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"THE IMPACT OF THE PANDEMIC ON CONSUMER BEHAVIOR AND THE PANIC BUYING PHENOMENON"

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Introduction

The COVID-19 pandemic has been one of the most devastating worldwide occurrences in modern times, altering economies, ways of living, and consumer habits to an extent never seen before. As people encountered extended uncertainty, changing government-imposed measures, and global supply chain breakdowns, their buying choices (previously guided by established habits) were increasingly swayed by fear, limited availability, and the urge to control. These alterations were not only situational as they signaled more profound psychological and social processes that have resulted in long-lasting effects on international consumption patterns. This thesis examines the changes in consumption patterns during the pandemic and, more specifically, the act of panic buying.

This condition, typically marked by the abrupt and extreme acquisition of necessary items, appeared as a prominent and significant behavioral reaction. It emphasized the way believed threats, emotional factors, and the level of trust in institutions (or their absence) can influence collective consumer behavior during crisis events. Grasping these attitudes is essential not just for analyzing previous market trends but it is useful also for preparing a more efficient reaction to upcoming crises.

The study explores how consumer reacted to COVID-19 in both logical and emotional ways, tracing the behavioral changes back to underlying psychological, cultural and economic influences. It addition to these aspects, it examines the effects of digital transformation, focusing on the growth of digital commerce and payments , which surged quickly as people adjusted to lockdowns and social distancing requirements.

By integrating primary questionnaire data with secondary data, this research comprehensively examines consumer responses during the pandemic. It highlights the conflicts between personal coping mechanisms and collective results, as seen in stock shortages and supply irregularities, and explores the important role of enterprises and policymakers in alleviating or worsening these behaviors.

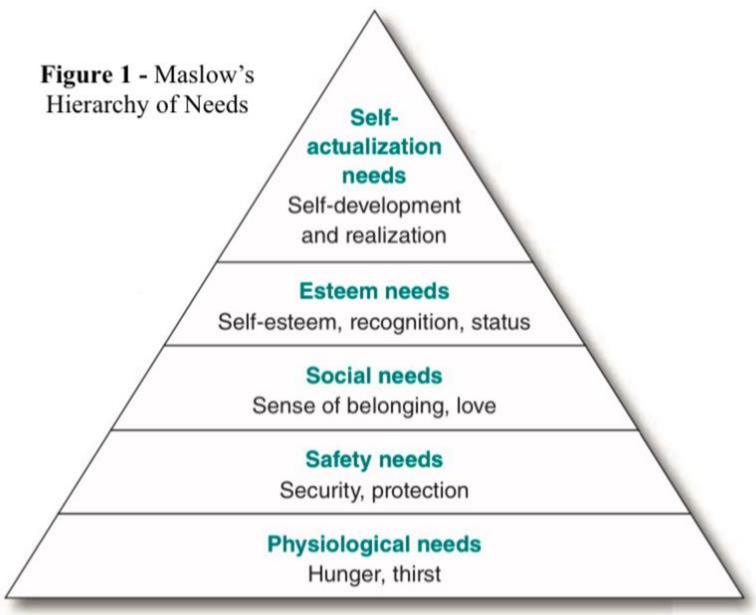
Ultimately, this thesis aims to give insight into the lasting impacts of crisis consumption and to offer ways to develop more resilient, flexible, and ethically conscious consumer systems to cope with future global challenges.

CHAPTER 1: CONSUMER BEHAVIOR AND ITS EVOLUTION DURING THE PANDEMIC

1.1 Consumer Behavior: Definition and Key Theories

Consumer behavior is a primary area of study in the field of marketing (and the social sciences), as it investigates how people, groups, and organizations make purchasing decisions, using and discarding products, services, and ideas to meet their needs and wants. Research in this domain also investigates the psychological, social, cultural, and economic factors influencing buying decision-making. Comprehending consumer behavior is important for organizations wishing to design successful marketing strategies, as well as policymakers, researchers, and others looking to bring about change in other areas (i.e., society and social change) such as sustainability and public health. Recent global events, such as the COVID-19 pandemic, have demonstrated the complexities and variations in consumer behavior, showing how things like emergencies, technological advancements, and culture can rapidly change purchasing behavior and preferences. These behaviors demonstrate that it is essential to review and analyze consumer behavior all the time to respond to changing consumer preferences and needs, as circumstances

Figure 1 - Maslow's Hierarchy of Needs



and conditions are outside the control over many consumers and consumers take action according to the stimuli. In exploring consumer behavior, Abraham Maslow wanted to know why specific individuals valued certain needs more than others at particular times. For instance, why may one consumer prioritize safety at a higher or lower level than an individual who relies on recognition or esteem? Maslow suggested that one way to consider this phenomenon is his theory of a hierarchy of needs based on human motivations from most important (base) to lesser needs (tip).

As a hierarchy of needs, presented in Figure 1[1], Maslow's needs range from physiological, safety, social, esteem, and self-actualization. Most individuals focus on fulfilling their most crucial need first; when that is satisfied, it is no longer the motivator of their behavior. For example, individuals facing starvation (physiological need) are unlikely to be worried about pursuing a new work of art (self-actualization), status, or efficiency of air in their house (safety need). However, once that physiological need is fulfilled, needs in higher-order categories will become the most important need. To understand consumer behavior fully, it is important to explore the buy decision process following five key stages: need recognition, searching for information, evaluating alternatives, making the purchase decision, and experiencing post-purchase behavior. This process starts before the actual act of buying takes place and extends well beyond purchase. The first step is need recognition which is when the buyer identifies a problem or perceives a need. Often, internal stimulations can aggregate to create a need state to the degree that the buyer takes action on a buying process (i.e., hunger or thirst).

When the consumer is seeking to make a purchase decision, they will consider alternatives, which means they will process information and arrive at a judgment about the purchase of an item. It is important to remember that consumers do not evaluate alternatives the same way. As a matter of fact, overall evaluation will vary depending on the consumer and/or the situation. The consumer will sometimes voice their thinking after deliberation and comparing items, but at other times, they will say very little or not at all.

More often than not, the purchase decision is to select whichever brand the consumer has thought most positively about. However, there are two possible intervening factors between the time when a consumer has formed an intention to purchase a brand and the decision about which brand to purchase. The first factor is that the consumer might be swayed by other people and their opinions, for example, the advice and recommendations of friends and family. The second factor could be situational and involves the consumer being influenced by situations; for example, income has changed, item prices may have changed, or an opportunity arose that they did not plan for.

The marketer's function does not end with the purchase. The purchase behavior, which is the consumer's response to the product, is vital information for marketers to track. The buyer is either satisfied or not based on whether their expectations match the product's performance. If a product can't meet a consumer's expectations, they experience disappointment. If the product meets the consumer's expectations, they can be satisfied, and if the product exceeds expectations, the consumer can be delighted.

1.2 Factors influencing Consumer Behavior

A dynamic combination of factors that influences consumer behavior, and the interplay of these factors shapes consumers' purchasing choices. These elements can be categorized as cultural, social, personal, and psychological influences , as Figure 2 illustrates. Each factor is an essential aspect of influencing consumer behavior.

Cultural factors are included in consumer behavior because they comprise the values, norms, and traditions that exist in society.

Key elements include: Culture, which defines basic needs and preferences, often learned through family and societal institutions. For example, cultures emphasizing health and fitness might prioritize organic or wellness-related products. Subcultures include groups within a larger culture that share distinct values, such as those based on ethnicity, religion, or geographic location; marketers often target subcultures, such as Hispanic or Asian-American communities, with tailored strategies. In our society Social Class has a relevant role these relatively permanent divisions based on income, education, and occupation influence product choices like clothing, cars, and home furnishings.

Next, there are Social Factors intended as the Social interactions and relationships that a person could have during his life. Reference Groups could be considered as an example as they are Groups that provide points of comparison or influence, such as friends, colleagues, or opinion leaders, to shape perceptions of products and brands. Family members play a vital role in purchasing decisions, with evolving dynamics, such as increased male participation in household shopping and reshaping traditional roles. Even a person's societal roles (e.g., parent, professional) and perceived status influence the product they choose to align with their identity.

Among these factors, the personal ones heavily affect a consumer’s choice. Indeed, individual characteristics determine consumer behavior such as age and life stage. Preferences can change with life stage. For example, young adults tend to be interested in technology equipment, while older adults may be interested in products related to health.

A person's occupation can also affect purchase habits. For example, blue- collar or hourly wage earners may lean towards durable goods over time, while senior executives may become more interested in purchasing more formal clothes.

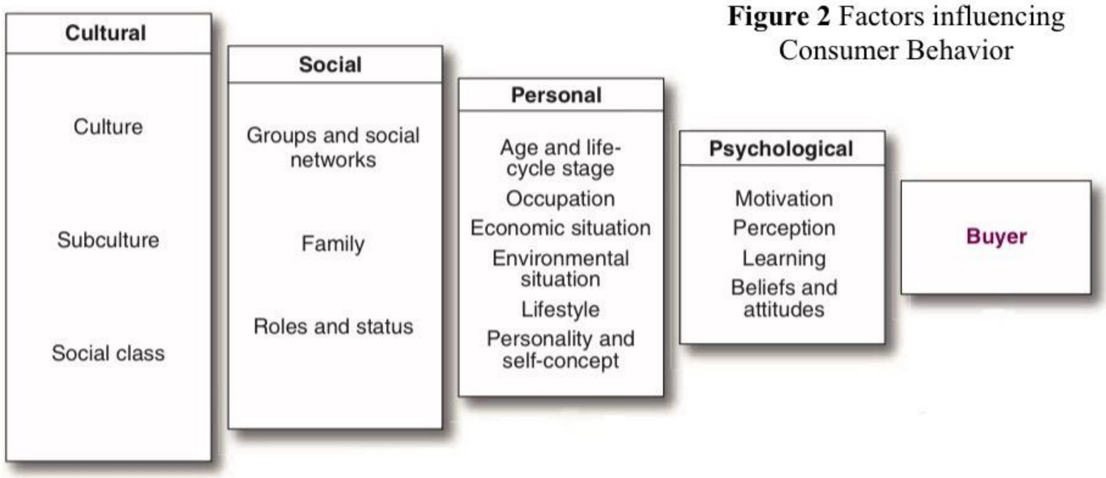
People's incomes will typically shape their product choices, particularly salient in times of distress or economic uncertainty. A person's lifestyle also influences their activities, interests, and opinions and ultimately influences choices in leisure activities, food, and clothing.

Also, personality drives consumers’ choices; indeed, often selected products align with their self-image or desired traits, such as adventurous individuals choosing brands marketed as bold and innovative.

Lastly, psychological factors as internal psychological processes, play a crucial role in decision-making.

Motivation is one of these factors derived from unmet needs, ranging from basic physiological necessities to higher-level self-actualization desires (as outlined in Maslow's hierarchy of needs). The perception of an individual is significant in how people interpret marketing stimuli, such as advertisements, and it significantly affects their buying choices. Learning and past experiences influence future decisions; for instance, a positive experience with a brand fosters loyalty. In addition, among these types of factors, beliefs and attitudes are relevant as consumers form beliefs about products based on information and personal experiences, shaping attitudes that drive or deter purchases.

Figure 2 Factors influencing Consumer Behavior



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1.3 The role of crisis events on consumer behavior

Customer decision-making is mainly subject to emotional /mood/feelings and the overall limitations of human information processing. Economic decisions are based on their feelings, the motives of the feat, attitudes, social influence, and cognitive shortcuts. Events such as financial crises, pandemics, and terrorist/violent attacks will influence consumer behavior because a particular event will likely change an individual’s motive and affect their emotions. Example of this crisis event include events related to terrorism,

[1] Marketing An Introduction, Armstrong, G., Kotler, P. and Opresnik, p.161.

widespread disease outbreaks (such as Covid-19), events related to wars, and economic recession.

War, both foreign and domestic, is one of the most salient events that influence consumer behaviors. For example, if a consumer's country is engaged in war, typically, the feelings of nationalism will be amplified as part of the support for the consumer's community. For example, news of fallen soldiers during the U. S. –Iraq War (2003–2011) correlated to an increase in the market share of American brands within those individual communities. Helms (2022) found the news of fallen soldiers increased weekly supermarket sales, based on data from over 1,100 supermarkets and over 8,000 brands throughout the United States.

The researchers found that local casualties, defined as the death of an American soldier from the county where a supermarket was located, led to growth in American brands' market share. In times of foreign threat, consumption behavior often switches towards brands that help to affirm their national identity. During this time, consumers also boycotted products from foreign competitors, as demonstrated by American consumers who avoided French wine because France disagreed with U.S. involvement in Iraq. Boycotting is easily done when consumers are not dependent on a product, and a substitute is readily available. Not only this, but consumer preferences can also change due to geopolitical conflict and the resulting boycott, as was the case when the Russian war on Ukraine began in 2022 when many Ukrainian consumers boycotted Russian products to hurt their aggressor economically, while Western brands also exited the market. In contrast to aiding their enemy, consumer animosity towards competing countries had consumers willing to increase their expenditure on domestic products or products made by allied countries. This is an example of how consumer behavior produces economic consequences in a crisis. Another example of a momentous event that changed consumer behavior relates to the 2008 Financial Crisis. There was a significant change in the actual economic conditions as well as perceptions of the economic conditions that changed spending behavior.

Before, consumers were simplifying their purchases of brands and products, purchasing products that felt easy. Consumers became increasingly frugal as they wanted to minimize effort and waste. Research from Harvard suggests that many consumers were against excess consumption during this time as many were looking for a lifestyle that yielded less waste. Household economic factors, such as increasing unemployment and prices straitened the constraints on consumer expenditure. Uncertainty of the future led consumers to tighten budgets and save for future uncertainties. Distrust and anger toward the large corporate and financial institutions who were accused of leading us into the crisis only heightened this behavior (Time magazine featured a cover story responsible for this perception of the financial institutions while also depicting the banks as intentionally negligent). Simultaneously, the banks were now more cautious in taking risks, and if they chose to lend, they were sometimes less efficient. Consumer expenditure continued to be limited under this type of behavioral circumstances.

As a result, consumers adopted thriftier lifestyles and focused on financial security in response to the crisis.

1.4 Studies on Covid-19 and Behavioral Changes

The COVID-19 pandemic will likely be identified as a significant event that changed nearly all elements of life, especially consumer behavior and systems related to exchange in the marketplace. Health-related behaviors related to COVID-19, including vaccination, mask wearing, and social distancing, gained public momentum, and governmental and health organizations appeared to be taken by surprise at times and perplexed.

Consumer behavior during a crisis differs from normality in one significant aspect: threat. Marketing scholars have widely researched threats to individual consumers and are generally thought to influence decision-making and behaviors. Threats can lead consumers to seek greater perceived control by purchasing utilitarian goods or demanding concrete, numerical information. The COVID-19 pandemic signified a pivotal event that altered nearly every realm of life, including consumer behavior and the surrounding ecosystems of marketplace transactions. Health-oriented choices, such as vaccinations, mask wearing, and social distancing, served as a prime indicator of individual behaviors that, sometimes, caught government and health organizations off guard and left them perplexed.

Furthermore, lingering feelings of threat long after a disaster could push consumers toward impulsive buying to reestablish some sense of normality. These consumer behaviors reflect consumers' attempts to protect their well-being—be it through safeguarding their physical and mental health, the fears of supply chain issues and scarcity, or to maintain their livelihoods while trying to retain perceived stability in the world. Often, volitional behaviors will fall within the realm of societal values. Institutions did their part to affect individual behaviors during this time of threat through their view of what was effective for the greater good of humanity, be it the World Health Organization making recommendations on masking and physical distancing, governments pushing vaccination campaigns, grocery chains discouraging stockpiling, and mental health organizations advising consumers strategies to support keeping social connection in their lives. At the same time, other organizations, for instance, conspiracy-theory, were spreading disinformation and urging consumers not to vaccinate. Businesses, education, hospitals, and sports leagues changed their operations, running for example, a hospital that postponed surgeries, schools that implemented health protections, and sports leagues that changed how fans experienced summer sports. Social media influencers served as agents of change (or resistance) during this time. Digital voices were influential in crafting negative and positive public attitudes towards masking, vaccination, and other health-related behaviors that were backed by science.

However, influencers promoting misinformation or opposing health behaviors often acted more swiftly, gaining an advantage over scientific authorities. This disparity may, in general, have occurred given the slower and more evidence-based nature of the science process, which typically lagged in responding to pressing matters like the safety of vaccinating women who were pregnant.

A good example of a situation that highlighted how significant the consumer behavior during this time was around buying and marketing N95 masks. During the Pandemic, the interaction between a consumer and a health organization revolved around mask-wearing decisions. The consumer considered purchasing an N95 mask, guided by their knowledge of virus transmission, mask efficacy, and attitudes toward mask-wearing.

The health organization, aware of the superior efficacy of N95 masks, avoided promoting them explicitly, fearing that nuanced messaging might discourage mask-wearing altogether. Instead, it promoted a general message that any mask is sufficient.

Influenced by the organization's guidance, the consumer chose a less effective cloth mask, assuming the recommendation reflected purely data-driven advice. This misalignment between the organization's perception of the consumer and the consumer's actual behavior and attitudes resulted in a slight reduction in individual and population-level benefits.

Another scenario with greater mismatches, explored by Ahmadi et al. (2022) and Sheng, Kim, and Ketron (2022), involved pandemic-induced supply chain disruptions. When delivery of everyday essentials like toilet paper becomes inconsistent, shelves may be left empty for days. Imagine a consumer who, due to heightened awareness of scarcity, becomes anxious when food or personal items are in limited supply. A local news report warns of dwindling paper product supplies, prompting consumers to consider stockpiling as a precautionary measure. Their understanding of stockouts, accurate or not, is shaped by past experiences with food insecurity, which left a lasting impression of the hardship caused by empty shelves. They view hoarding positively, associating it with strategic behavior commonly undertaken by those with financial means. Social media amplifies their distrust of retailers, suggesting that stockouts are deliberately worsened to inflate prices.

On the other hand, retailers possess accurate knowledge of supply chain dynamics, including projected delivery schedules and expected restocking times. They view stockpiling negatively, seeing it as unnecessary and disruptive to their efforts to ensure product availability. Retailers also perceive hoarding as unethical and believe that customers panic-buy irrationally. They assume their customers trust their communications about product availability but fear losing business to competitors if stockouts persist. In light of this, retailers are trying to stop stockpiling by limiting the sale of N95 masks to two to a person and putting signs up that say that deliveries will be ready within 48 hours.

Two significant misalignments emerge in this scenario. To begin with, there is an inconsistency between both the consumer's strategies and the retailer's strategies. Second, the consumer's interpretation of the retailer's objectives is misguided. The consumer is not confident about the retailer's commitment to restock, believing that the retailer is manipulating the situation using the cap on buying. Consumers think they have a right to avoid the limits on their purchases by going on multiple separate trips for more items. The benefit for the consumer is a sense of security and well-being that allows them to cope with some of the anxiety related to the pandemic.

However, community-wise, the effect is adverse. Stockpiling leads to increased shortages of supplies, updated social media posts, and press publications about shortages. The next time there is a disruption in the supply chain, this evolves into panic-buying to a greater degree, culminating in diminished well-being for the community, unstabilized over time. Notice, we are not saying only differences in attitudes toward stockpiling lead to this situation. Instead, this is a misapprehension of the retailer's operations and purpose, and a lack of trust. Consumers benefit in the short term, but the communal outcomes can tip considerably negative for everyone in the long term.

CHAPTER 2: THE EFFECT OF "PANIC BUYING" ON ESSENTIAL GOODS CONSUPTION

2.1 Drivers of Panic Buying Behavior

Panic buying is a typical purchasing response triggered by a present event orthe anticipation of a future event. It commonly occurs before or after an event such as an extreme weather event (storm events such as hurricanes or blizzards, etc.). The fear of running out of necessary supplies causes people to rush to stores and buy quantities of these supplies over what they usually would buy. This behavior often leads to a self-fulfilling nature. Because people worry about a potential shortage and plan to stock up on necessary supplies, they create increased demand, creating an actual supply shortage that probably would not have occurred without the initial panic buying behavior.

Panic buying encompasses psychological, social, and economic factors that impact consumer behavior when faced with potential crisis events. It is primarily driven by fear and anxiety, but several other factors contribute to the widespread behavior of over-purchasing of supplies in the need of stocking up.

The first key psychological factor of panic buying is loss aversion. People are more sensitive to the thought of having or losing something rather than gaining something. Because consumers are fearing running out of basic supplies, they over-purchase. Another factor or motivation for panic purchasing is the herd mentality. After people see others stockpiling supplies, they reason that those people are probably stockpiling supplies because there is a good reason to stockpile necessary supplies, so they get stockpile supplies because they are afraid if they do not, they might miss out. The herd mentality is impressively fluid and is tied to perceived scarcity. The thought that supplies are becoming scarce makes it more valuable, therefore, the perceived urgency increases to purchase.

Perceived loss is tied to perceived scarcity, and the illusion of control. During times of crisis, contrived uncertainty leads to high levels of uncertainty. Panic buying gives people a way to alleviate the uncertainty by feeling as if they are prepared even if they over-purchase necessary supplies. When people perceive loss associated with perceived scarcity, it provides a sense of security even if the chances of actual loss occurring are very low.

The role of media influence further amplifies this behavior. News media and social media talk segments are primarily built around images of empty shelves and long supermarkets lines that support the idea that something must be done.

Social and cultural factors also play a role in panic buying beyond the psychology of individuals. In collectivist cultures, individuals prioritize the interests of their families and communities, which may motivate panic buying someone else's well-being. In contrast, individualistic cultures are typically most concerned with self-preservation. Trust in institutions is another factor; when individuals do not trust governments or retail suppliers to keep supply chains intact through a crisis, they take matters into their own hands by stockpiling goods.

Past experiences also shape consumer behavior. Individuals are more likely to panic if they have experienced shortages due to an economic crisis or a natural disaster in the past.

Economic and market conditions further fuel panic-driven purchasing. Individuals are more likely to panic buy if they have experienced shortages due to a financial crisis or a natural disaster. During a supply chain interruption (effectively a disruption), the consumer becomes/remains in a mindset to buy, in-store or online, before that good is no longer available. A crisis also induces the consumer to act out of fear of needing this product more after they learn inflation has affected supply and demand or simply a cost factor. Also, even if inadvertent, retailers can induce panic by engaging in behaviors limiting inventory's perceived availability. These behaviors may include not announcing product restocking, limited stock warnings, or urgency with marketing promotions (or simply having a label on an item that states "low stock"). Panic buying involves much more than obtaining goods or necessities - panic buying is complex. Panic-buying motivations are built up of various fears, social cues, and economic pressures. What may begin as an individual reaction to a sense of anxiety can shift to an entire group behavior, often resulting in the goods or items in low being sold out or not available. A similar process can often be seen in financial markets driven mainly through FOMO. When assets see rapid inflation of value, groups of investors feel an unusual sense of urgency to invest just to capture the profits. Even if irrationally, you also see groups of sellers to the same investment options, causing further inflation (often not economically based).

Throughout history, panic buying has occurred in various contexts. Notable instances include:

· The Spanish flu pandemic outbreak in 1918–1919 caused panic buying behavior by consumers toward over-the-counter medications, resulting in sales hiking beyond normal levels.

· The start of hyperinflation in Germany and Austria in the 1920s prompted individuals to purchase anything they could before the prices inflated past their ability to afford it.

· The Cuban Missile Crisis of 1962 caused Americans to panic buy their way through supermarkets for canned goods even though anxiety over a going nuclear event was unfounded.

· The event of the September 11, 2001 attacks on the American homeland caused worldwide panic buying of gold and oil and elevated prices to great heights.

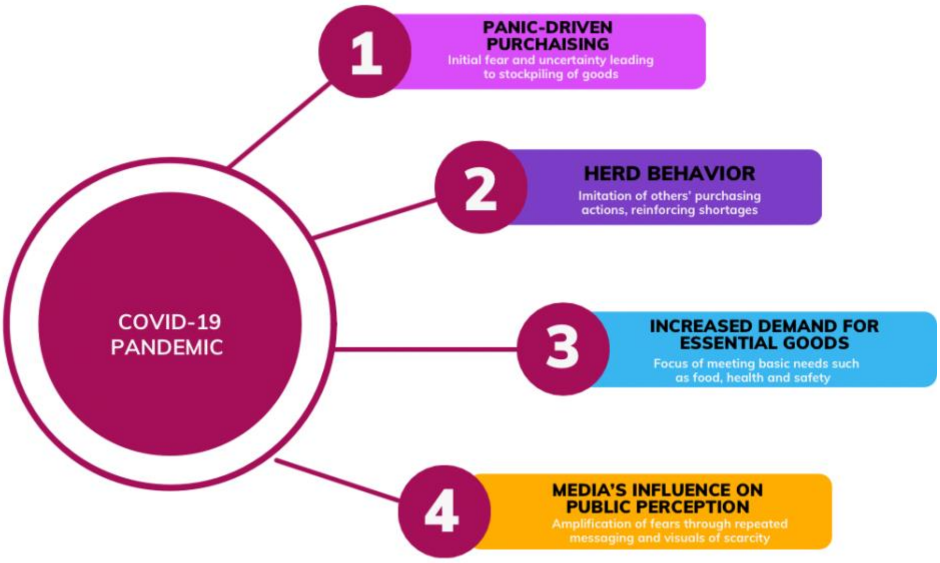
· During the COVID-19 pandemic (2020), panic buying occurred for essentials for every household, such as toilet paper, hand sanitizers, and non-perishable goods of food. Several stores ran out of supplies as many customers were motivated to build up supplies to sustain them in case of delays in the chain or extended lockdowns.

2.2 Changes in demand for essential goods during the Pandemic

COVID-19 significantly transformed purchasing behaviors related to everyday necessities. Fear, uncertainty about the economy, and the change and restructuring of supply chains took hold and changed expectations about purchasing consumer goods. One of the most immediate changes was panic buying, as consumers stockpiled essentials such as toilet paper, hand sanitizers, and canned goods in increased amounts.

Panic buying mainly was a byproduct of the uncertainty surrounding becoming and staying stocked, as the pandemic caused government shutdowns. Retailers could not meet the demand as it surged, leading to shortages and limits on buying to mitigate supply concerns (J. P. Morgan, 2020). As the pandemic developed, spending would also change, mainly driven by social distancing and remote work. Spending shifted from the consumption of services to essential items, mainly to supply the household. Consumers also changed their spending toward home office supplies, kitchen items, and entertainment products to manage the time spent indoors during the quarantine. Moreover, due to government and federal stimulus measures that provided households with increased disposable income, consumers felt comfortable increasing spending on durable goods (Bureau of Labor Statistics, 2021). The pandemic also catalyzed a shift to purchasing necessary products online. Health concerns and lockdowns were catalysts for consumer behavior to shift towards groceries, hygiene products, and household necessities online. Retailers had to expand their infrastructures and delivery because of demand from consumers who turned to purchasing necessities online.

The growing preference for digital shopping changed the customer experience during the pandemic and laid the foundation for changes that will likely last into the near future. (NCBI, 2022) However, the manifested demand for specific items highlighted the inefficiencies of global supply chains. Manufacturing was slow to catch up on production, and delays in shipping were also a factor in inventory shortages. Both manufacturing and shipping experienced delays that took months to resolve. The demand for consumer electronics and appliances created a bottleneck for supply, demonstrating the need for more efficient and dynamic distribution networks. This allowed many suppliers to assess their supply strategies, commit to diversifying their sources, modify production, or employ a combination of both sourcing/production to mitigate future disruption risks. In addition to immediate supply challenges, economy-driven changes in consumer behavior due to COVID-19 also affected consumer purchasing behavior. An expansion of total household spending was observed for some customers due to savings and the government-financial stimulus. Conversely, many customers curtailed spending due to wage or employment loss. This resulted in divides in spending habits across income levels. Low-income households only purchased absolute necessities, while higher-income customers continued to buy non-essential categories. Businesses had to develop marketing and product offerings to satisfy both relative wealth while also understanding differences in customers' financial conditions (McKinsey & Company, 2020). As for the future, most behavioral changes attributed to COVID-19 are likely to stay for some time. People are likely to continue to prefer shopping online, emphasizing health and hygiene products, and emphasizing home. Businesses respond to that demand by broadening digital initiatives, affirming supply chain resiliency, and adjusting product portfolios to account for consumer demand changes. Understanding these trends is crucial for companies and policymakers aiming to navigate the post-pandemic economic landscape and ensure long-term stability in essential goods markets (Nature, 2024).



2.3 Supply chain strain and consumer response

Global production networks have been facing increasing pressure since the second half of 2020, notably due to demand-supply imbalances for certain goods, with sizeable adverse implications for the global economic recovery. Such pressures, commonly referred to supply bottlenecks, are manifold in nature and have root causes. The sharpest contraction and the subsequent recovery in economic activity during the pandemic were unprecedented both in terms of the magnitude and the speed of the changes in demand and supply due to the extreme volatility driven by the lockdowns and reopenings, the sizeable fiscal and monetary interventions as well as the very substantial accumulated savings, especially in the advanced economies. In addition, various containment measures in the services sector caused a restructuring of consumers' preference for more goods over the services sector, further fueling the strong cyclical rebound in the goods sector. As a result of this boom in demand, supply chains worldwide have struggled to catch up with the growing number of orders. A series of other supply chain disruptions owing to new waves of the virus, extreme weather events, and other unforeseen events have further curtailed economic activity and trade expansion with a knock-on effect on inflationary pressures. At the global level, these disruptions are causing a slowdown in production and trade. Logistics and transportation challenges, semiconductor shortages, unusual constraints on business operations due to the pandemic, and labor shortages are the most striking among the many factors. Global shipping operations have been severely disrupted in recent years as containers have gone missing and port facilities congested. Rapid economic recovery, shifting consumer preferences from services to merchandise, and high import volumes have compounded the disruptions. Also, localized and asynchronous outbreaks of COVID-19 have caused sporadic port closures, worsening the delays. Consequently, since late 2020, shipping costs from major Asian ports to the U.S. and Europe have surged to unprecedented levels.

Semiconductor shortages became apparent during the second half of 2020, impacting mainly the automotive sector. Automakers reduced orders for semiconductors at the start of lockdowns, while demand for chips in electronics increased exponentially with newfound working-from-home and digitalization trends. Out of nowhere came the increasing demand for vehicles in the second half of 2020, taking the auto manufacturers off guard; as such, with limited spare capacity in semiconductor manufacturers that could have been further impaired by their underinvestment in the preceding years, chip production could not keep up with demand.

Labor shortages have been less widespread but are more pronounced in some economies, like the United States and the United Kingdom. Unlike during the slow recovery following the global financial crisis, in these countries at present, indicators of labor market tightness have snapped to a level higher than pre-pandemic levels. Several causes have been attributed to labor shortages: declining labor force participation, inefficient matching of jobs, increased unemployment benefits, early retirements, caregiving responsibilities, and hesitancy to work in high-contact industries. Also at play are the supply strains that give rise to the bullwhip effect, where firms build their inventory levels in anticipation of continued demand growth.

Since the end of 2020, the most prominent manifestation of generalized strain on global supply chains has been the extended supplier delivery times in advanced economies. The global Purchasing Managers' Index suppliers' delivery times (PMI-SDT) has been the most commonly used indicator of these constraints, tracking the time required for firms to receive their inputs.

The benefit of the PMI SDT index is that it captures many types of capacity constraints, including the lack of intermediate goods, delays in transport, and labor supply problems, and thus provides a portrait of pressures on the supply chain. Trends in the PMI SDT index suggest that as suppliers' delivery times have lengthened, they remain persistently lengthened past the initial COVID-19 shock, Also, between advanced and emerging economies, the U. S., euro area, and U.K. were affected more than the major emerging markets. The lengthening delivery times have occurred across most industries, but the delivery times are exceptionally long in technology equipment and machinery, suggesting that the shortages of intermediate goods are particularly severe based on delivery times.

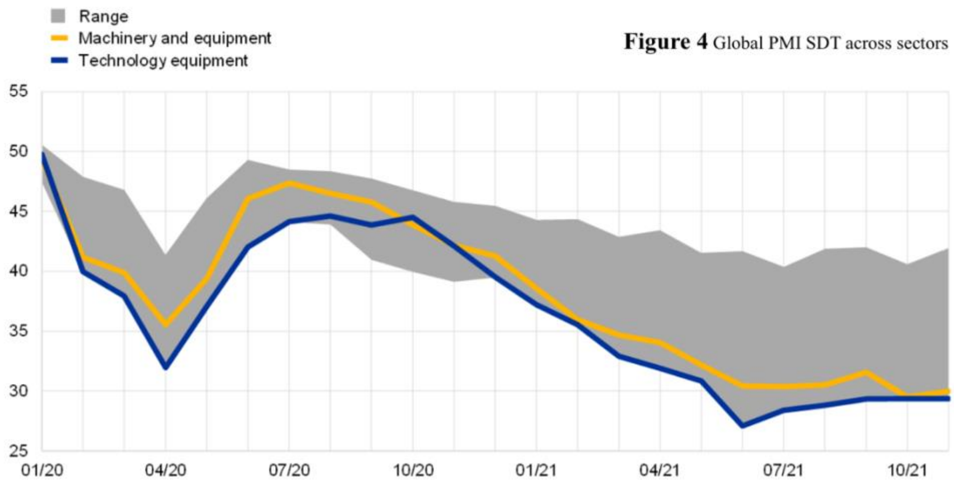


Figure 4 Global PMI SDT across sectors

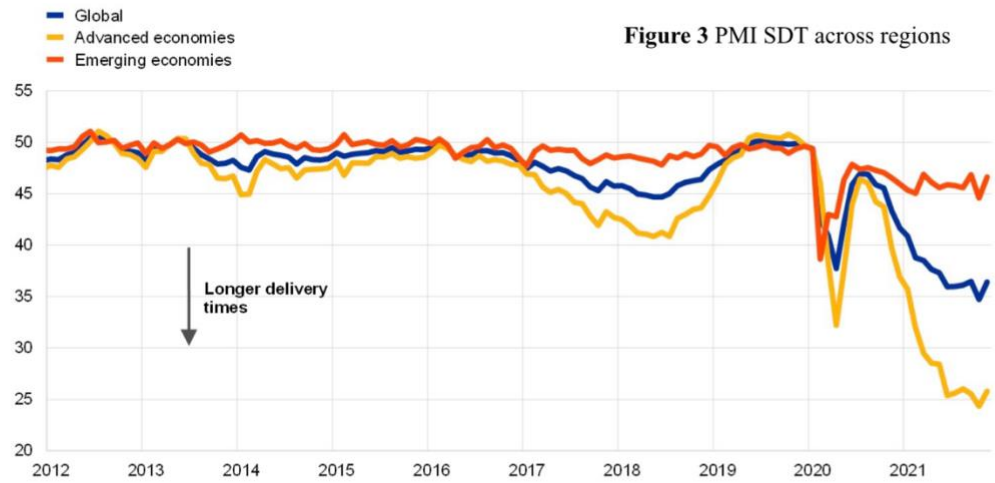


Figure 3 PMI SDT across regions

CHAPTER 3: METHODOLOGY

3.1. Research Design

This chapter details the research methods to examine how the COVID-19 pandemic influenced panic buying habits and consumer choices. The investigation uses questionnaires as the primary instruments for gathering data, complemented by secondary data sources. It implements a systematic sampling approach and data analysis methods to extract significant insights. The methodology guarantees a thorough comprehension of the behavioral shifts experienced during the pandemic and their consequences.

The research utilizes a quantitative research framework with a descriptive methodology to investigate consumer behavior during the pandemic. Quantitative techniques are especially effective for uncovering trends, patterns, and statistical relationships among variables such as demographics, panic buying tendencies, and frequency of purchases.

The primary aim of this study is to explore:

- The prevalence and degree of panic buying behavior throughout the pandemic.
- The reasons that drive individuals to stockpile essential items.
- The influence of regional and demographic factors on consumer behavior.
- The lasting impacts of the pandemic on buying habits.

This research strategy enables a systematic assessment of the extent of panic buying across various demographic groups. This study uses structured survey instruments to gather standardized data supporting statistical comparison and trend analysis. The study presents empirical evidence of how the pandemic impacted consumer priorities and resulted in temporary interruptions and permanent changes to purchasing preferences.

The study also addresses potential bias and self-reported limitations by checking the consistency of conclusions with secondary data, including previous findings of consumer behavior in response to a crisis.

A quantitative approach has been chosen for these reasons:

1. Uniformity: Gathering numerical data facilitates statistical analysis and the identification of patterns among various groups.

2. Contrast: Quantitative surveys permit straightforward comparisons across different demographic segments (e.g., panic buying tendencies in younger than older individuals).

3. Generalisability: The method used is reproducible, so comparing the results to other research on consumer behavior during the pandemic may be easier. The study was

implemented using a cross-sectional method of data collection by collecting data at only one point in time, not the same participants over time, so this allows for even further analysis of consumer reaction at a specific time in the pandemic and what happened next.

However, It does include specific ethical considerations based on human participants: ·Informed Consent: All participants received clear details about the study's purpose.

·Confidentiality: All participants' answers were anonymous to mitigate similar potential risks to their personal information.

·Questions Avoiding Bias: The survey questions were designed to limit leading questions that would influence the participants' responses.

3.2 The Questionnaire

This section describes the primary data collection method that was used in this study, which was a structured questionnaire. The questionnaire was designed to gather quantitative data on panic buying behavior, associated motivations, and how shopping patterns and behaviors changed in the wake of the pandemic.

A structured questionnaire was selected as it allowed for the standardization of responses, the statistical analysis of responses, and the identification of patterns among different demographic categories. Questionnaires have been documented to have several advantages:

• Efficiency: This will allow for quick data collection from a large number of participants.

• Standardization: Structured questions provide standard data collection of the same data, minimizing the differences between respondent answers.

• Quantifiability: Responses can be statistically analyzed, providing an opportunity to compare responses from various demographic groups.

• Cost savings: Online questionnaires are inexpensive and can reach a broad audience while minimizing logistical issues. Questionnaires also allow the researcher to look at consumer behavior when examinining self-reported purchasing decisions, motivations, and perceptions. The study focused on understanding panic buying behavior during the pandemic; therefore, a structured questionnaire was the most suitable tool for systematically examining any changes in trends in shopping behavior. The survey was administered online using Google Forms and with easey access for respondents. The survey was administered as follows:

• Using social media platforms (Facebook, LinkedIn, and Instagram) to reach a diverse audience.

• Invite people from a variety of ages and locations via e-mail to complete the questionnaire.

• Using snowball sampling, the first invitees forwarded the survey link to others. The survey was available for a set period to ensure that the responses were recorded in a fixed timeframe and to reduce variation caused by external factors. The questionnaire had five sections with clear sub-questions under each section, with the aim of measuring a single aspect of consumer behavior in the study. The types of questions included:

1. Demographics

- Closed-ended multiple-choice questions to classify respondents based on age, gender, employment status, and residence.
- Assessment of household size to comprehend how family dynamics influenced purchasing behavior.

2. Shopping Frequency and Availability of Products

    - Frequency scale questions (e.g., “How often did you purchase groceries during the pandemic?”).
    - Multiple-choice options regarding product shortages.

3. Panic Buying Behavior

- Likert-scale questions gauging the extent to which respondents participated in panic buying (e.g., “I purchased more than usual due to fear of shortages”).
- Multiple-selection questions to pinpoint the types of products most frequently stockpiled.

4. Purchases Related to Health and Sanitation

- Yes/no questions to assess changes in spending on hygiene and protective items (e.g., masks, sanitizers).
- Multiple-choice questions regarding the difficulty in obtaining particular products.

5. Regional Variations in Consumer Behavior

- Comparative questions (e.g., “Did urban or rural areas face more shortages?”).
- Open-ended questions allow respondents to share their experiences with supply chain issues.

Each section was precisely structured to make the questionnaire comprehensible, engaging, and unbiased.

3.3 Secondary Data Sources

Along with primary data collection through surveys, this research utilizes secondary data sources to thoroughly examin panic buying and consumer patterns during the pandemic. Secondary data is an essential source of confirmation, context, and augmentation to primary research findings. Primary data provides us insight directly from survey participants; however, it has limited scope with certain constraints, including sample size limitations, self-reporting biases, and geographical bounds. For these reasons, we will also use secondary data in the study, which will be further expanded in Chapter 4 to:

• Confirm findings: Comparing survey findings with external data, can help us assess whether the trends we found in the survey align with more grounded patterns exhibited in national and global studies.

• Enhance rich analysis: Primary data illustrates individual experiences, while secondary data sources indicate macro-level trends, such as retail market changes, global supply chain disruptions, and reactions to economic policies.

• Improve generalizability: Secondary data helps situate the findings of a study involving a limited sample size (n=50 respondents) within the larger context of consumer behavior trends.

The Secondary Data consulted include:

1. Academic Research:
    - Investigations into the psychology of panic buying and consumer responses to disruptions in the supply chain.
    - Research in behavioral economics focused on purchasing driven by fear during crises.
2. Market Reports
    - Reports from the retail sector analyzing consumer spending behaviors during the pandemic.
    - Data from grocery stores and online shopping platforms regarding the trends in stockpiling behaviors.
    - Analyses of supply chain issues detailing disruptions and variations in prices.
3. Government and Institutional Reports
    - Public health regulations that affected consumer habits, including lockdown measures and interventions in the supply chain.

3.4 Sampling strategy

A sampling strategy is essential to ensure the collected reflects the studied population. This research uses a non-probability convenience sampling study since we can only obtain individuals that can help us understand how the pandemic has altered consumer behavior. Due to limited time and resources, convenience sampling was a viable and expedient method of reaching participants as quickly as possible. The study's objective was to encompass a diverse array of respondents to capture variations in consumer behavior among different demographic segments. The criteria considered included:

1. Age Range – Participants from various age groups (18-65+) were included to explore generational differences in panic buying.

2. Gender Balance – An equitable distribution of males and females was aimed at investigating whether gender impacts crisis-related purchasing choices.

3. Geographic Diversity – Residents from both urban and rural areas were included to assess regional discrepancies in supply chains.

4. Employment Status – Participants included:

• Full-time employees – To evaluate if financial stability affects purchasing ability.

• Part-time employees – To investigate if economic uncertainty increased panic buying behaviors.

• Students and retirees – To analyze how those not in the workforce reacted to market disruptions.

5. Household Composition – Families of varying sizes (single vs. multiple-person households) were examined to see if larger families were more inclined toward panic buying.

By broadening the respondent pool, the study ensures that the trends in panic buying are explored across various consumer segments.

A total of 50 participants were surveyed, which, while moderate in scale, offers a meaningful snapshot of consumer patterns during the pandemic.

The benefits of a 50-person Sample were several, among all the most relevant were:

- Exploratory Quality – Considering the study's aim to delve into the motivations driving panic buying, a moderate sample size allows for an in-depth examination of responses.
- Targeted Consumer Insights – Instead of applying findings broadly to the entire population, this research focuses on specific consumer subgroups and their behavioral changes.
- Practicality – The manageable size facilitates thorough response validation and avoids data analysis complexity.

The Drawbacks of a 50-person Sample were:

- Generalizability Concerns – The results may not wholly reflect the entire population.
- Restricted Geographic Coverage – Certain areas may be either overrepresented or underrepresented, which could influence findings regarding regional differences in panic buying.

Although a bigger sample size would improve the applicability of the results, the methodology used in this study offers critical exploratory insights, setting the stage for future extensive research.

Data Analysis Techniques

The data was analyzed by combining exploratory, descriptive, and correlational approaches appropriate for quantitative and qualitative data.

1. Descriptive Statistics

Descriptive statistics were used in the first phase of analysis, providing an overall sample description. Pie and bar charts were generated using Google Forms to show the distribution of the responses:

•Age and Gender: The 25–34 age group was most dominant (42%), with a female majority (62%).

•Residence: Most respondents live in Rome (58%).

•Work status: Over half (52%) work full-time.

•Family size: 72% live in 3- to 4-member families.

This information helped create a profile of the typical respondent, which is useful when interpreting the following behavioral data.

2. Behavioral and Frequency Analysis

This part analyzed pandemic shopping habits, such as the frequency of grocery shopping, the bulk purchase of products, and the reasons why panic buying happened.

For instance:

- 77.6% said that they purchased more goods than usual.
- The most stockpiled products were staple foods (81%), sanitary products (71.4%) and cleaning products (50%).
- The primary reason for panic buying was fear of product shortages (46.7%). Also, 52% indicated that they bought items they did not usually buy, and 59.2% struggled to obtain sanitary products, indicating a strong relationship between perceived shortage and shifts in buying behavior.

3. Correlation Analysis

A correlation analysis was adopted to investigate correlations between variables, based on a matrix obtained from the numerical coding of the answers. Key variables (such as influence by others, boost in purchases, perception of shortages, and rural/urban distinctions) were numerically coded and processed through a correlation matrix.

Findings of key importance:

- Social influence and regional stock fluctuations: positive correlation (0.43), showing how easily imitations of panic buying swayed those who recognized the local supply differences.

- Social influence and shortages of products: positive correlation (0.38), demonstrating how bare shelves instigated imitative behavior.

- Spending on sanitation items and lifestyle health decisions: moderate correlation (0.25), showing healthy behavior moving towards better choices.

•Increased purchases and sanitary expenditure: correlation (0.29), as anticipated for a preventive stockpiling approach.

•Regional variation in panic buying had an unsatisfactory correlation with the other variables, suggesting more consistent perceptions nationally.

The snalysis was illustrated by displaying a color-coded matrix to emphasize the strength of the variable relationship and discern the most important associations.

4. Other Techniques

Alongside correlation analysis, the following methods were employed:

•Cross-tabulations are used to examine joint distribution between two variables (for instance, age and shopping frequency).

•Comparative analysis of behavior to grasp distinctions between adopters and non-adopters.

•Thematic coding of open-ended responses (such as "items not purchased in the usual manner").

Conclusion

The methods utilized facilitated a comprehensive probing of the consumers' conduct within the context of the pandemic, with specific mentions of concerns, supply maneuvers, and social effects. The research method bridged quantitative analyses (statistics, correlation) with qualitative interpretation (explanations about behavior), creating a comprehensive look at the phenomenon.

CHAPTER 4: FINDINGS AND ANALYSIS

4.1 Overview of the Italian Consumer Market Pre-Covid-19

The analysis of the spending of Italian households in the pre-Covid context represents a key step in accounting for the structural variations induced by the pandemic. From the data collected from the years from the 1990s to 2019, it is possible to sketch the primary trend of spending, indicating sectoral dynamics and established consumption modes before the health emergency. This reference framework can not only allow us to measure the effects of the pandemic crisis on consumer choices but also allow us to estimate the scale of subsequent new forms of transformations. The survey will focus on key spending functions and highlight increasing and decreasing sectors to elucidate Italian economic behavior in the pre-Covid phase.

Trends in consumption by Italian households from 1996 to 2023, as visible in Tables 4 and 5 (USC calculations using ISTAT data), reveal significant structural variations and accelerations in the effects of the pandemic crisis of 2020 and 2022. Trends in the general realm of the main areas of expenditure: Over a more extended period of 1996-2007, it was generally possible to observe trends in widespread positive change driven by sectors concerning technology and leisure:

• Telephones: +17.9% average year on year in real terms

• Audio-visual and multimedia products: +10.2%

• Leisure time: +2.8% Leisure and cultural services (+3.7%) and traveling (+1.2%) also recorded positive increases, marking a growth phase for consumption in experiences. However, from 2008 to 2019, appearing after the global financial crisis, the growth rates were very much contracting or descending into negative growth. For example:

• Mobility and communication expenditure contracted -0.7%,

• Clothing and footwear -0.3%

• Furniture and household appliances -1.2%

This phase marks a contraction in non-essential consumption but a greater focus on durable goods, which showed marked differences from the pre-Covid period. From 2020 to 2022, the effects of the pandemic are apparent in consumption:

• travel, holidays, and hotels are collapsing -9.8% due to traveling restrictions,

• the recreational and cultural services also show a negative sign -1.0%,

• traditional public establishments (restaurants, bars) came down -3.1%, with household spending on meals out remaining negative at -1.6%;

and the oversized items, digital and household spending are growing:

• audio-visual and multimedia products +15.7%

• furniture and household appliances +2.1%

• telephony +17.9%

The evolution of consumption demonstrates how consumption had to adjust to a new enforced digital household environment due to lockdown and smart working. Return to normality and transitions (2023) In 2023, some signs of rebound and repositioning of consumption are visible:

• travel, holidays, and hotels +23.6% full recovery of pandemic collapse;

• recreational and cultural services +9.7%

• catering +8.0%

Counter to this are the audiovisual products (+0.3%) and telephony (+2.4%), which are subsiding after the pandemic explosion, reflecting some saturation of the digital market. In summary, contrasting consumption trends between the period before the pandemic and the COVID-19 period underscore how the health crisis has provoked profound and differentiated changes to consumption patterns between pre-pandemic consumption and pandemic consumption. Some sectors (travel, culture, catering) have suffered rapid declines followed by rebounds, while other sectors (digital, furniture) are showing explosive growth associated with new daily life at home. These data ultimately signify the need to consider extraordinary exogenous factors that can categorically modify consumption dynamics at both territorial and sectoral levels, such as the pandemic.

Tab. 4 - I consumi sul territorio: le grandi funzioni di spesa

var. % medie annue in termini reali

	1996-2007	2008-2019	2020-2022	2023
Tempo libero	2,8	0,3	3,4	3,9
Prodotti audiovisivi e multimediali	*10,2*	*5,2*	*15,7*	*0,3*
Servizi ricreativi e culturali	*3,7*	*1,6*	*-1,0*	*9,7*
Viaggi, vacanze e alberghi	1,2	1,1	-9,8	23,6
Mobilità e comunicazioni	3,0	-0,7	-1,7	2,9
Telefoni	*17,9*	*13,7*	*17,9*	*2,4*
Cura del sé	1,1	0,1	-0,5	-0,2
Abbigliamento e calzature	*1,0*	*-0,3*	*-1,2*	*0,0*
Casa	0,8	0,0	0,7	-1,0
Elettricità, gas ew altri combustibili	*0,6*	*-1,3*	*0,5*	*-3,4*
Mobili ed elettrodomestici	*0,7*	*-1,2*	*2,1*	*-2,7*
Pasti in casa e fuori casa	1,1	-0,4	-1,6	0,2
Alimentari e bevande	*0,6*	*-0,8*	*-0,8*	*-3,5*
Pubblici esercizi	*2,4*	*0,5*	*-3,1*	*8,0*
Totale sul territorio economico	**1,5**	**-0,1**	**-0,6**	**1,0**

Elaborazioni e stime USC su dati Istat.

[2] [3]

Tab. 5 - La struttura dei consumi sul territorio

quote di spesa a prezzi correnti

	1995	2007	2019	2022	2023
Tempo libero	**7,6**	**7,4**	**7,0**	**7,3**	**7,4**
Prodotti audiovisivi e multimediali	*0,9*	*0,9*	*0,8*	*1,0*	*1,0*
Servizi ricreativi e culturali	*2,0*	*2,4*	*2,8*	*2,6*	*2,8*
Viaggi, vacanze e alberghi	2,3	2,8	3,2	2,4	3,1
Mobilità e comunicazioni	16,7	18,7	17,3	16,5	16,5
Telefoni	*0,4*	*0,6*	*0,7*	*0,7*	*0,7*
Cura del sé	23,8	21,6	20,9	20,1	19,7
Abbigliamento e calzature	*7,6*	*6,6*	*6,0*	*5,6*	*5,4*
Casa	25,7	27,3	28,6	31,2	30,2
Elettricità, gas e altri combustibili	*4,1*	*3,8*	*3,4*	*6,1*	*5,5*
Mobili ed elettrodomestici	*6,5*	*5,4*	*4,7*	*4,9*	*4,8*
Pasti in casa e fuori casa	23,9	22,2	23,1	22,6	23,0
Alimentari e bevande	*17,9*	*15,4*	*15,2*	*15,3*	*15,2*
Pubblici esercizi	*6,0*	*6,8*	*7,9*	*7,2*	*7,9*
Totale sul territorio economico	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**

Elaborazioni e stime USC su dati Istat.

[2] Elaborazione USC su dati ISTAT. In Confcommercio, Nota di aggiornamento sui consumi delle famiglie, luglio 2023, p.9.
[3] Elaborazione USC su dati ISTAT. In Confcommercio, Nota di aggiornamento sui consumi delle famiglie, luglio 2023, p.10.

The following tables (Tavola A 2017-2018)[4] (Tavola A 2019-2020)[5] show the average monthly expenditure of Italian households, distinguishing between food and non-food consumption, for the years 2017-2018 and 2019-2020. They as well can be considered a key source for analyzing the repercussions of the COVID-19 outbreak on household spending patterns, highlighting significant changes in consumption habits.

TAVOLA A. SPESA MEDIA MENSILE DELLE FAMIGLIE, ERRORE RELATIVO PERCENTUALE E SIGNIFICATIVITÀ DELLA VARIAZIONE PER CAPITOLO DI SPESA. Anni 2019-2020, valori in euro e in percentuale

CAPITOLO DI SPESA	2019 Spesa media	2019 Errore relativo (%)	2020 Spesa media	2020 Errore relativo (%)	Variazione significativa (*)
SPESA MEDIA MENSILE	2.559,85	0,5	2.328,23	0,5	*
Prodotti alimentari e bevande analcoliche	464,27	0,6	467,56	0,6	
Pane e cereali	76,45	0,7	76,08	0,6	
Carni	98,29	0,7	101,68	0,8	*
Pesci e prodotti ittici	41,22	1,2	41,08	1,1	
Latte, formaggi e uova	59,12	0,7	62,11	0,7	*
Oli e grassi	15,93	1,6	14,81	1,6	*
Frutta	42,18	0,8	42,69	0,8	
Vegetali	63,45	0,9	63,85	0,8	
Zucchero, confetture, miele, cioccolato e dolciumi	19,17	1,1	17,94	1,0	*
Piatti pronti e altre preparazioni alimentari (prodotti alimentari n.a.c.)	10,99	1,8	10,97	1,7	
Caffè, tè e cacao	14,80	1,3	14,05	1,2	*
Acque minerali, bevande analcoliche, succhi di frutta e verdura	22,66	1,0	22,30	0,9	
Non alimentare	2.095,58	0,5	1.860,68	0,5	*
Bevande alcoliche e tabacchi	46,10	1,4	42,54	1,3	*
Abbigliamento e calzature	114,65	1,6	87,98	1,7	*
Abitazione, acqua, elettricità, gas e altri combustibili, di cui:	896,05	0,6	893,21	0,5	
Manutenzioni straordinarie	*26,51*	*6,9*	24,74	6,8	
Affitti figurativi	*577,89*	*0,8*	587,09	0,7	
Mobili, articoli e servizi per la casa	109,97	2,1	103,66	2,0	*
Servizi sanitari e spese per la salute	118,33	1,4	108,10	1,3	*
Trasporti	288,39	1,3	217,45	1,4	*
Comunicazioni	59,31	0,8	54,16	0,8	*
Ricreazione, spettacoli e cultura	127,01	1,5	93,49	1,5	*
Istruzione	15,83	3,3	13,63	3,2	*
Servizi ricettivi e di ristorazione	129,98	1,3	79,41	1,5	*
Altri beni e servizi	189,96	1,2	167,04	1,4	*

(*) La presenza dell'asterisco indica che la variazione tra il 2019 e il 2020 della spesa per singolo capitolo è statisticamente significativa (ovvero diversa da zero).

Abbigliamento e calzature	119,33	1,7	118,88	1,6	
Abitazione, acqua, elettricità, gas e altri combustibili, di cui:	898,19	0,6	902,77	0,6	
Manutenzioni straordinarie	*27,82*	*7,2*	*23,89*	*8,5*	
Affitti figurativi	*586,71*	*0,8*	*589,27*	*0,8*	
Mobili, articoli e servizi per la casa	109,87	2,7	107,93	2,6	
Servizi sanitari e spese per la salute	122,71	1,7	120,74	1,6	
Trasporti	290,48	1,5	292,39	1,4	
Comunicazioni	63,68	0,8	62,06	0,8	*
Ricreazione, spettacoli e cultura	129,74	1,5	127,71	1,5	
Istruzione	16,03	4,3	16,00	3,7	
Servizi ricettivi e di ristorazione	130,59	1,4	130,37	1,3	
Altri beni e servizi	181,00	1,3	184,13	1,3	

(*) La presenza dell'asterisco indica che la variazione tra il 2017 e il 2018 della spesa per singolo capitolo è statisticamente significativa (ovvero diversa da zero).

[4] ISTAT, Le spese per i consumi delle famiglie- 2018, p.15.
[5] ISTAT, Le spese per i consumi delle famiglie-2020, p.14.

4.2 CHANGES IN CONSUMER SPENDING PATTERNS

Although COVID-19 compelled many individuals to alter their lifestyles, work habits, and methods of communication, it has also impacted how consumers settle transactions for goods and services. Furthermore, it has hastened the adoption of novel payment systems at checkout by businesses, highlighting its importance. This is supported by the recent study "Lost in Transactions" conducted by Skrill, a prominent global authority in creating international payment solutions for businesses and a member of the Paysafe group, a leading player in the payments sector.

Simultaneously, companies lack clarity on which payment methods to provide, and numerous businesses assert that they have ceased offering specific payment options because of insufficient demand.

In Italy, 70% of online businesses report that customers seek more ways to pay without sharing their financial information, while 68% state that COVID-19 has increased consumer comfort with previously unused payment methods. Consequently, 76% of the Italian firms surveyed are implementing new payment methods.

Currently, card payments continue to be the most commonly utilized method worldwide, although digital wallets and direct bank transfers are gaining more popularity.

Digital wallets are already quite popular in Italy, ranking at 56%, only trailing credit cards at 67%, and direct bank transfers at 57%. Another 13% of businesses intend to introduce digital wallets as a payment option within the next two years.

Worldwide, three-fourths of the firms noticed a shift in consumer behavior regarding the payment methods utilized in their online shopping carts, whereas in Italy, this figure ascends to 81% of the companies surveyed.

The most valued change is a rise in the percentage of transactions conducted via digital wallets, a trend also verified in our nation, where 41% of Italian businesses reported an increase in the usage of digital wallets.

Only 12% of Italian businesses reported experiencing a decline in digital wallet transactions.

When asked about the reasons behind the shift in consumer spending methods, the most common response noted by 46% of national businesses was that individuals are utilizing new payment systems to monitor their expenses with greater precision.

32% of Italian firms reported initiating at least one new collaboration with a digital wallet provider during the COVID-19 pandemic. In comparison, 25% of these companies have added multiple new payment methods to their digital cash register. Sixty-three percent of businesses that transformed their checkout processes during COVID-19 reported that these modifications have significantly boosted sales.

4.3 THE RISE OF E-COMMERCE AND DIGITAL CONSUMPTION

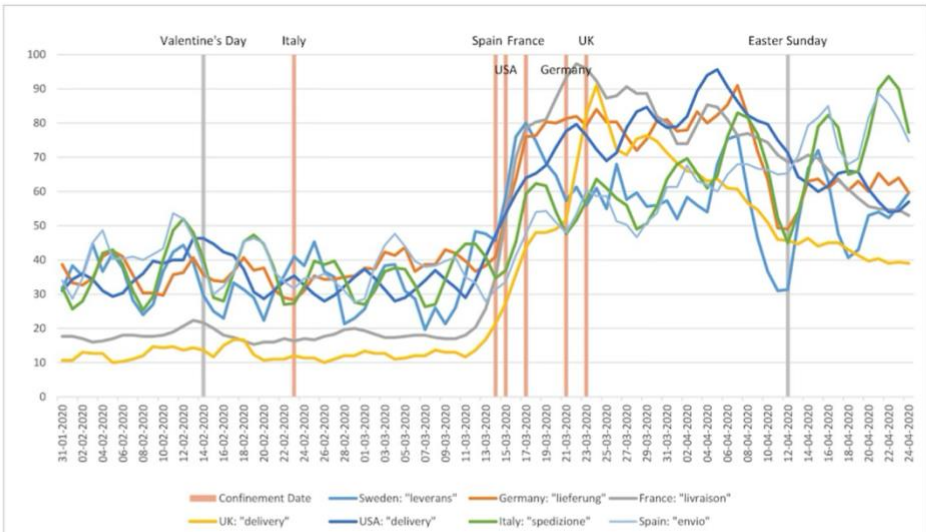
The COVID-19 pandemic has caused individuals in numerous nations to reduce in-person interactions. Voluntary social distancing to prevent infection, along with the stringent lockdown measures enforced in multiple countries, has effectively halted a significant portion of conventional brick-and-mortar retail, at least for now. Between February and April 2020, the United States experienced a 7.7% decline in retail and food service sales compared to the same months in 2019. In contrast, the period saw noticeable growth in grocery stores and purchases made through e-commerce and other non-traditional retail channels, with respective increases of 16% and 14.8%. During April 2020, online retail sales and sales over the Internet (including mail-order retail sales) in the EU-27 went up by 30% relative to the same month in 2019, but overall retail activity went down by 17.9%. The movement from retail physical outlets to digital platforms marks a distinct trend across countries. In the United States, online sales rose steadily from 9.6% at the beginning of 2018 to 11.8% by early 2020, before undergoing a significant increase to 16.1% in the period spanning the first and second quarters.

The UK experienced a comparable pattern, with the share of online retail in total sales rising from 17.3% in the first four months of 2018 to 20.3% in the first of 2020, with explosive growth to 31.3% between the first and second quarters of 2020. Similarly, in

China, the share of e-commerce in total retail sales increased to 24.6% between January and August 2020, compared to 19.4% in August 2019 and 17.3% in August 2018.

Within the Asia-Pacific area, online shopping has already increased in the first months of 2020. The rise in e-commerce in Europe and North America took place subsequently,

Google search interest in "delivery", selected OECD countries (February to April 2020)



particularly after several countries aimed to adopt analogous policies such as Italy's initial COVID-19 ones, by implementing lockdown measures quickly. The reality that Google searches for delivery choices nearly doubled in certain nations before the implementation of confinement measures(e.g. Germany, United Kingdom) highlights the strong connection between consumer expectations, governmental responses, and changes in behavior, as shown in the Figure[6].

The effect of the pandemic on e-commerce differs depending on the product categories and sellers. In the United States, for instance, there was an increase in demand for products related to personal safety (disposable gloves), home projects, groceries, or ICT devices. In contrast, demand decreased for items associated with travel, athletics, or formal attire (luggage, wedding dresses, gym bags, etc.). Various countries have witnessed a transition toward e-commerce, especially within the food supply chain, where

[6] ODCD(2020), E-commerce in the time of COVID-19

farmers began leveraging digital technologies to sell their products to consumers directly, and restaurants moved to offer food or grocery delivery services. In Germany, there was a notable increase in online sales for medicines and groceries, which have traditionally been slow to adopt e-commerce. In contrast, total online sales dropped roughly 18% in March 2020 compared to the previous year. In Korea, where official statistics exist, the value of e-commerce transactions increased by 15.8% from July 2019 to July 2020. Marked rises were noted for food services (66.3%), household items (48%), and food and drinks (46.7%); in contrast, online transactions related to cultural and leisure services or travel planning and transport services decreased markedly by 67.8% and 51.6%, respectively. In China, food items emerged as the top success in e-commerce, experiencing a 36% increase in total sales from January to April 2020 compared to the prior year. In comparison, total online sales from January to April 2020 stayed nearly the same as during the same timeframe in 2019 (+1.7%), following a substantial increase from 2018 to 2019 (17.8%). Total sales of clothing items decreased by 16% compared to 2019, following a notable increase of 23.7% from 2018 to 2019.

4.4 HEALTH-CONSCIOUS PURCHASES

The pandemic significantly altered consumer habits related to health and wellness. Lockdowns hindered entry to standard healthcare centers, the demand for premium health items surged, and home remedies began gaining popularity online.

However, if there was a sector that experienced the most significant impact after 2020, eCommerce's health and wellness sector took the lead, which was already lagging. The demand for quality household health products to meet stay-at-home mandates was essential for numerous individuals enduring the pandemic. This shift led to a growing trend of health-related self-sufficiency among consumers; individuals preferred to take control using modern technological solutions and cost-effective methods rather than spend extra on "professional" services outside their homes.

In what ways has this change in consumer behavior been shown within the health and wellness market?

Before the coronavirus pandemic, the focus on optimizing nutrition was generally limited to health-conscious individuals and active people. Similar to numerous aspects, the pandemic significantly altered how consumers think about the foods they consume daily.

A 2021 survey by the International Food Information Council found that 85% of Americans experienced significant modifications to their diets in the COVID-19 era, with 72% stating they continued to eat and prepare food more mindfully as restrictions were eased. Self-directed learning about nutritious food options has risen, with three out of four Americans now believing they can select healthy meals to include in their diet (boosting sales for organic choices and local food sources). Additionally, fewer consumers are transforming their meals solely for visual appeal—physical health often takes precedence.

Interest in immune health has understandably become prominent for many consumers after COVID-19. As a direct effect, immune therapies, including IV and red light treatments, are now being adopted at rates 50% higher than those seen prior to COVID.

Workout regimens were undoubtedly not immune to the drastic shifts caused by lockdowns. The widespread shutdown of numerous gyms and fitness centers posed a challenge for consumers to create effective home training programs as adequate alternatives. It wasn't long before multiple fitness fans found significantly cheaper options for gym memberships by buying personal gear and accessing a vast range of complimentary digital resources across various networks.

The pandemic significantly harmed public mental health. From preventing social unrest during lockdowns to the ongoing flood of negative news in 2020, numerous consumers had to discover methods to handle depression and other mental issues independently. Throughout the pandemic, an astonishing 40% of adults reported experiencing symptoms of anxiety and depression.

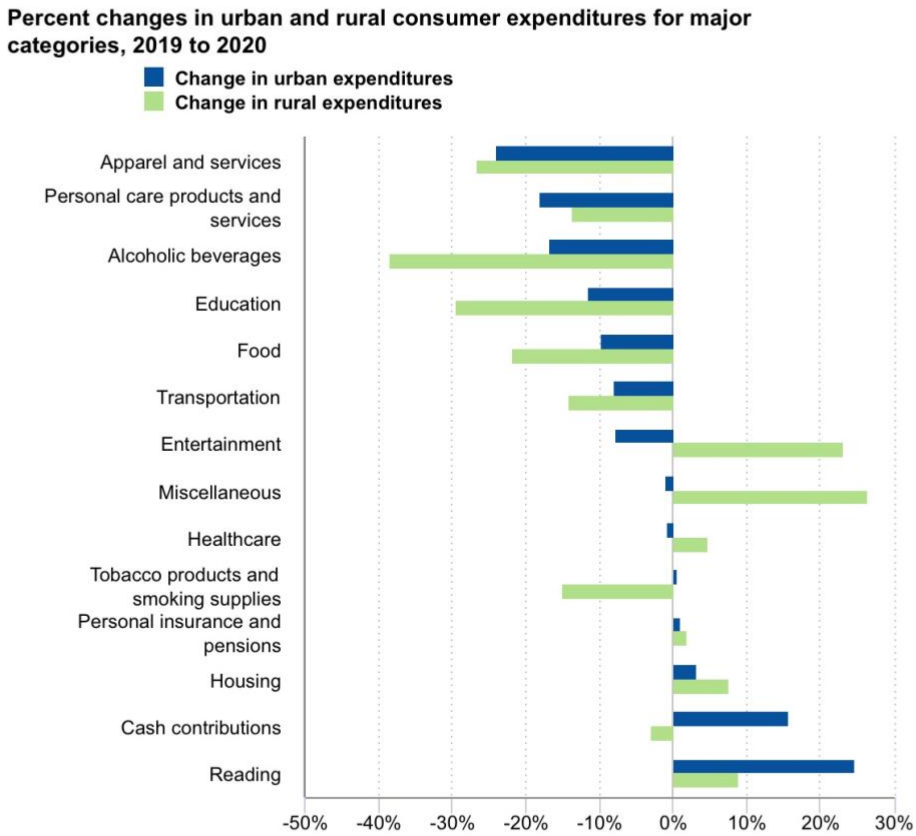
Consequently, access to mental health resources is expanding as the subtle stigma related to mental wellness continues to fade. Mental wellness applications are estimated to attain a market value of $500 million. In general, these wellness trends act as a gauge for a constructive shift within the healthcare and personal care market. Customers are realizing the significance of looking after themselves instead of depending on others to handle it.

4.5 REGIONAL VARIATIONS IN CONSUMER BEHAVIOR

The United States was one of the nations most impacted by Covid-19.

Recent historical data on consumer spending indicates similar trends in urban and rural regions from 2005 to 2020. Customer spending declined in both areas during the 2007-09 recession and during the COVID-19 recession (March to April 2020), with the decline in rural regions being more significant than in the urban areas.

Between 2008 and 2010, expenditure decreased sharply in rural regions (by 10.2 percent) compared to urban regions (by 4.3%). Nonetheless, the disparities during the COVID-19 pandemic were less noticeable. The decrease from 2019 to 2020 was 3.3 % in rural regions and 2.7 % in cities.[7]



[7] U.S. Bureau of Labor Statistics,(2022 January). How the COVID-19 pandemic changed urban and rural spending habits. Spotlight in Statostics.

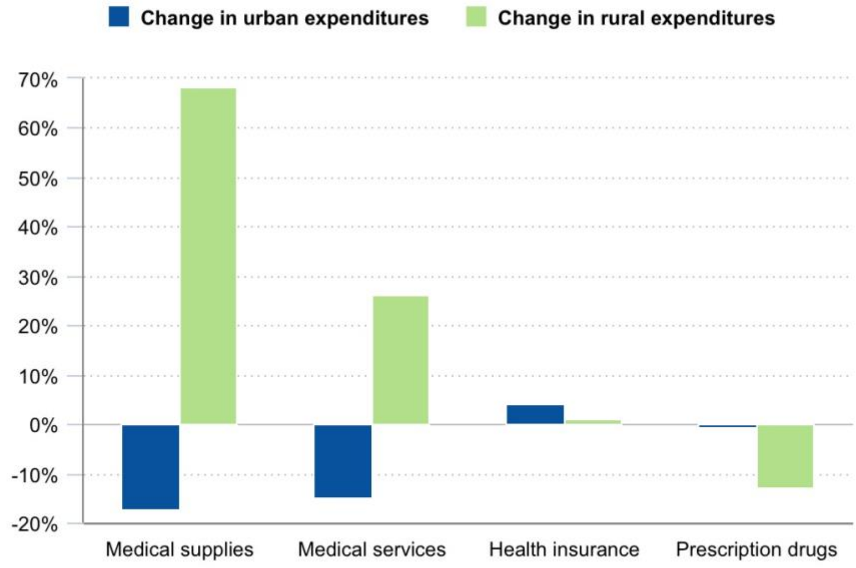
In specific categories, urban and rural spending moved in a similar direction. At the height of the COVID-19 crisis, spending patterns moved in contrasting directions in areas such as entertainment, miscellaneous items, healthcare, nicotine products and, smoking goods, and cash donations. The pandemic caused significant alterations in healthcare expenditures. Rural consumers raised their spending on medical care by 26.2 % between 2019 and 2020, whereas urban expenditure dropped by 14.9%. During the identical timeframe, spending on health insurance in urban regions rose by 4.2%, whereas it saw an increase of just 0.9 % in the non-urban areas.

The most significant rise in medical care was verified in rural regions, which rose by 68.3%. This unexpected increase was mainly fueled by higher expenditures on hearing aids. Even when hearing aids are not included in medical supplies, the costs still increased by 18.2%.

In the categories of medical care spending, medications represent the only group that decreased in both regions, although the decline was significantly greater in countryside areas.

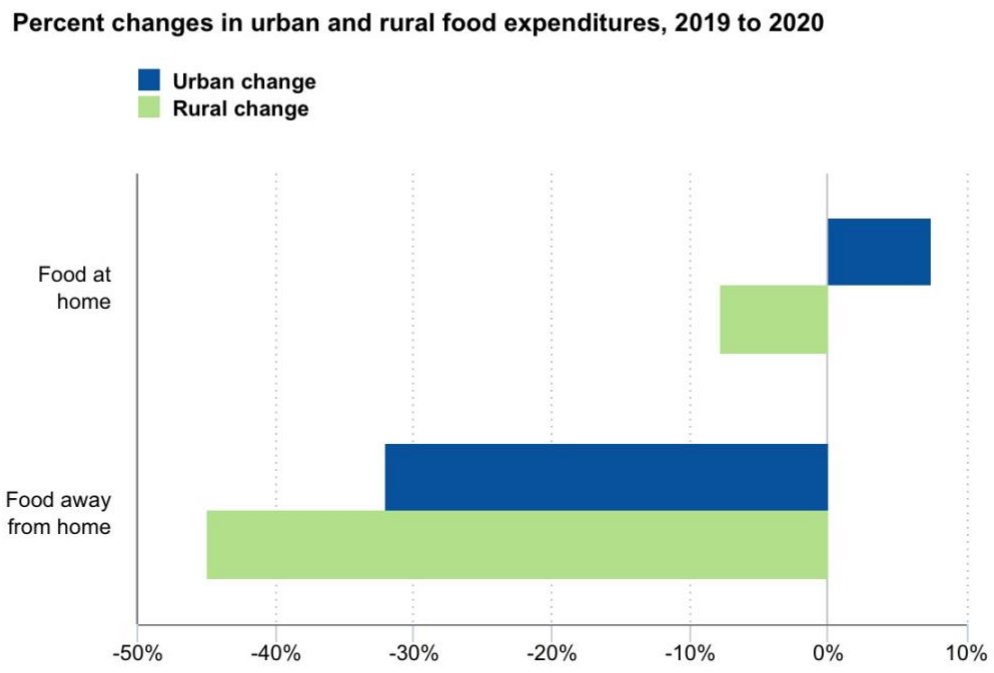
In contrast, health insurance is the sole segment that rose in both regions, seeing a more significant rise in cities, as shown in the figure below.[8]

Percent changes in urban and rural healthcare expenditures, 2019 to 2020



[8] U.S. Bureau of Labor Statistics. (2022,January). How the COVID-19 pandemic changed urban and rural spending habits: Helathcare expenditures. Spotlight in Statistics.

The COVID-19 pandemic resulted in limitations on eating out, a situation worsened by stay-at-home mandates. Expenditures on dining out fell in cities (-32.0 %) and countryside locations (-44.9 %), as shown in the figure below [9]. Given these reductions, we could have anticipated that groceries expenditures would rise throughout the pandemic. This assumption applied to urban regions, where home food expenditures increased by 7.5 % from 2019 to 2020. In the countryside, though, expenditures on home food declined by 7.8 %.



[9] U.S. Bureau of Labor Statistics. (2022, January). How the COVID-19 pandemic changed urban and rural spending habits: Food expenditures. Spotlight on Statistics.

4.6 PSYCHOLOGICAL IMPACTS ON CONSUMER DECISIONS

Businesses frequently question why an individual's buying habits vary from those of others and seek to comprehend the factors that affect a consumer's purchasing behavior. Psychological elements like motivation, learning, perception, attitude, and beliefs can guide customers' buying choices.

Numerous psychological elements affect consumer behavior. They enhance customer interaction and buying choices through these methods:

Motivation

Motivation plays a crucial role in shaping consumer behavior and assists a brand in developing marketing strategies. Every consumer is distinct in what drives their buying choice. A buyer may only decide to buy if the product or brand satisfies their needs. Brands can promote these products to address consumer issues, potentially encouraging them to buy. To comprehend the motivation levels of customers, examine Maslow's hierarchy of needs theory, which presents five distinct categories of human needs organized by their importance. The lower category of the hierarchy comprehends the fundamental needs, including food and housing.

A higher hierarchy level encompasses needs like self-actualization, connection, and affection. Maslow states that consumers attend to higher-level needs only after satisfying their lower-level needs. This structure is crucial for comprehending a customer's requirements. Whenever a company grasps the desires of a customer and the reasons driving those desires, it aids in forming precisely focused groups.

Learning

Learning brings new knowledge that alters a customer's actions and viewpoints based on prior experiences. It plays a crucial role in comprehending consumer behavior within a specific market. Although learning can involve experience and non-experience, marketing teams emphasize non-experiential learning, which consists of acquiring knowledge through exploration and watching. This psychological aspect is crucial since consumers prioritize the experiences of friends and family over the information a brand gives.

Reinforcement

Reinforcement is a branch of learning where consumers' thoughts, opinions, and understanding are affirmed through rewards and penalties. This psychological aspect is crucial, as customers revisit a brand when the information they acquired and learned about a product or service is accurate. However, if consumers discover a product through negative reinforcement, they may never buy from that brand again. Grasping how reinforcement affects consumers' buying choices and actions is vital for developing a marketing campaign that connects with the intended audience.

For example, a consumer might discover that a new eyeliner is resistant to smudging and lasts over 12 hours. When a customer buys the eyeliner and realizes that the brand's assertions are accurate, it leads to positive reinforcement. This encourages consumers to buy again, and they may discuss it with their friends and family. This behavior motivates other customers to buy, potentially boosting sales.

Socialization

Socialization is a psychological aspect that emphasizes adopting the norms and values of society, influenced by the surroundings. Consumers engage in socialization to acquire particular expected behaviors that may evolve. They develop these behaviors from socialization influences, including parents, siblings, politicians, educators, and celebrities. These agents both knowingly and unknowingly educate consumers regarding behavioral trends. Frequently, the information a brand provides customers can act as an agent of socialization.

To engage consumers, marketers can interact and motivate them to decide on purchases. Socialization can impact their behavior as it creates a specific kind of interaction. The marketing team may frequently tailor the campaign according to the customer's social behavior. This can foster constructive engagement between a customer and a brand.

Attitudes and beliefs

A key psychological element that affects consumer behavior is their attitudes and beliefs. Attitude refers to the way a consumer thinks, feels, and acts. It pertains to feelings, actions, and convictions regarding a specific object, individual, or occurrence. A belief is a fact or statement a person holds or regards as accurate. When a consumer has a negative perception and feeling about a specific brand, it deters them from engaging and buying. Perspectives and convictions can influence the process of decision-making.

The promotional aspect can create a beneficial shift in the customer's perspective. Usually, when a customer possesses a negative brand perception , the marketing team can adjust their approach and create a good that satisfies expectations. A marketing team must recognize that changing customer perceptions and opinions is challenging. For example, if a person residing in a household that uses a specific perfume brand may think that other brands are inferior. When buying a perfume, their mindset could influence their buying choice.

Perception

Perception denotes how a person arranges and understands sensory data. For consumers, perception influences an individual's thoughts about a product and determines their interaction with a brand. Marketing professionals find it challenging to grasp consumers' perceptions since each person may uniquely interpret information, influenced by their own experiences and understanding. Due to the varying perceptions of two consumers with the exact needs, they may choose different products. Consequently, marketing experts can aim to grasp the processes that result in a change in perception.

Grasping the psychological elements affecting consumer behavior is crucial for understanding the reasons behind a purchase.

Psychological elements can positively influence a business's success. When businesses understand the elements that influence consumers' decisions and likes, they can create a product that meets the consumer's requirements. They can effortlessly develop products and produce marketing materials that cater to consumers' requirements and motivate them to connect with a brand. This fosters an emotional bond. When customers form an emotional bond with a brand, they overlook the price and are willing to pay more for a product.

CHAPTER 5: DISCUSSION

5.1 Interpretation of Key Findings

The analysis of the questionnaire responses (N=50) generated some interesting insights into consumer behaviour in response to COVID-19. The data revealed many significant relationships in terms of age, gender, place of residence, occupation, household arrangements, and consuming behaviour under in a traumatic situation.

Demographics and contextual background

Respondents mainly were aged between 25 and 34 (42%), followed by the 65+ age group (28%), which reasonably represents young adults and the elderly. About gender, the sample was skewed (62% female, 38% male). The sample was predominantly urban-based; 58% of respondents lived in Rome, followed by Ciampino (16%). Major respondents were either full-time employed (52%) or students (42%).

Household living arrangements ,substitution behavior, and shopping behavior during the pandemic

A relatively high number of the sample (72%) were in two-person households. Two-person households may increase the number of categories purchased, and therefore, the amount spent per visit. Frequencies of shopping were also not as routine; typically, shopping occurred every weekly (46%) vs. daily (6%). The changing frequency may be reflective of goal-directed behaviors to reduce the chance of infection exposure and intentionally following social distancing behaviors.

Subjective perceptions from the first research question were also evident in the context of shortage of many products - 40% reported frequent shortages, and 48% occasional - both of which would correlate with stockpiling. Respondents overwhelmingly reported (in line with panic buying) that they were buying products in greater quantities than they usually bought - 77.6% of the sample reported this. The most common items included basic foods (81%), sanitary products (71.4%), and cleaning products (50%).

Motives and influences as explanations of behaviors

The biggest influence were stock-out fears (46.7%), followed by following the lockdown announcements (40%). Panic buying was surprisingly moderated by other people; 60.0% of respondents partially agreed they were influenced by others' panic buying (8% strongly agreed). These results suggest consumers aren't as autonomous as they believe when they panic buy, and conditions are prime for stronger social influence.

Change in consumption behaviors

52% of the sample bought items never purchased before the pandemic. Health items grew due to increasing concerns for personal hygiene. Disinfectants, masks, and vitamins were all purchased in greater quantity or more often prior OTC-19 consumer behavior. The highest rates of change were identified when spending more on sanitary products; for example, 68% of this sample reported higher spending. Tellingly, 59.2% began purchasing masks, gloves, and sanitizers weekly.

Health and lifestyle

COVID-19 forced many respondents to change their lifestyle; 42% reported they were practicing healthier or changed lifestyle habits. This was not true for all householders. Concern for purchase access to sanitary products remained an issue: 59.2% reported purchasing access to these items was affected by product shortages during these times.

Differences between urban and rural areas

While 60% did not identify differences in product availability between urban and rural areas, 22% reported that urban areas had better access to products. Panic buying behaviours between urban and rural areas were considered relatively similar, though 18% reported substantial regional differences.

5.2 Comparison with Global Trends

The questionnaire's results are largely consistent with the global trends of consumer behavior during the COVID-19 pandemic. This implies that some psychological and economic responses were valid across many consumers globally during the pandemic.

Panic Buying and Stockpiling Nationally and internationally

Panic buying was one of the first and most visible reactions to the pandemic. International survey data conducted in the United States, the United Kingdom, and Australia indicate that panic buying and stockpiling were widespread across countries, especially nonperishables, toilet paper, and disinfectants (OECD, 2020; Ipsos, 2020). In the questionnaire, 77.6% of respondents indicated that they purchased more products than their usual shopping. Fear of shortages and uncertainty over how long lockdowns would last were cited worlwide as two of the initial motivators reflecting the 46.7% of respondents to this survey who indicated that fear of stockouts was their initial most important motivator.

Changes in frequency and manner of shopping

Reduction in shopping frequency was reflected in only 6%, the majority of respondents indicated they were still shopping every day. International studies showed that many consumers were attempting to group trips and use weekly and biweekly grocery runs - to limit exposure to the coronavirus. Data from McKinsey & Company (2020) noted a significant increase in online grocery shopping portals. However, that may not have been the same in the questionnaire for either structural or cultural reasons.

Changes in Product and Service Demand

Increased demand for hygiene and health-related products was a global pattern. Similar to the 68% of participants of the questionnaire increased spending on masks, vitamins, and disinfectants, global reports from Nielsen (2020) and the World Health Organization (2020) reported spikes in demand for hygienic goods, immune boosting supplements, medical supplies, and personal protection supplies. Documented bulk purchases of staples such as rice, pasta, and canned items were evident across Europe, North America, and some parts of Asia.

Psychological and social influences

The influence of social behaviour of peers in consumers' decision-making during the pandemic, as found in the questionnaire (where 60% indicated others partially influenced them), confirms findings from behavioural studies that herd behaviour and panic buying accelerated across different societies (Sim et al., 2020). There was significant fear of missing out (FOMO) among consumers concerning essential items, aided further by media coverage and viral photos of bare shelves.

Health conscientious consumption

Although the questionnaire indicated only 42% of respondents reporting a shift towards healthier habits, globally, the trend did reflect a general shift towards health and wellness during the pandemic. Consumers consistently reported interest in immune-boosting foods, increased amounts of cooking at home, and increased activity in fitness and physical activity (PwC, 2021). It is important to note that cultural contexts, economic stability, and pre-existing habits drove varying levels of interest.

Urban/rural differences

In the questionnaire, there were not a lot of noticeable differences between the product availability in urban and rural. There were common perceptions between the two regarding product access (60% reported no difference). The rural and urban differences observed were more pronounced on a global level. In decentralized supply chain countries, rural areas sometimes experience longer delays between the time that products arrive in urban centres compared to rural ones. However, in some cases, urban center locations were subject to more shortages due to their more pronounced population density and the narrow spikes in demand during the pandemic (UNCTAD, 2021).

5.3 Implications for Businesses and Policymakers

The results of this study show significant implications for businesses and policy-makers operating in the post-pandemic environment. Understanding consumer behavioral changes and psychological reactions is important in managing the crisis and creating a resilient, adaptable system in the future.

Demand forecasting and stock management.

Examples of panic buying or "stocking up" behavior caused by fears of shortages during the pandemic show that organizations must look to improve demand forecasting. Let's consider the many retailers that can afford a more flexible supply chain, with systems such as real-time inventory tracking. They should be able to adjust to unexpected demand changes more efficiently. Consistent and continued messaging concerning COVID-19, done by public policy-makers or public officials during and in the case of emergencies, will help reduce consumer anxieties and possibly help deter panic buying.

Access to essential goods.

Since some of the basic goods hoarded include food, sanitary products, and medicines, the necessity for colleagues in the public and private sectors to work collaboratively on a supply chain contingency strategy or, at the very least, ministerial-level access to stocks during crisis times to ensure basic goods are accessible, even if it may take longer for consumers to access is paramount. This could include national-level stockpiling, predictive supply chain contingency plans, or multi-prong approaches that support local production inputs, particularly in rural areas.

Focus on health and hygiene.

The demand for personal protection products and wellness products provides insight into the shifting consumer demand and prioritisation of health and hygiene, which may be more permanent than post-pandemic. Consequently, businesses should diversify stock to incorporate personal protection and health promotion products and provide transparency on safety measures (for example, hygiene, contactless services). Furthermore, public policymakers should plan and regulate the availability and stable price of essential health-related goods for special populations, including low-income consumers.

Behavioural communication models.

The influence of social behaviors such as panic buying based on observing others act reflects the potential of behavioral science in crisis intervention communication strategies. For example, public policymakers should shape public information campaigns informed by behavioral insight that encourages rational purchasing behaviors in the hope of achieving a slow recovery to normalized behaviors; linguistic considerations that promote community consciousness for future planning or local risk management; and avoid areas of feared behaviors. In retail settings, businesses should think differently about using reassuring messages and up-to-date notifications of product availability, to counteract and support 'fear-based behaviors'.

Digital transformation and digital commerce infrastructure.

The differences a city would have seen in the move to digital shopping may not be as significant as anticipated globally. However, it shows strong evidence that consumers have adopted stronger digital preferences and behaviors that will not change moving forward. Businesses must invest in digital commerce and mitigate consumer inconvenience in accessing services digitally as a supply chain priority (for example, acceptable digital hardware, e-commerce platforms, customer service, and online and offline payment processing tools). For public policy-makers and for digital non-users, governments must aim to optimize access to broadband internet via the public and private provision of internet services and provide subsidies or tax incentives for SMEs to move online or support towns where it has long been deficient.

Encouraging sustainable consumption.

Some consumers have adopted healthier or more sustainable behaviours during the pandemic, which is unexpected and represents an opportunity to support. Businesses can promote more sustainable behaviors by increasing the availability of eco-friendly products, community health products, or locally sourced inputs. Policy-makers can act to improve/promote sustainable consumption through public health campaigns, local education programs that support health and wellbeing, or regional schemes that provide green innovation support via community programs.

Conclusions

The COVID-19 pandemic marked a turning point, fundamentally changing consumer choices from both mental and behavioral perspectives. This thesis investigated the impact of perceived risk, uncertainty, and supply chain breakdowns in triggering mass panic buying and enduring changes in consumer behavior. The results indicate that people, when confronted with crisis, after the way they behave in intricate manners motivated by personal anxieties along with social pressure, media communication, and lifestyle requirements.

Drawing on both original questionnaire results and existing data sources, it was revealed that the concerns over goods accessibility, social influence, and the urge to regain control played central roles in driving panic buying. Shoppers reacted by accumulating essential goods such as groceries, personal care items, and medical products. It was a worldwide phenomenon, cutting across regions and demographics, though differing in scale and emphasis subject to financial circumstances, technological capabilities, and cultural traditions.

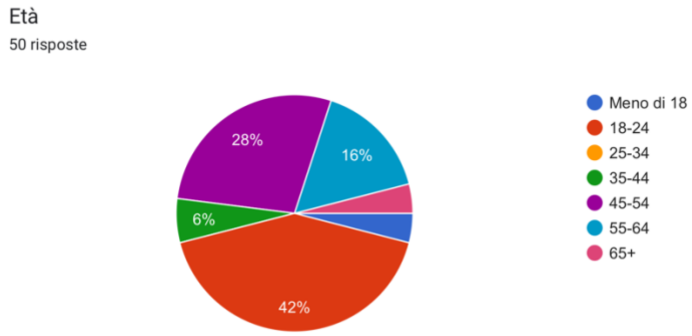
An essential discoverery within this investigation is the recognition that many changes in consumer behavior, such as the growth in e-commerce, health-driven consumption, and growing use of digital payment systems, are likely to persist beyond the end of the pandemic. The increase in e-commerce uptake, along with the increased interest in health-related goods, indicate not merely a fleeting response but a broader shift in priorities and daily habits. Psychological elements like motivation, sensory interpretation, and social influence significantly impact decision-making processes. Under stressful conditions, there was a rising tendency among consumers to base decisions on intuitive judgments and feelings, resulting in impulsive actions like hoarding and following the crowd. These reactions were heightened by media attention and distrust in institutional messaging, as shown by the disparity between consumer behavior and retailer goals.

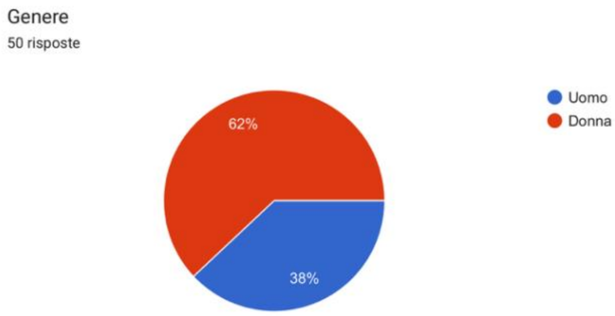
The findings emphasize the essential duty of both companies and policymakers in guiding consumer behavior during crises. Ensuring transparency, strengthening interactions, and building robust supply chain systems are crucial, for curbing panic-driven reactions and securing the availability of essential goods in future critical situations.

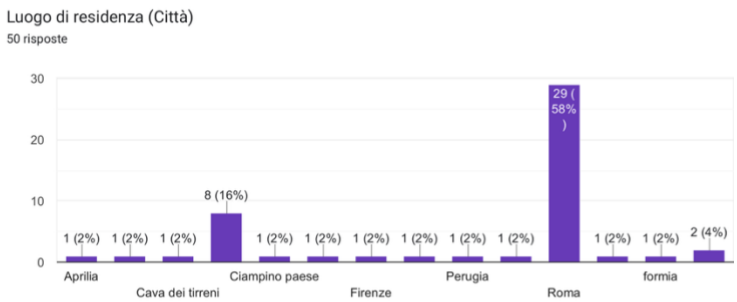
To handle demand fluctuations, retailers should strengthen their forecasting models, integrate innovative tools, and implement robust contingency strategies. Governments must prioritize public trust in the their strategies, guarantee fair access to vital goods, and implement behaviorally informed strategies in their public information efforts.

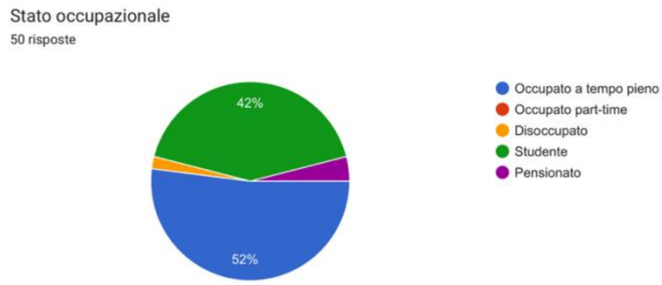
In summary, COVID-19 revealed weaknesses in consumer markets while generating chances for innovation, adaptability, and better-integrated supply chains and human actions. By analyzing how psychological factors shape consumer behavior during stressful times, companies and organizations can develop more flexible strategies, readying themselves not only for upcoming crises but also aiming toward a more engaged and health-conscious consumer environment.

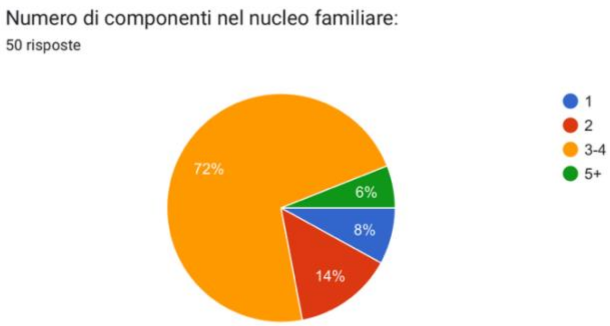
Appendix: Questionnaire’s charts

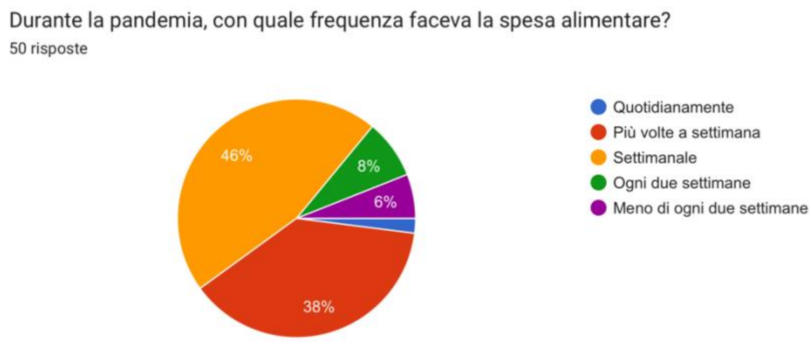




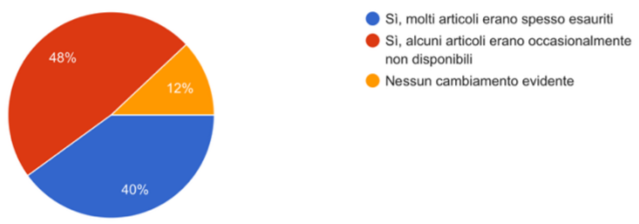




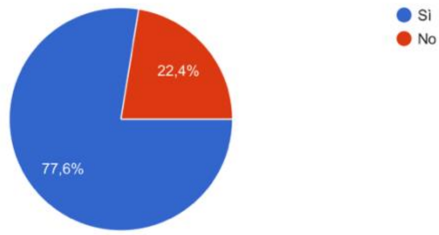




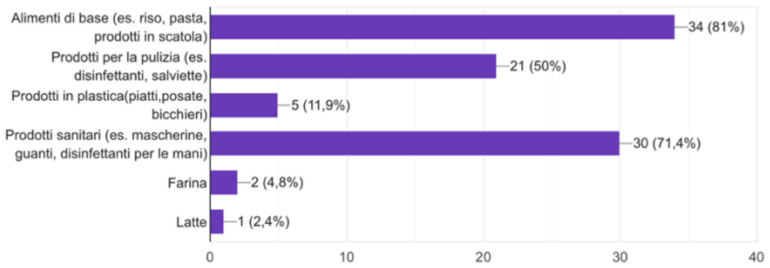
Ha notato cambiamenti nella disponibilità dei prodotti nel suo supermercato locale durante la pandemia?
50 risposte



Ha acquistato prodotti in quantità maggiori del solito durante la pandemia?
49 risposte

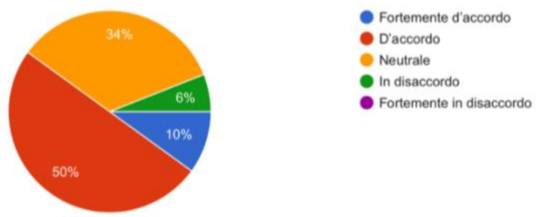


Se sì, quali tipi di prodotti ha acquistato in grandi quantità? (Selezioni tutte le opzioni applicabili)
42 risposte

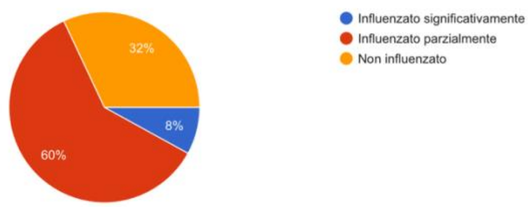


Qual è stato il motivo principale per gli acquisti in grandi quantità?
45 risposte

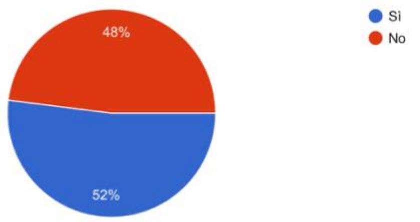
Crede che la pandemia abbia causato scorte eccessive e inutili di certi articoli?
50 risposte



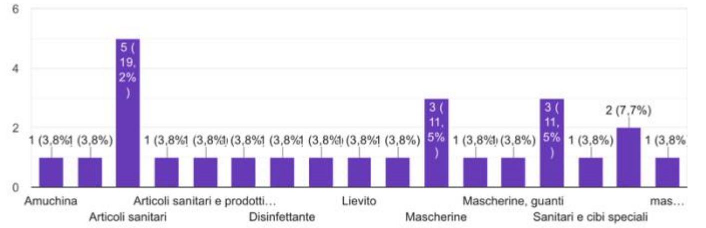
Quanto il comportamento di panic buying degli altri ha influenzato le sue decisioni di acquisto?
50 risposte



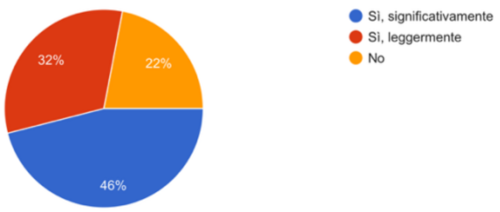
Ha mai acquistato prodotti durante la pandemia che non acquistava normalmente prima?
50 risposte



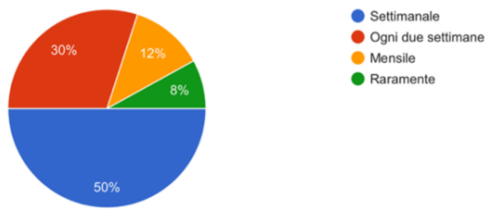
Se sì, quali erano? (es. articoli sanitari, cibi speciali)
26 risposte



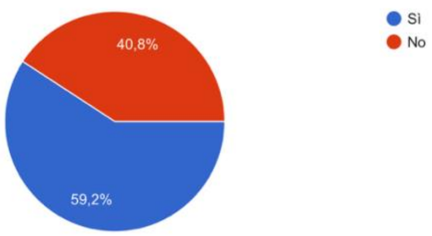
La sua spesa per prodotti sanitari (es. vitamine, integratori, mascherine) è aumentata durante la pandemia?
50 risposte



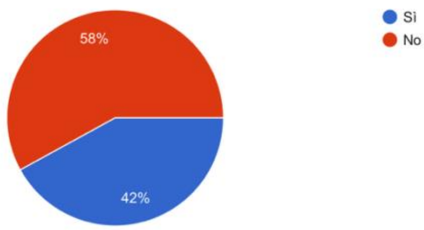
Con quale frequenza ha acquistato prodotti come mascherine, guanti e disinfettanti durante la pandemia?
50 risposte

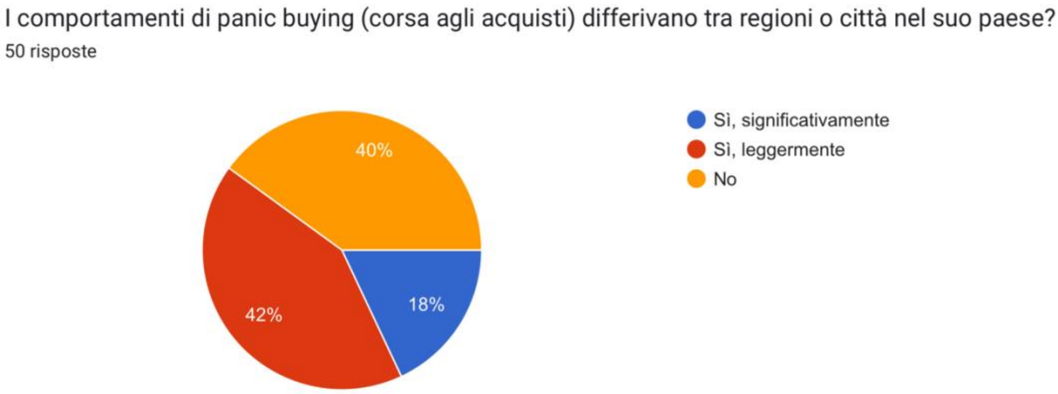


Ha avuto difficoltà a reperire prodotti sanitari a causa della carenza di scorte?
49 risposte



La pandemia l'ha spinta ad adottare abitudini alimentari o stili di vita più sani?
50 risposte





[10]

	Product shortages	Bought more than usual	Influence from others	Health product spending	Healthier lifestyle	Urban-rural stock difference	Regional panic buying difference
Product shortages	1.0	0.1414841381410388	0.37855274491853613	0.0625640017296886	0.19025295692965055	0.12156504818378819	0.003302272927617952
Bought more than usual	0.1414841381410388	1.0	0.044683038464259445	0.28835824184438147	0.14825888254922012	-0.18017995655150426	0.035270655490874846
Influence from others	0.37855274491853613	0.044683038464259445	1.0	0.1680970342699449	0.07202077907458729	0.43412899801695776	0.06375430854221847
Health product spending	0.0625640017296886	0.28835824184438147	0.1680970342699449	1.0	0.2547641050879111	0.20232717727382107	0.022252698898298392
Healthier lifestyle	0.19025295692965055	0.14825888254922012	0.07202077907458729	0.2547641050879111	1.0	0.19621382558600037	0.14561300312785144
Urban-rural stock difference	0.12156504818378819	-0.18017995655150426	0.43412899801695776	0.20232717727382107	0.19621382558600037	1.0	0.22760251869310874
Regional panic buying difference	0.003302272927617952	0.035270655490874846	0.06375430854221847	0.022252698898298392	0.14561300312785144	0.22760251869310874	1.0

[10] Correlation Matrix color-coded with shades of red highlighting perfect correlations (r=10), and blue used to indicate relevant moderate correlations above 0.35

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