



# Content analysis of food industries marketing by focus on new trends

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## Abstract

The food industry is undergoing changes. Consumers are seeking food products that are both tasty and healthy, as well as sustainable and authentic. New opportunities for the development of food products are opened up by new developments in farming, food processing, and retailing. Food marketing faces a significant challenge in bridging these challenges and opportunities.

The food industry is an essential part of many countries' national economies, as it plays a crucial role in processing agricultural raw materials and providing food supplies. Food industry companies recognize innovation as a crucial tool to stand out from competitors and meet consumer expectations. Functional foods are playing an important role in this regard, as shown by their increasing demand caused by the rising cost of healthcare, improve their people's quality of life and there has been a steady increase in life expectancy.

**Keywords:** Content Analysis, Food Industries, Marketing, New Trends

## Introduction

### *The effecting factors on food product demand*

The factors that affect the demand for food products include income levels, price parameters, availability of products, advertising and promotion, health education, quality development, self-provision with food products, and the degree to which needs are satisfied. The factors that affect the demand for food products include income levels, price changes, and regional differences (Femenia, 2019; Stávková & Turcinkova, 2005; Nikonova & Nikonov, 2020). Also, the dynamics of demand and its

determining factors in the food market, but does not provide a comprehensive list of these factors. Income levels have a significant impact on income and price elasticities, with higher income levels leading to lower elasticities (Weible, 2015; Biletska et al., 2020). The factors that affect the demand for food products include price setting, individual consumption habits, socio-demographics, and attitudes towards the product. Changes in income and prices also affect food demand differently depending on the global regions involved. The functional forms used to represent food demand also play a role in elasticity estimates, highlighting the importance of demand

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function specification in simulation models.  
Consumer preferences for food products and

production systems, analyzing choice  
behavior and attitudes.

**Table 1.** Some study on the effecting factors on food product demand

<b>Article</b>	<b>Results</b>
Consumer Preferences and Factors that Influence the Choice of Food Products Mari Uyeda +1 more 01 Mar 2016	The paper focuses on consumer preferences and the influence of marketing strategies on purchasing decisions.
An investigation on important factors influencing consumer purchase: A case study of food products Mohammad Haghighi +1 more 01 Jan 2014-Management Science Letters	The factors that affect the demand for food products are brand and reputation, being a green product producer, quality of packaging, taste of food products, and materials used in products.
Empirical evidence of changing food demand and consumer preferences in the USA Kazi Tamim Rahman +2 more 01 Jan 2020-Journal of The Bangladesh Agricultural University	The factors that affect the demand for food products mentioned in the paper include increase in per capita income, price, population and urbanization, and health consciousness.
Stimulators and barriers of demand for food (Polish case) Joanna Szwacka-Mokrzycka 30 Sep 2016	The factors that affect the demand for food products in Poland are the overall level of economic development and consumers' disposable income.
Consumer Behavior in Decision Making - What Are the Factors? Kosovare Mustafa Sadiku +2 more 22 Jun 2023-International journal of membrane science and technology	The factors that affect the demand for food products are sociodemographic and psychological traits, including revenue, gender, educational level, age, and profession.
Consumer Behaviour and Food Consumer Market: The Case study of Slovakia Mária Kmety Barteková +2 more	The paper states that consumer behavior in the food market is influenced by factors such as price, income, social factors, and psychological factors.
Импортозамещение и его роль в обеспечении продовольственной безопасности и развитии АПК региона Е. В. Пастушкова +1 more 03 Nov 2017	The paper does not provide specific factors that affect the demand for food products. The paper primarily focuses on the analysis of food market security, import substitution, and the role of the agricultural sector in regional development.
Three essays on consumer choices on food Miyoung Oh 01 Jan 2014	The paper discusses the impact of habit formation, public policy, and uncertainty of food safety hazards on consumer choices for food products.
Social and cultural influences on food choices: A review Jean Pierre Enriquez +1 more 11 Jan 2021-Critical Reviews in Food Science and Nutrition	The factors that influence food choices and demand for food products include socio-cultural aspects, cultural capital, social stratifications, inequalities, foodscapes, social environments, tastes, and nutritional information.
Factors influencing the consumer behaviour when buying food Jana Stávková +3 more 11 Feb 2018-Agricultural Economics-zemedelska Ekonomika	The factors that affect the demand for food products are price, brand, quality, product attributes, habits, price reductions, advertisement, innovation, and word-of-mouth.



<p>Estimating Demand Elasticities for Aggregate Food Groups using QUAIDS and Pooled HIES Data Mehreen Zaid Ullah +4 more 01 Jan 2017-Transylvanian Review</p>	<p>The factors that affect the demand for food products in Pakistan include income variation, price change, population change, and urbanization.</p>
<p>The importance of factors that influence on consumer purchasing decisions of food products. Katerina Bojkovska +3 more 01 Jan 2014-Journal of Hygienic Engineering and Design</p>	<p>The paper does not specifically mention the factors that affect the demand for food products. The paper focuses on the factors that influence consumer purchasing decisions, including external factors such as opinions of family and friends, and internal factors such as personal image and mood.</p>
<p>Motivation Factors of Consumers' Food Choice Iraz Haspolat Kaya 14 Mar 2016-Food and Nutrition Sciences</p>	<p>The paper discusses factors such as sensual features, cost/price balance, and consumer health that influence consumers' motivation for food choice.</p>
<p>Age-Free Income Elasticities of Demand for Foods: New Evidence from Japan 喜美子 石橋 +2 more 01 Jan 2006</p>	<p>The paper discusses that income and prices are important factors influencing food purchasing behavior, but other variables also play a role. The paper does not provide a comprehensive list of factors affecting food demand.</p>
<p>The food consumer in the 21st century: new research perspectives Benjamin Senauer 01 Jan 2001-Research Papers in Economics</p>	<p>The factors that affect the demand for food products include nutrition and health, safety, convenience, diversity, and genetic modification.</p>
<p>A Meta-analysis of Food Demand Elasticities for China Danhong Chen +4 more 01 Mar 2016-Applied Economic Perspectives and Policy</p>	<p>The paper does not explicitly mention the factors that affect the demand for food products. The paper focuses on conducting a meta-analysis of food demand elasticities for China and deriving estimates of income, own-price, and cross-price elasticities of demand.</p>

## Method and Materials

Content analysis research is a method used to analyze and review the content of various sources. It involves examining and interpreting the information present in texts, documents, or other forms of communication. This type of research can be applied to different fields, such as science learning, corporate communication, criminology and criminal justice, and English language acquisition. In science learning, content analysis research has been used to explore the effectiveness of the ethno science approach in improving students' abilities and skills (Pratama & Jumadi, 2023). In corporate communication, content analysis has been used to study various aspects, including

corporate social responsibility, corporate reputation, and stakeholder relations (Kelly, 2022). In criminology and criminal justice, content analysis has been used to examine the frequency and content of ethnographic research articles (Copes et al., 2011). In the context of English language acquisition in Thailand, content analysis has been used to analyze the distribution of research topics, publication years, research methods, and data analysis techniques (Maravilla & Maming, 2023). Finally, in science communication, content analysis has been used to study the communication practices of scientists, universities, scientific institutions, and alternative science communicators (Liu, 2022).

## Literature Review

### *The main factors that drive the food industry*

The main factors that drive the food industry include consumer demands for price, quality, pleasure, convenience, and health (Vilas et al., 2023; Egea et al., 2023). The rise of capitalism, globalization, and changes in lifestyle have also played a significant role in shaping the industry (dos Santos et al., 2023). Drive the food industry are the growing charge for productivity, alienation, lack of free time, and stress, which create a market for practical and less conscious eating habits. Additionally, environmental, socio-cultural, political, economic, and demographic factors have a major impact on food systems (Fanzo, & Davis, 2021). The main factors that drive the food industry are environmental, socio-cultural, political and economic, and

demographic drivers, as well as innovation, technology, and infrastructure. Competitiveness drivers such as technical and scale efficiency, technological change, and innovation are crucial for the profitability and productivity of food processing companies (Trnková & Žáková Kroupová, 2021). Furthermore, recent developments suggest a potential de-commoditization process in the agro-food sector, driven by the failure of agricultural trade liberalization, alternative distribution networks, organic and ecological agricultural methods, and a focus on quality in food consumption (Gendron & Audet, 2011). The main factors that drive the food industry are the failure of agricultural trade liberalization, the rise of alternative distribution networks, the reintroduction of organic and ecological agricultural methods, and the "turn to quality" in food consumption.

**Table 1.** Some study on the main factors that drive the food industry

Article	Results
Key drivers of the food chain Corinne Gendron +1 more 01 Jan 2012-Research Papers in Economics	The main factors that drive the food industry are the failure of agricultural trade liberalization, the rise of alternative distribution networks, the reintroduction of organic and ecological agricultural methods, and the "turn to quality" in food consumption.
Передумови ефективного розвитку підприємств харчової промисловості I. М. Ощипок +1 more 16 Apr 2021	The paper does not explicitly mention the main factors that drive the food industry.
Main factors determining the development of food markets Ol'ga Repushevskaya 14 Oct 2022-Russian Journal of Management	The paper does not provide specific information about the main factors that drive the food industry. But authors emphasized on food market.
Análisis bibliométrico para la identificación de factores de innovación en la industria alimenticia Diana Lorena Pineda Ospina 30 Nov 2015-AD-minister	The provided paper discusses the main factors of innovation in the food industry, such as communication channels and participation in the production process by customers, suppliers, and institutions. It does not specifically mention the main factors that drive the food industry.



Modeling of critical profitability factors: empirical research from food industry in Serbia. Jelena Tadić +2 more 25 Jun 2019-Ekonomika Poljoprivrede (1979)	The main factors that drive the food industry in Serbia are efficiency, innovation, quality, and flexibility, according to the research conducted in this paper.
What drives total factor productivity and its growth in post-communist countries? The case of the Czech food industry Ivana Blažková +2 more 09 Apr 2020	The provided paper does not directly address the main factors that drive the food industry. It focuses on investigating factors that drive total factor productivity (TFP) and its growth in the Czech food industry.
Drivers leading to higher food prices: biofuels are not the main factor Paul W. Armah +2 more 22 May 2009-In Vitro Cellular & Developmental Biology – Plant	The main factors driving the food industry, according to the paper, are increased energy costs and the devaluation of the US dollar. The impact of crude oil as a driver has decreased significantly.
Social Drivers In Food Technology Vivian-Lara Silva 03 Dec 2020	The paper does not explicitly mention the main factors that drive the food industry.
La filiera vitivinicola in Puglia : dalla teoria alla pratica Francesco Contò +2 more 01 Aug 2011	The paper does not explicitly mention the main factors that drive the food industry.
Identification of Key Drivers for Sustainable Supply-Chain Management of Fresh Food Based on Rough DEMATEL Juan Yang +3 more 01 Apr 2021-International Journal of Information Systems and Supply Chain Management	The main factors that drive the food industry according to the paper are the competitiveness of the supply chain, food security, and strategic factors.
Key drivers for the food chain P. J. Lillford 01 Jan 2006-Food Australia	The paper discusses the challenge of mapping global influences onto the food industry and anticipating steps to improve its health and wealth. It mentions the use of scenario planning to envision the future of the industry. However, it does not explicitly mention the main factors that drive the food industry.
Modeling of Critical Food Supply Chain Drivers Using DEMATEL Method and Blockchain Technology Santosh Kumar Patidar +2 more 15 Apr 2023-Journal Of The Institution Of Engineers (india): Series C	The main factors that drive the food industry in the Indian context are "Shift towards a sustainable food system in India" (D7), "Social requirements on food security and safety" (D13), and "Growing attention towards food SCM amidst pandemic Covid-19" (D1).
Analysis of the state of the food industry Altynkul Kumashevna Khaimuldinova +2 more 30 Dec 2022-ScienceRise	The paper does not explicitly mention the main factors that drive the food industry.
The rise of big food and agriculture: corporate influence in the food system 25 Oct 2022	The main factors that drive the food industry are financial incentives, technological change, and shifts in the regulatory context.
The economics of the food system revolution. Reardon, T., & Timmer, C. P. (2012). <i>Annu. Rev. Resour. Econ.</i> , 4(1), 225-264.	In this article they examine the economics of these system-wide changes. They focus on the shock to the food system by the rapid transformation in the food industry

*The key trends in the food industry*

The key trends in the food industry include the shift to vegetable diets and the digital transformation in food production and consumption patterns (Hassoun et al., 2022). The industry is responding to changing consumer demands by implementing Omni channel retail strategies, focusing on product differentiation, strengthening e-commerce, and optimizing customer service (Li, 2023) Nanotechnology is also playing a significant role in addressing food safety concerns, with the development of sensors using nanomaterials to detect

toxins, pathogens, and additives in food (Bayat et al., 2022). Additionally, the food industry is focused on increasing added value, producing quality products, and positioning itself in domestic and export markets (Felkai & Kuti, 2022). The adoption of digital technologies, such as artificial intelligence, big data, and the Internet of Things, is accelerating the development of plant-based innovations and improving food system outcomes (Doddamani et al., 2022). These trends highlight the importance of sustainability, innovation, and food safety in the evolving food industry.

**Table 3.** Some study on the key trends in the food industry

Article	Results
The fourth industrial revolution in the food industry-part II: Emerging food trends. Abdo Hassoun +13 more 05 Aug 2022-Critical Reviews in Food Science and Nutrition	The paper discusses emerging food trends in the context of the fourth industrial revolution (Industry 4.0), such as fortified and functional foods, additive manufacturing technologies, cultured meat, precision fermentation, and personalized food.
E-Marketing trends in Food Entrepreneurship: The Future of Food Industry Jwala B +2 more 01 Feb 2019-Journal of emerging technologies and innovative research	The key trends in the food industry mentioned in the paper are Geofencing, Live Video, Content marketing, Ephemeral Marketing, Voice control, and Chabot.
The Emerging trends of microencapsulation : In food industry Ritu Rani Bhakat	The provided paper is about the emerging trends of microencapsulation in the food industry. It does not specifically mention the key trends in the food industry.
Identification of leading consumer trends on the food market Marzena Lemanowicz +1 more 08 May 2019	The paper does not provide information about the key trends in the food industry.
The Dimensions of Enterprise Innovation and Selected Trends on the Food Market Elżbieta Goryńska-Goldmann 01 Jan 2017	The key trends in the food industry mentioned in the paper are functional foods, convenience foods, and minimally processed foods.
Digitization of the food industry enabled by Internet of Things, blockchain, and artificial intelligence 01 Jan 2022	The provided paper discusses key trends in the food industry, including the utilization of IoT, blockchain, intelligent packaging, and artificial intelligence.



<p>Digital transformation in the agri-food industry: recent applications and the role of the COVID-19 pandemic Abdo Hassoun +12 more 18 Jul 2023-Frontiers in sustainable food systems</p>	<p>The paper discusses the trend towards digital solutions in the agri-food industry, driven by the fourth industrial revolution (Industry 4.0) and accelerated by the COVID-19 pandemic.</p>
<p>New trends in the food industry: application of nanosensors in food packaging Thiago Caon +2 more 01 Jan 2017</p>	<p>The provided paper discusses the application of Nano sensors in food packaging, focusing on design, application, and constituents of three main types of Nano sensors. It does not specifically mention key trends in the food industry.</p>
<p>Innovative and Sustainable Food Business Models Paola De Bernardi +1 more 01 Jan 2020</p>	<p>The paper discusses the trends of poverty, malnutrition, hunger, climate change, and social inequalities in the agri-food sector. It also mentions the use of digital techniques and disruptive technologies such as artificial intelligence, precision farming, and block chain in the food industry.</p>
<p>Emerging strategies for the development of food industries. Cristóbal N. Aguilar +9 more 30 Oct 2019-Bioengineered bugs</p>	<p>The paper discusses the key trends in the food industry, including local sourcing, on-the-go food, organic foods, and clean labels.</p>
<p>Nanotechnology: recent trends in food safety, quality and market analysis Zamri Nurfatihah +1 more 01 Jan 2019</p>	<p>The paper discusses the use of nanotechnology in the food industry, including its application in food production, packaging, quality control, and labeling.</p>
<p>Nanotechnology Trends in Food Processing and Food Packaging L.J.S. Undugoda +3 more 27 Feb 2023-Nanoscience &amp; nanotechnology Asia</p>	<p>The provided paper is about nanotechnology trends in food processing and food packaging. It does not mention the key trends in the food industry.</p>
<p>The fourth industrial revolution in the food industry-Part I: Industry 4.0 technologies. Abdo Hassoun +13 more 03 Feb 2022-Critical Reviews in Food Science and Nutrition</p>	<p>The paper mentions that the Industry 4.0 technologies have led to new food trends, such as 3D printed foods. However, specific key trends in the food industry are not mentioned in the paper.</p>
<p>Marketinško usmjeravanje prehrambene industrije prema potrošačima digitalnog doba – generaciji Milenijalaca Silvija Podoreški 12 Apr 2018</p>	<p>The provided paper does not mention the key trends in the food industry.</p>
<p>Introduction to the Special Issue on recent Trends in the Food Industry and Food Chain George Baourakis +2 more 12 Apr 2011-Journal of Food Products Marketing</p>	<p>The paper discusses the recent trends in the food industry, including consolidation, centralization, globalization, and large-scale operations.</p>
<p>Trends and directions in the food industry M. K. Schmidl 01 Jan 2000-Food Australia</p>	<p>The paper does not provide specific information about the key trends in the food industry.</p>
<p>Emerging Trends of Electrochemical Sensors in Food Analysis Ítala M. G. Marx 04 Feb 2023-Electrochem</p>	<p>The provided paper is about the emerging trends of electrochemical sensors in food analysis. It does not specifically mention the key trends in the food industry.</p>

Bio- and Nanosensors in the Food Industry 19 Oct 2022	The provided paper discusses the use of nanotechnology-based biosensors in the food industry, but it does not specifically mention the key trends in the food industry.
Innovation by Food Companies Key to Growth and Profitability Hayden Stewart +1 more 01 Jan 2002	The paper does not provide specific information about the key trends in the food industry.
Nanoscience and nanotechnologies in food industries: opportunities and research trends Shivendu Ranjan +6 more 29 May 2014-Journal of Nanoparticle Research	The provided paper is about the application of nanotechnology in the food industry. It does not mention the key trends in the food industry.

*The challenges and opportunities for the food industry*

The food industry faces challenges in addressing greenhouse gas emissions, food waste, traceability, and innovation. The challenges for the food industry include limited attention to carbon emissions, lack of standardized methodologies for carbon verification, and difficulty achieving carbon neutrality without relying on offsets. Opportunities include comprehensive mitigation strategies and collaboration for sustainability (Liu et al., 2023). The problem of food waste and the need to reduce it through innovative methods. (Morone et al., 2019). Tanwar et al., (2022) revealed that the challenges and opportunities in the food industry, including the need for food traceability, authenticity verification, quality checks, and prevention of fraud. It also highlights the potential benefits of block chain technology in addressing these issues. The challenges faced by the food industry, such as reduced product life cycles and the need to comply with quality and supply chain

requirements. It also highlights the opportunities for innovation and new business models, particularly in the context of the COVID-19 pandemic. (Dabic et al., 2022). Emission hotspots are found in the farm, manufacturing, and post-production stages, with the farm stage often overlooked (Bakalis et al., 2022). Standardized methodologies, accurate data, and reporting are needed for carbon verification. Block chain technology can enhance traceability in the food supply chain, ensuring authenticity, quality, and preventing fraud. The crises has highlighted the need for flexible and collaborative approaches to innovation and new business models in the food industry. Resilience, agility, transparency, and product assurance are important for navigating the challenges in the food production landscape. Industry 4.0 technology enablers can contribute to digitalized and automated food production chains. Overall, the food industry has opportunities to mitigate emissions, reduce food waste, enhance traceability, foster innovation, and improve operational resilience.





**Table 4.** Some study on the challenges and opportunities for the food industry

<b>Article</b>	<b>Results</b>
Challenges and opportunities of the fourth revolution: a brief insight into the future of food James Chapman +6 more 06 Jan 2021-Critical Reviews in Food Science and Nutrition	The paper discusses challenges in the food industry such as adjustments to the value chain, climate change, food security, and health. It also mentions opportunities for improvement through digital agriculture, big data, and sustainable practices.
Food Carbon Footprint: Challenges and Opportunities Nourhan Magdy Abdelrhim +2 more 15 Oct 2022	The paper does not specifically mention the challenges and opportunities for the food industry.
Food packaging and the new coronavirus: challenges and opportunities for the packaging industry post-Covid-19 Gustavo Henrique Moraes +1 more 01 Jan 2023-Brazilian Journal of Food Technology	The provided paper does not specifically mention the challenges and opportunities for the food industry.
Food SMEs' open innovation: Opportunities and challenges 01 Jan 2022	The paper discusses the challenges and opportunities for SMEs and start-ups in the food sector, highlighting the need for a paradigm shift, embracing open innovation, and enhancing collaboration for a prosperous future.
Challenges, trends and opportunities in food processing Pedro Esteves Duarte Augusto 01 Oct 2020-Current opinion in food science	The paper discusses challenges and opportunities in food processing, including topics such as safety, preservation, nutrition, sensorial, wellbeing, and environmental concerns.
Digitalising food manufacturing 01 Sep 2022-Food science & technology	Copilot couldn't generate the response. Please try again after some time.
The fourth industrial revolution in the food industry-Part I: Industry 4.0 technologies. Abdo Hassoun +13 more 03 Feb 2022-Critical Reviews in Food Science and Nutrition	The paper discusses the challenges of climate change, population growth, food waste, and disease outbreaks in the food industry. It also mentions the opportunities brought by Industry 4.0 technologies for sustainable development and addressing these challenges.
The utilization of food waste: Challenges and opportunities Oyenike Makanjuola +2 more 16 Oct 2020	The provided paper does not specifically discuss the challenges and opportunities for the food industry.
Grand Challenges in Sustainable Food Processing José A. Teixeira 04 Jun 2018	The challenges for the food industry include providing high-quality and safe food that complies with sustainability standards. However, these challenges also create opportunities for developing more efficient processing technologies and value from waste.
Challenges in exploiting open innovation's full potential in the food industry with a focus on small and medium enterprises (SMEs) I. Sam Saguy +1 more 01 Aug 2014-Trends in Food Science and Technology	The paper discusses the challenges faced by the food industry, particularly small and medium enterprises (SMEs), and the opportunities that open innovation presents to address these challenges.

<p>Review of Energy Efficiency Technologies in the Food Industry: Trends, Barriers, and Opportunities Jean-Michel Clairand +3 more 06 Mar 2020-IEEE Access</p>	<p>The paper discusses the challenges and opportunities for energy efficiency in the food industry, but does not specifically mention challenges and opportunities for the food industry as a whole.</p>
<p>Open Innovation Opportunities Focusing on Food SMEs Israel Saguy +1 more 01 Jan 2016</p>	<p>The paper discusses the challenges faced by the food industry, including strict safety regulations, evolving consumer needs, shortened product life cycles, and meeting the requirements of various chain players. It also highlights the opportunities that open innovation can provide in addressing these challenges.</p>
<p>Food losses and food waste : the Industry 4.0 opportunity for the sustainability challenge Roberto Ruggieri +3 more 01 Aug 2020</p>	<p>The paper discusses the challenge of food losses and waste in the food industry and highlights the opportunity for Industry 4.0 innovations to reduce waste and adopt a more sustainable lifestyle.</p>
<p>Current Challenges in the Sustainable Valorisation of Agri-Food Wastes: A Review Cristina Berenguer +4 more 22 Dec 2022-Processes</p>	<p>The provided paper discusses challenges and opportunities for the valorisation of agri-food waste, but does not specifically mention challenges and opportunities for the food industry.</p>
<p>Food waste management, valorization, and sustainability in the food industry Semih Ötleş +3 more 01 Jan 2015</p>	<p>The paper discusses the challenges of waste management in the food industry, but does not explicitly mention the opportunities for the industry.</p>
<p>The fourth industrial revolution in the food industry-part II: Emerging food trends. Abdo Hassoun +13 more 05 Aug 2022-Critical Reviews in Food Science and Nutrition</p>	<p>The challenges for the food industry mentioned in the paper include climate change, population growth, urbanization, and the spread of diseases. The opportunities include the use of Industry 4.0 technologies to revolutionize food production and consumption.</p>
<p>Digital transformation in the agri-food industry: recent applications and the role of the COVID-19 pandemic Abdo Hassoun +12 more 18 Jul 2023-Frontiers in sustainable food systems</p>	<p>The paper discusses the challenges and opportunities for the agri-food industry, including the adoption of digital technologies and the role of the COVID-19 pandemic in accelerating digitalization.</p>
<p>Emerging trends in the agri-food sector: Digitalisation and shift to plant-based diets Abdo Hassoun +9 more 17 Nov 2022-Current research in food science</p>	<p>The paper discusses the challenges faced by the food industry, including climate change, pandemics, and wars. It also highlights the opportunities for innovation and technological approaches to address these challenges.</p>
<p>Food Industry Waste 02 Sep 2022</p>	<p>The provided paper discusses the challenges and opportunities for the valorization of food industry waste, but does not specifically mention the challenges and opportunities for the food industry as a whole.</p>
<p>Digital technology enablers for resilient and customer driven food value chains Christos Emmanouilidis +1 more 25 Aug 2020</p>	<p>The paper does not explicitly mention the challenges and opportunities for the food industry. The paper focuses on the need for digital technology enablers in food production chains and the mapping between high performing food production chains and enabling technologies.</p>
<p>Blockchain Integration with end-to-end traceability in the Food Supply Chain Lakshya Bansal +3 more 28 Apr 2022</p>	<p>The challenges in the food industry include lack of traceability and communication, supply of fraudulent food products, and failure in monitoring warehouses. The paper proposes using blockchain technology as a solution.</p>



Blockchain Technology in the Food Industry: A Review of Potentials, Challenges and Future Research Directions Abderahman Rejeb +4 more 26 Oct 2020	The paper discusses the challenges and opportunities of blockchain technology in the food industry, including technical, organizational, and regulatory issues.
Food logistics 4.0: Opportunities and challenges Sandeep Jagtap +5 more 30 Dec 2020	The paper discusses the challenges and opportunities in food logistics, including resource planning, warehouse management, transportation management, predictive maintenance, and data security.
On the benefits and challenges of blockchains for managing food supply chains Panagiota Katsikouli +3 more 01 Apr 2021-Journal of the Science of Food and Agriculture	The provided paper discusses the challenges faced by the food industry, such as food safety, food fraud, and inefficient processes. It also highlights the opportunities offered by blockchain technology for managing supply chains in the food and agricultural sectors.
From open innovation to enginomics: Paradigm shifts ☆ Sam Saguy +1 more 01 Feb 2017-Trends in Food Science and Technology	The paper discusses the challenges and opportunities for the food engineering domain, including the need for new curricula, innovation ecosystem, partnerships, creativity, entrepreneurship, sustainability, and addressing issues like population growth, health and wellness, and nutrition.
Energy and Carbon Footprint of Food Industry S. Naresh Kumar +1 more 01 Jan 2019	The provided paper does not specifically mention the challenges and opportunities for the food industry. It focuses on the energy use and carbon footprint of different types of food industries.
Challenges and opportunities for mitigation in the agricultural sector Louis V. Verchot 01 Jan 2014	The provided paper does not specifically address the challenges and opportunities for the food industry. It focuses on mitigation practices in the agricultural sector, including livestock, crops, and soils.
Foodereum: A Blockchain-based Authenticated Solution for Food Supply Chain V. Kumaresh +3 more	The challenges for the food industry mentioned in the paper include lack of transparency and traceability, third-party interference, high transportation and storage costs, food waste, and poor accountability. The paper also discusses the opportunities for the industry through the use of block chain technology.
Foodereum: A Blockchain-based Authenticated Solution for Food Supply Chain 20 Nov 2022	The paper discusses the challenges in the food industry, including lack of transparency, high costs, food waste, and poor accountability. It also presents the opportunity to use block chain technology to address these challenges.
Low carbon solutions for the food industry H. Schnitzer +2 more 27 Oct 2010	The paper discusses challenges and opportunities for the food industry, including reducing emissions, utilizing waste heat, and improving energy efficiency.

*The most innovative food products on the market*

The most innovative food products on the market include water-soluble food ingredients based on complexes of food biopolymers with liposomes loaded with curcumin and fish oil (Eisner et al., 2020).

Another innovative product is cheese bread with carrots, which offers the idea of speed, ease of preparation, and enjoyment in consumption. The development of innovative food ingredients based on complexes of food biopolymers with phosphatidylcholine liposomes loaded with fish oil and curcumin. It does not mention specific innovative food

products on the market. (Kyriakoudi et al., 2021). Additionally, there are customized food products designed for cancer patients under treatment, addressing their specific nutritional requirements and sensory preferences (Nazzaro et al., 2019; Lucchese-Cheung et al., 2021). The food and beverage industry as a whole is also focused on innovation, with trends such as the

production of nutritional products, functional drinks, convenience food products, supply chain transparency, and innovative packaging (Tueros & Uriarte, 2018). These innovations aim to provide high nutritional value, improve taste and texture, and meet consumer demands for convenience and transparency in the food industry.

**Table 5.** Some study on the most innovative food products on the market

Article	Results
Innovation activities and entrepreneurial strategies in international food sector Apostolos D. Zaridis +1 more 01 Jan 2020	The paper mentions that the top trends in the food and beverage industry include the production of nutritional products with high nutritional value, convenience food products, and innovative packaging.
Innovations in the food packaging market: active packaging Joanna Wyrwa +1 more 27 Mar 2017-European Food Research and Technology	The provided paper is about innovations in the food packaging market, specifically active packaging. It does not mention specific innovative food products on the market.
Innovative Technologies for the Production of Semi-Finished Meat Products as a Factor in the Development of the Consumer Market Olga Chugunova +3 more 01 Jan 2021	The provided paper does not mention the specific innovative food products on the market. The paper focuses on the development of minced meat semi-finished products with added benefits and the use of grain matrix in the production of minced meat products.
Advanced Food Products Prepared Through Academic and Industry Collaboration Dimitris Skalkos 30 Dec 2020	The paper does not provide information about the most innovative food products on the market. The paper discusses a collaboration model between universities and food companies for new product development.
Innovation Activities in the Food Market Marzena Lemanowicz +1 more 01 Jan 2014	The paper discusses innovation activities in the food market, specifically in the segment of new generation products such as dairy desserts and dessert concentrates. It mentions that market leaders in terms of innovative product offers are large concerns and large processing plants. However, it does not specifically mention the most innovative food products on the market.
Innovations in Food Technology Special Issue Jorge B. Velázquez 14 Apr 2011-Food and Bioprocess Technology	The provided paper does not mention specific innovative food products on the market.
Plant-based products: potential, production technology and challenges Isabella Maciel Costa +2 more 11 Oct 2022-The Journal of Engineering and Exact Sciences	The provided paper does not specifically mention the most innovative food products on the market. It focuses on the development and challenges of plant-based products.



Developments in Agricultural Crop Innovations 05 Oct 2022-Annual Review of Resource Economics	The paper discusses two emerging areas of agricultural product development: vertical farming and alternative animal products. It mentions that leafy greens produced in vertical farms and plant-based meat alternatives like burgers and nuggets are innovative food products on the market. However, it does not provide information on the "most" innovative food products.
Development of plant based functional food products: a review Dubale Befikadu Chala +1 more	The provided paper does not mention the most innovative food products on the market. The paper discusses the development of plant-based functional food products and the importance of consumer research and validation of health claims.
Innovation in the food industry: The history of some innovations and of their innovators B Alfonso Valenzuela +1 more 01 Jan 2015	The paper does not provide information about the most innovative food products on the market. The paper discusses the concept of innovation in the food industry and provides examples of successful innovations and innovators in the industry.
Innovation in the Food Industry W. Bruce Traill +1 more 01 Dec 2002-Agribusiness	The provided paper does not mention the most innovative food products on the market.
Innovation in the food industry M.D. Earle 01 May 1997-Trends in Food Science and Technology	The paper does not provide information about the most innovative food products on the market.
Innovation trends in the food industry: The case of functional foods Barbara Bigliardi +1 more 01 Jun 2013-Trends in Food Science and Technology	The paper does not provide information about the most innovative food products on the market. The paper focuses on the analysis of functional foods and their increasing demand.
Innovations of the food products from the perspective of the gen Y consumers Anetta Barska +1 more 01 Jan 2014	The paper does not provide information about the specific innovative food products on the market. The paper focuses on the behavior and perception of Generation Y consumers towards innovations in the food market.
Innovation activities of food industry enterprises Marzena Lemanowicz +1 more 18 Dec 2014	The paper discusses innovation activities in the food industry, specifically in the segment of dairy desserts and dessert concentrates. It mentions that the leading companies in the bio yoghurt range are Olma, EkoLukta, and Granarolo. However, it does not provide information on the most innovative food products on the market in general.
Innovation in the Food Industry: A Comparison Between New and Traditional Categories of Foodstuffs Angela Tarabella +6 more 01 Jan 2019	The provided paper does not mention specific innovative food products on the market. The paper discusses the importance of innovation in the food industry and factors influencing innovation adoption in the Italian food sector.
Innovations in Food Production - Status and Directions of Development Barbara Grzybowska 31 Dec 2012-Olsztyn Economic Journal	The paper does not provide information about specific innovative food products on the market. It focuses on the directions of innovative activities undertaken by food industry enterprises and the manufacturing of food products.
Novel food products from genetically modified crop plants: methods and future prospects Jim M. Dunwell 01 Jun 1998-International Journal of Food Science and Technology	The paper does not provide information about the most innovative food products on the market. The paper discusses the methods and future prospects of genetically modified food products.

<p>Open access•Proceedings Article•DOI                  Innovative product as future vision for the development of the food industry at the turn of new industrialisation                  E. A. Pyanikova +2 more                  01 Jan 2019</p>	<p>The provided paper does not mention the most innovative food products on the market. The paper discusses the development and implementation of innovative products using non-traditional types of raw materials in the food industry.</p>
<p>New foods, new consumers: innovation in food product development                  Raquel Guiné +2 more                  31 Jul 2016-Current Nutrition &amp; Food Science</p>	<p>The paper does not provide information about specific innovative food products on the market. The paper discusses the importance of innovation in the food industry and highlights areas of innovation such as processing technologies and packaging systems.</p>
<p>The comparison of the innovation activities in the food industry                  Eva Rusňáková +1 more                  31 Oct 2013</p>	<p>The paper does not provide information about the most innovative food products on the market. The paper compares and identifies differences in product and process innovations within the food industry in Central European countries.</p>

## Conclusion

Several new trends have been revealed through content analysis of food industry marketing. Health and nutrition are becoming more and more important in marketing strategies. The promotion of this involves promoting ultra-processed foods, snacks, and protein-rich products. Industry 4.0 technologies, like artificial intelligence, smart sensors, and block chain, have revolutionized food production, transportation, and consumption. The emergence of new food trends, such as fortified and functional foods, additive manufacturing, cultured meat, precision fermentation, and personalized food, has been made possible by these technologies. Moreover, the use of online marketing tools such as geofencing, live video, content marketing, ephemeral marketing, voice control, and chatbots has made online food marketing more prominent. A shift towards sustainable food development and a growing awareness of the health and environmental impacts of food systems are reflected in these trends.

Food marketing involves the use of various methods and approaches to promote and sell food products. To attract customers, companies must comprehend consumer behavior and implement effective branding and advertising techniques. The pandemic has caused an increase in the popularity of digital platforms and online applications, which enable convenient and contactless food purchasing. Differentiation and standing out from competitors should be the main focus of marketing strategies, especially in the agricultural sector where products are often standardized and regulated. By emphasizing environmentally friendly production and healthy lifestyles, non-price methods can be employed to achieve this goal. To create a unique and high-end product, it is crucial to improve the brand image and producer's reputation. Understanding consumer needs, using digital platforms, and distinguishing products from competitors are all part of a successful marketing strategy in food marketing.



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