

American University Kyiv

A Capstone Project

**STRATEGIC MANAGEMENT OF RETAIL MARKETS IN UKRAINE
DURING THE WAR: ADAPTING TO CHALLENGES IN SALES
DYNAMICS AND CONSUMER BEHAVIOR**

**СТРАТЕГІЧНЕ УПРАВЛІННЯ РОЗДРІБНИМИ РИНКАМИ УКРАЇНИ
ПІД ЧАС ВІЙНИ: АДАПТАЦІЯ ДО ВИКЛИКІВ У ДИНАМІЦІ
ПРОДАЖІВ І ПОВЕДІНЦІ СПОЖИВАЧІВ**

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ABSTRACT

This research investigates the transformation of retail markets in Ukraine during the ongoing war, focusing on changes in sales dynamics and shifts in consumer behavior caused by external crises, such as energy infrastructure disruptions. The study highlights how these disruptions triggered a substantial increase in demand for survival-critical electronics, including charging stations, generators, and power banks, while sales of traditional categories like laptops and smartphones declined, reflecting broader economic contractions and shifting consumer priorities.

The findings underscore that survival-critical products experienced exponential growth, with their collective market share rising from marginal levels to 6.89% by 2024. For instance, generator sales surged by over 2,500% in 2022 due to urgent demand during prolonged power outages. In contrast, discretionary product categories, such as laptops and smartphones, declined as purchasing power contracted, underlining the necessity for businesses to realign their product strategies to address evolving consumer needs.

To respond effectively to these market shifts, businesses employed data-driven approaches, such as leveraging Google Trends data, vendor statistics, and descriptive analytics, to identify demand surges and anticipate future trends. Managers prioritized inventory optimization, strengthening supply chains, and reallocating resources to survival-critical goods. Flexible pricing models, tailored marketing strategies, and regional adaptations enabled businesses to meet localized demands, demonstrating the importance of agility and strategic foresight in crisis management.

The research also reveals that survival-critical electronics have become integral during infrastructure crises, reshaping market dynamics and prompting businesses to adopt forward-looking strategies. By integrating predictive analytics, enhancing logistics flexibility, and diversifying supply chain networks, businesses can mitigate risks and ensure operational continuity. Furthermore, the findings highlight the need for long-term preparedness, encouraging managers to build resilience through real-time monitoring of consumer trends and proactive planning for potential disruptions.

In conclusion, this study contributes to a deeper understanding of how external crises influence market transformations and consumer behavior. By prioritizing essential goods and adapting operational strategies, businesses can navigate volatile environments with greater

resilience and competitiveness. These insights serve as a valuable framework for managers seeking to optimize inventory, logistics, and marketing strategies, positioning their organizations for sustainable growth even amid prolonged uncertainty.

Keywords: survival-critical electronics, consumer behavior, retail transformation, Ukraine war, market adaptation.

INTRODUCTION

The retail market in Ukraine is currently undergoing a profound transformation due to the ongoing conflict (Sharov et al., 2024). The war has led to significant disruptions across the sector, affecting supply chains, consumer behavior, and overall market dynamics. According to the Ukrainian Retail Association and the Ukrainian Council of Shopping Centers, by June 2022, the 10 largest retail chains closed around 300 supermarkets, although more than 3,000 locations remained operational (Kyivstar Hub, 2022). The total estimated losses for retail chains from the Russian invasion amount to 50.7 billion UAH, with turnover in the initial months dropping to 75% of pre-war levels (Kyivstar Hub, 2022). These factors have compelled businesses to adapt their development strategies to survive in this volatile environment. Studying these shifts provides critical insights into the evolving landscape of Ukrainian retail, offering guidance for businesses navigating these unprecedented conditions.

Since the onset of the war, Ukrainian retailers have faced severe disruptions in supply chains, leading to a significant reduction in product variety and availability (Promodo, 2024). Damaged infrastructure, restricted logistics, and workforce shortages have exacerbated the situation, creating bottlenecks in sourcing and delivering products to retail outlets. To mitigate delays caused by disrupted international trade routes, many retailers rapidly identified alternative suppliers, often relying on local producers. This shift not only helped stabilize inventories but also contributed to fostering regional supply chains during a time of national crisis.

The decline in consumer purchasing power has further compounded these challenges. Currently, 66% of household budgets are allocated to essentials such as food and mandatory payments – double the share in some Western countries, including the USA (Deloitte, 2024). This significant reallocation of spending has drastically reduced demand for non-essential goods, such as luxury items and discretionary purchases like electronics and apparel. In response, retailers have adjusted their product portfolios to focus on essential goods and introduced cost-effective solutions, including bundle deals and discounts, to accommodate financially strained consumers.

Economic instability has also forced businesses to reevaluate their strategies, with many shifting toward digital communications and omnichannel approaches to retain consumer engagement (RAU, 2024). E-commerce platforms emerged as a vital lifeline for retailers,

enabling them to sustain operations despite the closure of physical stores. Retailers invested in improving their online presence through user-friendly websites, mobile applications, and targeted digital advertising campaigns. Simultaneously, they integrated click-and-collect and home delivery services to meet consumer needs. These strategies not only alleviated logistical challenges but also expanded access for consumers who could no longer shop in person.

The accelerated growth of online retail has been particularly pronounced, with the frequency of online purchases rising by 12% over 2022–2023 (Sharov et al., 2024). Urban areas, where consumers were already accustomed to e-commerce platforms, saw the most significant growth. However, rural regions also experienced increased adoption of online shopping, driven more by necessity than convenience. Retailers responded by enhancing their delivery networks and collaborating with logistics companies to ensure coverage in remote areas.

This reliance on digital channels has prompted widespread adoption of new technologies aimed at enhancing customer experiences and streamlining operations. Tools such as artificial intelligence (AI) for personalized recommendations, chatbots for customer service, and analytics platforms for monitoring consumer behavior have become increasingly prevalent. Omnichannel strategies have also allowed businesses to integrate physical and online presences, creating seamless shopping experiences tailored to diverse consumer preferences. Despite these adaptations, significant challenges persist. Many businesses continue to struggle with rising operational costs, while others face difficulties scaling their digital operations to meet increased demand. The rapid adoption of digital technologies has also highlighted disparities among retailers, with larger, well-resourced companies better positioned to implement these changes compared to smaller, resource-constrained businesses.

The war has dramatically altered the operations of Ukrainian retailers, particularly in their marketing strategies and consumer engagement approaches. Logistical disruptions, product shortages, and fluctuating consumer demand – exacerbated by rising prices and the suspension of promotional campaigns – have eroded consumer trust. Decreased purchasing power and logistical challenges have forced businesses to pivot quickly, prioritizing digital platforms as cost-effective tools to reach audiences (Kazak & Sulyma, 2023). While the rapid shift to digital channels and omnichannel approaches represents a significant evolution in marketing strategies, comprehensive research is still needed to evaluate the effectiveness of

these emergency measures and their potential long-term implications for the Ukrainian retail landscape.

These developments underscore the resilience of the retail sector in adapting to a crisis but also highlight areas requiring further exploration. The war has accelerated trends such as digitalization and localized supply chains, yet the long-term sustainability and impact of these strategies remain uncertain. Further research is essential to understand how these changes will shape the future of retail in Ukraine, particularly in the context of post-conflict rebuilding and recovery. This period of transformation offers valuable lessons not only for Ukraine but also for other nations facing similar disruptions in retail and consumer markets. This study aims to address these gaps by evaluating the adaptation strategies of businesses and assessing their success in maintaining market presence amidst ongoing turmoil. To achieve this, the study will address the following research questions:

What are the key challenges faced by Ukrainian retailers during the war, including supply chain disruptions and consumer behavior shifts?

How have businesses adapted their strategies, particularly in marketing, sales dynamics, and operational practices, to address these challenges?

What are the long-term implications of these adaptation strategies for the Ukrainian retail market, and how effective have they been in sustaining market presence?

What practical recommendations can be made for Ukrainian retailers to enhance resilience and sustainability during future crises?

The primary objective of this paper is to analyze how the retail market in Ukraine has transformed under the impact of war, with particular emphasis on shifts in consumer trends, product demand, and category preferences. Initially, consumer spending focused on specific categories essential for immediate survival, with shifts toward other categories as the situation evolved. This research will explore the major challenges that businesses encountered, such as product shortages and logistical disruptions, and evaluate effective and ineffective responses to these challenges, drawing on practical examples and case studies where available. By understanding these responses, this study will aim to provide practical recommendations for businesses in Ukraine on how to adapt and prepare for similar crises in the future. These insights are expected to guide retailers toward resilience and sustainable operations amidst uncertainty.

This project first discusses the research methodology, detailing the data sources and analytical frameworks employed to ensure a balanced and reliable evaluation. It then goes on to present the findings, focusing on changes in sales dynamics, marketing practices, and operational strategies. Finally, the project concludes with practical recommendations for Ukrainian retail businesses, emphasizing strategies to enhance resilience and competitiveness during and after the conflict, along with identifying areas for further research.

CHAPTER 1. LITERATURE REVIEW

1.1 Economic Challenges and Their Impact on Retail Market Dynamics

The economic consequences of the ongoing war have significantly impacted Ukraine's retail sector. With a GDP contraction of 29.1% in 2022 (Gavrysh et al., 2024), businesses face a challenging environment characterized by financial instability, disrupted operations, and heightened uncertainty. These conditions have compelled retailers to develop immediate survival strategies while grappling with long-term sustainability. Understanding these economic dynamics is crucial to addressing the challenges faced by Ukrainian retailers and exploring viable strategies for maintaining market presence. Korenyuk (2024) further elaborates on the challenges facing Ukrainian retailers, such as significant labor shortages, disrupted supply chains, and increasing operating costs, which have reshaped the country's retail landscape. While existing studies provide an overview of the war's economic impact on retail, they often focus on aggregated economic indicators such as GDP and broad financial trends. Limited research examines how specific financial pressures, such as rising operational costs and declining revenues, affect individual retail businesses. Furthermore, there is a lack of analysis on how these pressures influence decision-making regarding resource allocation, pricing, and workforce management.

The economic environment shaped by the war has forced Ukrainian retailers to adapt in unprecedented ways. This study aims to fill the identified gaps by analyzing how financial instability affects retail operations and exploring strategies that businesses use to navigate these challenges. By addressing these questions, the research provides a nuanced understanding of the economic factors driving retail transformations during the war.

1.2. Global Context and E-Commerce Trends

On a global scale, the economy showed resilience post-pandemic. The International Monetary Fund (IMF) reported global GDP growth rates of 3.4% in 2022, slowing slightly to 3.2% in 2023, with projections for 2024 remaining steady at 3.2%. Comparatively, Ukraine's retail sector continues to grapple with unique challenges stemming from ongoing conflict, while global markets benefit from stability and technological advancements (IMF, 2024). E-

commerce, which has been a major driver of retail growth globally, reached \$6.54 trillion in 2022, with continued growth expected into 2024. In contrast, Ukrainian retailers struggle with unreliable internet connectivity, power outages, and restricted supply chains, placing them at a disadvantage compared to their global counterparts (OECD, 2022). Despite the growing importance of e-commerce in Ukraine, existing research has not fully explored the impact of digital transformation on specific product categories. Additionally, studies often overlook regional disparities in e-commerce adoption, particularly between urban and rural areas where infrastructure and consumer behavior differ significantly. The effectiveness of Ukrainian retailers' digital strategies in overcoming power outages and internet disruptions also remains underexplored.

While e-commerce has provided a lifeline for Ukrainian retailers, more detailed research is needed to evaluate the effectiveness of digital strategies in different contexts and regions. This study seeks to address these gaps by investigating how Ukrainian businesses leverage e-commerce to adapt to wartime conditions and identifying best practices for sustaining digital operations during crises.

1.3. E-Commerce and Digital Transformation

Maksymenko et al. (2024) illustrate that during the war, e-commerce became a crucial support for businesses, especially in areas where infrastructure was damaged and mobility was restricted. Their study, based on data from the Ukrainian E-commerce Association and analytics from digital platforms like Facebook Ads and Google Trends, indicates a 12% increase in online shopping frequency in 2023. This shift was driven by consumers' need to access goods remotely and businesses' efforts to maintain sales through digital channels.

Both Ukrainian and global e-commerce businesses rely on similar digital marketing tools. These include social media platforms such as Facebook and Instagram, search engine optimization (SEO), email marketing, and pay-per-click (PPC) advertising. According to Hrabovych (2022), globally effective digital marketing instruments also include content marketing, marketing automation, big data technologies, and artificial intelligence. Ukrainian businesses are adopting these globally recognized strategies, reflecting the universal applicability of these tools in engaging and reaching consumers effectively (Hrabovych, 2022).

Promodo (2024) further examines the adoption of omnichannel strategies in Ukraine's retail sector in response to the growing reliance on online platforms. The study highlights that businesses integrating both physical and online sales channels were more resilient during the crisis. Despite challenges such as unstable internet connectivity and power outages, Ukrainian retailers showed adaptability by implementing these strategies under constrained circumstances.

Existing research has largely focused on general online shopping trends, neglecting the dynamics of specific emerging product categories. Items such as power banks, portable generators, and charging stations have become critical during the war but lack detailed analysis regarding their online demand and sales performance. To better understand the influence of specific segments on larger market dynamics, there is a need for detailed research into how e-commerce trends evolved within distinct product groups. For example, how categories like consumer electronics, household essentials, and critical survival items contributed to the overall growth in online sales. Such focused analysis would provide a clearer understanding of these segments' impact on macroeconomic figures. By addressing these gaps, future research could offer more nuanced insights into e-commerce's role during crises, helping businesses refine their digital strategies and optimize supply chains for key product categories. Understanding the granular dynamics of specific product groups is essential to contextualize their contribution to overarching market trends.

1.4. Consumer Behavior and Market Trends

Consumer behavior in Ukraine has shifted dramatically due to the war, with 66% of household budgets now spent on essentials such as food and utilities, compared to much lower shares in Western countries (Deloitte, 2024; Kyivstar Hub, 2022). Retailers have had to adapt their product offerings to align with these changing priorities, focusing on cost-effective solutions and critical goods. Understanding these shifts is essential for developing effective marketing and operational strategies that meet consumer needs in times of crisis. Current research predominantly focuses on general spending patterns, with limited analysis of specific product categories such as survival goods and electronics.

In regions affected by conflicts since 2015, such as Syria, Yemen, and parts of Africa, consumer priorities for electronics have experienced significant shifts. Mobile phones and their

accessories, such as chargers and batteries, have become essential tools for communication, with high demand in areas like Syria where they serve as primary communication devices (Enab Baladi, 2022). In locations with limited internet access, portable radios have emerged as vital sources of information, further driving their demand (ReliefWeb, 2022). Frequent power outages in conflict zones have also created a growing need for alternative energy solutions, making solar chargers an increasingly popular choice (UNHCR, 2023). Similarly, battery-powered flashlights and LED lamps are widely relied upon to meet lighting needs during prolonged power shortages (World Bank, 2022). In areas where it is feasible, portable generators have become an important investment for households to fulfill their basic energy requirements, demonstrating their critical role in addressing energy challenges in conflict-affected regions (Global Trends, 2023).

Additionally, there is a lack of regional-level data on consumer preferences, which is critical for tailoring retail strategies to different demographics. Another gap lies in the understanding of how consumer trust, eroded by price increases and reduced promotional activities, can be rebuilt through targeted engagement strategies. This study aims to bridge these gaps by examining the nuances of consumer behavior in Ukraine, including regional variations and preferences for specific product categories. By doing so, it contributes to answering the research question on how businesses can adapt their marketing and operational strategies to meet evolving consumer demands.

1.5. Adaptation to Logistical Challenges

Forbes (2024) highlights how retailers addressed logistical bottlenecks through innovative solutions, such as sourcing from local suppliers and optimizing delivery routes to mitigate disruptions caused by damaged infrastructure and supply chain interruptions. The RAU report (2024) further complements this by analyzing how Ukrainian retailers dealt with labor shortages caused by mobilization and war-related disruptions. These studies emphasize the resilience and adaptability of businesses in conflict settings by adopting localized strategies and logistical optimization (Forbes, 2024; RAU, 2024). While aggregated industry data provides insights into general trends, there is a lack of company-specific case studies detailing how individual retailers navigated logistical bottlenecks. Additionally, most existing research relies on retrospective analyses, failing to capture the real-time dynamics of logistical

adaptations during the war. There is also limited exploration of how these challenges affect different retail sectors, such as food, electronics, and essential goods. To address these gaps, this study will analyze specific examples of logistical adaptations by Ukrainian retailers, focusing on the effectiveness of strategies such as local sourcing and delivery optimization. These insights will help answer the research question on how businesses can overcome supply chain disruptions to sustain operations during crises.

CHAPTER 2. METHODOLOGY

According to the literature review, Table 1 outlines the key analytical tools and data sources used for each focus area.

Table 1. Analytical Tools and Data Sources

Section	Analytical Tools and Data Sources
Economic Impact and Strategic Challenges	<ul style="list-style-type: none"> - World Bank Reports: Economic impact analysis. - IMF Data: GDP and economic projections. - GfK Reports: Market trends.
Global Context and Comparisons	<ul style="list-style-type: none"> - IMF and OECD Reports: Global GDP trends. - Google Trends: International search interest on relevant topics.
E-Commerce and Digital Transformation	<ul style="list-style-type: none"> - Google Analytics: Website traffic and user behavior. - Facebook Ads Analytics: Campaign effectiveness. - Internal Company Reports: E-commerce sales trends and performance insights.
Consumer Behavior and Market Trends	<ul style="list-style-type: none"> - Deloitte and Kyivstar Hub Reports: Consumer spending patterns. - Google Search Console: Search data on product categories. - Internal Company Reports: Changes in demand for key product categories like electronics and survival items.
Adaptation to Logistical Challenges	<ul style="list-style-type: none"> - RAU Reports: Solutions to logistical bottlenecks. - Internal Operational Data: Tracking supply chain disruptions and solutions. - Internal Company Reports: Logistics adjustments for inventory and delivery efficiency.

Based on the outputs presented in Table 1, the authors commonly utilized a combination of primary and secondary data alongside quantitative and qualitative methods to analyze the transformation of the retail market. The primary data includes internal company reports and operational data, which provide firsthand insights into e-commerce sales trends, consumer demand for specific product categories, and adjustments to logistical operations. This data supports qualitative analysis by offering detailed accounts of how individual businesses have responded to wartime challenges. The secondary data is derived from reputable global and regional sources, including World Bank, IMF, and OECD reports, as well as industry studies such as those from Deloitte, GfK, and Kyivstar Hub. These sources deliver quantitative metrics on macroeconomic impacts, market trends, and consumer spending patterns. Additionally, tools like Google Analytics, Facebook Ads Analytics, and Google Trends provide secondary data on user behavior, campaign effectiveness, and global search interests, enriching the

analysis with real-time insights. The quantitative methods employed focus on analyzing measurable metrics, such as GDP projections, market performance, and digital engagement statistics. These methods are crucial for evaluating macroeconomic impacts and consumer trends. On the other hand, qualitative methods are applied to examine business-specific strategies and operational adjustments, using reports from RAU and internal company documents. These methods provide context to the quantitative findings, highlighting the adaptive measures taken by businesses to overcome logistical and market challenges.

2.1. Data

The study utilizes a combination of primary and secondary data sources to investigate the economic impact and strategic challenges faced by retail markets during crises. Primary data were obtained from vendor-provided reports and internal company records, which reflect real-time trends in Ukraine's retail sector. To provide a broader context and enable international comparisons, secondary data from industry reports such as GfK, IDC, and TrendForce were incorporated. Additionally, Google Trends data was analyzed to track shifts in consumer interest for survival-critical goods like charging stations, generators, and power banks. The data focused on two key product groups: survival-critical electronics, which include charging stations, generators, and power banks, and traditional electronics, such as laptops and smartphones. This approach ensured a direct comparison between emerging demand trends and declining discretionary product categories.

2.2. Methods

To ensure a thorough examination of the data, the study employed a mixed-methods approach combining quantitative and qualitative methods. Quantitative analysis was conducted using several techniques. Descriptive statistics were applied to identify fluctuations and growth patterns in monthly and annual sales dynamics. Percentage change calculations were used to measure the magnitude of changes over time, particularly focusing on demand surges for survival-critical goods and declines in traditional categories. Market share analysis was employed to assess the relative importance and growth of survival-critical products within the broader electronics market, capturing their increasing prominence during infrastructure

disruptions. Microsoft Excel served as the primary tool for data aggregation, computation, and visualization, enabling clear representation of trends. To ensure reliability, industry-standard validation techniques were applied, including cross-referencing with vendor-reported data and industry benchmarks.

Qualitative methods were integrated to provide contextual understanding and complement the numerical findings. These methods focused on analyzing shifts in business strategies, particularly in product portfolio adjustments, inventory management, and supply chain adaptations to address emerging consumer priorities. This was achieved through content analysis of company reports, industry insights, and observational trends from digital platforms like Google Trends. The qualitative analysis highlighted how businesses realigned their marketing efforts, pricing models, and logistics operations to respond proactively to consumer needs during crises.

CHAPTER 3. RESULTS

3.1. Strategic Responses to Economic Challenges in Retail Management During the War

The table 2 illustrates the sales trends of mobile phones and laptops over four years (2021–2024). The data is presented in thousands of units (Th.units) and includes monthly breakdowns as well as annual totals.

Table 2. Monthly and Annual Sales Dynamics of Smartphones and Laptops in Ukraine

Product Class	January	February	March	April	May	June	July	August	September	October	November	December	Total
By Year	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units
Mobile Phone													
2021 year	323	318	346	360	470	398	540	450	446	516	510	592	5 272
2022 year	265	189	208	235	308	259	383	322	317	367	341	403	3 597
2023 year	371	290	267	257	317	276	362	334	321	372	350	423	3 940
2024 year	348	287	289	272	341	305	401	330	314	307	358		
Laptop													
2021 year	41	37	43	38	34	38	49	44	42	43	57	75	542
2022 year	34	27	15	18	28	22	39	44	43	37	45	42	394
2023 year	40	30	26	24	28	27	37	50	47	43	48	44	444
2024 year	39	31	28	25	31	34	43	45	43	43	42		

Source: The data presented in this table was calculated and compiled by the author using Microsoft Excel.

In 2021, smartphone sales totaled 5.27 million units, representing a stable market under normal economic conditions. However, by 2022, sales dropped significantly to 3.94 million units, marking a decline of approximately 25.3%. This sharp reduction reflects several challenges, including shifts in consumer priorities, supply chain disruptions, and a decrease in purchasing power during a period of economic instability, potentially aggravated by geopolitical events. A further drop in smartphone sales occurred in 2023, totaling 3.58 million units – a decline of 9.1% compared to the previous year. The ongoing contraction indicates a continued adjustment in market demand. However, by 2024, smartphone sales are expected to recover to 5.04 million units, approaching pre-crisis levels, with demand potentially driven by the stabilization of the economic environment and new technological innovations. Laptop sales followed a similar trend, decreasing from 542,000 units in 2021 to 444,000 units in 2022 – a decline of approximately 18%. The drop in laptop sales, though less severe than smartphones, reflects reduced discretionary spending on electronics as households and businesses adjusted to tightened budgets. In 2023, sales dropped slightly further to 432,000 units, signaling market

saturation or a shift in consumer preferences toward other devices like tablets. By 2024, laptop sales are projected to stabilize at 420,000 units, showing minimal variation compared to the prior year, which suggests limited growth prospects in this category. Smartphones and laptops exhibit seasonal sales patterns. Sales for both categories peak in the fall and early winter months, particularly in October and November, likely due to holiday shopping and promotional events. For example, in 2021, smartphone sales in October reached 910,000 units – the highest monthly figure. Conversely, January and February consistently record the lowest sales, reflecting post-holiday slowdowns. The data further highlights the larger overall demand for smartphones compared to laptops. Despite a general decline across the board, smartphones remain significantly more in demand, underscoring their role as essential devices in the modern consumer market. Key insights include the economic sensitivity of both product categories, as demonstrated by the steep declines in 2022 and 2023; the recovery potential of smartphones in 2024 compared to the stagnation of laptop sales, which suggests shifting consumer preferences; and the pronounced seasonal variations, with higher sales activity in the fall and winter months.

The table 3 provides the percentage change in sales between months and years for both smartphones and laptops over the period 2021–2024.

Table 3. Percentage Change in Monthly and Annual Sales of Smartphones and Laptops in Ukraine (2021–2024)

Product Class	January	February	March	April	May	June	July	August	September	October	November	December	Total
By Year	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units	Thn.units
Mobile Phone													
2021 a.													
2022 a.	-18,00%	-40,69%	-40,00%	-35,00%	-35,00%	-35,00%	-29,00%	-29,00%	-29,00%	-29,00%	-32,00%	-32,00%	
2023 a.	14,80%	-8,81%	-22,98%	-28,91%	-33,10%	-30,73%	-32,89%	-26,35%	-28,10%	-28,03%	-30,21%	-28,63%	
2024 a.	7,68%	-9,75%	-16,63%	-24,77%	-28,04%	-23,46%	-25,66%	-27,24%	-29,67%	-40,65%	-28,65%		
Average	1,49%	-19,75%	-26,54%	-29,56%	-32,05%	-29,73%	-29,19%	-27,53%	-28,93%	-32,56%	-30,29%		
Laptop													
2021 a.													
2022 a.	-17,01%	-26,70%	-65,01%	-53,04%	-18,37%	-41,64%	-20,68%	-0,23%	2,06%	-14,09%	-21,05%	-44,30%	-27,29%
2023 a.	-2,36%	-18,55%	-39,35%	-37,39%	-18,37%	-28,38%	-24,75%	13,38%	11,55%	-0,15%	-15,79%	-41,64%	-18,06%
2024 a.	-4,80%	-15,84%	-34,68%	-34,78%	-9,62%	-9,81%	-12,54%	2,04%	2,06%	-0,15%	-26,32%		
Average	-8,06%	-20,36%	-46,35%	-41,74%	-15,45%	-26,61%	-19,32%	5,06%	5,22%	-4,80%	-21,05%		

Source: The data presented in this table was calculated and compiled by the author using Microsoft Excel.

The analysis highlights significant variability in sales trends, with both product categories showing steep declines during periods of heightened economic instability. The smartphone and laptop markets in Ukraine experienced a significant decline of approximately 30% in 2022, aligning closely with the 29.1% contraction of Ukraine's GDP during the same period, underscoring the direct link between macroeconomic performance and consumer

demand for electronics. The most pronounced monthly declines for smartphones occurred in the early months of the year, particularly January and February 2022, when sales dropped by 49% and 48.8%, respectively, compared to the previous year. These sharp drops reflect the immediate impact of economic disruptions on consumer spending power and priorities. Similarly, laptop sales followed a comparable pattern, with significant year-over-year percentage decreases throughout 2022, peaking at a 27.2% annual decline.

In 2023, the pace of decline slowed for both product categories, suggesting market stabilization despite ongoing challenges. Smartphones recorded smaller average monthly declines, ranging from -3% to -7% across most months, with an annual reduction of 9.1%. Laptops saw less dramatic monthly fluctuations, averaging around a -10.9% annual drop. These figures indicate some recovery in consumer spending but also point to ongoing challenges in restoring pre-crisis levels of demand.

The outlook for 2024 presents signs of recovery for smartphones, with a projected 6.2% annual growth. Monthly data shows positive growth during key months, particularly in October and November, which aligns with typical seasonal shopping trends. Laptops, however, exhibit no projected growth in 2024, with a flat 0% change, reflecting stagnation in this product category and possible market saturation or shifting consumer preferences.

Seasonal trends remain evident throughout the years, with stronger sales performance in October through December, likely driven by holiday shopping and promotional events, while January and February consistently report the steepest declines. This pattern is consistent across both smartphones and laptops, though the magnitude of fluctuations is more pronounced in the smartphone market due to its larger overall sales volume.

Table 4 highlights significant shifts in global sales dynamics for smartphones and laptops over 2021–2024. While smartphones are projected to recover in 2024 with moderate growth, the laptop market remains flat, suggesting divergent trajectories for these two key product categories.

Table 4. Global Sales Dynamics of Smartphones and Laptops (2021–2024)

Year	Smartphones (Million Units)	Year-over-Year Change	Laptops (Million Units)	Year-over-Year Change
2021	1,391	—	223.8	—
2022	1,200.5	-13.7%	195	-12.9%
2023	1,166.9	-2.8%	173.65	-10.9%
2024	1,240 (est.)	"+"6.2%	173.65 (est.)	0%

Source: The data presented in this table was calculated and compiled by the author using Microsoft Excel.

Both smartphone and laptop markets experienced strong sales, with smartphones reaching approximately 1.391 billion units and laptops 223.8 million units (IDC, 2023; TrendForce, 2024). Significant declines occurred in both markets, with smartphones dropping by 13.7% and laptops by 12.9%, influenced by component shortages and economic uncertainties (Counterpoint Research, 2023; Pingvin.Pro, 2023). The downward trend continued, though at a slower pace for smartphones (-2.8%) and a more pronounced decline for laptops (-10.9%) (IDC, 2023; TrendForce, 2024).

Projections indicate a rebound in smartphone sales with an estimated 6.2% growth, reaching 1.24 billion units, while laptop sales are expected to stabilize at 173.65 million units (TrendForce, 2024).

These global trends align with the challenges observed in the Ukrainian market and provide a basis for analyzing how the local electronics sector compares in terms of market resilience and consumer behavior during crises.

The analysis of the smartphone and laptop market is essential due to their dominant position in the electronics commerce sector. According to research, smartphone sales accounted for approximately 25%, and laptops for 15% of the total sales volume of technology and electronics in Ukraine. These categories lead the electronics trade, making them reliable indicators of consumer trends (IDC, 2023; TrendForce, 2024).

During economic crises, consumers adjust their priorities, focusing on essential goods. This shift results in a decline in electronics sales, particularly smartphones and laptops. Thus, analyzing these categories helps assess the impact of economic downturns on consumer spending (Counterpoint Research, 2023). Smartphones and laptops play a critical role in everyday life by enabling communication, access to information, remote work, and education. During crises, demand for these devices can fluctuate, reflecting consumers' adaptation to new circumstances. Understanding these changes is key to identifying consumer priorities during challenging periods (Pingvin.Pro, 2023; IDC, 2023).

3.2. Digital Transformation Strategies in E-Commerce Management During Crises

To sustain operations amidst disruptions, retail managers adopted strategic digital transformation initiatives, such as alternative energy solutions, predictive inventory

management, and optimized logistics planning. These strategies ensured e-commerce continuity even during critical infrastructure challenges. The sales dynamics of charging stations in Ukraine over the period from 2022 to 2024 are presented in Table 5. It is based on aggregated data derived from selected vendor reports and company analytics. These data reflect changes observed within a subset of the market rather than the entirety of national sales. While not representative of the entire market, this sample provides valuable insights into the general trends and dynamics influencing the charging station category during the period.

Table 5. Aggregated Sales Data of Charging Stations in Ukraine (2022–2024)

Year	Aggregated data			Dynamic	
	2022 year	2023 year	2024 year	2023 year	2024 year
	Quantity	Quantity	Quantity	%	%
January	1	484	162		-66,53%
February	4	142	110		-22,54%
March	2	324	186		-42,59%
April	2	77	368		377,92%
May	4	633	1 041		64,45%
June	4	55	2 736		4874,55%
July	5	260	2 948		1033,85%
August	17	465	1 128	2635,29%	142,58%
September	38	631	1 080	1560,53%	71,16%
October	16	472	663	2850,00%	40,47%
November	186	463	719	148,92%	55,29%
December	961	396		-58,79%	
Total	1 240	4 402	11 141		

Source: The data presented in this table was calculated and compiled by the author using Microsoft Excel.

The aggregated data further underline the dynamic nature of this category. Retail managers also enhanced their e-commerce infrastructure by integrating technologies such as AI-driven tools for personalized recommendations, chatbots for real-time support, and low-bandwidth solutions to maintain accessibility. These technologies not only improved customer experience but also allowed businesses to quickly adapt to evolving consumer needs. While these numbers represent a partial view of the market, the trends they reveal point to a critical shift in consumer demand toward survival-critical goods. These shifts highlight the evolving priorities of both businesses and consumers in addressing the challenges posed by energy shortages. In light of these dynamics, charging stations have become a strategic category in the retail electronics market. They now rival traditional categories in importance due to their

critical role during crises. This analysis sets the stage for further exploration of survival-critical electronics and their interplay with broader market categories such as laptops and smartphones. Furthermore, omnichannel strategies like click-and-collect services played a vital role in ensuring delivery efficiency during logistical bottlenecks. Managers collaborated with local logistics companies to overcome infrastructure disruptions, demonstrating the adaptability of Ukrainian businesses under crisis conditions.

The table 6 illustrates the sales dynamics of power banks in Ukraine between 2021 and 2024, derived from aggregated data based on internal company reports. The data highlights a clear dependency of power bank demand on external crisis conditions, particularly periods of significant power outages caused by missile strikes on Ukraine's energy infrastructure.

Table 6. Aggregated Sales Data of Charging Stations in Ukraine (2022–2024)

	<i>Aggregated data</i>				<i>Dynamic</i>		
<i>Year</i>	2021 year	2022 year	2023 year	2024 year	2022 year	2023 year	2024 year
	Quantity	Quantity	Quantity	Quantity	%	%	%
January	393	751	2188	1044	91,09%	191,34%	-52,29%
February	471	899	1273	701	90,87%	41,60%	-44,93%
March	454	2193	746	1044	383,04%	-65,98%	39,95%
April	482	721	588	1681	49,59%	-18,45%	185,88%
May	618	823	713	3144	33,17%	-13,37%	340,95%
June	714	1153	700	6202	61,48%	-39,29%	786,00%
July	925	1312	1308	6900	41,84%	-0,30%	427,52%
August	876	1325	2414	2574	51,26%	82,19%	6,63%
September	629	2342	2510	2351	272,34%	7,17%	-6,33%
October	519	11941	2531	1175	2200,77%	-78,80%	-53,58%
November	696	10517	2723	2137	1411,06%	-74,11%	-21,52%
December	1825	5945	1408	756	225,75%	-76,32%	-46,31%
Total	8 602	39 922	19 102	29 709	364,10%	-52,15%	55,53%

Source: The data presented in this table was calculated and compiled by the author using Microsoft Excel.

The monthly data reveals dramatic surges in sales during critical periods. For instance, in October 2022, power bank sales spiked by an extraordinary 2,200%, driven by urgent consumer needs to secure uninterrupted power for essential devices. This trend underscores the transition of power banks from being considered supplementary electronic items to critical survival tools in times of crisis.

Unlike traditional consumer electronics, power bank sales exhibit no clear seasonality. Instead, their demand correlates directly with the timing and intensity of infrastructure

disruptions. For example, sales in June 2024 increased by 786% compared to the same month in the previous year, coinciding with severe disruptions to the electricity grid. Conversely, sales dropped by 52.29% in January 2024 compared to January 2023, indicating stabilization of electricity availability or a temporary alleviation of immediate consumer needs.

Power banks have become indispensable for addressing the basic energy requirements of households during the war, particularly for charging mobile phones and other essential communication devices. This dynamic shift reflects how external crises reshape consumer behavior, prioritizing survival-critical goods over discretionary electronics. The analysis of power banks complements the study of related categories such as charging stations and generators, emphasizing the importance of examining these segments. The significant sales dynamics observed across these categories highlight their critical role in addressing consumer needs during prolonged crises. This integrated analysis underscores the necessity for businesses to prioritize these essential products when adapting their inventory and marketing strategies to evolving consumer priorities under challenging circumstances.

The table 7 provides a detailed overview of the annual sales trends of generators in Ukraine from 2021 to 2024, highlighting the rapid surge in demand during the ongoing war. The data underscores the critical need for alternative energy solutions during extended power outages caused by disruptions to Ukraine's infrastructure.

Table 7. Aggregated Sales Data and Dynamics of Generators in Ukraine (2021–2024)

	<i>Aggregated data</i>				<i>Dynamic</i>		
<i>Year</i>	2021 year	2022 year	2023 year	2024 year	2022 year	2023 year	2024 year
	Quantity	Quantity	Quantity	Quantity	%	%	%
Generator	22	575	737	1444	2513,64%	28,17%	95,93%

Source: The data presented in this table was calculated and compiled by the author using Microsoft Excel.

The sales of generators exhibited extraordinary growth in 2022, skyrocketing by over 2,513.64% compared to 2021. This remarkable increase was primarily driven by missile strikes on Ukraine's energy grid, which created an urgent need for energy independence during prolonged crises. While the growth rate slowed in subsequent years, demand remained significant. In 2023, sales rose by 28.17% compared to 2022, and in 2024, demand increased further, growing by 95.93% from the prior year. These dynamics highlight the critical role of generators as survival tools and the evolving consumer priorities during times of instability.

The data also reveals a clear trend: products like generators, which were once considered niche, have shifted to the forefront of consumer demand during crises. This surge in sales highlights the importance for businesses to pay attention to such shifts in the market. Addressing the rising demand for survival-critical goods like generators, charging stations, and power banks presents significant opportunities for businesses to adapt their strategies and align with consumer needs during prolonged crises. Recognizing and responding to these patterns can help businesses remain resilient and competitive in volatile market conditions. The findings underscore that digital transformation strategies, such as integrating omnichannel approaches, leveraging predictive analytics, and prioritizing essential goods, have been crucial for business continuity. These initiatives not only allowed retailers to navigate immediate crises but also fostered long-term resilience, as evidenced by the increased market share of survival-critical goods.

Detailed analysis of how the market share of survival-critical electronics categories evolved in Ukraine between 2021 and 2024 is presented in table 8. It highlights a structural shift in consumer behavior and the retail electronics market, driven by external crises. Categories such as charging stations, power banks, generators, and UPS batteries, which previously occupied a marginal position in the market, now represent a significant portion of total sales. This growth underscores their essential role in addressing energy needs during prolonged periods of power outages and infrastructure disruptions caused by the war.

Table 8. Market Share Dynamics of Survival-Critical Electronics Categories

	<i>2021 year</i>	<i>2022 year</i>	<i>2023 year</i>	<i>2024 year</i>
UPS Battery	0,50%	1,17%	1,12%	1,46%
Universal Battery	0,22%	2,05%	0,69%	0,89%
Generator	0,01%	0,19%	0,21%	0,35%
Charging Station	0,001%	0,33%	1,18%	4,19%
Total	0,72%	3,73%	3,20%	6,89%

Source: The data presented in this table was calculated and compiled by the author using Microsoft Excel.

In 2021, survival-critical electronics collectively accounted for only 0.72% of the total electronics market, reflecting their status as niche products with limited demand. By 2024, this share had risen to 6.89%, a nearly tenfold increase. Charging stations showed the most dramatic growth, moving from 0.001% in 2021 to 4.19% in 2024. Similarly, generators, though starting from a smaller base, grew from 0.01% to 0.35% in the same period, cementing their role as critical items during infrastructure challenges.

In contrast, laptops and smartphones, traditionally dominant categories in the electronics market, exhibited a decline in sales, directly reflecting the contraction of Ukraine's GDP. As these products are more closely tied to discretionary spending, their sales performance often mirrors broader economic trends. For example, smartphones, which accounted for a significant share of the electronics market in 2021, saw a sharp drop in demand as consumer purchasing power decreased. Laptops followed a similar trajectory, further underscoring their economic sensitivity.

This comparison is crucial in understanding the unique dynamics of survival-critical electronics. Unlike laptops and smartphones, these categories demonstrated counter-cyclicality, growing in importance even as the overall market declined by approximately 30% in tandem with GDP. This divergence suggests that survival-critical electronics are not only less dependent on GDP fluctuations but also serve as a reliable indicator of shifts in consumer priorities during crises.

The underrepresentation of survival-critical electronics in market analyses is notable. While much attention is given to GDP-linked categories like laptops and smartphones, the remarkable growth of charging stations, generators, and power banks highlights the need for deeper exploration of these segments. Their rising market share reflects their essential role in ensuring energy independence and adaptability during prolonged crises. These findings suggest that businesses and researchers must look beyond traditional categories to fully understand market transformations during periods of instability.

3.3. Consumer Behavior Shifts and Managerial Adaptations in Market Trends

The outputs presented in Table 8 validate the critical importance of survival-oriented product categories previously identified, such as charging stations and generators, and introduce additional items that also demonstrate significant growth trends.

Table 8. Dynamic Shifts in Consumer Interest for Critical Product Categories

Category	Change Transds Google Analytics: (2021–2024)
CO2 Cylinder	320,00%
UPS Battery	272,00%
Pawerbanks	383,00%
Gas Cylinder	300,00%
Generator	6463,00%
Charging Station	6215,00%

Inverter	500,00%
Flashlight	300,00%
Heater	400,00%
Portable Gas Stove	366,00%
Uninterruptible Power Supply	500,00%
Chemical Heater	380,00%
Router Cable	333,00%

Source: The data presented in this table was calculated and compiled by the author using Microsoft Excel.

Charging stations and generators continue to lead with growth rates of 6,215% and 6,463%, respectively, confirming their role as essential products during energy crises. However, other categories, such as chemical heaters (380%), portable gas stoves (366%), and UPS batteries (272%), further emphasize the broadening consumer focus on survival-critical solutions. These trends reveal a diversification in demand, moving beyond energy-specific products to items that address heating, cooking, and general household needs during infrastructure disruptions.

Retail managers were quick to recognize the need for flexible inventory management and real-time response systems. To meet the surging demand for survival-critical goods like charging stations (6,215% growth) and generators (6,463% growth), businesses redirected supply chains to local vendors and prioritized stock levels for essential products. This allowed retailers to stabilize inventories amid disrupted international trade routes. Additionally, managers adopted agile procurement processes, identifying secondary suppliers to mitigate shortages.

To address consumer needs for heating and cooking solutions, businesses diversified their portfolios to include emerging categories such as portable gas stoves, chemical heaters (380% growth), and gas cylinders. These shifts demonstrate managerial foresight in reallocating resources to products most relevant to households during power outages and energy crises. This proactive approach highlights the importance of adapting inventory strategies to real-time demand trends during uncertain periods.

This analysis helps to validate earlier insights into how the war and its associated challenges reshaped consumer behavior, shifting focus from traditional electronics like laptops and smartphones to products addressing basic survival and functional needs. In response to consumers' reduced purchasing power, managers employed dynamic pricing models for

survival-critical goods to ensure accessibility while maintaining profitability. For example, generators and power banks were sold with flexible payment options, installment plans, and discounted bundle packages that combined UPS batteries, flashlights, and router cables.

Promotional campaigns were restructured to focus on survival essentials. Digital platforms and targeted advertising emphasized the functional importance of these products, particularly during peak periods of infrastructure disruptions. Seasonal price adjustments were introduced for products like heaters and chemical stoves to align with winter demand, further solidifying the alignment of pricing strategies with consumer priorities

The findings also provide a solid foundation for understanding the interconnectedness of these categories and their shared role in supporting consumers during crises. This approach allows businesses to holistically adapt their inventory and marketing strategies to align with dynamic consumer priorities during uncertain times.

The analysis of Google Trends data from 2021 to 2024 confirms the growing importance of specific product categories during crises. Managers capitalized on digital marketing tools to monitor and respond to shifting consumer interests. Insights from Google Trends allowed businesses to identify spikes in demand for products like charging stations, generators, and flashlights. This data-driven approach enabled managers to launch targeted marketing campaigns, emphasizing energy independence and emergency preparedness.

Social media platforms like Facebook and Instagram were leveraged to communicate product availability, with interactive campaigns showcasing the functional benefits of survival goods. E-commerce platforms were also optimized to highlight high-demand categories, featuring banners, special discounts, and prominent product placements. Additionally, chatbots and automated customer support tools were deployed to handle the increased volume of inquiries related to survival-critical electronics.

The study focuses on generators, charging stations, power banks, gas cylinders, UPS batteries, router cables, and flashlights. To address regional variations, managers implemented localized strategies based on infrastructure stability and consumer needs. In urban areas, the demand for connectivity solutions like router cables, UPS batteries, and power banks remained high due to remote work and communication requirements. Retailers in these areas concentrated on digital platforms to facilitate quick delivery and real-time updates for consumers.

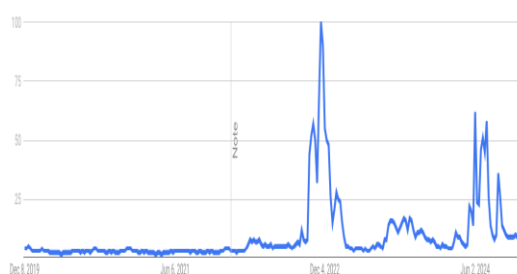
Conversely, in rural regions, where energy and heating solutions were more critical, businesses prioritized distributing gas cylinders, heaters, and portable gas stoves. Partnerships with local distributors and logistics companies were established to ensure product availability, despite road and infrastructure challenges. By tailoring strategies to specific regions, managers demonstrated adaptability in addressing localized priorities during the crisis. These categories have become essential for consumers as they ensure autonomous power supply, lighting, and connectivity during power outages and infrastructure disruptions.

Google Trends is a powerful tool that analyzes the popularity of search queries over time. It provides a visual representation of how interest in specific topics fluctuates, highlighting spikes during events or periods of heightened relevance. Figure 1 presents key categories, such as generators, charging stations, and power banks, which show significant surges in interest, often aligning with times of intensified infrastructure challenges, such as widespread power outages caused by external factors.

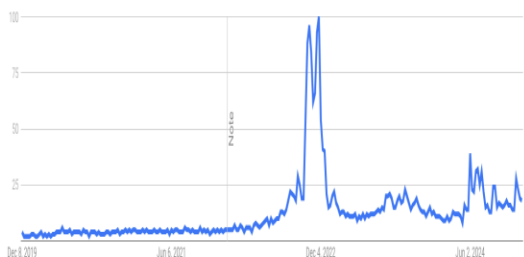
UPS Battery



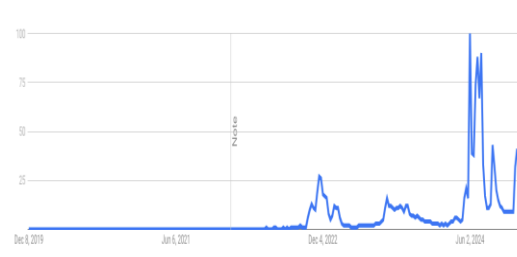
Pawerbanks



Gas Cylinder



Charging Station



Generator

Router Cable

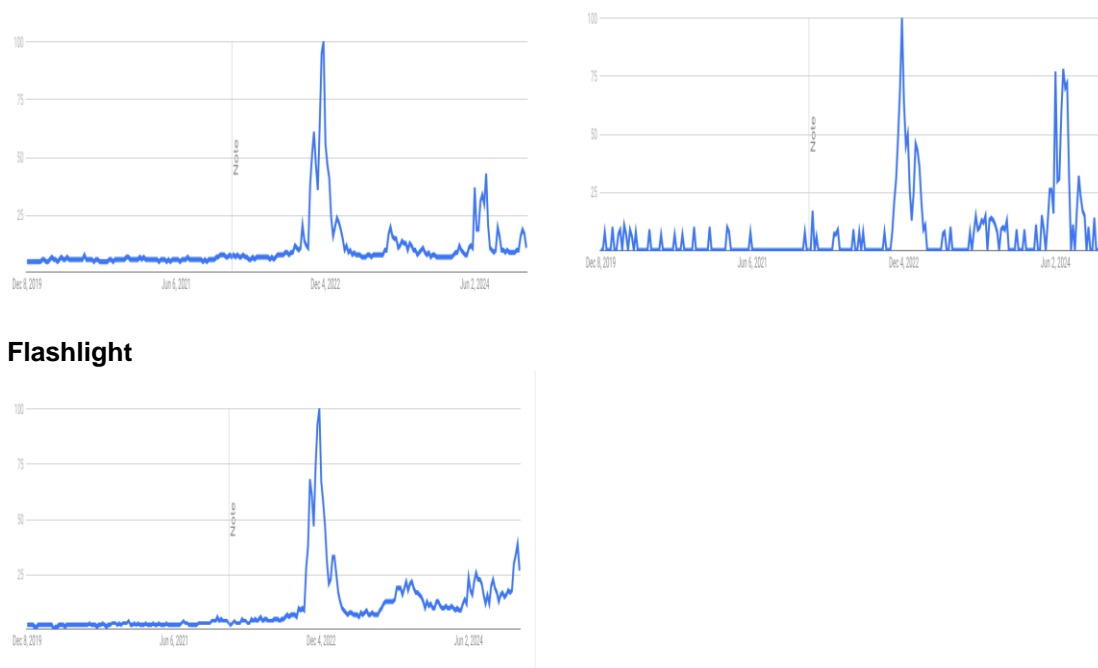


Figure 1. The analysis of Google Trends data from 2021 to 2024

Specifically, generators and charging stations exhibit the highest peaks in search interest, correlating with increased sales during these critical periods. This confirms their vital role in addressing consumer needs for energy independence and emergency preparedness. Additionally, the analysis revealed other products that gained prominence, such as chemical heaters, portable gas stoves, and heaters, further emphasizing the shift in consumer priorities toward fulfilling basic survival needs.

The Google Trends graphs illustrate not only the dynamic nature of consumer interest but also the extent to which crises influence purchasing decisions. These insights validate the sales trends identified earlier and expand our understanding of market dynamics, highlighting the urgency of products that address critical needs during challenging times. The findings from this analysis highlight critical lessons for long-term strategic management. Retailers should invest in predictive analytics tools that monitor consumer behavior in real time, enabling rapid decision-making and inventory adjustments during crises. Developing flexible supply chain systems, with multiple supplier networks, will enhance businesses' ability to adapt to disruptions. Furthermore, the importance of e-commerce and omnichannel integration cannot be overstated. Managers should continue strengthening digital platforms, improving user experience, and integrating customer feedback mechanisms to identify emerging needs. By

focusing on resilience, agility, and digital transformation, businesses can position themselves to remain competitive and sustainable in future periods of uncertainty

Conclusion

This research explored the complexities of managing retail markets during crises, such as war and infrastructure disruptions, with a focus on shifts in consumer behavior and the corresponding business adaptation strategies. The core problem addressed how businesses can anticipate rapid changes in demand and respond effectively while maintaining operational stability and resilience in volatile environments. Successfully addressing this issue requires data-driven insights, strategic adaptability, and operational flexibility to meet emerging market priorities.

The findings reveal that survival-critical product categories—including generators, charging stations, power banks, and portable gas stoves—experienced unprecedented spikes in demand, driven by the urgent need to address energy shortages and disruptions to basic services. These shifts underscored a fundamental reorientation of consumer priorities toward goods that ensure energy independence, connectivity, and functional household stability during crises. By analyzing Google Trends data, sales analytics, and behavioral patterns, the study identified distinct demand fluctuations, particularly during infrastructure failures, and highlighted how these periods necessitate swift, informed business responses.

Managers addressed these dynamics by restructuring product portfolios to prioritize essential items, streamlining supply chain operations to ensure timely deliveries, and employing flexible pricing models to accommodate changing consumer purchasing power. Innovative marketing approaches, such as targeted digital campaigns, product bundling, and regional promotions, enabled businesses to effectively communicate value and meet localized demand. Furthermore, businesses localized their strategies, focusing on energy solutions like UPS batteries and power banks in urban areas, while prioritizing portable stoves and heaters in rural regions, demonstrating a high level of adaptability in responding to regional needs.

A key insight from this research is the importance of real-time decision-making and operational agility in crisis management. Leveraging advanced tools like predictive analytics and e-commerce platforms allows businesses to monitor demand patterns, optimize inventory, and forecast future surges in consumption. Additionally, flexible logistics systems—such as omnichannel models, including click-and-collect services—help mitigate disruptions and improve accessibility for consumers during times of uncertainty.

This study also underscores the broader value of long-term strategic planning for resilience. Diversifying supply chains, fostering partnerships with reliable vendors, and

investing in digital infrastructure are critical steps for businesses aiming to minimize vulnerabilities during crises. Furthermore, continuous monitoring of market trends and consumer preferences ensures businesses remain prepared to adapt their strategies as conditions evolve.

By adopting these approaches, managers can not only meet immediate consumer needs but also build a foundation for sustainable growth and resilience. This research demonstrates that crises, while disruptive, provide opportunities for businesses to innovate, improve adaptability, and strengthen their competitive edge in dynamic and unpredictable environments. Through agile decision-making and a focus on survival-critical product categories, businesses can transform short-term challenges into drivers of long-term stability and operational success.

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