

# Crises precautions: Analysing changes in consumer behaviour – A Romanian food retailer's perspective

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**Abstract:** *The food retail industry has experienced significant transformations during recent crises, including the pandemic, energy crisis, and armed conflicts. These events generated substantial socio-economic challenges for both companies and consumers, directly influencing purchasing behaviour and relational dynamics with brands and products. For instance, mobility restrictions during the pandemic forced consumers to reconsider how they purchased food and non-food items. Concurrently, armed conflicts and the energy crisis severely disrupted supply chains and store operations, requiring retailers to adapt quickly to meet shifting consumer needs and shortages. Many consumers rapidly abandoned previous shopping routines for online purchasing, mandating retailers to rapidly develop strategic responses to these changes. To explore the consequences of recent crises on food retail in Romania, an emerging market, and to show how retailers managed to adapt and implement new strategies based on the lessons learned, in 2025, the authors conducted in-depth interviews with food retail representatives. The aim was to identify transformations in consumer behaviour during the crises. Interview data were processed and analysed, combining text analytics (word frequency, associations, sentiment analysis, clustering) with thematic coding. Respondents consistently emphasised changes in consumer experience, increased adoption of online channels, precautionary behaviours such as stockpiling, and periods of panic buying. The findings provide an integrated perspective on how food retailers perceived and managed changes in consumer behaviour during the crises. Rather than establishing statistical causal effects, the research highlights consistent thematic patterns and emerging themes that link the crises situations to shifts in consumption and food retail strategies. The paper thus contributes to ongoing discussions on consumer behaviour dynamics under uncertainty, extending the methodological use of cluster analysis in food retail contexts, and adding interpretive insights in line with the dynamic capabilities theory.*

**Keywords:** *Crises, in-depth interview, representatives of food retailers, consumer behaviour, food retail industry, sentiment analysis, cluster analysis.*

**JEL Classification:** *H12, L81, M30, M31.*

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## Introduction

The recent crises, especially the sanitarian one, precipitated significant societal disruption, affecting supply chains across industries and prompting rapid adaptations in consumer behaviour, resulting in a restructuring of both food and non-food product consumption patterns. Due to restrictions imposed by government and local authorities (Schleper et al., 2021), consumers could no longer resort to the regular purchasing of products, being able to buy food only within certain time intervals (Sáez-González & Gázquez-Abad, 2024). Non-food products were purchased mainly online (Chang & Meyerhoefer, 2021), which led to a sudden and drastic change in shopping practice and behaviour.

Although the pandemic has long ended, its impact continues to shape retail strategies, strengthening retailers' ability to respond quickly and safely to future crises. Facing challenges such as the energy crisis, volatile prices, new taxes, and regional conflict, Romanian retailers have adapted continuously, innovating to protect consumers from negative effects.

This paper addresses the research gap by examining how food retail chains in Romania, an emerging market, adapted and responded to the latest crises, which are still severely affecting the country, and how the subsequent impact on consumer attitudes and purchasing behaviour influenced strategies designed for the "new normal." The three main research questions are:

*RQ1: How did food retail chains in Romania adapt to crises restrictions, and what lessons have been learned for the future?*

*RQ2: What strategies did food retailers adopt in response to shifting consumer behaviour during the recent crises, and which practices have been retained under the "new normal?"*

*RQ3: What has been the impact of these adaptations on the sentiments, attitudes and buying habits of Romanian consumers?*

The empirical research was implemented in 2025 through an interview guide administered to representatives of Romanian food

retailers. The collected data were analysed using R econometric software, resulting in various qualitative analyses, such as word-cloud, sentiment and cluster analysis. The paper adds value in extending our understanding of cluster analysis to analyse consumer behaviour during crises, and to the use of dynamic capabilities theory. Building on prior research (Kumar et al., 2021) identifying key drivers such as risk perception, financial stress, and social needs, the paper highlights through qualitative research how sentiment and cluster analysis reveal behavioural complexity and support effective strategy development. The study also deepens insight into how food retailers adapted during crises by reshaping supply chains to meet growing online demand.

The article is structured as follows: section 1 presents a review of the relevant literature, while section 2 outlines the research methodology and provides a detailed description of the procedures employed. Section 3 presents the research results, and section 4, the discussion, where the novelty of the approach is highlighted. The paper ends with conclusions, including the main theoretical and managerial implications, along with the limitations and research perspectives.

## 1 Theoretical background

### 1.1 Dynamic capabilities theory

Research on dynamic capabilities theory in retail crises contexts reveals that these capabilities are crucial for organisational survival and performance during environmental disruptions. Studies demonstrate that dynamic capabilities enable companies to effectively respond to crises, with superior capabilities associated with better financial performance during downturns (Venkatesh et al., 2021). In retail specifically, dynamic capabilities and social capital enhance organisational resilience, with different capability types (reconfiguration, leveraging, sensing, learning) contributing variably across crises phases (Martinelli et al., 2018). Crises' contexts force companies to become more objective in resource utilisation, with entrepreneurship, innovation capacity, and

partnerships significantly impacting new product development capabilities (Dias et al., 2021). Dynamic marketing capabilities prove most influential for international performance during economic crises, entrepreneurs deploying resource, market, and technology-related practices to adapt their business models accordingly (Ledesma-Chaves & Arenas-Gaitán, 2023).

All recent crises caused rapid disruptions that compelled retail and supply chain companies to develop and implement dynamic capabilities for swift decision-making, resource reallocation, and risk management. These dynamic capabilities were found to have a positive impact on supply chain resilience, highlighting their importance in crises management and recovery (Stanca et al., 2025). Research (Ruiz-Real et al., 2024) focusing on small businesses and retail demonstrate how dynamic capabilities supported survival and adaptation within entrepreneurial ecosystems during crises uncertainties. The use of dynamic capabilities also fostered resilience and a competitive edge throughout the global crises (Olawaju & Ajeyalemi, 2023). Additional research on various companies shows that dynamic capabilities positively affect customer and operational agility, enhancing a company's readiness to handle crises (El Idrissi et al., 2023).

## 1.2 Crises induced retail transformations

From a psychological standpoint, the crises-imposed constraints had a profound influence on consumer behaviour, and were primarily driven by emotional factors such as fear, anxiety and an intensified need for safety. Perceived illness risk repositioned purchasing to essentials and rational stockpiling. This shift in behaviour opened opportunities for food retailers to rethink their business models, adapting to the new situation with an emphasis on online sales and a more targeted approach to consumers in order to enhance their experience and make products more attractive (Li et al., 2023).

The health crisis significantly altered individuals' perceptions of daily life, with a notable impact on the consumption of goods and services (Redda, 2021). Besides societal disruption and change, it affected the global economy, a strong sector of which was physical food retail (Roggeveen & Sethuraman, 2020). Authorities had to take steps to prevent the population from getting sick by imposing social distancing, retailers being forced to find

new solutions to market their products during lockdown (Stanca et al., 2025). Physical retail was significantly affected, with non-essential products sales suspended for a time (Verhoef, 2021), restaurants and street vendors being severely affected (Li et al., 2023).

In response to government-imposed restrictions and consumer concerns about the potential risks of in-store shopping, online retailing experienced a surge in 2020. Some retailers rethought and improved their online sites, making them more attractive to consumers who already bought online, and aiming to convert traditional shoppers to online purchasing (Shaw et al., 2022). By minimising the frequency of visits to physical stores, consumers opted for alternative methods of shopping and purchasing, such as home delivery or in-store order collection (Diaz-Gutierrez et al., 2023).

The onset of the crises presented retailers with substantial challenges (Pantano et al., 2020). In response to dramatic shifts in purchasing patterns and consumer behaviour, including stockpiling, panic buying and product hoarding, retailers were forced to manage a new and unknown situation (Stanca et al., 2025). Restrictions and social media amplified fear and insecurity, driving impulsive purchasing (Rune & Keech, 2023). Demand for essential products increased, forcing retailers to pay special attention to supply chains and goods inventories, logistics management becoming a major challenge in the new context (Gupta et al., 2023). At the same time, consumer needs, preferences, and social behaviour shifted significantly as people sought interaction within limited opportunities (Kuikka et al., 2024; Li et al., 2023).

To remain competitive in the market and attractive to buyers, retailers had to reshape and adjust their services and offers to meet expectations and needs (Li et al., 2023). They were forced to pay more attention than ever to consumer satisfaction and loyalty issues (Falatouri et al., 2024), considering various new options for buyers (e.g., home delivery), improving supply chains and implementing the use of digital technologies (Beckers et al., 2021). While consumers were obliged to adopt new shopping patterns, retailers faced pressure to quickly adjust to a changing economic and social reality (Kuikka et al., 2024).

Especially during the sanitary crisis, consumers avoided large shopping stores or malls,

so retailers were forced to rethink and improve their online retail strategies, making their web pages more attractive and visual (Redda, 2021). Consumers showed a preference for technology, especially for mobile applications and contactless payment. This orientation towards e-commerce had a two-fold impact, driving the rapid digitisation and modernisation of retail infrastructure (Music & Charlebois, 2022), whilst providing consumers with a safer shopping experience that prioritised their well-being (Hultman & Egan-Wyer, 2022). Practices such as click-and-collect became widespread (Verhoef, 2021), driving strong growth in online retail (Stanca et al., 2025), a trend expected to persist (Gupta et al., 2023). In response, physical retailers adopted omnichannel strategies (Salvietti et al., 2022), with channel integration emerging as a key solution (Beckers et al., 2021).

## 2 Research methodology

Empirical qualitative-based research was implemented in 2025 among representatives of Romanian food retailers to identify how they had coped with a negative and unprecedented crises that led to rapid store closures, how they managed increasing and changing consumer demands, and what lessons had been learned for the “new normal,” i.e., what market development strategies could be implemented based on the recent crises experiences. Data were collected relying on an interview guide specifically designed by the authors and structured around four main topics:

- (i) The impact of the crises on consumer behaviour and lessons learned for the future;
- (ii) Organisational adaptations by in-store retailers and the impact on retail strategies during the “new normal;”
- (iii) Inventory and supply chain management influences under the “new normal;”
- (iv) Crises lessons, strategies and perspectives.

The research instrument was initially tested and adapted following pilot interviews. The research team conducted interviews, checked transcripts, and translated responses from Romanian into English. Backtranslation was implemented to ensure content accuracy, and no major issues were detected before analysis proceeded. The interview guide featured open-ended questions, prompting representatives of Romanian food retail companies to detail good practices and adaptations during recent

crises. The research did not test for statistical significance, instead exploring themes and relationships emerging from respondents’ narratives. The participants, including managers (e.g., store/department/general) from major retailers (Auchan, Carrefour, Cora, Lidl, Kaufland, etc.), provided the data. Of approximately 35 company representatives approached, 22 complete interviews were collected. The methodology was rigorous and multiphase, integrating advanced textual and computational analysis. Post-collection and coding, data underwent meticulous pre-processing. To mitigate social desirability bias, participants were assured of confidentiality and anonymity. Questions were neutral, allowing managers to fully explain their nuanced ideas.

In addition to the descriptive text mining (word frequency, word clouds, and sentiment analysis), the study also applied a systematic qualitative coding process inspired by grounded theory principles. After transcription, interview data were iteratively coded and compared to identify recurring categories and relationships. Through this constant comparison approach, higher-order themes were developed, such as consumer adaptation, operational resilience, and supply chain reconfiguration. This qualitative layer of analysis ensured that the findings went beyond surface-level textual patterns, providing interpretive insights into the mechanisms behind food retailers’ strategic responses to crises situations. All interviews were transcribed verbatim in English, anonymised, and diacritics were standardised before analysis. A standard English stop-word list from Snowball was applied to minimise textual noise while retaining key strategic terms relevant to the research context. Tokenisation was performed with `unnest_tokens()` from *tidytext*, followed by stemming using the English stemmer from *SnowballC*.

The R programming environment was used for statistical analysis and data processing, with an interactive interface implemented through the Shiny library. Textual analysis was performed using the specialized packages *tidytext* and *quanteda*, in accordance with the structured methodological protocol developed by (Saldaña & Omasta, 2016). Initially, data were acquired by implementing an in-depth interview guide, applied to a convenience sample of Romanian food retail representatives. The obtained data were subjected to a cleaning

and normalisation process, using specialised algorithms from the *tm* and *stringr* packages to eliminate non-informative elements and standardise the dataset. Visual exploration of the dataset was accomplished by generating advanced graphical representations, including term frequency analysis through weighted word clouds. A sentiment metric analysis was performed using the AFINN tool, calibrated for the English language, to quantify the affective tonality of the speech. Inter-lexical semantic relations were evaluated by constructing a co-occurrence matrix, allowing the identification of meaningful conceptual clusters. A hierarchical classification analysis was implemented to group terms according to distribution patterns, facilitating the emergence of latent themes from the dataset (Yan et al., 2022). To ensure methodological transparency and analytical rigour, detailed documentation of the qualitative coding process was included, describing coding phases, coder agreement, theme development, and representative quotations.

Sentiment was computed using the AFINN lexicon, translated and adapted for English. Translation involved bilingual back-checking to ensure semantic fidelity. Polarity scores were verified on a subsample by two coders, and contested entries were refined through consensus discussion. Co-occurrence and association matrices using pairwise Pearson correlations were constructed, restricted to terms with minimum frequency  $\geq 5$ . Pearson correlation was used to measure linear associations between terms based on their co-occurrence data, with a minimum frequency threshold of 5 to reduce sparsity. No additional transformations, such as log-odds, were applied. The robustness of this approach was validated through sensitivity checks using alternative distance metrics (e.g., cosine similarity) and clustering parameters, confirming the stability of the identified thematic clusters. To identify and validate these clusters, two complementary approaches were employed. First, hierarchical clustering was applied using Ward's linkage with Euclidean distance. This method minimises intra-cluster variance and identifies clusters based on term similarity, serving as a robustness check. Second, the Walktrap algorithm (implemented in the *igraph* package) was used as the primary method for community detection. The Walktrap algorithm detects communities by simulating random walks across the network, with

a parameter setting of step = 4, meaning the algorithm simulated walks of four steps to identify communities.

The results presented in the manuscript are based on the Walktrap algorithm, while hierarchical clustering was used to validate the stability of the clusters. Themes were interpreted based on dominant keywords, representative excerpts, and cross-validation with qualitative coding. Cluster weights were calculated as the ratio between the summed frequencies of terms belonging to each cluster and the total term frequency in the corpus. These values were scaled by 100 for interpretability. The Walktrap algorithm (step = 4) was used as the main community detection approach, while hierarchical clustering (Ward's linkage, Euclidean distance) was applied to verify the structural robustness of the resulting communities.

Clusters were labelled post hoc by the researchers, but interpretation was evidence-based. Each cluster was characterised through (i) top-ranked words by centrality; (ii) co-occurrence context; and (iii) representative excerpts from the transcripts. To strengthen interpretive validity, cluster meanings were cross-checked with qualitative coding of interviews and sentiment trends. The interpretation of the results involved an in-depth multidimensional analysis, corroborating qualitative data with quantitative insights to formulate robust conclusions regarding the impact of recent crises on consumer behaviour and the adaptability of the food retail sector in the context of socio-economic disruptions induced by them. Using this approach, it was possible to understand how the interviewees considered that recent crises had affected consumers' attitudes, behaviours and consumption patterns.

The methodology effectively combined qualitative and computational approaches to ensure both validity and depth of analysis. Methodological triangulation integrated findings from iterative thematic coding with advanced text analysis (semantic clustering and sentiment analysis), enabling the identification of emerging patterns and complex semantic relationships. Grounded in qualitative exploratory research principles, this approach was reinforced via coherence checks and theme validation, contributing to a nuanced understanding of how Romanian food retailers navigated recent crises. A rigorous preprocessing stage involved data-cleaning to eliminate

textual noise and filter irrelevant terms, thereby focusing the analysis on the food retail sector's specific dynamics. Despite a small sample size, it was deemed suitable for an exploratory study prioritizing in-depth examination over statistical generalization. Computational results provided actionable managerial insights, highlighting the need for retailers to adjust supply chains and accelerate digital transformation. Methodologically, the study combines qualitative and computational approaches to advance theory and offer practical strategies for building resilience in future crises.

### 3 Results

The qualitative analysis revealed that the crises has deeply affected food retail consumer behavior, causing shifts in purchasing and stocking essentials. Authority-imposed restrictions also lowered consumers' perceived shopping comfort.

#### 3.1 Word-cloud analysis

Recent crises had a profound influence on the shopping habits of both consumers and food retailers (see Fig. 1). The prominence of words such as "crises" highlights the substantial influence on consumer behaviour. Other frequently occurring words include "food," "behaviour," "impact," "store," "shopping," and "restrictions." They suggest major changes in the way consumers bought and behaved in stores due to the restrictions imposed. Data revealed fluctuations in the consumption frequency of various types of foodstuffs, suggesting potential shifts in consumer behaviour during recent crises, the pandemic being somehow considered a general concept to describe any crises.

"Reopening," "decrease," "traffic," "purchase," "conditions," "sales," "decreased," "radical," "discounted," "new," "hires," "part-time," "contract," "fixed," and "tendencies" appear less frequently, suggesting that these factors



**Fig. 1:** Word-cloud – crise's influence on consumer behaviour and in-store shopping habits

Source: own using R (wordcloud2 package) based on textual analysis of our database 2025

played a relatively minor role in understanding the crisis's influence on shopping habits and consumer behaviour. "Stock" appears multiple times, indicating that some consumers engaged in panic shopping, which led to empty shelves and the lack of certain essential products.

The most prominent words, such as "crises," "customers," "behaviour," "stocks," and "restrictions," emphasize that managing the unprecedented situation caused by crises required significant adaptation, particularly in understanding new consumer consumption habits, ensuring stock availability, and complying with safety measures. These crises acted as a major disruptor, driving significant changes in consumer behaviour and leading to profound effects on demand,

consumption, and purchasing habits. Words like "imposed," "guideline," and "restrictions" highlight the challenges of adhering to safety regulations and protocols, while terms such as "supply," "stock," "empty shelves," and "groceries" reflect the logistical and supply chain management pressures faced by food retailers in response to sharp fluctuations in demand. The impact on operations is further illustrated by words such as "store," "period," "decrease," and "increase." This analysis captures the multiple challenges faced by food retailers during crises, including adapting to new consumer behaviours, managing supply chain disruptions, and ensuring compliance with restrictions, all requiring exceptional responsiveness and organisational resilience.

Words such as “behaviour” and “consumer/customers” suggest significant changes in consumer habits and preferences during crises. Some consumers opted for less frequent purchases but larger supplies (“stock-ahead”), while others switched to more convenient alternatives such as home delivery. Although not explicitly stated, the presence of “store” and “consumer/customers” suggests that brick-and-mortar stores continued to play an important role in consumer behaviour. Crises may also have accelerated the adoption of digital channels and e-commerce to meet consumers’ social distancing preferences.

The research highlights the significant impact of crises on consumer behaviour, demonstrating the critical need for rapid adjustments within the food retail sector (Fig. 2). Food retailers could gain a clearer understanding of consumer

priorities and behaviours during crises, enabling them to refine their sales strategies and operations. This includes reshaping physical stores to enhance the shopping experience and expanding online store offerings to provide seamless and convenient customer service. The prominence of words such as “store” and “shopping” underscores the importance of adapting more effectively to evolving consumer demands during periods of uncertainty and disruptions.

The most prominent words, “crises,” “impact,” “major,” and “stock,” suggest the significant impact of crises on consumer behaviour and food retail stock management, while “store,” “food,” “product,” and “item” indicate the focus on physical stores and the foodstuffs sold within them. Words such as “behaviour,” “change,” and “observe” highlight changes in consumer behaviour and purchasing habits during crises



**Fig. 2:** Word-cloud illustrating the adjustment of food retailers due to crises situations

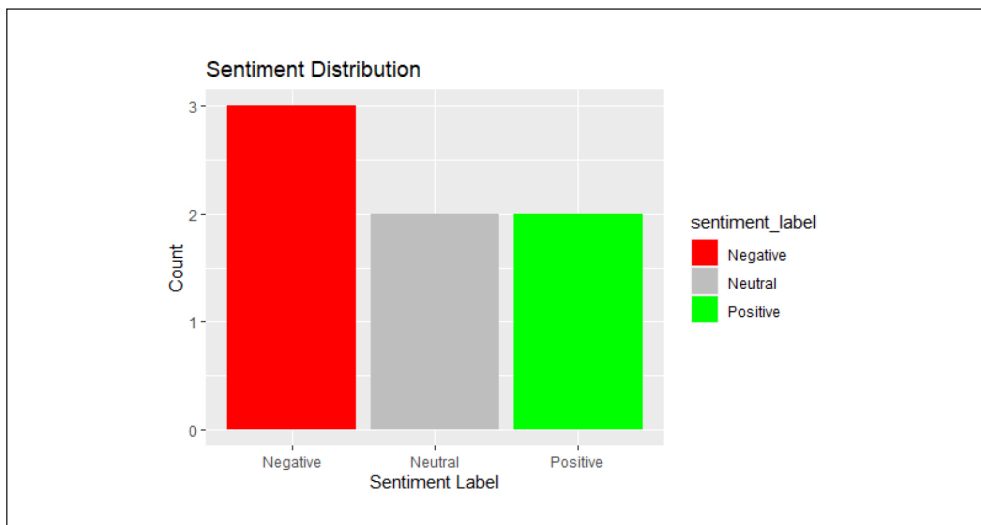
Source: own using R (wordcloud2 package) based on textual analysis of our database 2025

contexts. “Guide,” “COVID,” and “restrictions” reflect aspects relating to the regulations and guidelines imposed by health authorities to manage various crises. “Decreased” and “previous” suggest comparisons between sales or consumption levels observed during crises, highlighting potential decreases in demand for certain products. “Month” and “category” indicate that consumers changed their periodic consumption habits, relying more on specific product categories during the crises and imposed restrictions.

### 3.2 Sentiment analysis

The analysis of the dataset-based sentiment analysis AFINN allowed the delimitation

of three sentiments (see Fig. 3): negative feelings were the most pronounced, followed equally by neutral and positive feelings. This suggests that respondents had a slightly negative feeling in general. The sentiment analysis, conducted using the *tidytext* package in R, reveals a prevailing emotional tone of feeling “abandoned.” The text mentions a significant decrease in sales, with consumers visiting stores less often and opting for larger quantities, probably due to the security measures imposed by the authorities and limited travel to and from home. There were stockpiling trends for certain products, such as chips and/or cosmetics. Consumer behaviour shifted to cheaper foodstuff and staples, eliminating



**Fig. 3: Sentiment analysis**

Source: own using R based on transcripts analysis

the purchase of premium and/or luxury foods, as crises also lead consumers to adopt a more impulsive oriented shopping behaviour, for different types of equipment, electronic goods and various household appliances. Crises situations are associated with predominantly negative feelings of consumers.

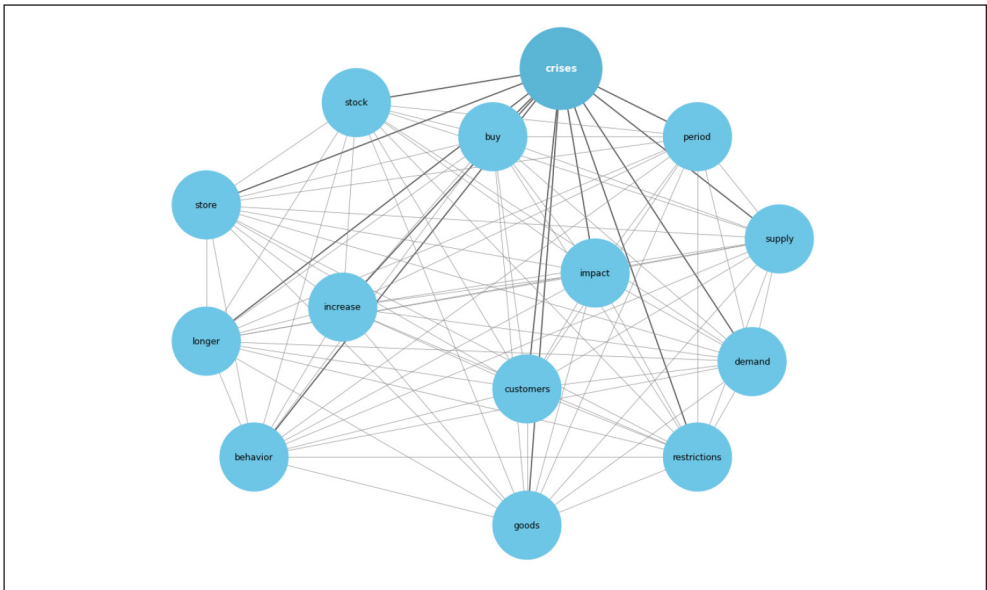
Examining the distribution, one can see a significant polarisation between the frequency of negative and positive sentiments, while the neutral sentiment registers a relatively low weight. These findings suggest that the analysed dataset contains a high level of emotional expression, either positive or negative, with few instances of neutrality. The negative sentiment shows the highest frequency within the distribution, indicating a preponderance of negative expressions, potentially relating to dissatisfaction, criticism, or unfavourable experiences. This observation provides valuable information for identifying problems, deficiencies, or areas that require improvement. Respondents feared the negative effects of crises, which are quite often associated to the latest sanitarian pandemic, avoiding crowds and trying to minimise social interactions when shopping (Stanca et al., 2025). Positive feeling registers high frequency, although slightly less than negative

feeling, indicating notable satisfaction and successful practices worth exploring.

### 3.3 Word association matrix

A word association matrix (Fig. 4) can be used to identify the relationships between concepts or topics that arise from textual data. This matrix displays the frequency with which each concept is mentioned in the qualitative data in relation to other concepts. Matrix cells contain the degree of association quantifying the relation between concepts in terms of strength and direction. Correlation coefficients range between medium and high, so the words identify the presumed relationship. This reveals how crises affect consumer behavior and in-store shopping, showing changes before and during disruptions alongside negative feelings driven by insecurity.

During the association analysis, positive and negative associations between concepts were identified. A strong positive association suggests that the two concepts are closely linked or even interchangeable, while a weak positive association suggests a more general association. A strong negative association suggests that the two concepts are mutually exclusive or in opposition to each other, while a weak



**Fig. 4:** Word association matrix

Source: own using R (quanteda package) based on textual analysis of transcripts analysis

negative association suggests a weaker opposition. “Buy” is associated with interest in “shopping,” but with “store reopening,” the association coefficient being above 0.645, indicates that these concepts are frequently mentioned together. There are negative associations, “buy” being negatively associated with “crises,” and “stockpiling” with an association coefficient above 0.543, which indicates that these concepts are mentioned less frequently together.

### 3.4 Cluster analysis

Cluster analysis was not only used to identify descriptive subgroups within the text corpus, but also to support theory-building regarding adaptive mechanisms in retail resilience. The emerging clusters were interpreted through the lens of crises management and consumer adaptation theories, linking data-driven themes to broader conceptual frameworks. The association matrix represents the basis for identifying patterns and relationships in the analysed data, allowing a cluster analysis to be performed via elbow method. In this sense, communities using a *walktrap* algorithm were detected. This resulted in five clusters in which different

groups of words were grouped based on their patterns of occurrence. Clusters are numbered from 1 to 5, consisting of different members and weights, which suggests the relative importance of each cluster in the dataset (Fig. 5).

Cluster 1, reflecting the “Direct impact of crises on food retail,” has the highest weight of 6.75. It comprises words that appear with the highest frequency of occurrence in the dataset, such as “crises,” “store,” “stock,” and “food.” This cluster highlights how crises disrupted operations and supply chains in food retail. Words like “crises,” “consumer,” and “stock” emphasise the challenges of managing fluctuating consumer demand and ensuring adequate stock levels for essential products. “Store” and “food” point to the direct impact on physical food retail stores and the supply of basic food products to consumers during the imposed restrictions. The high weight of this cluster underlines the importance of understanding the consequences of crises on food retailers and their ability to adapt to consumer needs in exceptional circumstances. It demonstrates that crises had a major impact on grocery store operations.



“empty,” “fear,” “panic,” “non-perishable,” “hygiene,” “driven,” “maintain,” “fast,” and “shelf.” “Buy,” “impact,” “stock,” “fear,” and “panic” highlight the deep motivations behind this unusual behaviour. This cluster demonstrates the “panic buying” phenomenon and preventive stockpiling that occurred in the early stages of crises contexts. Words such as “panic,” “frenzy,” “stock,” “empty,” “non-perishable,” or “hygiene” suggest the unusual consumer behaviour of buying excessive quantities of essential products (foods, hygiene products, long shelf-life products). Such behaviour can be explained by multiple psychological and social factors that acted concurrently and amplified each other.

Psychologically, the fear and uncertainty generated by the threat of an unknown crises triggered an instinctive survival response, causing people to stock up in order to feel safe (Rune & Keech, 2023), a phenomenon known as the “herd effect” or mass behaviour, where individual decisions are strongly influenced by collective actions and/or perceptions (Dabija et al., 2025). Media and social networks amplify this by spreading images of empty shelves and frantic shopping, intensifying public fear and setting off a vicious circle in which people bought even more to avoid running out of supplies (Stanca et al., 2025). This creates supply chain disruptions and supply-demand imbalances. From a sociological perspective, the phenomenon can be explained by the theory of herd behaviour and the pressure of social conformity. When people observe others purchasing in large quantities, they tend to adopt similar behaviour to align with the perceived norm and avoid the risk of running out of essential products (Gupta et al., 2023).

Cluster 4, with a weight of 1.17, entitled “Changes in buying habits,” includes words relating to consumer behaviour transformation, showing that consumers altered their purchasing behaviour during crises: “condition,” “less,” “reopen,” “traffic,” “consumption,” “flour,” “increase,” “measure,” “situation,” “value,” and “use.” While Cluster 2 focuses on general changes in consumer behaviour, Cluster 4 explores more specific aspects of changing purchasing habits. The presence of words such as “consumption,” “measure,” “situation,” and “value” examines how individuals adjusted their volume, frequency, and types of purchases according to the exceptional circumstances and measures imposed. This cluster reflects efforts

to understand the specific adaptations of purchasing behaviour in different crises contexts and scenarios, individuals tending to reassess their priorities and adapt their purchasing decisions to reduce perceived risks and cope with new constraints.

This cluster reflects adaptive consumption patterns that can be interpreted through the theoretical lens of adaptive consumer behaviour and risk mitigation theory. The observed shifts in purchase volume, frequency, and shopping channels correspond to the concept of situational adaptation, where consumers reconfigure their decision-making processes in response to perceived constraints and uncertainty. These behavioural adjustments illustrate how consumers engaged in bounded rationality, re-evaluating their needs and resources to maintain control and stability amid disrupted conditions. From a theoretical perspective, this cluster contributes to understanding the dynamic interplay between contextual pressures and individual adaptive strategies, reinforcing existing models of consumer resilience in a crisis’s context.

Cluster 5, with a weight of 1.32, represents the “Impact of crises on food retail.” It consists of words such as “back,” “big,” “comfort,” “contract,” “crises,” “remedy,” “hire,” “irritation,” “more,” “new,” “overcrowding,” “part-time,” “period,” “radical,” “reduce,” “appreciate,” “discount,” and “time.” This cluster focuses on the broader impact of crises on the food retail sector, emphasising changes in operational strategies, consumer preferences, and sales patterns. The presence of words such as “contract,” “trend,” “discount,” and “comfort” highlights how the health crises influenced consumer preferences for essential products and sales strategies in food retail. Terms like “employment” and “crises” point to their economic and operational impact on employers and food retailers, including adjustments made to workforce management and logistical operations.

This cluster highlights the challenges faced by food retailers during crises, including shifts in consumer demand, operational changes, and the imperative for resilience amid disruptions. Focusing on the food retail sector, the analysis reveals how retailers adapted to evolving consumer needs, enhanced efficiency, and revised sales strategies to meet new market realities. The findings illustrate that crises act as catalysts for innovation, accelerating

pre-existing trends such as digitalisation and sustainability, rather than creating entirely new ones. Emphasis on employment, operational restructuring, and consumer preferences aligns with theories of strategic adaptation and institutional resilience. This cluster demonstrates how organisations leverage crisis-induced constraints to redesign business models, contributing to theoretical discussions on retail systems' adaptive capacity during systemic disruption.

The clustering results go beyond surface-level text patterns. Each identified cluster was conceptually anchored in existing theories of resilience, adaptation, and consumer behaviour, contributing to an integrative framework for understanding how Romanian food retailers and consumers co-evolved under crises conditions. This theoretically grounded approach transforms descriptive clustering into an analytical step that supports the development of new conceptual insights.

#### 4 Discussion

The qualitative analysis indicates that recent crises had a profound impact on both consumer behaviour and the retail industry. The restrictions and conditions implemented of recent crises led to substantial changes in consumers' shopping habits and inventory management of essential products, particularly food (Gerlich, 2021). There was an obvious link between crises and consumer behaviour, frequently appearing keywords being "consumers/customers," "crises," "restrictions," "behaviour," "shop"/"shopping" highlighting significant changes in purchasing behaviour and consumer experience, due to possible governmental restrictions and relatively limited possibilities to shop. These results align with prior research (Nou et al., 2025), highlighting that crises triggered a shift in consumer needs, with psychological concerns being superseded by more tangible worries about safety, illness prevention, decline of physical fitness (Kyrychenko et al., 2023) and access to essential goods. "Storage" appears frequently, signalling episodes of panic shopping, leading to the emptying of shelves and the lack of essential products. Appearance of words, such as "decrease" and "increase" in food consumption indicates a significant shift in crises induced consumer behaviour.

High perceived illness risk prompted defensive shifts in purchasing, prioritizing essentials and bulk buys of basics like food and hygiene

products (Gupta et al., 2023). This has spurred circular economy business models and online food retail growth (Salviotti et al., 2022), with omnichannel integration boosting channel synergies, efficiency, and satisfaction. These changes could trigger a significant restructuring of value chains and supply chains in favour of local sourcing and sustainable products (Osei et al., 2023).

Recent crises have caused a shift in preference towards products with a long shelf life that are easy to store, reflecting the precautionary stocking up trend shown by many consumers (Rune & Keech, 2023). Fashion and accessories sales declined significantly as people stayed home and reduced discretionary spending. Retailers responded with strict in-store safety measures, including customer limits, distancing markers, protective barriers, and optimized traffic flows (Dabija et al., 2025). Many retailers resorted to adjustments to their supply chains, and products/brand offers to align with fluctuating demand and supply constraints (Schleper et al., 2021). Shifts in consumer behavior and post-crisis strategies reshaped food retail. To adjust to these significant changes, food retailers quickly embraced digital channels, e-commerce platforms, and online shopping options (Perticas et al., 2025). Strengthening digital capabilities is essential for retailers to delivering seamless online experiences (Mardosaite et al., 2024).

A lasting change in consumer behaviour is evident, with a continued preference for online shopping and ordering essential products. Cluster 4, entitled "Changes in buying habits," highlights terms relating to the ongoing transformation in consumer behaviour, illustrating how purchasing patterns have evolved beyond crises and which practices have persisted in the "new normal." Research reveals that while initial panic-driven behaviours faded, some behavioural changes became permanent, reshaping retail consumption. Crises challenged retailers, driving agile, innovative strategies for survival (Niu et al., 2025). Food retailers focused on accelerating e-commerce, operational tweaks, and adapting to new preferences.

#### Conclusions

Theoretically, this paper advances our understanding of crisis-driven consumer behavior, showing adaptations in food and non-food purchases amid heightened uncertainty. Crises

amplified perceived risks, sparking panic buying and stockpiling aligned with loss aversion, while shifting reference points and risk perceptions toward a “new normal.” This fueled online consumption and precautionary behaviors, forcing retailers to rapidly reinvent operations and supply chains. Our findings contribute to dynamic capabilities theory, emphasising the necessity for organisations to remain agile and responsive to unexpected market conditions.

Empirical interviews with retailers, supported by cluster and sentiment analyses, revealed diverse behavioral and strategic responses aligned with theoretical constructs. Word-cloud analysis further highlighted the emotional and cognitive dimensions of strategic adaptability during the crises. Concurrently, sentiment and cluster analyses illuminated consumer perceptions of in-store safety measures, such as social distancing and mask mandates, and their impact on shopping behaviors. Understanding these dynamics is crucial for retailers adapting to the “new normal” and effectively meeting customer needs. Government restrictions altered consumer behavior, leading to discomfort, lower foot traffic, and changes in staffing and hiring. Since sentiment analysis can be influenced by context and ambiguity, its findings need validation through other methods. Crises have induced major consumer shifts, requiring retailers to adapt to changing demands and supply challenges.

This research contributes significantly to the literature on organisational resilience by illustrating how retailers in an emerging market, specifically Romania, implemented innovative strategies to maintain operational continuity amid uncertainty and disruption. Rapid digitalisation and the localisation of supply chains enabled these organisations to respond effectively to fluctuating demand and contextual constraints imposed by crises. The findings elucidate the core dimensions of resilience (anticipation, adaptation, and recovery) and highlight the pivotal role of digital channels and local sourcing in strengthening retailers' crises response capabilities.

Future research could examine the long-term impact of crises on consumer behavior. Although health restrictions influenced behavior, this study did not specifically assess their role in stockpiling, which warrants further investigation. Our findings reflect patterns in perceptions and experiences rather than

statistically significant causal effects. Another limitation is that the in-depth interviews were only conducted within a single emerging market, namely Romania. Further research could investigate retailers' opinions on the recent crises and/or the “new normal” in different markets. It could investigate the differential impact of crises on consumers and the adopted measures to overcome them. Subsequent research could examine the crisis's effects on supply chain management and explore strategies to mitigate the impact in future crises.

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