





## SMM for Promoting Healthy Eating: Bibliometric Analysis

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**Abstract:** This article summarizes the arguments and counterarguments within the scientific discussion on the use of social media marketing (SMM) for promoting healthy eating. The main goal of the present study was to analyse the trends and effectiveness of SMM tools in the fields of healthy eating and human behaviour. The systematization of literary sources and approaches to solving the problem of promoting healthy eating has led to a significant increase in attention to interactive marketing strategies in recent years. The relevance of solving this scientific problem lies in the fact that healthy eating is an important component of public health, and SMM can become an effective tool for shaping appropriate habits among the population. The study of the use of SMM in this article is carried out in the following logical sequence: analysis of the literature, bibliometric analysis of publication dynamics and geography, identification of key trends and research clusters, and testing hypotheses about the influence of regional features and innovative SMM tools. The methodological toolkit of the study includes bibliometric analysis methods, with the research period spanning 1969–2024. The object of the study consists of scientific publications from the Scopus and Web of Science databases, as they provide the broadest understanding of global trends. The article presents the results of an empirical analysis of the dynamics of publication activity and key terms related to the research topic. This analysis revealed that over the past 5 years, increased attention has been given to the use of interactive SMM tools for promoting healthy eating. The study empirically confirms and theoretically proves that cultural and regional features influence the choice of marketing strategies in SMM and that innovative tools contribute to improving the effectiveness of such campaigns. The results of this study may be useful for marketers, public health researchers, and organizations involved in promoting a healthy lifestyle, as they allow for the adaptation of SMM strategies to cultural and regional characteristics. Moreover, the findings of this study may serve as a foundation for further research on the effectiveness of digital technologies in shaping healthy habits. The identified trends will promote the development of innovative approaches to healthy eating promotion through the use of personalized content.

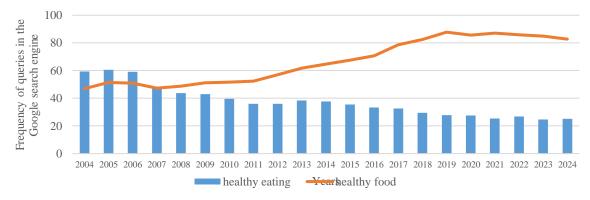
**Keywords:** food habits; healthy eating; healthy food; promotion; SMM.

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**1. Introduction.** Healthy eating is a key component in maintaining individual and public health. Dietary habits are influenced by social, economic, cultural, environmental, and geographical factors, which necessitate a comprehensive approach to creating a healthy food environment. The main goal is to ensure access to a balanced diet that includes diverse, safe, and nutritious foods. Governments, the private sector, and society must work together to create conditions that promote healthy eating.

Effective policies include encouraging the production of fresh fruits and vegetables, limiting the marketing of unhealthy products, ensuring the availability of nutritious food in schools and workplaces, and using economic regulatory tools such as taxes and subsidies. Particular attention should be given to informing the population, especially through educational programs and food labelling. Schools are important platforms for shaping healthy eating habits in children, and the development of educational initiatives in cooking and nutrition contributes to raising awareness. Supporting breastfeeding through appropriate policies is also an integral part of promoting healthy eating.

Thus, achieving success requires cross-sector collaboration to implement systemic changes aimed at creating a food environment that encourages healthy choices. The implementation of such measures is an investment in the nation's health, reducing the risk of chronic diseases and improving the population's quality of life. To examine the relevance of the study in greater detail, an analysis of Google search queries for the keywords "healthy eating" and "healthy food" was conducted (Figure 1).



**Figure 1.** Dynamics of the queries "healthy eating" and "healthy food" in the Google search engine, 2004–2024.

Sources: developed by the authors on the basis of Google Trends (2024).

From 2004–2006, there was a relatively stable level of search queries, with an average frequency of approximately 55–60 units. Starting in 2007, the frequency of "healthy eating" queries began to decline and stabilized at approximately 40–45 units during the period from 2009--2024. Overall, interest in the topic of "healthy eating" during this period demonstrated a downwards trend. Searches for "healthy food" fluctuated between 40–50 units from 2004–2008. Starting in 2009, the popularity of "healthy food" began to rise, peaking between 2018 and 2020, with a frequency exceeding 90 units. After 2020, a slight decline in search frequency was observed, but the level remained relatively high.

Accordingly, the popularity of the search term "healthy eating" has gradually decreased over the past two decades, which may indicate reduced interest in the concept of healthy eating as a behavioural model. In contrast, searches for "healthy food" show consistent growth, reflecting a shift in focus from behavioural aspects (how to eat properly) to specific products associated with health. The peak increase in the popularity of "healthy food" from 2018–2020 was likely driven by global trends, such as growing interest in organic food, the rise of plant-based diets, and heightened attention to health during the COVID-19 pandemic.

The decline in interest in both terms after 2020 may be related to oversaturation of the informational space with this topic or growing interest in alternative concepts, such as functional nutrition or personalized diets.

Overall, the analysis of the graph emphasizes the importance of adapting approaches to promote healthy eating, considering changes in consumer interests and global trends. Additionally, we analysed the geographical distribution of the popularity of search queries for "healthy eating" and "healthy food" in various countries (Figure 2).

The map shows that the term "healthy food" is significantly more popular in most countries worldwide, including Europe, Asia, Africa, South America, Australia and Oceania. This suggests that the majority of

search engine users look specifically for information about healthy products rather than general principles of healthy eating. Notably, the blue colour on the map is almost absent, indicating minimal interest in the search term "healthy eating" at the global level.



Countries	healthy eating	healthy food	
Liechtenstein	57	43	
Fiji	55	45	
Anguilla	53	47	
Monaco	50	50	
Botswana	49	51	
Dominica	49	51	
United Kingdom	48	52	
Gibraltar	48	52	
Ireland	48	52	
Botswana	48	52	
Barbados	48	52	

**Figure 2.** Geography of the queries "healthy eating" and "healthy food" in the Google search engine Sources: developed by the authors based on Google Trends (2024).

The popularity of "healthy food" may be attributed to its perception as a more concrete and understandable term for most users. In contrast, "healthy eating" as a concept requires a deeper understanding of a healthy lifestyle, which might be less appealing to a mass audience. This distribution reflects a global trend—a focus on the accessibility of healthy products and marketing campaigns aimed at promoting specific items rather than an overall food culture.

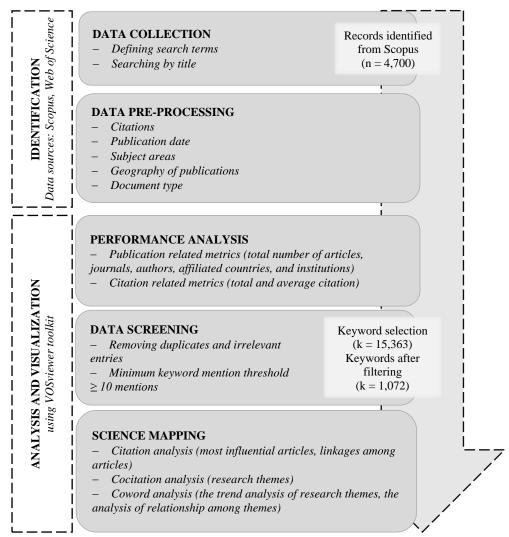
Accordingly, the dominance of the term "healthy food" on the map (Figure 2) indicates that consumers are more focused on finding specific products or food solutions rather than exploring principles of dietary behaviour. This opens up opportunities for businesses and governments to promote accessible healthy products, as the demand for such information is globally high.

The low interest in "healthy eating" highlights the need for more active educational efforts aimed at fostering healthy eating habits, which have a long-term impact on public health. In summary, the focus on specific products is a key component of the global interest in a healthy lifestyle. However, long-term programs with an educational component remain critically important

**2. Methodology and research methods.** Research on the feasibility of utilizing SMM to promote healthy eating has been conducted in several stages. The study applies the PRISMA approach to systematically identify and analyse relevant research studies (Fig. 3). This method ensures a rigorous and transparent review process by following predefined criteria for literature selection and analysis.

In the initial phase, a comprehensive review of over 4,700 publications was conducted. The search focused on titles containing the keywords "SMM" or "social media marketing" and "healthy eating" within the Scopus and Web of Science databases. The search criteria aimed to capture a wide range of studies related to the interplay between social media marketing strategies and their influence on healthy eating behaviours. The resulting data were meticulously catalogued and organized in Excel to enable systematic processing and analysis.

The second phase involved the creation of a bibliographic map to visually represent and cluster research trends. This was achieved by extracting relevant data from the Scopus (2024) and Web of Science (2024) databases and utilizing VOSviewer (2024), a robust tool for research visualization and cluster analysis. VOSviewer was instrumental in identifying relationships between publications, authors, and thematic areas, enabling a deeper understanding of the intellectual structure of the research field. The bibliometric analysis revealed key patterns in the research landscape. From the initial dataset, a total of 1,072 out of 15,363 unique keywords were identified as meeting the threshold of a minimum of 10 occurrences across titles, keywords, and abstracts. These keywords represented core topics and themes that frequently appeared in the literature, reflecting the dominant areas of interest and ongoing discussions within the academic community. The analysis facilitated the grouping of keywords into clusters, highlighting thematic interconnections and emerging trends in the field of social media marketing and healthy eating.



**Figure 3.** Research design considering the PRISMA technique Sources: developed by the authors.

This structured approach not only ensured a comprehensive review of the literature but also provided valuable insights into the evolving dynamics of social media marketing strategies aimed at promoting healthy eating behaviours

**3. Results**. When scientific publications indexed in the Scopus (2024) and Web of Science (2024) scientometric databases were analysed, the studies with the highest number of citations (Table 1) were identified on the basis of the keywords "SMM", "social media marketing", and "healthy eating" in their titles.

The study by Willett et al. (1995), with the highest citation count, presents the Mediterranean diet as a cultural model of healthy eating, emphasizing its benefits for health and longevity. This research provides a foundation for developing SMM contents that promote healthy eating by popularizing the Mediterranean diet as a trending nutritional approach.

The article by Michie et al. (2009) analyses effective behavioural change techniques for healthy eating and physical activity. These techniques can be adapted for SMM campaigns to create content that motivates changes in dietary habits.

The authors of Krebs–Smith et al. (2018) updated the Healthy Eating Index, which measures adherence to dietary recommendations. This index serves as a basis for creating informative content that raises awareness about nutritional standards via social media.

In the study by De Vries et al. (2012), factors influencing the popularity of brand posts on social media were explored. This enables the development of effective strategies for promoting healthy eating through SMM, with a focus on audience engagement.

**Table 1.** Top 10 scientific publications on the research topic with the highest citation rate

Article Title	Authors	Source	Year of Publication	Number of Citations
Mediterranean diet pyramid: A cultural	Willett W.C., Sacks F.,	American Journal of	1995	1,983
	Trichopoulou A., Helsing E., Trichopoulos D.	Clinical Nutrition		
Effective Techniques in Healthy Eating and Physical Activity Interventions: A Meta-Regression	Michie S., Abraham C., Whittington C., McAteer J., Gupta S.	Health Psychology	2009	1,640
Update of the Healthy Eating Index: HEI-2015	Krebs-Smith S.M., Pannucci T.E., Subar A.F., Wilson M.M., Reedy J.	Journal of the Academy of Nutrition and Dietetics	2018	1,411
Popularity of Brand Posts on Brand Fan Pages: An Investigation of the Effects of Social Media Marketing	De Vries L., Gensler S., Leeflang P.S.H.	Journal of Interactive Marketing	2012	1,391
Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand		Journal of Business Research	2012	1,384
A refined taxonomy of behaviour change techniques to help people change their physical activity and healthy eating behaviours: The CALO-RE taxonomy	Sniehotta F.F., Bishop	Psychology and Health	2011	1,268
The Healthy Eating Index. Design and Applications	Kennedy E.T., Ohls J., Carlson S., Fleming k.	Journal of the American Dietetic Association	1995	1,190
Update of the Healthy Eating Index: HEI-2010	Guenther P.M., Casavale K.O., Reedy J., Kahle L.L., Krebs-Smith S.M.	Journal of the Academy of Nutrition and Dietetics	2013	1,101
Setting the future of digital and social media marketing research: Perspectives and research propositions	Dwivedi Y.K., Ismagilova E., Hughes D.L., Tran G.A., Wang Y.	of Information Management	2021	1,003
Creative Strategies in Social Media Marketing: An Exploratory Study of Branded Social Content and Consumer Engagement	· · · · · · · · · · · · · · · · · · ·	Psychology and Marketing	2015	870

Sources: developed by the authors based on Scopus (2024; Web of Science, 2024).

Kim & Ko (2012) investigate how SMM activities influence brand perception and customer loyalty. In the context of healthy eating, this research can be applied to campaigns fostering trust in healthy food brands.

Michie et al. (2011) propose a classification of behavioural change techniques that can be integrated into SMM campaigns to encourage healthy eating habits. The article by Kennedy et al. (1995) describes the creation of the Healthy Eating Index (HEI), which evaluates diet quality. In the SMM context, this index is used for educational content. Authors (Guenther P. M. et al., 2008; Guenther et al., 2013; Guenther et al., 2014; Reedy, 2018; Schwingshackl et al., 2018) have further explored changes in the HEI (HEI-2010), helping to understand diet quality and dietary shifts.

Authors Dwivedi et al. (2021) and Ashley & Tuten (2015) discuss research perspectives in SMM and creative strategies that enhance audience interaction. These studies provide a general framework for understanding modern trends and developing strategies for promoting healthy eating through social media.

Musat et al. (2021) examined the influence of SMM on the eating habits and physical activity of Generation Z students in Romania. This study highlights the impact of social media on behaviour related to healthy eating and serves as an example for creating successful campaigns in this field.

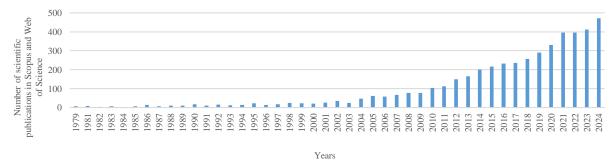
In the article by Onem & Selvi (2024), an influencer impact assessment scale is presented, highlighting the important role of influencers in promoting healthy eating through SMM. This research aids in evaluating their effectiveness. The authors (Godey et al., 2016; Felix et al., 2017; Chan et al., 2011; Liu et al., 2021) conducted an analysis of luxury brands' marketing efforts on social media, their impact on brand equity, and consumer

behaviour. Relevant studies (Michaelidou et al., 2011) have also examined the usage, barriers, and measurement methods of social media marketing for small and medium–sized B2B brands.

Research on healthy eating (Pierce et al., 2007; Story et al., 2009; Samdal et al., 2017) provides a scientific basis for shaping the content of such campaigns, relying on proven approaches to improve dietary behavior and assess its outcomes. Articles (Kim & Ko, 2010; Lipsman et al., 2012; Stephen et al., 2016; Zhu & Chen, 2015) have investigated how social media can influence consumers, their relationships with brands, and their behavioural intentions. Many studies (Schwingshackl & Hoffmann, 2015; Cooke, 2007; Conner et al., 2002; Verplanken & Faes, 1999) have focused on the impact of diet and its evaluation on health, as well as the effectiveness of methods for promoting it. Some works (Chibotaru et al., 2008; Nielsen et al., 2007) are indirectly related to promoting healthy eating through SMM but may be useful for certain aspects of research in the medical field. Studies by researchers (Li et al., 2021; Shareef et al., 2019; Chen et al., 2019; Seo et al., 2018; Chang et al., 2015; Wang & Kim, 2017) provide tools for effectively utilizing social media to engage audiences and create impactful campaigns (Mozaffarian et al., 2018; Cadario & Chandon, 2020; Shan et al., 2020). Research on healthy eating (Shepherd et al., 2006; Wechsler et al., 2000; Arredondo et al., 2006; Schwartz et al., 2011) highlights behavioral aspects, barriers (Croll et al., 2001; Hesketh et al., 2005; McGill et al., 2015), and opportunities for promoting a healthy lifestyle that can be adapted to SMM content. Additionally, studies by Cherkaoui et al. (2024), Huynh (2024), Nadason et al. (2024), Zouaoui & Hamdi (2024), and Ocel et al. (2023) provide valuable insights into analysing SMM trends, ranging from influencer impact and content personalization to neuromarketing (Chygryn et al., 2024) and omnichannel approaches (Hasbullah et al., 2024; Oe & Yamaoka, 2023). These findings can be integrated into SMM campaigns to promote healthy eating effectively and create sustainable connections with the audience.

In summary, the above-discussed studies provide a foundation for developing SMM strategies that effectively promote healthy eating. They include scientifically grounded dietary recommendations, behavioural change techniques, audience analysis, and content effectiveness, enabling the creation of trend-driven campaigns with high engagement levels. The analysis of the dataset revealed that the earliest publication was 1969. This article (Stare & Dwyer, 1969) is one of the first scientific works dedicated to the importance of healthy eating among adolescents. Stare & Dwyer (1969) emphasized the key role of balanced nutrition in shaping healthy habits during adolescence. They analyse the needs of the growing body, examine common deficiencies among teenagers, and provide recommendations for improving the diet of young people. Additionally, attention is given to educational initiatives in schools aimed at promoting a healthy lifestyle. The overall dynamics of publication activity in the Scopus and Web of Science scientometric databases on the research topic are presented in Figure 4. The graph (Figure 4) shows that the number of scientific publications in the Scopus and Web of Science databases gradually increased during the 1980s and 1990s, with a sharp increase starting in the 2000s. This indicates a significant growth in interest in the topic within the scientific community. Overall, three key growth periods can be identified:

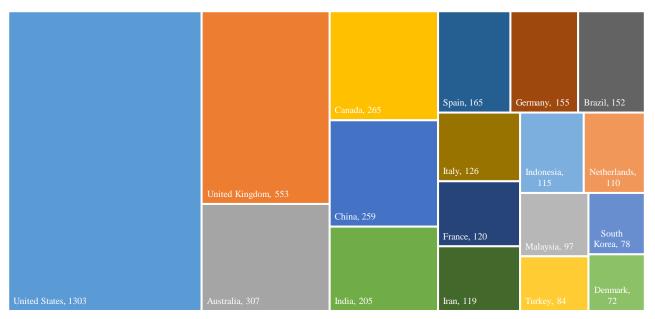
- -1979-1999: minimal growth, with publications being sporadic. This period can be characterized as the initial stage of interest in healthy eating trends and their promotion.
- -2000-2010: noticeable acceleration. This period marked the active development of digitalization, which may be attributed to technological breakthroughs, increased research funding, or societal interest in the topic.
- -2011-2022: exponential growth. The most significant increase occurred between 2016 and 2022, likely due to the emergence of new research methods, the globalization of scientific exchange, and a stronger interdisciplinary approach.



**Figure 4.** Dynamics of scientific publications in Scopus and Web of Science, 1979–2024 Sources: developed by the authors (Scopus and Web of Science, 2024).

In addition to the overall dynamics of publication activity, the global distribution of scientific publications on the topic of SMM for promoting healthy eating was analysed. The graph (Figure 5) presents the number of scientific publications in Scopus and Web of Science by country.

The United States has the highest number of publications (1,303), accounting for a substantial portion of the total. This reflects the high level of activity among American researchers in this field. The United Kingdom ranks second with 553 publications, highlighting significant interest in the European region. Australia holds the third position with 307 publications, likely due to growing attention to healthy lifestyles in the country.



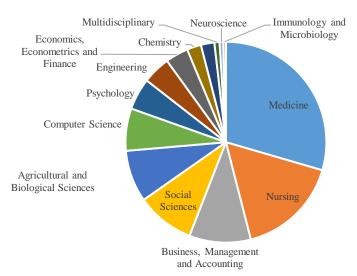
**Figure 5.** Geography of scientific publications in Scopus and Web of Science by research topic. Sources: developed by the authors (Scopus and Web of Science, 2024).

Moderate levels of activity are observed in Canada (265), China (259), and India (205). These countries represent a significant number of studies but lag behind leaders. In particular, China and India may owe their activity to the rapid development of digital technologies and social media in these regions.

European countries such as Spain (165), Germany (155), Italy (126), France (120), and the Netherlands (110) maintain stable numbers of studies, reflecting a sustained interest in healthy eating as part of social and cultural values. Countries with smaller volumes of research include Indonesia (115), Malaysia (97), South Korea (78), Turkey (84), and Denmark (72). While these countries have fewer publications, their presence indicates a gradual increase in interest in this topic globally.

In summary, healthy eating and its promotion through SMM remain relevant research topics across many countries. The highest number of publications is observed in countries with advanced healthcare and research systems, driven by greater resources and interest in the impact of healthy lifestyles on populations. In the United States, a significant volume of publications may be attributed to investments in scientific research, strong traditions in studying marketing strategies, and a wealth of data available for analysis.

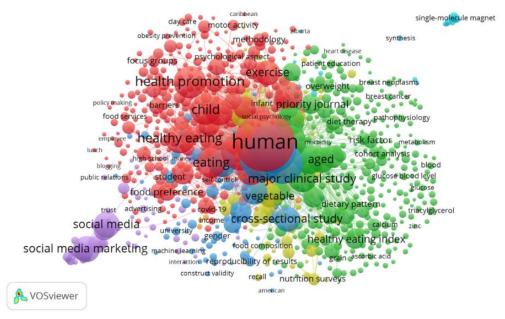
China, India, and Indonesia have published a substantial number of publications, suggesting that Asian countries are also actively exploring this topic, particularly given the rapid development of social media. The distribution of publications indicates that this topic integrates aspects of medicine, marketing, technology, and social behaviour, attracting researchers from various disciplines, as confirmed in Figure 6.



**Figure 6.** Distribution of scientific publications by research area in Scopus and Web of Science. Sources: Developed by the authors (Scopus and Web of Science, 2024).

Accordingly, medicine and social sciences are key areas of research. The large number of publications in the fields of medicine, nursing and social sciences demonstrates that healthy eating and SMM are most often considered in the context of their impact on health and consumer behaviour.

The fields of business and computer science indicate significant interest in the use of modern marketing approaches and technologies to promote healthy eating. The presence of publications in different areas confirms the interdisciplinary nature of research, which requires the involvement of knowledge from many fields. Considering the results obtained, we conducted a bibliometric analysis of the keywords of the sample of scientific publications to identify the main areas of research. Figure 7 presents a bibliometric map visualizing connection between keywords on the basis of their co-occurrence in scientific publications indexed in the Scopus database. The generated visualization map identified seven clusters.



**Figure 7.** Bibliometric map of keywords in the researched articles Sources: developed by the authors (VOSviewer, 2024).

The red cluster contains the largest number of key terms (316) and focuses on aspects of healthy eating, its impact on children, and public health. Key terms include "human" (Links: 842; occurrences: 2260), "child"

(Links: 758; occurrences: 564), "feeding behaviour" (Links: 820; occurrences: 934), "physical activity" (Links: 783; occurrences: 495), and "healthy eating" (Links: 748; occurrences: 541).

The green cluster (309 terms) focuses on clinical research and physiological aspects, such as "risk factor" (Links: 600; occurrences: 138), "dietary pattern" (Links: 516; occurrences: 98), "cohort analysis" (Links: 467; occurrences: 95), and "metabolism" (Links: 257; occurrences: 38).

The blue cluster comprises 82 terms related to methodology and new approaches to assessing the effectiveness of healthy eating, such as "questionnaire" (Links: 791; occurrences: 449) and "cross-sectional study" (Links: 749; occurrences: 395).

The purple cluster (62 terms) is associated with social media and marketing, including "social media marketing" (Links: 108; occurrences: 447), "public relations" (Links: 118; occurrences: 20), and "trust" (Links: 125; occurrences: 28).

The yellow cluster (63 terms) represents terminology describing healthy eating behaviours, with key terms such as "food habits" (Links: 632; occurrences: 255), "diet" (Links: 823; occurrences: 910), and "nutrition policy" (Links: 628; occurrences: 222).

Strong links between terms such as "healthy eating" and "health promotion" indicate the integration of these themes into research. The connection between social media and healthy eating highlights the importance of information campaigns in promoting a healthy lifestyle. For example, a "single-molecule magnet" appears isolated, which may suggest a random link or a niche topic not central to the primary research.

Frequent terms such as "cross-sectional study" and "reproducibility of results" emphasize the significance of methodological accuracy and consistency in scientific research. The study of "risk factors" related to nutrition is crucial, as they directly impact population health. Bibliometric analysis shows that leveraging social media to promote healthy eating ideas can be an effective tool, as indicated by the interconnection of these themes on the map (Figure 7).

The link between social media and healthy eating underscores the role of communication and trust in educating the public about healthy eating. In the present world, SMM campaigns can serve as powerful tools for shaping healthy habits. For example, social platforms can be used to popularize healthy eating through influencers, create viral content (e.g., recipes, videos), and foster discussions.

Keywords such as "child", "student", "income", and "high school" indicate diverse target audiences for marketing campaigns. For children and students, interactive formats such as games or challenges on TikTok and Instagram may be effective. Considering the income levels of the target audience is also essential, as it influences messaging about the affordability of healthy eating.

Terms such as "barriers", "self-control", and "trust" indicate that healthy eating is often perceived as expensive or difficult. SMM campaigns can help dispel these stereotypes by showcasing simple, budget-friendly recipes and real success stories. "Trust" remains critical—authentic content and user reviews can help overcome skepticism.

According to the bibliometric map, terms such as "reproducibility of results" and "interaction" highlight the need for analytics in SMM campaigns, including reach, engagement, and raising awareness about healthy eating. Overall, the study demonstrated that promoting healthy eating through social media and engaging diverse audiences are closely interconnected. SMM trends, such as influencer marketing, interactive content, and targeting, can play a vital role in changing public habits. The use of bibliometric maps helps identify aspects that need to be strengthened to create effective campaigns.

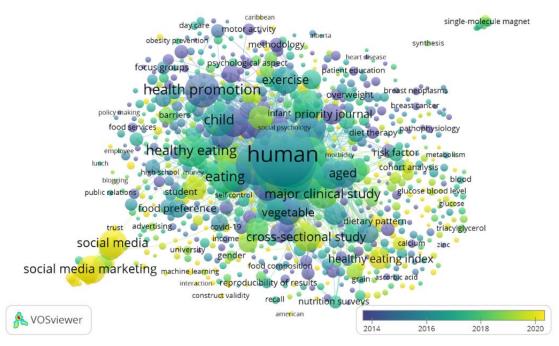
To further understand key research trends, a map of the evolution of key terms was developed (Figure 8), illustrating the main directions of studies within the scientific community.

On the presented bibliometric map (Figure 8), the keywords are displayed along with their evolution over time, as indicated by the colour scale. The main trends identified are as follows:

-Until 2016, the blue and purple clusters predominantly included terms related to fundamental concepts such as "cross-sectional study", "major clinical study", and "health promotion". The focus during this period was on fundamental health and nutrition research. Additionally, methodological terms such as "reproducibility of results" and "construct validity" began to emerge.

-From 2017 onwards, the green, olive, and yellow clusters highlighted the active development of topics related to social media and healthy eating promotion. These were characterized by keywords such as "social media", "social media marketing", "advertising", and "trust". This reflects a shift in emphasis from clinical studies to social studies and audience interaction. Additionally, increased attention has been given to specific aspects of healthy eating, such as the "healthy eating index", "dietary pattern", and "food preference".

On the basis of the results of the bibliometric analysis of the evolution of keywords, it can be concluded that there has been a shift in the focus of the research field from general concepts (human health) to specific practical applications (studying the impact of media, risks, and social trends). The integration of digital tools is also evident, as social media and machine learning have gradually become significant elements in studying the effects of informational campaigns on people's behaviour.



**Figure 8.** Bibliometric map of the evolution of keywords in the researched articles Sources: Developed by the authors (VOSviewer, 2024).

**4. Conclusions**. Healthy eating is a vital component of overall health, and ensuring access to a balanced diet requires a comprehensive approach. Analysis of search queries reveals a decline in interest in general concepts of nutrition ("healthy eating") and a rise in the popularity of specific products ("healthy food"), reflecting a shift towards practical aspects. Effective influence demands collaboration between governments, businesses, and society to promote awareness and accessibility of healthy foods as a key investment in quality of life.

Research has demonstrated an interdisciplinary approach to popularizing healthy eating through SMM, integrating medical, social, and marketing aspects. Bibliometric analysis identified key trends, including the influence of the Mediterranean diet, behavioural change techniques, dietary quality indices, and the role of influencers. The results highlight increasing interest in interactive SMM tools over recent years, considering cultural and regional specifics, making this topic relevant for further research and practical application.

The dynamics of scientific publications reveal a growing interest in healthy eating and its promotion through SMM, particularly since the 2000s. Bibliometric analysis shows the integration of various knowledge domains – from medicine to social media – and the evolution of research from fundamental concepts to practical applications, underscoring the importance of interdisciplinary approaches for the effective promotion of a healthy lifestyle.

The findings suggest several critical policy implications for promoting healthy eating through SMM. Policymakers should prioritize public-private partnerships to improve access to and awareness of healthy food options. Regulatory frameworks can encourage businesses to incorporate health-promoting messages into their marketing strategies while maintaining transparency and combating misinformation. Additionally, policies can incentivize the creation of culturally and regionally tailored campaigns to address specific dietary needs and preferences, making healthy eating initiatives more impactful and inclusive. Educational programs that integrate digital literacy and nutrition awareness can also empower individuals to make informed dietary choices.

Despite the significant insights provided, the study is not without limitations. The reliance on Scopus and Web of Science databases may result in the exclusion of relevant publications from other sources, potentially

limiting the comprehensiveness of the analysis. Additionally, the bibliometric approach identifies trends and clusters but does not delve deeply into qualitative aspects of how SMM tools influence behavior change. The study also does not consider the impact of rapidly evolving digital platforms and technologies, which could significantly alter the landscape of SMM and healthy eating promotion. Future research should address these limitations by incorporating broader data sources, qualitative analyses, and assessments of emerging digital tools.

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Data availability statement: Not applicable.

**Informed Consent Statement**: Informed consent was obtained from all the subjects involved in the study.

## References

- 1. Arredondo, E. M., Elder, J. P., Ayala, G. X., Campbell, N., Baquero, B., & Duerksen, S. (2006). Is parenting style related to children's healthy eating and physical activity in Latino families? *Health education research*, 21(6), 862–871. [Google Scholar] [CrossRef]
- 2. Ashley, C., & Tuten, T. (2015). Creative strategies in social media marketing: An exploratory study of branded social content and consumer engagement. *Psychology & marketing*, 32(1), 15–27. [Google Scholar] [CrossRef]
- 3. Cadario, R., & Chandon, P. (2020). Which healthy eating nudges work best? A meta-analysis of field experiments. *Marketing Science*, 39(3), 465–486. [Google Scholar] [CrossRef]
- 4. Chan, N. L., & Guillet, B. D. (2011). Investigation of social media marketing: how does the hotel industry in Hong Kong perform in marketing on social media websites? *Journal of Travel & Tourism Marketing*, 28(4), 345–368. [Google Scholar] [CrossRef]
- 5. Chang, Y. T., Yu, H., & Lu, H. P. (2015). Persuasive messages, popularity cohesion, and message diffusion in social media marketing. *Journal of Business Research*, 68(4), 777–782. [Google Scholar] [CrossRef]
- 6. Chen, S. C., & Lin, C. P. (2019). Understanding the effect of social media marketing activities: The mediation of social identification, perceived value, and satisfaction. *Technological forecasting and social change*, 140, 22–32. [Google Scholar] [CrossRef]
- 7. Cherkaoui, N., El Handri, K., Medard, D. Y, T., El Hassani, Y., & Errafyg, A. (2024). Consumer Behaviour: Analysing Marketing Campaigns through Recommender Systems and Statistical Techniques. *Marketing and Management of Innovations*, 15(3), 1–12. [Google Scholar] [CrossRef]
- 8. Chibotaru, L. F., Ungur, L., Aronica, C., Elmoll, H., Pilet, G., & Luneau, D. (2008). Structure, magnetism, and theoretical study of a mixed-valence CoII3CoIII4 heptanuclear wheel: lack of SMM behavior despite negative magnetic anisotropy. *Journal of the American Chemical Society*, *130*(37), 12445–12455. [Google Scholar]
- 9. Chygryn, O., Shevchenko, K., & Tuliakov, O. (2024). Neuromarketing as a mechanism of communication with the consumer: the case for small business. *Marketing i menedžment innovacij*, 15(2), 26–38. [Google Scholar] [CrossRef]
- 10. Conner, M., Norman, P., & Bell, R. (2002). The theory of planned behaviour and healthy eating. *Health psychology*, 21(2), 194. [Google Scholar] [CrossRef]
- 11. Cooke, L. (2007). The importance of exposure for healthy eating in childhood: a review. *Journal of human nutrition and dietetics*, 20(4), 294–301. [Google Scholar] [CrossRef]
- 12. Croll, J. K., Neumark-Sztainer, D., & Story, M. (2001). Healthy eating: what does it mean to adolescents?. *Journal of nutrition education*, 33(4), 193-198. [Google Scholar] [CrossRef]
- 13. De Vries, L., Gensler, S., & Leeflang, P. S. (2012). Popularity of brand posts on brand fan pages: An investigation of the effects of social media marketing. *Journal of interactive marketing*, 26(2), 83–91. [Google Scholar] [CrossRef]
- 14. Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., ... & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International journal of information management*, 59, 102168. [Google Scholar] [CrossRef]
- 15. Felix, R., Rauschnabel, P. A., & Hinsch, C. (2017). Elements of strategic social media marketing: A holistic framework. *Journal of business research*, 70, 118–126. [Google Scholar] [CrossRef]
- 16. Godey, B., Manthiou, A., Pederzoli, D., Rokka, J., Aiello, G., Donvito, R., & Singh, R. (2016). Social media marketing efforts of luxury brands: Influence on brand equity and consumer behavior. *Journal of business research*, 69(12), 5833–5841. [Google Scholar] [CrossRef]
  - 17. Google Trends (2024). [Link]
- 18. Guenther, P. M., Casavale, K. O., Reedy, J., Kirkpatrick, S. I., Hiza, H. A., Kuczynski, K. J., ... & Krebs-Smith, S. M. (2013). Update of the healthy eating index: HEI-2010. *Journal of the Academy of Nutrition and Dietetics*, 113(4), 569–580. [Google Scholar] [CrossRef]

- 19. Guenther, P. M., Kirkpatrick, S. I., Reedy, J., Krebs-Smith, S. M., Buckman, D. W., Dodd, K. W., ... & Carroll, R. J. (2014). The Healthy Eating Index-2010 is a valid and reliable measure of diet quality according to the 2010 Dietary Guidelines for Americans. *The Journal of nutrition*, 144(3), 399–407. [Google Scholar] [CrossRef]
- 20. Guenther, P. M., Reedy, J., & Krebs-Smith, S. M. (2008). Development of the healthy eating index-2005. *Journal of the American Dietetic Association*, 108(11), 1896–1901. [Google Scholar] [CrossRef]
- 21. Hasbullah, N. N., Kiflee, A. K. R., Anwar, S., & Ramachandran, K. K. (2024). Mapping the trend of digital transformation in omni-channel retailing: a bibliometric analysis. *Marketing i menedžment innovacij, 15*(1), 29–40. [Google Scholar] [CrossRef]
- 22. Hesketh, K., Waters, E., Green, J., Salmon, L., & Williams, J. (2005). Healthy eating, activity and obesity prevention: a qualitative study of parent and child perceptions in Australia. Health promotion international, 20(1), 19–26. [Google Scholar] [CrossRef]
- 23. Huynh, Q. L. (2024). Ranking the importance of marketing strategies in building client loyalty. *Marketing i menedžment innovacij*, 15(2), 1–12. [Google Scholar] [CrossRef]
- 24. Kim, A. J., & Ko, E. (2010). Impacts of luxury fashion brand's social media marketing on customer relationship and purchase intention. *Journal of Global fashion marketing*, 1(3), 164–171. [Google Scholar] [CrossRef]
- 25. Kim, A. J., & Ko, E. (2012). Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand. *Journal of Business research*, 65(10), 1480-1486. [Google Scholar] [CrossRef]
- 26. Krebs-Smith, S. M., Pannucci, T. E., Subar, A. F., Kirkpatrick, S. I., Lerman, J. L., Tooze, J. A., ... & Reedy, J. (2018). Update of the healthy eating index: HEI-2015. *Journal of the Academy of Nutrition and Dietetics*, 118(9), 1591–1602. [Google Scholar] [CrossRef]
- 27. Li, F., Larimo, J., & Leonidou, L. C. (2021). Social media marketing strategy: definition, conceptualization, taxonomy, validation, and future agenda. *Journal of the Academy of Marketing Science*, 49, 51–70. [Google Scholar] [CrossRef]
- 28. Lipsman, A., Mudd, G., Rich, M., & Bruich, S. (2012). The power of "like": How brands reach (and influence) fans through social-media marketing. *Journal of Advertising research*, 52(1), 40–52. [Google Scholar]
- 29. Liu, X., Shin, H., & Burns, A. C. (2021). Examining the impact of luxury brand's social media marketing on customer engagement: Using big data analytics and natural language processing. *Journal of Business research*, 125, 815–826. [Google Scholar] [CrossRef]
- 30. McGill, R., Anwar, E., Orton, L., Bromley, H., Lloyd-Williams, F., O'Flaherty, M., ... & Capewell, S. (2015). Are interventions to promote healthy eating equally effective for all? Systematic review of socioeconomic inequalities in impact. *BMC public health*, 15, 1–15. [Google Scholar] [CrossRef]
- 31. Michaelidou, N., Siamagka, N. T., & Christodoulides, G. (2011). Usage, barriers and measurement of social media marketing: An exploratory investigation of small and medium B2B brands. *Industrial marketing management*, 40(7), 1153–1159. [Google Scholar] [CrossRef]
- 32. Michie, S., Abraham, C., Whittington, C., McAteer, J., & Gupta, S. (2009). Effective techniques in healthy eating and physical activity interventions: a meta-regression. *Health psychology*, 28(6), 690. [Google Scholar] [CrossRef]
- 33. Michie, S., Ashford, S., Sniehotta, F. F., Dombrowski, S. U., Bishop, A., & French, D. P. (2011). A refined taxonomy of behaviour change techniques to help people change their physical activity and healthy eating behaviours: the CALO-RE taxonomy. *Psychology & health*, 26(11), 1479–1498. [Google Scholar] [CrossRef]
- 34. Mozaffarian, D., Angell, S. Y., Lang, T., & Rivera, J. A. (2018). Role of government policy in nutrition—barriers to and opportunities for healthier eating. *BMJ*, 361. [Google Scholar] [CrossRef]
- 35. Musat, G. C., Petcu, D., Georgescu, A., Florin, C., Georgescu, A., Popa, D. A. T., ... & Barna, O. (2021). Influence of social media marketing on nutrition and physical activity behaviors of Romanian Generation Z students. *Progress in Nutrition*, 23(2), [Google Scholar]
- 36. Nadason, S., Vasudevan, H., & Cheok, M. Y. (2024). The mediating effect of customer loyalty on the relationships among supply chain performance, inventory management and quality management. *Marketing i menedžment innovacij*, 15(1), 67–79. [Google Scholar] [CrossRef]
- 37. Nielsen, M., Lundegaard, C., & Lund, O. (2007). Prediction of MHC class II binding affinity using SMM-align, a novel stabilization matrix alignment method. *BMC bioinformatics*, 8, 1–12. [Google Scholar] [CrossRef]
- 38. Ocel, Y., Mutlu, H. T., & Bayat, M. (2023). Determination of the Relationship Between Lifestyle and Impulsive Purchasing Behaviour. *Marketing and Management of Innovations*, 14(3), 37–55. [Google Scholar] [CrossRef]
- 39. Oe, H., & Yamaoka, Y. (2023). Smart Luxury Shoppers' Behaviour in China: Omni-Channel Perspectives of Gen Y Consumers. *Marketing and Management of Innovations*, 14(3), 176–187. [Google Scholar] [CrossRef]
- 40. Onem, S., & Selvi, M. S. (2024). General attitude scale for social media influencers. *Marketing i menedžment innovacij*, 15(2), 122–139. [Google Scholar] [CrossRef]
- 41. Pierce, J. P., Natarajan, L., Caan, B. J., Parker, B. A., Greenberg, E. R., Flatt, S. W., ... & Stefanick, M. L. (2007). Influence of a diet very high in vegetables, fruit, and fibre and low in fat on prognosis following treatment for breast cancer: the Women's Healthy Eating and Living (WHEL) randomized trial. *Jama*, 298(3), 289–298. [Google Scholar]

- 42. Reedy, J., Lerman, J. L., Krebs-Smith, S. M., Kirkpatrick, S. I., Pannucci, T. E., Wilson, M. M., ... & Tooze, J. A. (2018). Evaluation of the healthy eating index-2015. *Journal of the Academy of Nutrition and Dietetics*, 118(9), 1622–1633. [Google Scholar] [CrossRef]
- 43. Samdal, G. B., Eide, G. E., Barth, T., Williams, G., & Meland, E. (2017). Effective behaviour change techniques for physical activity and healthy eating in overweight and obese adults; systematic review and meta-regression analyses. *International Journal of Behavioral Nutrition and Physical Activity*, 14, 1–14. [Google Scholar] [CrossRef]
- 44. Schwartz, C., Scholtens, P. A., Lalanne, A., Weenen, H., & Nicklaus, S. (2011). Development of healthy eating habits early in life. Review of recent evidence and selected guidelines. *Appetite*, *57*(3), 796–807. [Google Scholar] [CrossRef]
- 45. Schwingshackl, L., & Hoffmann, G. (2015). Diet quality as assessed by the Healthy Eating Index, the Alternate Healthy Eating Index, the Dietary Approaches to Stop Hypertension score, and health outcomes: a systematic review and meta-analysis of cohort studies. *Journal of the Academy of Nutrition and Dietetics*, 115(5), 780–800. [Google Scholar] [CrossRef]
- 46. Schwingshackl, L., Bogensberger, B., & Hoffmann, G. (2018). Diet quality as assessed by the healthy eating index, alternate healthy eating index, dietary approaches to stop hypertension score, and health outcomes: an updated systematic review and meta-analysis of cohort studies. *Journal of the Academy of Nutrition and Dietetics*, 118(1), 74–100. [Google Scholar] [CrossRef]
  - 47. Scopus (2024) [Link]
- 48. Seo, E. J., & Park, J. W. (2018). A study on the effects of social media marketing activities on brand equity and customer response in the airline industry. *Journal of Air Transport Management*, 66, 36–41. [Google Scholar] [CrossRef]
- 49. Shan, Z., Li, Y., Baden, M. Y., Bhupathiraju, S. N., Wang, D. D., Sun, Q. I., ... & Hu, F. B. (2020). Association between healthy eating patterns and risk of cardiovascular disease. JAMA internal medicine, *180*(8), 1090–1100. [Google Scholar]
- 50. Shareef, M. A., Mukerji, B., Dwivedi, Y. K., Rana, N. P., & Islam, R. (2019). Social media marketing: Comparative effect of advertisement sources. *Journal of Retailing and Consumer Services*, 46, 58–69. [Google Scholar] [CrossRef]
- 51. Shepherd, J., Harden, A., Rees, R., Brunton, G., Garcia, J., Oliver, S., & Oakley, A. (2006). Young people and healthy eating: a systematic review of research on barriers and facilitators. *Health education research*, 21(2), 239–257. [Google Scholar] [CrossRef]
- 52. Stare, F. J., & Dwyer, J. (1969). An eye to the future: healthy eating for teenagers. *Journal of School Health*, 39(9), 595–599. [Google Scholar] [CrossRef]
- 53. Stephen, A. T. (2016). The role of digital and social media marketing in consumer behavior. *Current opinión in Psychology*, 10, 17–21. [Google Scholar] [CrossRef]
- 54. Story, M., Nanney, M. S., & Schwartz, M. B. (2009). Schools and obesity prevention: creating school environments and policies to promote healthy eating and physical activity. The Milbank Quarterly, 87(1), 71–100. [Google Scholar] [CrossRef]
- 55. Kennedy, E. T., Ohls, J., Carlson, S., & Fleming, K. (1995). The Healthy Eating Index: design and applications. *Journal of the American Dietetic Association*, 95(10), 1103–1108. [Google Scholar] [CrossRef]
- 56. Verplanken, B., & Faes, S. (1999). Good intentions, bad habits, and effects of forming implementation intentions on healthy eating. European journal of social psychology, 29(5-6), 591–604. [Google Scholar] [CrossRef]
  - 57. VOSviewer (2024) [Link]
- 58. Wang, Z., & Kim, H. G. (2017). Can social media marketing improve customer relationship capabilities and firm performance? Dynamic capability perspective. Journal of Interactive marketing, *39*(1), 15–26. [Google Scholar] [CrossRef]
  - 59. Web of Science (2024) [Link]
- 60. Wechsler, H., Devereaux, R. S., Davis, M., & Collins, J. (2000). Using the school environment to promote physical activity and healthy eating. *Preventive medicine*, *31*(2), 121–137. [Google Scholar] [CrossRef]
- 61. Willett, W. C., Sacks, F., Trichopoulou, A., Drescher, G., Ferro-Luzzi, A., Helsing, E., & Trichopoulos, D. (1995). Mediterranean diet pyramid: a cultural model for healthy eating. *The American journal of clinical nutrition*, 61(6), 1402S–1406S. [Google Scholar] [CrossRef]
- 62. Zhu, Y. Q., & Chen, H. G. (2015). Social media and human need satisfaction: Implications for social media marketing. *Business horizons*, 58(3), 335–345. [Google Scholar] [CrossRef]
- 63. Zouaoui, R., & Hamdi, R. (2024). The Impact of Online Advertising on Store Visiting: Saudi Arabia. *Marketing and Management of Innovations*, 15(1), 56–66. [Google Scholar] [CrossRef]

SMM як інструмент промоції здорового харчування: бібліометричний аналіз

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Ця стаття узагальнює аргументи та контраргументи в межах наукової дискусії з питання використання social media marketing (SMM) для популяризації здорового харчування. Основною метою проведеного дослідження є аналіз трендів і ефективності SMM-інструментів у сфері здорового харчування та поведінки людини. Систематизація літературних джерел та підходів до вирішення проблеми популяризації здорового харчування засвідчила, що останнім часом спостерігається значне зростання уваги до інтерактивних маркетингових стратегій. Актуальність вирішення даної наукової проблеми полягає в тому, що здорове харчування  $\varepsilon$  важливим компонентом громадського здоров'я, і SMM може стати ефективним інструментом для формування відповідних звичок у населення. Дослідження питання використання SMM у статті здійснено в наступній логічній послідовності: аналіз літератури, бібліометричний аналіз динаміки та географії публікацій, виявлення ключових трендів і кластерів досліджень, перевірка гіпотез щодо впливу регіональних особливостей і інноваційних інструментів SMM. Методичним інструментарієм проведеного дослідження стали методи бібліометричного аналізу, а періодом дослідження обрано 1969–2024 роки. Об'єктом дослідження обрано наукові публікації баз даних Scopus i Web of Science, оскільки саме вони надають найширше уявлення про глобальні тенденції. У статті представлено результати емпіричного аналізу динаміки публікаційної активності та ключових термінів у досліджуваній тематиці, який засвідчив, що за останні 5 років відзначається зростання уваги до використання інтерактивних SMM-інструментів у популяризації здорового харчування. Дослідження емпірично підтверджує та теоретично доводить, що культурні та регіональні особливості впливають на вибір маркетингових стратегій у SMM, а також що інноваційні інструменти сприяють підвищенню ефективності таких кампаній. Результати проведеного дослідження можуть бути корисними для маркетологів, дослідників у сфері громадського здоров'я, а також для організацій, які займаються популяризацією здорового способу життя, адже вони дозволяють адаптувати стратегії SMM до культурних і регіональних особливостей. Окрім цього, результати дослідження можуть стати основою для подальших наукових робіт, присвячених ефективності цифрових технологій у формуванні здорових звичок. Виявлені тенденції сприятимуть розробці інноваційних підходів до популяризації здорового харчування з використанням персоналізованого контенту.

Ключові слова: харчові звички, здорове харчування, здорова їжа, просування, SMM.