



SCIENTIFIC OASIS

Decision Making: Applications in Management and Engineering

Journal homepage: www.dmame-journal.org
ISSN: 2560-6018, eISSN: 2620-0104

Decision-Making In Crisis: Insights From Hungarian SMES And Households During The Covid-19 Pandemic

Titanilla Oravecz^{1*}, Éva Pólya², Zoltán Máté³¹ Budapest University of Economics and Business, Budapest, Hungary. Email: oravecz.titanilla@uni-bge.hu² Budapest University of Economics and Business, Budapest, Hungary. Email: polya.eva@uni-bge.hu³ Budapest University of Economics and Business, Budapest, Hungary. Email: mate.zoltan@uni-bge.hu

ARTICLE INFO

ABSTRACT

Article history:

Received 10 May 2025

Received in revised form 20 July 2025

Accepted 15 Aug 2025

Available online 07 September 2025

Keywords:

Crisis, Change, Consumer Behaviour, Customer Behaviour, Pandemic, Hungary

This study aims to explore the transformations in consumer behaviour in Hungary resulting from the COVID-19 pandemic and the corresponding responses by businesses. The research incorporated semi-structured, in-depth interviews conducted with Hungarian enterprises between late February and early March 2023. The participants comprised owner-managers of 25 domestic small and medium-sized enterprises (SMEs), whose insights offered an understanding of organisational adaptability and resilience during times of crisis. In preparation for the quantitative phase of consumer research, twelve focus group interviews were carried out in February 2023 with young adult participants. These discussions sought to understand consumer responses to the crisis, shifts in purchasing and consumption behaviours, the perceived impacts of the pandemic, their personal experiences, and potential coping mechanisms. Subsequently, in November 2023, a nationally representative survey was administered to Hungarian consumers aged 18 and above, aiming to assess the behavioural shifts triggered by the coronavirus pandemic during 2020–2021. Data gathered from 1,000 respondents were analysed using cross-tabulation (Pearson's chi-square test) and correspondence analysis to identify the key determinants influencing consumers' financial wellbeing and the extent to which newly formed shopping habits were retained. The principal outcome of the investigation indicates that, although the pandemic engendered widespread economic instability and altered consumption dynamics, individuals' subjective experiences of financial difficulty often exceeded the realities reflected in macroeconomic indicators. Resilience appeared to vary across demographic segments, with most behavioural adaptations occurring out of necessity rather than choice. These insights underscore the imperative for tailored public policy interventions to assist SMEs in navigating economic volatility. Such measures may include financial support mechanisms and initiatives promoting digital transformation. Moreover, fostering consumer confidence and stabilising market conditions through strategies such as adaptable tax policies and targeted stimulus programmes is essential. Investment in digital infrastructure and broader access to e-commerce platforms also emerges as a critical factor for enhancing long-term economic resilience and competitiveness.

* Corresponding author.

E-mail address: oravecz.titanilla@uni-bge.hu<https://doi.org/10.31181/dmame8220251538>

1. Introduction

The economic and societal disruptions experienced in recent years, particularly those triggered by the COVID-19 pandemic, have profoundly influenced political, economic, and socio-cultural systems. These shifts have significantly affected various domains, including marketing practices, trade in both goods and services, and patterns of consumer behaviour. Understanding consumer attitudes has become increasingly critical, as businesses face intensifying market competition, necessitating informed marketing strategies and responsive action plans. The pandemic induced a fundamental transformation in consumption practices—some of which have persisted over time, while others have been discarded as the immediate crisis subsided [49,63]. For businesses, especially SMEs, access to timely data on evolving consumer trends is essential to maintaining competitiveness. Rapid adaptability remains a key determinant of SME sustainability in dynamic market environments.

Earlier research addressing economic crises has underscored the importance of consumer confidence, financial resilience, and adaptive measures in mitigating the effects of downturns [14; 16]. However, the COVID-19 crisis presented unprecedented challenges, given its abrupt onset and global scope. Recent analyses [10; 34; 47] have examined how European markets responded to the crisis, drawing attention to modifications in spending behaviour and the evolution of corporate strategies. Nonetheless, there remains a relative paucity of empirical research focusing on Hungary, particularly with respect to both consumer and SME perspectives. This study aims to address that void by offering a detailed investigation into Hungary's capacity to withstand and adapt to economic disruptions, thereby contributing to broader academic discussions on consumer dynamics and market resilience during periods of instability. Hungary was selected as the focal context for this research for several reasons. As a developing European market, Hungary exhibits unique consumer patterns that contrast with those of more advanced Western economies [46]. Analysing behavioural adjustments in such a context provides valuable insights into the adaptive mechanisms of mid-sized economies in the face of external shocks. Furthermore, the literature on pandemic-induced changes in consumer behaviour has largely centred on major global economies such as the United States, the United Kingdom, and Germany [23; 62]. By concentrating on Hungary, the current research contributes to rectifying this imbalance, thereby enriching the understanding of regional responses within Central and Eastern Europe.

This investigation advances knowledge on entrepreneurial responses by examining how Hungarian SMEs navigated the challenges posed by the pandemic and how consumer behaviour evolved concurrently. Adopting a mixed-methods approach—comprising qualitative interviews, focus group discussions, and a representative quantitative survey—the study explores decision-making under uncertainty and organisational resilience. Focusing on Hungarian SMEs enables the research to bridge a regional knowledge gap while generating findings applicable to wider debates on crisis management and recovery strategies. Methodological robustness is enhanced through the use of cross-tabulations and correlation analysis, lending empirical strength to the study's conclusions. By linking transformations in consumer habits to business responses, the research offers actionable insights for policymakers, industry stakeholders, and academic researchers concerned with economic recovery and long-term resilience.

The paper is organised into several key sections. The initial section provides a review of existing literature, focusing on consumer behaviour trends during the COVID-19 crisis, SME resilience in the face of economic shocks, and the influence of digitalisation on marketing strategy. This is followed by the methodology section, which details the data collection process, the sample characteristics within Hungary, the research tools employed, and the analytical techniques applied. The methodological framework integrates both qualitative and quantitative elements, including in-depth interviews with SME owner-managers, focus group discussions with young adults, and a representative consumer

survey examining changes in purchasing behaviour and financial decision-making. The subsequent section presents the research findings, supplemented with tables, and includes an interpretative discussion. The concluding section outlines the study's key implications, limitations, and potential directions for future research—particularly in relation to understanding the long-term consequences of crises for consumer behaviour and market equilibrium.

2. Literature Review

This research enhances the existing body of knowledge by delivering an in-depth examination of the behavioural shifts among Hungarian consumers triggered by the COVID-19 pandemic, with a particular emphasis on the adaptive strategies and marketing adjustments employed by SMEs. While much of the earlier academic work has tended to focus on short-term variations in consumer habits, the present study adopts a more expansive lens, drawing upon both qualitative and quantitative evidence to assess the enduring ramifications of the crisis. By incorporating contemporary insights from recent scholarly work published between 2020 and 2024, the research identifies key developments in areas such as digital transformation, market resilience, and evolving consumer dynamics. The outcomes aim to assist businesses in optimising their marketing frameworks, effectively utilising digital technologies, and gaining a clearer understanding of shifting consumer expectations in the post-crisis period.

[64] conceptualises change as an objective, directional process that operates independently of human agency, advancing in a logical and predictable manner. While the notion of change may elicit a mixture of positive and negative sentiments, behaviours, and anticipations, the concept of crisis is more frequently linked to anxiety and fear. This is due to its characterisation as an unplanned and adverse sequence of events, which threatens the integrity of a system, jeopardises the achievement of fundamental goals, and, if sustained, can endanger its very survival [64]. A crisis is generally defined as an extreme, unforeseen, or volatile occurrence that compels immediate organisational response. It disrupts normal operations, generates ambiguity in decision-making, undermines institutional objectives and ethical values, damages reputational standing, and impairs overall performance [14]. Crises may be classified using various typologies [65] and are often understood to evolve through successive stages [66]. Their influence on consumer behaviour is considerable, frequently resulting in the deceleration or disappearance of some behavioural patterns while accelerating the emergence of others [16]. Both corporate and consumer markets are required to respond adaptively to such disruptions [13], and the COVID-19 pandemic, in particular, has produced lasting transformations in purchasing behaviour and customer expectations [67].

2.1 Consumer Behaviour Trends during the Covid-19 Pandemic

The outbreak of COVID-19 introduced considerable instability in consumer patterns, with episodes of panic buying becoming a common occurrence [8; 27]. As the crisis unfolded, consumers were compelled to adjust, prompting noticeable alterations in their shopping routines [2; 19] and purchasing preferences [20]. A general trend towards more prudent and deliberate consumption emerged Szymkowiak [56], characterised by reduced overall spending [5] and less frequent shopping trips [34]. There was a marked increase in the demand for healthcare items and non-perishable food products, while expenditure on non-essential categories such as clothing and luxury goods witnessed a substantial decline ([24]. Consumers increasingly emphasised value for money, with health and safety considerations surpassing convenience as primary decision-making criteria [10].

Güney and Sangün [21]s documented that, during the initial phase of the pandemic, consumers expressed heightened concern over price inflation, supply scarcities, and a growing interest in healthy, natural food products. Although online commerce had already been experiencing steady

growth prior to the pandemic Barbara et al. [6], its role became significantly more prominent during 2020–2021, particularly during lockdown restrictions [48]. Concurrently, in-person shopping activities diminished both in frequency and duration [34]. The crisis also amplified the value of short supply chains, bolstering demand for domestically produced food, with sustained consumer preference for local goods evident throughout the pandemic period [17; 30]. In addition, the perceived importance of food safety increased, leading consumers to favour pre-packaged and processed products offering higher added value [31]. One of the most notable developments in food-related consumption was the growing emphasis on discounted items [7], accompanied by a significant erosion of brand loyalty [30].

To explore these behavioural shifts, Sikos et al. [51] administered an online survey targeting Hungarian consumers in March 2020, gathering responses from 450 individuals. Employing descriptive statistics, cross-tabulation, and hierarchical clustering methods, their findings identified pronounced transitions towards bulk-buying and prioritisation of essential goods. Keller and Huszka [24] also investigated evolving patterns in food purchasing behaviour through a mixed-methods approach. Their study incorporated qualitative interviews alongside quantitative survey data collected from 349 participants via an online questionnaire in October 2020. Their analysis, which included variance testing and cross-tabulation, revealed a reduction in physical store visits, increased stockpiling of durable food products, and greater receptiveness to online shopping alternatives.

2.2 SME Resilience in the Face of Economic Disruptions

The COVID-19 pandemic triggered widespread disruption across global economies [67], with businesses facing sharp revenue losses due to restrictions, event cancellations, curtailed operating hours, and declining consumer demand [47]. Many enterprises, particularly those unsuited for remote operations, encountered further challenges including supply chain interruptions, reduced orders, labour shortages, and declining exports [22]. The cultural and creative sectors were especially affected, as social distancing and quarantine rules significantly reshaped cultural consumption [55]. In response, Hungarian firms adopted survival measures such as drawing on reserves, accessing government support, cutting costs, and deferring investments [54]. Impact varied across sectors, with hospitality and catering among the most severely affected [47]. Despite these obstacles, the number of registered businesses in Hungary approached 2 million by the end of 2022, the majority being SMEs [43]. SMEs are vital economic drivers, promoting business activity and job creation [29; 35]. Although overall employment in Hungary declined by around 100,000, SME employment rose by 2–4% in the same period [43]. While SMEs often lack financial and human resources, they are generally more agile and innovative [37]. Such adaptability has been essential in crises, with open innovation and collaborative knowledge-sharing proving crucial for resilience during the pandemic [61].

However, Hungarian SMEs exhibit lower digital adaptability and resilience compared to international counterparts [59]. Comparative studies within the Visegrád Group often highlight these gaps in crisis response strategies [46; 53]. As resilience reflects the capacity to adapt and recover from adverse events, its role in shaping consumer behaviour during crises is increasingly emphasised [11; 13]. Mohamed Senin et al. [33] explore SME survival strategies during global disruptions, stressing the significance of open innovation and knowledge networks for organisational resilience. Óri et al. [45] examine how resilience links to resource availability and digitalisation, using literature review, survey data, and PLS-SEM analysis. Totth [59] apply a qualitative approach, conducting 25 semi-structured interviews to explore decision-making challenges faced by Hungarian SMEs, offering nuanced insights through an exploratory and multifaceted lens.

2.3 The Impact of Digitalization on Marketing Strategies

Shifts in consumer preferences have intensified market dynamics, prompting firms to implement more advanced and creative marketing approaches [26]. Digital technologies, especially social media and online platforms, have become integral to consumer interaction and brand positioning [3]. Economic pressures have heightened price consciousness, with buyers gravitating toward cost-effective goods, including private labels and discounted options [58]. Traditional brand loyalty is diminishing, replaced by greater emphasis on perceived value and affordability [35]. Digital purchasing has rapidly evolved, reflecting fluid preferences for products and retail formats [50,69]. Additionally, spending patterns now blend caution with emotional drivers, as individuals seek balance between saving and selective indulgence [36]. The digital shift has redefined marketing frameworks, empowering firms to harness automation, real-time analytics, and tailored outreach strategies [1]. Artificial intelligence and machine learning enhance firms' ability to monitor behaviours and anticipate consumer needs through predictive targeting [44]. Social platforms and influencer collaborations have supplanted conventional messaging, allowing brands to build presence in more interactive and authentic ways [3]. Omnichannel integration—aligning digital and physical retail experiences—is now crucial to fostering loyalty and consistent engagement [38]. Moreover, SEO and automated ad placement have increased marketing efficiency and precision [12]. As the pace of digital transformation continues, firms must remain responsive and technologically adaptive to thrive in a competitive global market [26].

3. Methodology

This study seeks to explore how the COVID-19 pandemic has influenced various dimensions of marketing. The ability of businesses to respond swiftly to emerging changes is essential to sustaining competitiveness in evolving markets. The findings of this research aim to shed light on how contemporary economic developments shape consumer values and purchasing decisions, thereby identifying key areas for persuasive marketing strategies and influence mechanisms. Following a comprehensive review of both national and international literature, the study adopted a mixed-methods approach, combining qualitative and quantitative techniques. For the purposes of the research, the pandemic period was defined by respondents as spanning from March 2020 to December 2021. The qualitative phase included a series of semi-structured, in-depth interviews conducted with domestic enterprises between late February and early March 2023. These interviews focused on the owner-managers of a diverse set of SMEs in Hungary to evaluate their adaptability and resilience in response to crisis situations. A total of 25 Hungarian SMEs were involved in this phase: 8 from the motor vehicle trade and repair sector, 9 from the accommodation and food services sector, and 8 from various other service industries. The interviews explored how these businesses reacted to the challenges posed by the pandemic and what operational adjustments they implemented in response.

To inform the quantitative phase of the research, 12 exploratory focus group interviews were conducted with young adults in February 2023. The group composition was based on prior methodological frameworks provided by Michelini et al. [32] and Soma et al. [52], with each group comprising approximately eight participants. The focus group participants, aged 19 to 24, were all university students. Most were originally from rural areas and resided in student accommodation or rented flats during the academic week, returning to their family homes at weekends. These discussions sought to explore the participants' responses to the pandemic, transformations in their purchasing and consumption behaviours, their lived experiences during the crisis, and their adaptive strategies in response to shifting circumstances. Qualitative data derived from the interviews and focus groups were analysed using NVivo 12 (release 1.7) software. Transcriptions were imported into the programme and evaluated through grounded theory methodology Anselm [4], applying open

coding in accordance with the guidelines provided by [18]. These analyses established a solid foundation for subsequent quantitative assessment.

For the quantitative phase, an online survey was administered using a pre-tested, standardised questionnaire designed to capture consumer behaviour changes triggered by the pandemic. This phase involved a representative sample of 1,000 Hungarian consumers aged 18 and above. The data collection was facilitated through an online questionnaire, distributed via a respondent panel comprising over 40,000 registered individuals. Participants were selected using simple random sampling. To ensure the representativeness of the sample, five key demographic variables—based on the most recent Hungarian census [40]—were applied as control criteria: gender (2 categories), age group (5 categories), region (3 NUTS-1 categories), type of municipality (4 categories), and educational attainment (4 categories). Table 1 presents a detailed demographic breakdown of the sample.

Table 1
Structure and Composition of the Sample

Characteristics	Item	Count	Percentage
Gender	Male	474	47%
	Female	526	53%
Age	18-29	160	16%
	30-39	177	18%
	40-49	181	18%
	50-59	161	16%
	60+	321	32%
Education Level	Elementary Education	206	21%
	Secondary Education without Matriculation	219	22%
	Secondary Education with Matriculation	343	34%
	Higher Education	232	23%
Geographical Region	Central Hungary	315	31%
	Western Hungary	303	30%
	Eastern Hungary	382	38%
Location, Settlement Type	Budapest (Capital)	181	18%
	County Seat, City with County Rights	208	21%
	Another Town	320	32%
	Village, Rural Area	291	29%

Source: Author's own research, 2024, N=1000.

To align the respondent composition with baseline population proportions, multivariate marginal weighting was applied to adjust minor deviations. Individual respondent weights ranged from 0.61 to 1.71—within acceptable bounds for social research. The reference population, comprising 7,918,836 individuals, was based on the 2022 census by the Hungarian Central Statistical Office [40]. Data collection occurred between 17 and 28 November 2023. The questionnaire featured both closed and open-ended items concerning the purchasing process, and utilised a 5-point Likert scale (1 = not at all important, 5 = extremely important) to gauge consumer attitudes and preferences. Demographic data were gathered in the final section, including income, highest education level, and education type. Statistical analysis was conducted using IBM SPSS Statistics 26.0. Alongside descriptive statistics, Pearson's χ^2 test with cross-tabulations at a 95% confidence level assessed relationships and group differences. Where associations were statistically significant, the contingency coefficient (Cramer's V) was calculated to evaluate the strength and direction of relationships between nominal and ordinal variables. Cross-tabulations with non-significant results or cell values below five were omitted. Additionally, correspondence analysis explored associations among variable categories, while Pearson's correlation was employed to examine inter-variable dependencies and underlying

structural relationships.

4. Results

4.1 Qualitative Research Results

4.1.1 Results of In-Depth Interview Research

Substantial variation was observed in the size and operational focus of the businesses included in the sample, enabling a broad understanding of the sector's actors. Within the retail and wholesale trade category, the study examined enterprises involved in the retail of passenger vehicles, household appliances, and clothing, alongside businesses engaged in the wholesale and retail distribution of household appliances, building materials, food products, and pharmaceuticals. These firms operated both in Budapest and in various rural areas. In the accommodation and food service sector, the research covered hotel and lodging service providers, as well as small and medium-sized enterprises delivering restaurant services, mobile food services, and other food and beverage activities. The 'other services' category was restricted to beauty-related enterprises, such as hairdressing, cosmetics, nail care, and grooming services. Managers in retail and wholesale businesses responded swiftly to pandemic-related challenges. Where feasible, they implemented reduced working hours while attempting to retain staff and adjusted store opening times accordingly. Remote work arrangements were also widely adopted. For businesses offering products that were non-essential or whose purchase could be deferred—such as automobiles and large household appliances—a marked temporary decline in demand was reported. Conversely, firms engaged in the sale of essential goods, including food, pharmaceuticals, and construction materials, experienced a surge in demand and increased revenues. While the former group reduced stock levels in response to lowered demand, the latter encountered difficulties linked to disrupted supply chains and the need to store growing inventories. Common issues across all sectors included supply shortages, often caused by procurement challenges or logistical disruptions, and difficulties complying with evolving public health regulations.

The pandemic exerted a severe impact on enterprises in the accommodation and catering sector. Many businesses were compelled to lay off employees or significantly reduce working hours due to restrictions on opening times, and in numerous instances, they were forced to suspend operations entirely. These firms encountered major obstacles as a result of public health measures, including a steep decline in occupancy rates and a drastic loss of income. Several respondents indicated they had contemplated permanent closure, and many struggled to maintain operations during this period. All the catering establishments surveyed had introduced home delivery services if they had not previously offered them. The importance of secure service options—such as contactless delivery and customer interaction—also increased. In 2021 and 2022, the Hungarian government launched a range of support initiatives aimed at the hospitality sector. These included tax concessions, state-backed loan facilities, wage subsidies, and targeted tax incentives for the sector. For respondents operating within the beauty industry, the impact of the pandemic was tantamount to enforced closure. While all businesses were affected by government-imposed restrictions, some individuals attempted to continue operating informally from their homes. With revenues either disappearing entirely or declining significantly, business owners had to manage fixed costs through personal savings, support from financially stable family members, borrowing, or accessing state assistance. Upon reopening, they faced elevated operating costs due to mandatory health and safety measures and a reduction in customer numbers.

4.1.2 Results of the Focus Group Research

The pandemic exerted a considerable influence on students nationwide. The abrupt transition to online education presented significant challenges, with many students reporting difficulties in maintaining motivation and managing their studies from home. The absence of in-person interaction and social engagement substantially contributed to a decline in student mental well-being. Furthermore, employment opportunities for students diminished, resulting in widespread financial hardship. Despite these adversities, the accessibility of online learning afforded students' greater flexibility in managing their schedules, while digital communication tools, such as videoconferencing platforms, introduced novel educational modalities. A substantial proportion of students perceived that they had developed new competencies and attitudes that may hold long-term value. The range of consumer preferences also shifted gradually due to COVID-19. Attention turned increasingly towards staple food items and basic ingredients, whether in raw or processed forms. Purchases of long-shelf-life products—such as dry pasta, canned goods, and hygiene-related items—rose notably, with face masks, rubber gloves, and disinfectants quickly becoming scarce. The importance of online retail grew significantly, as the majority of transactions were conducted digitally. One of the most salient developments during the pandemic was the expansion of digital services and online ordering platforms. Although food deliveries increased, many consumers reported dissatisfaction with product quality, logistical inefficiencies, and issues such as expired goods. These negative experiences, once restrictions were lifted, motivated several consumers to return to conventional shopping practices for certain products.

Changes in the structure of shopping behaviour were also evident. The content of the average shopping basket evolved due to external constraints, including limits on where and when purchases could be made, as well as the necessity of certain items. Consumers shopped for food less frequently, but in larger volumes per trip. Pandemic restrictions led to a contraction in both the variety of goods and services consumed and the frequency of purchases. Services such as hairdressing, beauty treatments, and fitness facilities were almost entirely inaccessible during certain periods. In response, consumers sought to minimise remaining offline interactions to safeguard their health and that of their families, resulting in a concentration of in-person purchases. A parallel trend emerged in online shopping, where orders were increasingly consolidated, often influenced by the availability of delivery discounts and the complexity of the purchase. Many students involved in the focus group interviews reported increasing their savings as a response to pandemic-induced uncertainty, health concerns, and reduced consumption. This behavioural shift was further supported by the significant reduction in discretionary spending, particularly on entertainment and travel, owing to lockdowns. As the student demographic was among the first to experience job losses, with many losing part-time or even full-time employment, this reinforced the need for financial prudence.

4.2 Quantitative Research Results

4.2.1 Involvement and Change in Living Standards

Beyond business adaptability, economic volatility has significantly influenced individuals' psychological well-being, as major financial disruptions often have mental health implications [15]. Research highlights a strong link between economic conditions and mental health, indicating that financial security directly affects perceived well-being [70]. Despite the upheaval caused by the pandemic, Hungarians' overall subjective well-being remained relatively stable, with both mental health and living standards showing notable resilience [15]. Our findings reveal that slightly over one-quarter of participants felt unaffected by the pandemic, while just under a quarter—amounting to 4%—reported improved living conditions between March 2020 and late 2021. These perceptions

appear inconsistent with official data from the Hungarian Central Statistical Office [43], which recorded real income growth during this period—6.3% in 2020 and 3.6% in 2021. This disparity suggests that public sentiment regarding living standards was more pessimistic than macroeconomic indicators reflect. Thus, it is particularly relevant to explore how this period—perceived more negatively than supported by economic data—influenced consumer behaviour and purchasing patterns.

4.2.2 Changes in Consumption during the Pandemic

The questionnaire explored alterations in consumption patterns during the pandemic, relying on respondents' recollections across twelve fundamental product categories. Changes in income and living standards influenced consumption behaviours; however, accessibility limitations also impacted certain categories [71]. This was particularly pronounced in cultural and fuel consumption. Cultural consumption was curtailed due to restricted access to community cultural services, such as cinemas and theatres [9; 39, 72], while fuel consumption was affected by mobility restrictions that hindered transportation [25; 28]. It should be noted that these restrictions were predominantly applicable during the initial phase of the pandemic, rather than throughout its entirety. Over half of the consumers reported a decline in cultural and fuel consumption. A comparable decrease was observed in demand for clothing, sweets, and snacks, which are more closely tied to household living standards given the lack of external constraints. Across all product categories, the proportion of respondents indicating a decrease in consumption exceeded those reporting an increase. Nevertheless, three categories—vitamins and food supplements, household chemicals, and hygiene products—experienced increased expenditure among 17–25% of respondents. These changes correspond with pandemic-driven behavioural adaptations, particularly the heightened focus on health protection [50]. Although a segment of consumers actively sought to augment safety measures, this was not representative of the majority.

Given that these value judgements are based on subjective memory, it is also instructive to compare them with retail sales data from the Hungarian Central Statistical Office [42]. During the pandemic, retail sales remained approximately at the same level as the previous year. A substantial decline occurred in April 2020 due to store closures, followed by an average monthly decrease of 1.7% between May 2020 and March 2021 compared to the preceding year. A peak was recorded in April 2021, attributable to a low base, while the period from May to December 2021 saw an average increase of approximately 5%. Consequently, it is probable that consumers have substantially overestimated the decline in consumption during the pandemic, and that the pandemic period is more accurately represented by 2020 figures.

4.2.3 The Context of Changes in Consumption

Given that this study primarily explores the relationship between consumption patterns and the pandemic, it is important to assess the degree to which financial circumstances influenced the consumption of various product categories. Rather than analysing the entire sample collectively, respondents were categorised into three distinct groups according to their perceived changes in living standards. These groups comprised individuals reporting a significant decline, a slight decline, or no decline in their standard of living. The analysis then examined how consumption behaviours varied across these groups for the twelve product categories under investigation. The results indicate that shifts in consumption were strongly correlated with respondents' perceptions of their living standard changes throughout the pandemic. Table 2 delineates these three groups affected to differing degrees by the pandemic, specifically:

- those experiencing a marked deterioration in their living standards (representing 22% of the

sample),

- those perceiving a moderate decline (34% of the sample), and
- those reporting no decline in living standards (43% of the sample).

For each of the twelve product categories, the table summarises the average frequency of consumption responses, classified as:

- substantially reduced consumption (based on responses to question 1 for each product),
- moderately reduced consumption (responses to question 2), and
- stable or unchanged consumption levels (responses to questions 3 through 5).

Table 2

Affected Groups by the Pandemic

Volume Percentage	Significant Drop in Living Standard	Slight Drop in Living Standard	No Drop in Living Standard
Consumed Much Less	46%	16%	9%
Consumed Less	28%	31%	14%
Did not Consume Less	26%	53%	77%

Source: Author's own research, 2024, N=1000.

Individuals experiencing a substantial decline in their standard of living reported consuming significantly less in nearly half (46%) of the twelve product categories examined, whereas approximately one-quarter (28% and 26%, respectively) reported consuming less or maintaining the same or greater levels. For those who perceived only a slight deterioration in their living standards, the figures were more moderate, with an average of 16% consuming considerably less across categories. Meanwhile, 77% of respondents who did not perceive any decline in their living standard maintained their consumption levels for the various product groups. A pronounced correlation is evident between the perceived change in living standards and the aggregate shifts in consumption across all categories. Distinct consumer strategies emerged from the analysis. The final row of Table 3 illustrates the proportion of respondents within the three groups who reduced their consumption on average across the twelve product categories, representing the combined totals of the two preceding rows. These proportions were 74%, 47%, and 23%, respectively. Further, we computed the proportion of consumers within each category (as shown in Table 2) who curtailed consumption within each group, comparing these values against the average across all categories. Negative values denote a smaller share of consumption reducers in the given category relative to the average, whereas positive values indicate a greater share.

To assess whether these deviations were statistically significant, a series of one-sample t-tests were conducted. In Table 3, significant negative deviations are marked with a single asterisk (*), and significant positive deviations with a double asterisk (**). This approach enabled identification of product categories where each consumer group reduced their consumption to a lesser or greater extent than the average. The findings underscore the key differences in consumption strategies characterising each group. For the two groups with less severe or no reduction in living standards, the consumption of staple foods declined less than average, while for those most affected by living standard decreases, consumption of these items remained at the average level. Similarly, bakery product consumption followed this pattern. For those whose living standards remained stable, reductions in consumption of fruit and vegetables, meat, and dairy products were below average, whereas individuals experiencing the most significant decline in living standards tended to reduce their consumption of these categories more markedly relative to the other groups, indicating a relative effort to economise in these essential product areas.

Table 3

Changes in Consumption in 12 Basic Food Categories

Deviation from the Average of the 12 Categories	Significant Drop in Living Standard	Slight Drop in Living Standard	No Drop in Living Standard
1. Basic Foods	73 (-1)	39 (-8*)	17 (-6*)
2. Fruits, Vegetables	73 (-1)	42 (-5)	18 (-4*)
3. Meat	79 (5)	49 (2)	16 (-7*)
4. Dairy Products	75 (1)	43 (-4)	18 (-4*)
5. Bakery Products	69 (-5)	41 (-6*)	17 (-5*)
6. Sweets, Snacks	83 (9**)	63 (16**)	29 (7**)
7. Household Chemicals, Cleaning Products	62 (-12*)	34 (-14*)	17 (-6*)
8. Other Hygiene Products	58 (-16*)	28 (-19*)	14 (-9*)
9. Vitamins, Food Supplements	63 (-11*)	33 (-14*)	14 (-9*)
10. Clothes, Accessories	87 (13**)	67 (20**)	37 (15**)
11. Culture	87 (13**)	67 (19**)	37 (15**)
12. Fuel	80 (6**)	59 (12**)	36 (13**)
Average of the 12 Categories	74	47	23

Source: Author's own research, 2024, N=1000.

4.2.4 Changes in Shopping Habits

An examination of alterations in shopping behaviour was conducted by presenting respondents with various potential behavioural changes. The predominant adjustment reported throughout the pandemic was a marked decline in shopping frequency, accompanied by an expansion in the quantity of goods purchased per visit, as noted by 38% of participants. This trend was particularly evident among pensioners (47%), residents of both metropolitan and rural locales (47% and 46%, respectively), and individuals possessing higher levels of education (51%). The deferral or outright cancellation of certain purchases was also a commonly observed response, especially among those who reported experiencing a deterioration in their standard of living. In contrast, modifications in the variety or composition of items purchased were less widespread and did not display notable differences across demographic groups. Approximately 20% of respondents reported no significant changes in their shopping practices, a finding most frequently observed among individuals whose living standards remained stable throughout the pandemic. A substantial segment of the sample indicated a reduction in shopping frequency: 25% acknowledged a considerable decline, while 36% reported a moderate decrease. Among those experiencing a pronounced decline in living standards, nearly half (49%) reported a substantial reduction in shopping frequency.

4.2.5 Place of Purchase

Online shopping patterns appear to be more strongly determined by the intrinsic characteristics of the products, particularly their placement along the durable-to-perishable continuum, rather than being directly shaped by pandemic-related changes in consumer behaviour. Across the twelve product categories under investigation, an average of 24% of consumers reported purchasing at least a portion of the category online. Younger consumers aged 18 to 29 exhibited a higher propensity for online shopping, while residents of the capital city and individuals with higher educational attainment also showed a tendency towards greater online purchasing, although these differences were not statistically significant. During the period studied, discount retailers such as Lidl, Aldi, and Penny Market remained the predominant venues for offline shopping in Hungary. Except for the categories of vitamins and dietary supplements, over 75% of consumers continued to acquire food products exclusively through physical retail outlets throughout the pandemic. Consequently, the share of purchases conducted at least partly online remained below 20%. Notably, the two categories that experienced the most substantial declines in consumption—cultural products and clothing—also recorded the highest proportions of online purchases. Nevertheless, the online availability of cultural

offerings, including theatre performances, concert streams, and virtual museum tours [55], as well as clothing items [57], witnessed a significant increase during the pandemic period.

4.2.6 Resilience

The study also explored the capacity of households to adapt to the altered circumstances brought about by the pandemic. Resilience, understood as the ability to endure and recover from adversity Turai [60], was primarily assessed from a financial standpoint. The analysis of responses revealed a strong positive correlation between resilience and perceived changes in living standards, as evidenced by a Pearson correlation coefficient of 0.604. Of particular interest, the correlation between resilience and concerns related to the cost of living was even more pronounced than that observed with a broader subjective value judgement question, despite the latter employing a scale that ranged from negative to neutral. The Pearson correlation coefficient for this comparison was 0.438. Among various demographic and economic factors, household income demonstrated the strongest association with resilience, with 41 percent of families reporting a household income of at least HUF 500,000 being classified as resilient.

5. Discussion

Throughout the pandemic, the perception of living standards among respondents predominantly shifted towards a negative assessment. Individuals reported a considerably more severe decline in their living standards than what was substantiated by objective macroeconomic indicators [41]. A strong association was observed between general subjective engagement and the perceived changes in living standards. Additionally, modifications in respondents' financial circumstances exhibited a robust correlation with both their level of engagement and their subjective evaluation of living standard fluctuations. Our analysis reveals a statistically significant relationship between alterations in consumer behaviour and subjective perceptions of living standard changes. Moreover, it became apparent that consumers tended to markedly overstate the extent of consumption reduction when compared to official retail turnover statistics from the [42] HCSO (2023b). The pandemic-induced transformations in purchasing behaviour documented in this study are consistent with findings reported in prior research [49]. A detailed examination of the consumer basket indicates a notable contraction in expenditure on cultural goods—including literature, theatre attendance, and cinema visits—alongside decreased spending on fuel, apparel, accessories, and confectionery items. These results corroborate the conclusions drawn by [55; 57].

Conversely, in alignment with the observations of Keller and Huszka [24] and Csiszárík-Kocsir et al. [10], this study also identified an escalation in consumer expenditure on health-related products such as vitamins, dietary supplements, fresh produce (notably fruits and vegetables), household chemicals, and hygiene commodities. However, these increased purchases were accompanied by a reduction in shopping frequency, with consumers tending to acquire larger quantities during promotional periods and discount campaigns, a pattern similarly emphasised by [34]. This study examined how the surveyed companies responded to the crisis and what strategic changes were adopted in its aftermath. The analysis revealed that many firms actively employed a range of crisis management tools, demonstrating considerable organisational resilience. Key strategies included refocusing core activities, modifying operational frameworks, adopting alternative sales channels, and exploring new financing options. Consistent with findings by Pogácsás and Szepesi [47], the accommodation and food services sector emerged as the most financially impacted during 2020–2021.

Despite these challenges, most businesses expressed satisfaction with their crisis performance, perceiving themselves as having successfully navigated the economic disruptions induced by the

COVID-19 pandemic. Many reported enhanced organisational strength and resilience, with prior crisis experience proving valuable in managing ongoing economic uncertainty. Firms that fared best were characterised by openness, adaptability, and a proactive approach to a volatile market environment. Echoing the observations of Totth [59], the crisis also fostered a notable shift in the strategic mindset of SMEs, with many embracing digital transformation—an effort further accelerated by the pandemic. The 2023 survey data indicated a near-universal intention among respondents to continue expanding online capabilities. Aligned with the perspectives of [3; 26], the findings reinforce that achieving sustainable competitive advantage requires differentiation, value creation, responsiveness to consumer expectations, and the integration of best practices and emerging trends.

6. Conclusion

The study underscores the pivotal role of decision-making strategies in navigating the challenges imposed by the COVID-19 pandemic. For SMEs, swift and adaptive responses—including the reorientation of business activities, the adoption of new distribution channels, cost reduction measures, and innovation—have been critical to fostering resilience. Approaches characterised by flexibility and forward planning have enabled businesses to withstand the economic disruptions more effectively. Overall, the pandemic has acted as a catalyst for positive transformation within the Hungarian SME sector by highlighting areas requiring improvement and accelerating developmental processes. Moreover, the integration of digital channels has become indispensable for maintaining consumer trust and sustaining market presence. Enterprises that have successfully aligned their digital strategies with evolving consumer behaviours have demonstrated enhanced resilience and profitability. Consequently, it is essential for forward-looking businesses to continue leveraging digital advancements to adapt to shifting consumer landscapes and reinforce their competitive positioning. The impact of the pandemic on businesses was heterogeneous, varying substantially across different sectors. Variations were observed in demand patterns, operational adjustments, and financial resilience. In the retail and wholesale sectors, adaptations included reduced working hours and the implementation of remote work arrangements, while demand fluctuations depended on product type, resulting in either shortages or surpluses of stock. The accommodation and food service industries suffered considerable financial pressure, culminating in layoffs, business closures, and increased dependence on governmental support. Similarly, beauty service providers faced extended closures, financial instability, and higher operational costs upon reopening, which underscores the varied degrees of economic vulnerability among sectors.

Consumer decisions during the pandemic reflected economic uncertainty, with shoppers buying less often but increasing basket size, focusing on essentials and value. Online shopping became more important. Respondents reported negative household impacts due to financial, health, or family issues but showed moderate resilience. Perceived financial hardship often exceeded macroeconomic data. Consumption declined across most product groups except health-related items, with changes driven mainly by necessity. Some pandemic-induced consumption changes appear lasting, while others faded. Businesses must stay informed of shifting consumer behaviour to remain competitive. The pandemic also affected students' education, consumption, and finances, with many viewing challenges as growth opportunities. Increased savings among students improved their financial security, a positive crisis outcome. The study relies on retrospective self-assessments, which may reflect memory bias rather than actual financial changes. While specific to Hungary, findings may inform other economies, though policy and social differences may limit relevance. Categorising respondents by perceived living standard changes offers insights, but income-based segmentation could clarify financial status and consumption links. Psychological and social influences on consumption remain underexplored and warrant future study. Further research should examine

factors like financial anxiety and risk perception, improve digital access for vulnerable groups, and evaluate government interventions to guide policies addressing financial hardship during crises.

Author Contributions

Conceptualization, É.P., T.O. and Z.M.; methodology, É.P., T.O. and Z.M.; validation, É.P., T.O. and Z.M.; formal analysis, É.P., T.O. and Z.M.; investigation, É.P., T.O. and Z.M.; writing—original draft preparation, É.P., T.O. and Z.M.; writing—review and editing, T.O.; visualization, É.P. and T.O.; supervision, T.O.; project administration, T.O., All authors have read and agreed to the published version of the manuscript.

Funding

This research received no external funding.

Data Availability Statement

The datasets generated or analyzed during this study are available from the corresponding author on reasonable request.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgement

The research underlying the study was carried out with the support of the Centres of Excellence of the Budapest University of Economics and Business (BUEB), in association with the BUEB Budapest LAB Centre of Excellence.

References

- [1] Adeniyi, I. S., Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., Onyebuchi, C. N., Omolawal, S. A., Aliu, A. O., & David, I. O. (2024). Organizational culture and leadership development: A human resources review of trends and best practices. *Magna Scientia Advanced Research and Reviews*, 10(1), 243-255. <https://doi.org/10.30574/msarr.2024.10.1.0025>
- [2] Ammar, A., Brach, M., Trabelsi, K., Chtourou, H., Boukhris, O., Masmoudi, L., Bouaziz, B., Bentlage, E., How, D., & Ahmed, M. (2020). Effects of COVID-19 home confinement on eating behaviour and physical activity: results of the ECLB-COVID19 international online survey. *Nutrients*, 12(6), 1583. <https://doi.org/10.3390/nu12061583>
- [3] Anjorin, K. F., Raji, M. A., & Olodo, H. B. (2024). The influence of social media marketing on consumer behavior in the retail industry: A comprehensive review. *International Journal of Management & Entrepreneurship Research*, 6(5), 1547-1580. <https://doi.org/10.51594/ijmer.v6i5.1123>
- [4] Anselm, L. S. (1987). Qualitative Analysis for Social Scientists. <https://doi.org/10.1017/cbo9780511557842>
- [5] Baker, S. R., Farrokhnia, R. A., Meyer, S., Pagel, M., & Yannelis, C. (2020). How does household spending respond to an epidemic? Consumption during the 2020 COVID-19 pandemic. *The Review of Asset Pricing Studies*, 10(4), 834-862. <https://doi.org/10.3386/w26949>

- [6] Barbara, B., Lajos, B., Gyula, K., & Dávid, S. (2016). Internetes élelmiszer-vásárlási szokások Magyarországon. *ÉLELMISZERVIZSGÁLATI*, 997. <https://www.researchgate.net/publication/309667205>
- [7] Buss, A., & Wallner, W. (2022). How inflation is changing consumer behavior. In: Ipsos. https://www.ipsos.com/sites/default/files/2022_01_18_Inflation_Buss_ipsos.pdf
- [8] Chronopoulos, D. K., Lukas, M., & Wilson, J. O. (2020). Consumer spending responses to the COVID-19 pandemic: An assessment of Great Britain. Available at SSRN 3586723. <https://dx.doi.org/10.2139/ssrn.3586723>
- [9] Coopers, P. (2020). *Media consumption patterns are changing. COVID-19 has accelerated the process.* https://www.pwc.com/hu/hu/iparagak/media_es_szorakoztatoipar/mediafogyasztasi_szokasok_2020.pdf
- [10] Csiszárík-Kocsir, Á., Garai-Fodor, M., & J., V. (2022). What became important during the pandemic? – Reassessment of preferences and customer habits due to the coronavirus epidemic through the eyes of different generations. *Budapest Management Review*, 53(4), 70-83. <https://doi.org/10.14267/VEZTUD.2022.04.06>
- [11] Cutter, S. L., Ahearn, J. A., Amadei, B., Crawford, P., Eide, E. A., Galloway, G. E., Goodchild, M. F., Kunreuther, H. C., Li-Vollmer, M., & Schoch-Spana, M. (2013). Disaster resilience: A national imperative. *Environment: Science and Policy for Sustainable Development*, 55(2), 25-29. <https://doi.org/10.1080/00139157.2013.768076>
- [12] Das, S. (2021). *Search engine optimization and marketing: A recipe for success in digital marketing.* Chapman and Hall/CRC. <https://doi.org/10.1201/9780429298509>
- [13] Debreceni, J., & Fekete-Frojimovics, Z. (2021). Research paradigms for restaurant management in COVID19: Systematic review of theoretical frameworks and a recommended research design. *Turisztikai és Vidékfejlesztési Tanulmányok*, 6(4). <https://www.turisztikaitanulmanyok.hu/wp-content/uploads/2021/12/TVT-Vlefv-4szam.pdf>
- [14] Doern, R., Williams, N., & Vorley, T. (2019). Special issue on entrepreneurship and crises: business as usual? An introduction and review of the literature. *Entrepreneurship & Regional Development*, 31(5-6), 400-412. <https://doi.org/10.1080/08985626.2018.1541590>
- [15] Families, M. K. I. f. D. a. (2021). The well-being of Hungarian families during the coronavirus epidemic. <https://www.koppmariaintezet.hu/images/news21/Kozerzet20200326.pdf>
- [16] Flatters, P., & Willmott, M. (2009). Understanding the post-recession consumer. *Harvard Business Review*, 87(7/8), 106-112. <https://www.trajectorypartnership.com/wp-content/uploads/2013/09/HBR-article.pdf>
- [17] Garai-Fodor¹, M., & Popovics, A. (2021). Hungarian food consumers' preferences, from the aspect of ethnocentrism. *Acta Polytechnica Hungarica*, 18(8). https://acta.uni-obuda.hu/Garai-Fodor_Popovics_115.pdf
- [18] Ghauri, P., & Grønhaug, K. (2016). Research methods in business studies. <https://doi.org/10.1556/9789630598590>
- [19] Goddard, E. (2020). The impact of COVID-19 on food retail and food service in Canada: Preliminary assessment. *Canadian Journal of Agricultural Economics/Revue canadienne d'agroéconomie*, 68(2), 157. <https://doi.org/10.1111/cjag.12243>
- [20] Górnicka, M., Drywień, M. E., Zielinska, M. A., & Hamułka, J. (2020). Dietary and lifestyle changes during COVID-19 and the subsequent lockdowns among Polish adults: a cross-sectional online survey PLifeCOVID-19 study. *Nutrients*, 12(8), 2324. <https://doi.org/10.3390/nu12082324>

- [21] Güney, O. I., & Sangün, L. (2021). How COVID-19 affects individuals' food consumption behaviour: a consumer survey on attitudes and habits in Turkey. *British Food Journal*, 123(7), 2307-2320. <https://doi.org/10.1108/BFJ-10-2020-0949>
- [22] Industry, I. f. E. a. E. R. H. C. o. C. a. (2021). *The economic impact of the coronavirus epidemic among Hungarian businesses up to October 2020 - capacity utilisation, crisis management tools, wage changes and sales prices*. https://gvi.hu/files/researches/628/koronavirus_kutatasi_fuzet_3_210127.pdf
- [23] Janssen, M., Chang, B. P., Hristov, H., Pravst, I., Profeta, A., & Millard, J. (2021). Changes in food consumption during the COVID-19 pandemic: analysis of consumer survey data from the first lockdown period in Denmark, Germany, and Slovenia. *Frontiers in nutrition*, 8, 635859. <https://doi.org/10.3389/fnut.2021.635859>
- [24] Keller, V., & Huszka, P. (2021). Food purchasing habits in times of the second wave of the coronavirus pandemic. *Scientific Journal of Agricultural Economic*, 65, 158-171. <https://doi.org/10.22004/ag.econ.310595>
- [25] Kövesdi, I., & Oszter, V. (2023). Impact of the coronavirus pandemic (COVID19) on transport services. *Transport and Mobility*, 2(1), 34-48. <https://doi.org/10.55348/KM.26>
- [26] Kupi, M., & Bakó, F. (2024). Analysis of Digital Tourist's Purchasing Decision Process Based on Feedback and Opinions. *Decision Making: Applications in Management and Engineering*, 7(1), 270-289. <http://www.dmame-journal.org/index.php/dmame/article/view/951>
- [27] Laato, S., Islam, A. N., Farooq, A., & Dhir, A. (2020). Unusual purchasing behavior during the early stages of the COVID-19 pandemic: The stimulus-organism-response approach. *Journal of Retailing and Consumer Services*, 57, 102224. <https://doi.org/10.1016/j.jretconser.2020.102224>
- [28] Laki, M. (2021). What is expected and what is unchanged. The question of a new start after the epidemic: where to go from here? . *External Economic Bulletin*, 65, 64-69. <https://doi.org/10.47630/KULG.2021.65.1-2.64>
- [29] Lu, Q., Yang, Y., & Yu, M. (2024). Can SMEs' quality management promote supply chain financing performance? An explanation based on signalling theory. *International Journal of Emerging Markets*, 19(7), 1981-2002. <https://doi.org/10.1108/IJOEM-03-2022-0456>
- [30] Madarász, T., Kontor, E., Antal, E., Kasza, G., Szakos, D., & Szakály, Z. (2022). Food purchase behavior during the first wave of COVID-19: the case of Hungary. *International Journal of Environmental Research and Public Health*, 19(2), 872. <https://doi.org/10.3390/ijerph19020872>
- [31] Mezei, K., & Gombkötő, N. (2022). The impact of COVID-19 on the domestic food economy. *Economy-Region-Society*, 19(1), 99-110. <https://doi.org/10.32976/stratfuz.2022.9>
- [32] Michelini, L., Grieco, C., Ciulli, F., & Di Leo, A. (2020). Uncovering the impact of food sharing platform business models: a theory of change approach. *British Food Journal*, 122(5), 1437-1462. <https://doi.org/10.1108/BFJ-06-2019-0422>
- [33] Mohamed Senin, S., Juhdi, N. H., Che Omar, A. R., & Hashim, N. A. (2024). Small and medium enterprises survival during the global crises: a systematic review of theoretical perspectives of building resilience in the time of crisis. *Cogent Business & Management*, 11(1), 2395428. <https://doi.org/10.1080/23311975.2024.2395428>
- [34] Molnár, A., Józsa, L., , & Dernóczi-Polyák, A. (2022). Changes in food purchasing habits during the Covid epidemic in Slovakia and Hungary, situation in Southern Slovakia and Western Hungary. *The Hungarian Journal of Nutrition Marketing*, 9(1), 55-70. <https://doi.org/10.20494/TM/9/1/5>

- [35] Msosa, S. K. (2023). Customer satisfaction and brand loyalty amongst South African Millennials during the Covid-19 Pandemic. *International Journal of Research in Business and Social Science*, 12(3), 22-30. <https://doi.org/10.20525/ijrbs.v12i3.2486>
- [36] Nagy, S. (2023). Global trends in retailing. <https://www.researchgate.net/publication/372164870>
- [37] Németh, V. (2020). A mediáció fejlődése és kommunikációs szempontjai. *Belügyi Szemle*, 68(Special Issue 3), 94. <http://doi.org/10.38146/BSZ.SPEC.2020.3.7>
- [38] Neslin, S. A. (2022). The omnichannel continuum: Integrating online and offline channels along the customer journey. *Journal of retailing*, 98(1), 111-132. <https://doi.org/10.1016/j.jretai.2022.02.003>
- [39] Office, H. C. S. (2021). *The situation of cinemas and films in Hungary in the shadow of the coronavirus*. https://www.ksh.hu/docs/hun/xftp/stattukor/mozik_filmek/index.html#2020ban72kalesettviszaamozikltogatottsga
- [40] Office, H. C. S. (2022). *Census Database*. <https://nepszamlalas2022.ksh.hu/adatbazis/>
- [41] Office, H. C. S. (2023a). Evolution of real earnings. https://www.ksh.hu/stadat_files/mun/hu/mun0191.html
- [42] Office, H. C. S. (2023b). *Unadjusted volume index of retail trade by type of retail outlet, monthly, quarterly*. https://www.ksh.hu/stadat_files/bel/hu/bel0019.html
- [43] Office, H. C. S. (2023c). *Evolution of the number of active enterprises by industry and type of business*. <https://ksh.hu/s/helyzetkep-2022/#/kiadvany/vallalkozasok/a-mukodo-vallalkozasok-szamanak-alakulasa-nemzetgazdasagi-ag-es-gazdalkodasi-forma-szerint>
- [44] Okeleke, P. A., Ajiga, D., Folorunsho, S. O., & Ezeigweneme, C. (2024). Predictive analytics for market trends using AI: A study in consumer behavior. *International Journal of Engineering Research Updates*, 7(1), 36-49. <https://doi.org/10.53430/ijeru.2024.7.1.0032>
- [45] Őri, D., Szabó, I., Kő, A., & Kovács, T. (2024). Digitalizing in crisis: the role of organizational resilience in SMEs' digitalization. *Journal of Enterprise Information Management*, 37(4), 1185-1205. <https://doi.org/10.1108/JEIM-03-2023-0141>
- [46] Pacana, A., Siwiec, D., & Molnár, L. (2024). Pro-environmental improving products Quality in SMEs from the Visegrad Group Countries (V4). *Zeszyty Naukowe. Organizacja i Zarzadzanie/Politechnika Śląska*. <http://dx.doi.org/10.29119/1641-3466.2024.194.22>
- [47] Pogácsás, P., & Szepesi, B. (2023). The impact of covid-19 on SMEs in Hungary. *Budapest Management Review*, 54(2), 25-39. <https://doi.org/10.14267/VEZTUD.2023.02.03>
- [48] Sheth, J. (2020). Impact of Covid-19 on consumer behavior: Will the old habits return or die? *Journal of business research*, 117, 280-283. <https://doi.org/10.1016/j.jbusres.2020.05.059>
- [49] Sidor, A., & Rzymiski, P. (2020). Dietary choices and habits during COVID-19 lockdown: experience from Poland. *Nutrients*, 12(6), 1657. <https://doi.org/10.3390/nu12061657>
- [50] Sikos, T. T., Molnár, D., Kovács, A. . (2022). The impact of COVID-19 pandemic on the retail sector – Policy-strategy-innovation. Strategic Issues of Northern Hungary. *Economy Region Society*, 19(4), 76-85. <https://doi.org/10.32976/stratfuz.2022.45>
- [51] Sikos, T. T., Papp, V., & Kovács, A. (2021). Changes in Hungarian shopping behavior during the first wave of COVID-19. *Területi Statisztika*, 61(2), 135-152. <https://doi.org/10.15196/TS610201>
- [52] Soma, T., Li, B., & Maclaren, V. (2021). An evaluation of a consumer food waste awareness campaign using the motivation opportunity ability framework. *Resources, Conservation and Recycling*, 168, 105313. <https://doi.org/10.1016/j.resconrec.2020.105313>

- [53] Srebalová, M., & Vojtech, F. (2021). SME development in the Visegrad area. Eurasian Business and Economics Perspectives: Proceedings of the 30th Eurasia Business and Economics Society Conference, 269-281. https://doi.org/10.1007/978-3-030-65147-3_19
- [54] Szepesi, B., Pogácsás, P. . (2021). The impact of the coronavirus epidemic on Hungarian business. <https://ifka.hu/medias/970/akoronavirus-jarvanyhatasaamagyarvallalkozasokra.pdf>
- [55] Szirmai, É. (2022). Art moving into the digital space - Opportunities and challenges for the cultural and creative sector during and after the pandemic. . *Community Connections – Studies on Culture and Education*, 2(1), 31-40. <https://doi.org/10.14232/kapocs.2022.1.31-40>
- [56] Szymkowiak, A., Kulawik, P., Jeganathan, K., Guzik, P. . (2020). In-store epidemic behavior: scale development and validation. *Physics and Society*. <https://arxiv.org/abs/2005.02764>
- [57] Taralik, K., Kozák, T., Molnár, ZS. . (2022). Role of touchpoints during apparel buying journey in Hungary. *Hungarian Statistical Review*, 100(11), 1055-1080. <https://doi.org/10.20311/stat2022.11.hu1055>
- [58] Tileva, T. (2023). *Consumer Behavior During Times of Inflation - And How to Save*. . <https://kogod.american.edu/news/consumer-behavior-during-times-of-inflation-and-how-to-save>
- [59] Totth, G., Brávác, I., Harsányi, D., Pacsi, D., Szabó, Z. . (2022). Decision making challenges of the Hungarian SME sector – with focus on online communication presence. *The Hungarian Journal of Marketing and Management*, 56(2), 5-12. <https://10.15170/MM.2022.56.02.01>
- [60] Turai, T. (2023). Resilience and vulnerability. Individual strategies under the pressure of Permanent social changes. *Ethno-Lore*, 40, 19-42. <https://doi.org/10.58449/EL.2023.02>
- [61] Wu, S., Cheng, L., Huang, C., & Chen, Y. (2024). The impact of open innovation on firms' performance in bad times: evidence from COVID-19 pandemic. *Eurasian Business Review*, 14(3), 657-694. <https://doi.org/10.1007/s40821-024-00275-6>
- [62] Žurek, J., & Rudy, M. (2024). Impact of the COVID-19 pandemic on changes in consumer purchasing behavior in the food market with a focus on meat and meat products—a comprehensive literature review. *Foods*, 13(6), 933. <https://doi.org/10.3390/foods13060933>
- [63] Dávid, Á., Gombkötő, Cs., & Gombkötő, N. (2023). Impact of Covid-19 on organic food consumption in Hungary. *Acta Agronomica Óváriensis*, 64(2), 120-137.
- [64] Noszkay, E. (2009). Change and crisis management from the basis. Budapest: N&B Press.
- [65] Katits, E., Pogácsa, Z., & Zsupanekné Palányi, I. (2018). Business cycles and enterprise life cycles in the national economy. Budapest: Akadémiai Press.
- [66] Biermann, M., & Bittner, P. (2013). The crisis has been good for management! And for management education? *Budapest Management Review*, 44(6), 59-66.
- [67] Kozák, T. (2022). Where do we go from here? The future of offline and online retailing. Economics and Gastronomy. Budapest Business University, Budapest, 206-220.
- [68] Kőműves, Zs. S., Dajnoki, K., Pató Gáborné Szűcs, B., Poór, J., Szabó, K., Szabó-Szentgróti, G., & Szabó, Sz. (Eds.) (2022). Recovery - Reopening - Growth. Wolters Kluwer Hungary Kft.
- [69] Hackl, J. (2023). Investigating shopping habits during COVID. In: Széles, Zs., & Szőke, T. M. (Eds.) The role of artificial intelligence in sustainable economic decisions-XVII Sopron Finance Days: Finance, Taxation and Accounting Professional and Scientific Conference: Conference proceedings. Sopron, Hungary: Sopron University Press, 30-47.
- [70] Kopp, M., Balog, P., Konkoly, T. B., Salavecz, Gy., Stauder, A., Csóka, Sz., & Bódizs, R. (2009). Epidemiological and psychophysiological examination of the mental health, and opportunities of the mental health promotion. Public Health Research Journal Of The Hungarian Association Of Public Health Training And Research Institutions, 87(2), 52-58.

- [71] Szalánczi-Orbán, V. (2023). Food Supply and Supply Chains Post Pandemic. *Safety and Security Sciences Review*, V.(1). special issue
- [72] Hervé-Lóránth, E. (2020). Paradigm shifts in cultural-artistic structures during the coronavirus. In: Kovács, L. (Ed.) Savaria University Press, Szombathely, 163–186.