaccines11010114

Garfin, D. R., Silver, R. C., & Holman, E. A. (2020). The novel coronavirus (COVID-2019) outbreak: Amplification of public health consequences by media exposure. *Health Psychology, 39*(5), 355–357. https://doi.org/10.1037/hea0000875

Guan, W., Ni, Z., Hu, Y., Liang, W., Ou, C., He, J., & Du, B. (2020). Clinical characteristics of coronavirus disease 2019 in China. *New England Journal of Medicine, 382,* 1708–1720. https://doi.org/10.1056/NEJMoa2002032

Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate data analysis* (7th ed.). Pearson Prentice Hall.

Haktanir, A., Seki, T., & Dilmaç, B. (2022). Adaptation and evaluation of Turkish version of the fear of COVID-19 scale. *Death Studies, 46*(3), 719–727. https://doi.org/10.1080/07481187.2020.1773026

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). Guilford Press.

Henseler, J., Ringle, C., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*, 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hita, M., Grégoire, Y., Lussier, B., Boissonneault, S., Vandenberghe, C., & Sénécal, S. (2022). An extended health belief model for COVID-19: Understanding the media-based processes leading to social distancing and panic buying. *Journal of the Academy of Marketing Science, 51*, 132–152. https://doi.org/10.1007/s11747-022-00865-8

Hornsey, M., Harris, E., & Fielding, K. (2018). The psychological roots of anti-vaccination attitudes: A 24-nation investigation. *Health Psychology, 37*(4), 307–315. https://doi.org/10.1037/hea0000586

Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Kawashima, S., Morita, A., & Higuchi, T. (2012). Emergency stockpiling of food and drinking water in preparation for earthquakes: Evidence from a survey conducted in Sendai City, Japan. *Journal of Hunger & Environmental Nutrition, 7,* 113–121. https://doi.org/10.1080/19320248.2012.704661

Keane, M., & Neal, T. (2021). Consumer panic in the COVID-19 pandemic. *Journal of Econometrics, 220*(1), 86–105. https://doi.org/10.1016/j.jeconom.2020.07.045

Kulemeka, O. (2010). US consumers and disaster: Observing 'panic buying' during the winter storm and hurricane seasons. *Advances in Consumer Research, 37*, 837–838.

Lazarus, J., Ratzan, S., Palayew, A., … Kimball, S., & El-Mohandes, A. (2020). A global survey of potential acceptance of a COVID-19 vaccine. *Nature Medicine, 27*, 225–228. https://doi.org/10.1038/s41591-020-1124-9

Lefever, S., Dal, M., & Matthíasdóttir, Á. (2007). Online data collection in academic research: Advantages and limitations. *British Journal of Educational Technology, 38*(4), 574–582. https://doi.org/10.1111/j.1467-8535.2006.00638.x

Lins, S., & Aquino, S. (2020). Development and initial psychometric properties of a panic buying scale during COVID-19 pandemic. *Heliyon, 6*(9), e04746. https://doi.org/10.1016/j.heliyon.2020.e04746

Martin, L., & Petrie, K. (2017). Understanding the dimensions of anti-vaccination attitudes: The vaccination attitudes examination (VAX) scale. *Annals of Behavioral Medicine, 51*(5), 652–660. https://doi.org/10.1007/s12160-017-9888-y

McRee, A., Gower, A., Kiss, D., & Reiter, P. (2022). Has the COVID-19 pandemic affected general vaccination hesitancy? Findings from a national study. *Journal of Behavioral Medicine, 46*, 9–14. https://doi.org/10.1007/s10865-022-00298-2

Mertens, G., Gerritsen, L., Duijndam, S., Salemink, E., & Engelhard, I. (2020). Fear of the coronavirus (COVID-19): Predictors in an online study conducted in March 2020. *Journal of Anxiety Disorders, 74,* 102258. https://doi.org/10.1016/j.janxdis.2020.102258

Mertens, G., Duijndam, S., Smeets, T., & Lodder, P. (2021). The latent and item structure of COVID-19 fear: A comparison of four COVID-19 fear questionnaires using SEM and network analyses. *Journal of Anxiety Disorders, 81*, 102415. https://doi.org/10.1016/j.janxdis.2021.102415

Mertens, G., Lodder, P., Smeets, T., & Duijndam, S. (2022). Fear of COVID-19 predicts vaccination willingness 14 months later. *Journal of Anxiety Disorders, 88*, 102574. https://doi.org/10.1016/j.janxdis.2022.102574

Mishra, N., Das, S., Yadav, S., … Hasnain, M., & Nayak, A. (2020). Global impacts of pre- and post-COVID-19 pandemic: Focus on socio-economic consequences. *Sensors International, 1*, 100042. https://doi.org/10.1016/j.sintl.2020.100042

Naeem, M. (2021). Do social media platforms develop consumer panic buying during the fear of COVID-19 pandemic. *Journal of Retailing and Consumer Services, 58*, 102226. https://doi.org/10.1016/j.jretconser.2020.102226

Nasiha, I., & Akhrani, L. (2020). The rush before the storm: Assessing the role of fear of

COVID-19 toward panic buying behaviors in the COVID-19 pandemic in Indonesia. *Khazanah: Jurnal Mahasiswa*. https://doi.org/10.20885/khazanah.vol12.iss2.art16

Nazlı, Ş., Yığman, F., Sevindik, M., & Özturan, D. (2021). Psychological factors affecting COVID-19 vaccine hesitancy. *Irish Journal of Medical Science, 191*, 71–80. https://doi.org/10.1007/s11845-021-02640-0

Omar, N., Nazri, M., Ali, M., & Alam, S. (2021). The panic buying behavior of consumers during the COVID-19 pandemic: Examining the influences of uncertainty, perceptions of severity, perceptions of scarcity, and anxiety. *Journal of Retailing and Consumer Services, 62,* 102600. https://doi.org/10.1016/j.jretconser.2021.102600

Pappas, G., Kiriaze, I., Giannakis, P., & Falagas, M. (2009). Psychosocial consequences of infectious diseases. *Clinical Microbiology and Infection, 15*(8), 743–747. https://doi.org/10.1111/j.1469-0691.2009.02947.x

Pertwee, E., Simas, C., & Larson, H. (2022). An epidemic of uncertainty: Rumors, conspiracy theories and vaccine hesitancy. *Nature Medicine, 28*, 456–459. https://doi.org/10.1038/s41591-022-01728-z

Pınar, D. A. (2022). COVID-19 küresel salgınının ekonomik etkileri. In *COVID-19 pandemisinin olumlu ve olumsuz etkileri* (p. 209).

Podsakoff, P., MacKenzie, S., Lee, J., & Podsakoff, N. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Roozenbeek, J., Schneider, C. R., Dryhurst, S., Kerr, J., Freeman, A. L. J., Recchia, G., van der Bles, A. M., & van der Linden, S. (2020). Susceptibility to misinformation about COVID-19 around the world. *Royal Society Open Science, 7*(10), 201199. https://doi.org/10.1098/rsos.201199

Ruggeri, K., Vanderslott, S., … Fallah, M., Stock, F., & Hertwig, R. (2024). Behavioural interventions to reduce vaccine hesitancy driven by misinformation on social media. *BMJ, 384.* https://doi.org/10.1136/bmj-2023-076542

Salameh, P., Hajj, A., Badro, D., Abou Selwan, C., Aoun, R., & Sacre, H. (2020). Mental health outcomes of the COVID-19 pandemic and a collapsing economy: Perspectives from a developing country. *Psychiatry Research, 294*, 113520. https://doi.org/10.1016/j.psychres.2020.113520

Sallam, M., Dababseh, D., Eid, H., Al-Mahzoum, K., … Bakri, F. G., & Mahafzah, A. (2021). High rates of COVID-19 vaccine hesitancy and its association with conspiracy beliefs: A study in Jordan and Kuwait among other Arab countries. *Vaccines, 9*(1), 42. https://doi.org/10.3390/vaccines9010042

Sarfraz, M., Ji, X., Asghar, M., Ivaşcu, L., & Ozturk, I. (2022). Signifying the relationship between fear of COVID-19, psychological concerns, financial concerns and healthcare employees job performance: A mediated model. *International Journal of Environmental Research and Public Health, 19*(5), 2657. https://doi.org/10.3390/ijerph19052657

Satici, B., Gocet, E., Deniz, M., & Satici, S. (2020). Adaptation of the Fear of COVID-19 Scale: Its association with psychological distress and life satisfaction in Turkey. *International Journal of Mental Health and Addiction, 19,* 1–9. https://doi.org/10.1007/s11469-020-00294-0

Schmidt, S., Benke, C., & Pané-Farré, C. (2021). Purchasing under threat: Changes in shopping patterns during the COVID-19 pandemic. *PLOS ONE, 16,* e0249121. https://doi.org/10.1371/journal.pone.0249121

Scrima, F., Miceli, S., Caci, B., & Cardaci, M. (2021). The relationship between fear of COVID-19 and intention to get vaccinated: The serial mediation roles of existential anxiety and conspiracy beliefs. *Personality and Individual Differences, 184,* 111188. https://doi.org/10.1016/j.paid.2021.111188

Seih, Y., Tra, V., Lepicovsky, M., & Chang, Y. (2021). Let others buy first: Identity fusion buffers the effect of COVID-19 phobia on panic buying behavior from an economic perspective. *Frontiers in Psychology, 12*, 710185. https://doi.org/10.3389/fpsyg.2021.710185

Sim, K., Chua, H., Vieta, E., & Fernandez, G. (2020). The anatomy of panic buying related to the current COVID-19 pandemic. *Psychiatry Research, 288*, 113015. https://doi.org/10.1016/j.psychres.2020.113015

Sobierajski, T., Rzymski, P., & Wanke-Rytt, M. (2023). Impact of the COVID-19 pandemic on attitudes toward vaccination: Representative study of Polish society. *Vaccines, 11*(6), 1069. https://doi.org/10.3390/vaccines11061069

Sterman, J., & Dogan, G. (2015). 'I'm not hoarding, I'm just stocking up before the hoarders get here': Behavioral causes of phantom ordering in supply chains. *Journal of Operations Management, 39*, 6–22. https://doi.org/10.1016/j.jom.2015.07.002

Taylor, S. (2021). Understanding and managing pandemic-related panic buying. *Journal of Anxiety Disorders, 78,* 102364. https://doi.org/10.1016/j.janxdis.2021.102364

Taylor, S., Landry, C., Paluszek, M., Fergus, T., McKay, D., & Asmundson, G. (2020a).

Development and initial validation of the COVID Stress Scales. *Journal of Anxiety Disorders, 72*, 102232. https://doi.org/10.1016/j.janxdis.2020.102232

Taylor, S., Landry, C., Paluszek, M., Rachor, G., & Asmundson, G. (2020b). Worry, avoidance, and coping during the COVID-19 pandemic: A comprehensive network analysis. *Journal of Anxiety Disorders, 76*, 102327. https://doi.org/10.1016/j.janxdis.2020.102327

Turkish Ministry of Health. (2021). *COVID-19 pandemic data*. Turkish Ministry of Health. Link: https://COVID19.saglik.gov.tr/

Voyvoda, E. (2020). COVID-19 salgının Türkiye ekonomisi üzerine etkileri ve politika alternatiflerinin makroekonomik genel denge analizi. In *Salgın ekonomisi*. Eflatun Yayınevi.

Wang, H. H., & Hao, N. (2020). Panic buying? Food hoarding during the pandemic period with city lockdown. *Journal of Integrative Agriculture, 19*(12), 2916–2925. https://doi.org/10.1016/S2095-3119(20)63448-7

World Health Organization. (2020a). *Coronavirus disease (COVID-2019): Situation report-54.* World Health Organization. Link: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200314-sitrep-54-COVID-19.pdf

Wu, Y., Xin, L., Li, D., Yu, J., & Guo, J. (2021). How does scarcity promotion lead to impulse purchase in the online market? A field experiment. *Information & Management, 58*(1), 103283. https://doi.org/10.1016/j.im.2020.103283

Yildiz, E., Gungormus, Z., & Dayapoglu, N. (2021). Assessment of validity and reliability of the Turkish version of the vaccination attitudes examination (VAX) scale. *International Journal of Caring Sciences, 14*(1), 261–268.

Yuen, K. F., Wang, X., Ma, F., & Li, K. X. (2020). The psychological causes of panic buying following a health crisis. *International Journal of Environmental Research and Public Health, 17*(9), 3513. https://doi.org/10.3390/ijerph17103513

Appendix:

Table. 7 Measurement Scales, Items, and APA References

No	Scale Name	Scale Items	In-text Citation
1. Fear of COVID-19 Scale | 7 items | 5-point Likert			
1	**1. Fear of COVID-19 Scale** *(Ahorsu et al. (2022)*	I am most afraid of coronavirus-19.	*Ahorsu et al. (2022)*
2		It makes me uncomfortable to think about coronavirus-19.	
3		My hands become clammy when I think about coronavirus-19.	
4		I am afraid of losing my life because of coronavirus-19.	
5		When watching news and stories about coronavirus-19 on social media, I become nervous or anxious.	
6		I cannot sleep because I'm worrying about getting coronavirus-19.	
7		My heart races or palpitates when I think about getting coronavirus-19.	
APA Reference: Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2022). The fear of COVID-19 scale: Development and initial validation. International Journal of Mental Health and Addiction, 20(3), 1537–1545. https://doi.org/10.1007/s11469-020-00270-8			
2. COVID-19 Compulsive Checking Scale | 6 items | 5-point Likert | Subscale of CSS — used independently			
8	**2. COVID-19 Compulsive Checking Scale** *(Taylor et al. (2020a)*	Searched the Internet for treatments for COVID-19.	*Taylor et al. (2020a)*
9		Asking health professionals (e.g., doctors or pharmacists) for advice about COVID-19.	
10		YouTube videos about COVID-19.	
11		Checking your own body for signs of infection (e.g., taking your temperature).	
12		Seeking reassurance from friends or family about COVID-19.	
13		Social media posts concerning COVID-19.	
APA Reference: Taylor, S., Landry, C. A., Paluszek, M. M., Fergus, T. A., McKay, D., & Asmundson, G. J. G. (2020). Development and initial validation of the COVID Stress Scales. Journal of Anxiety Disorders, 72, 102232. https://doi.org/10.1016/j.janxdis.2020.102232			
3. COVID Socioeconomic Consequences Scale | 6 items | 5-point Likert | Subscale of CSS — used independently			
14	**3. COVID Socioeconomic Consequences Scale** *(Taylor et al. (2020a)*	I am worried about grocery stores running out of food.	*Taylor et al. (2020a)*
15		I am worried that grocery stores will close down.	
16		I am worried about grocery stores running out of cleaning or disinfectant supplies.	
17		I am worried about grocery stores running out of cold or flu remedies.	
18		I am worried about grocery stores running out of water.	
19		I am worried about pharmacies running out of prescription medicines.	
APA Reference: Taylor, S., Landry, C. A., Paluszek, M. M., Fergus, T. A., McKay, D., & Asmundson, G. J. G. (2020). Development and initial validation of the COVID Stress Scales. Journal of Anxiety Disorders, 72, 102232. https://doi.org/10.1016/j.janxdis.2020.102232			
4. Vaccination Attitudes Examination (VAX) Scale | 12 items | 5-point Likert | (–) = reverse-scored items			
20	**4. Vaccination Attitudes Examination (VAX) Scale** *(Martin & Petrie (2017)*	I feel safe after being vaccinated. (–)	*Martin & Petrie (2017)*
21		I can rely on vaccines to stop serious infectious diseases. (–)	

22		I feel protected after getting vaccinated. (–)	
23		Although most vaccines appear to be safe, there may be problems that we have not yet discovered.	
24		Vaccines can cause unforeseen problems in children.	
25		I worry about the unknown effects of vaccines in the future.	
26		Vaccines make a lot of money for pharmaceutical companies, but do not do much for regular people.	
27		Authorities promote vaccination for financial gain, not for people's health.	
28		Vaccination programs are a big con.	
29		Natural immunity lasts longer than a vaccination.	
30		Natural exposure to viruses and germs gives the safest protection.	
31		Being exposed to diseases naturally is safer for the immune system than being exposed through vaccination.	
APA Reference: Martin, L. R., & Petrie, K. J. (2017). Understanding the dimensions of anti-vaccination attitudes: The Vaccination Attitudes Examination (VAX) Scale. Annals of Behavioral Medicine, 51(5), 652–660. https://doi.org/10.1007/s12160-017-9888-y			
5. Panic Buying Scale During COVID-19 | 7 items | 5-point Likert			
32	**5. Panic Buying Scale During COVID-19** *(Lins & Aquino (2020)*	Fear drives me to buy things to stock at home.	*Lins & Aquino (2020)*
33		The fear of not having the products that I need leads me to buying more things.	
34		I panic when I think that essential products may run out from the shelves, so, that is why I prefer to buy them in bulk.	
35		Fear drives me to buy more than I usually do.	
36		Panic makes me buy more things than I usually do.	
37		One way to relieve the feeling of uncertainty is to make sure that I have a good amount of the products that I need at home.	
38		The feeling of uncertainty influences my buying habits.	
APA Reference: Lins, S., & Aquino, S. (2020). Development and initial psychometric properties of a panic buying scale during COVID-19 pandemic. Heliyon, 6(9), e04746. https://doi.org/10.1016/j.heliyon.2020.e04746			

Note. (–) = reverse-scored item. All scales use a 5-point Likert response format.