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Research article

SUSTAINABLE MARKETING PERFORMANCE OF BANKS IN THE DIGITAL ECONOMY: THE ROLE OF CUSTOMER RELATIONSHIP MANAGEMENT

Stephen Acheampong, Tetyana Pimonenko, and Oleksii Lyulyov

Abstract. Customer relationship management (CRM) has become the lifeblood of banking and the principal driver of sustainable marketing performance in the digital economy. The discovery of computers and the Internet has transformed the industrial economy into digital through the integration of CRM and related elements, resulting in several benefits, including growth in research documents and increased collaborations. Marketers have developed a CRM system that integrates the digital infrastructure and digital capabilities of people to promote the sustainable marketing performance of banks through innovations such as customer acquisition, segmentation, customization, loyalty, and profitability. The paper aims to analyse the scientific landscape of CRM and sustainable marketing performance in the digital economy. The authors resorted to the Scopus database to extract 1485 documents and filtered 248 for Scopus analysis and to determine the roles of CRM. The filtered documents were then exported to VOSviewer for visualization mapping, including co-authorship and co-occurrence analysis. The visualization mapping depicts relationships among the keywords. The results of the research indicate an upwards growth in research publications since 2003, growing interest in funding and collaborations by countries and institutions, and the relationship among the keywords. The emerging financial crisis is a motivation for research in the area of study. The results also indicate that the integration of CRM into digital technology promotes collaborations and innovations resulting in the development of banking software applications to promote customer acquisition, retention, loyalty, profitability and sustainability. The study developed an integrated framework for sustainable banking performance. Global crises, including financial crises and COVID-19, have increased research output and become an integral part of CRM. Green banking is to be researched and integrated. The study will be used as a basis for further studies and for bankers for policy formulation.

Keywords: customer relationship management, sustainability, marketing performance, banking, digitalization.

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1. Introduction

Effective CRM implementation enables businesses to improve customer relationships and loyalty as well as maximize revenue and minimize costs. According to Blery & Michalakopoulos [1], CRM is one of the best approaches to sustaining the long-term performance of banks. Thus, CRM has become the lifeblood of banking and the principal driver of sustainable performance in marketing efficiency in the digital economy due to the important roles it plays. Any system that determines customer activity can measure business value. The new technology resulting in mass production and economies of scale has the potential to minimize costs and maximize profits [2].

During the industrial revolution, companies focused on making huge profits through economies of scale at the expense of customer satisfaction. However, CRM has become a significant determinant of organizational performance and sustainability in the digital economy. Society has not been static but dynamic, changing from simpler to complex and traditional to modern and global, so businesses need to be innovative to perform. Companies integrate relational customer indicators into profitability measurement to determine performance. Businesses, including banks, adopt the customer-centric approach to reaching their goals and objectives through holistic marketing. The holistic marketing concept encompasses relational marketing, integrated marketing, internal marketing, as well as corporate social responsibility marketing which enhances banking trust and image [3]. This suggests that in this study, integrating profitability and customer relational indicators is a holistic approach to sustainable performance in the banking industry.

Customer patronage is the outcome of a great manufacturing capability [4]. CRM is a technology that synchronizes organizational activities (e.g. segmentation, targeting, product development, sales, marketing research, business environment, analytics and green banking) and makes customer relations automatic by focusing on acquisition, retention and profitability [5]. In the contemporary digital economy, information technology capability is the fundamental sustainability factor for firms [6–12]. In the virtual market, companies need to put IT infrastructure tools and systems in place and have employees capable of using IT tools for accessing, integrating, evaluating and creating information and connecting stakeholders to promote sustainable marketing performance [13–16]. The availability of information tools alone does not guarantee development and the ability to solve problems [17]. Apart from investing in digital infrastructure, the organization needs to build capacity through training and integrate IT into business operations to realize the full effect. Besides, it is necessary to enhance relevant digital knowledge and skills [18–22].

Earlier researchers have not studied CRM, digitalization, and performance together to establish the relationships among them. Studies about CRM and technology indicate that technology is a CRM enabler; it promotes customer relationships by centralizing data and information as well as providing accurate and timely information [23]. Most CRM and technology studies to determine the role technology plays in CRM indicate the statistical relationship between technology and CRM [24].

Additionally, several studies on CRM and aspects of technology aimed at evaluating the contribution of technology to effective CRM have shown that CRM implementation largely

depends on the state of technology and that technology and CRM are statistically related [23]. Technology and CRM contribute to the sustainable marketing performance of organizations. Despite a wider adoption of the CAMELs model, namely, Capital adequacy, Asset quality, Management, Earnings, Liquidity, and Sensitivity to market risk [24] for assessing banking performance, many organizations have gone out of business, while others find it challenging to sustain their performance, particularly in the digital age.

The 2007-2008 financial crisis in the United States resulted in a high rate of bank failures [25]. As a result, the Federal Deposit Insurance Corporation closed 465 banks from 2008-2012. Bank of Ghana's (BOG) Stability report for 2017 stated that the banking industry's cost-income ratio increased to 85.7% in February 2017 from 84.4% in February 2016, indicating a general decline in the banking industry's efficiency. The Ghana banking crisis between August 2017 and January 2020 affected many banks, and the BOG allowed some indigenous banks to take over private companies. Dwamena et al. [26] noted that the recent banking crisis in Ghana has led to the revocation of the licences of more than 400 financial institutions that were licenced under the Act, 2016 (Act 930).

Comparatively, the Ukrainian banking crisis was between 2014 and 2017, and out of the 181 banks as of January 2014, only 77 survived in May 2019 [27]. Often, crises demand transformational solutions, and in this regard, companies integrate industrial and digital era models to ensure their survival; hence, this research focuses on marketing innovations. Adam et al. [28] asserted that if firms are to continue in business, they must be innovative and adapt to new situations continually. Developing an integrated model with customer relational components promotes the banking industry's sustainable performance.

The CAMELS model is a partial method of assessing banking performance in the digital age since it focuses on financials and pays little attention to sustainable non-financial marketing elements, which is the gap the research addressed. Bibliometric co-occurrence mapping was used to identify sustainable marketing performance indicators, including customer relationship management, market share, customer loyalty, customer profitability, research and product development, service quality, green banking, and brand image integrated into financial measurements. This research, therefore, assessed the role of CRM and banks' marketing performance in the digital economy and offered sustainable marketing performance indicators as integral components, the proper and fit method that focuses on the customer. Practically, the study serves as a guide to regulators, including central banks and businesses, to formulate the right policies and performance measurements to promote sustainable performance. The research contributes to the growing theoretical development by developing an integrated and holistic model for measuring sustainable marketing performance in the banking sector. Academically, the study keeps researchers abreast with contemporary research trends for further studies.

The financial model includes CAMELS indicators, and using CAMELS to assess banking performance in the digital economy is a partial approach. Integrating financial, customer-based, internal processes, learning and growth with CRM is a holistic approach to achieving sustainability. The VOSviewer co-word visualization mapping depicts the relationship among the keywords in CRM and balanced scorecard components.

The paper has the following structure: Section 1 highlights the introduction aspect of the role CRM plays in sustainable marketing performance in the digital economy; section 2 analyses the theoretical landscape of keywords namely, CRM, sustainable marketing performance and digitalization and developed an integrated performance assessment model for contemporary banking; section 3 describes the methodology, sources and process for data as well as the tools used for analysis; section 4 illustrate the research findings obtained through the application of the selected methodology; section 5 highlights on the main results, recommendations for future studies, and limitations.

2. Literature Review

CRM evolved around the late 1950s with the introduction of Rolodex. In the 1960s, the main frame computers became available to businesses, the 1980s was an evolution of database marketing, in the 1990s software service was developed, the 2000s was the growth of cloud-based CRM and open-source software, in 2010 were the explosion of technology and rise of CRM providers and today further sophistication of CRM, building customer strategy [29]. Chen & Popovich [30] asserted that CRM integrates people, processes and technology to analyse customers, manage relationships, and ensure customer retention. The authors added that CRM gas revolutionises from information technology, changes in organization, and customer-oriented processes; hence, the successful implementation of CRM results in long-term customer profitability and loyalty. In this regard, CRM is becoming the lifeblood of contemporary and future businesses as cloud-based software solutions are gaining ground. Sales, marketing, service and provision of mobility are the main focus of CRM today.

Banks need to adopt a holistic approach, financial and non-financial, to ensure the sustainability of the digital age. Raut et al. [31] studied the sustainability of banking from four angles, including CRM, business process, financial stability, and friendly environment management system. The emergence of CRM has promoted targeted and segmented marketing to enhance policy optimization and profit maximization. CRM is a complete strategy to acquire, retain and connect specific clients and create customer delight value. It includes sales, customer service, marketing and the supply chain that promote effectiveness and efficiency [32].

The purpose of CRM is defined to enhance productivity through marketing efficiency and effectiveness [33]. Scholars [32] have stated that cooperation and collaboration accruing from marketing efficiency minimize the transaction and cost of development. In banking, the digitalization process promotes efficient and quality service to customers. From a marketing perspective, digital banking promotes long-term quality service in banking and customer satisfaction [34]. CRM, which is the impact factor in the digital economy, integrates digitalization, banking, marketing, customers and other contemporary elements as a model to develop loyal customers for long-term sustainability. The theoretical Framework-Integrated Approach for Sustainable Marketing Performance of Banks is shown in Figure 1.

The research theories in the later part of the 1970s focused on industrial marketing and channels to develop buyer–seller relationships [35]. The emergence of a marketing philosophy for customer-organization relationships resulted in CRM [36]. CRM is an integrative strategic process to develop, enhance and sustain customer relationships as well as add value to

businesses [37]. In strategic management, the balanced scorecard encompassing financial, customer-oriented, internal business processes, and learning and growth is a holistic approach.

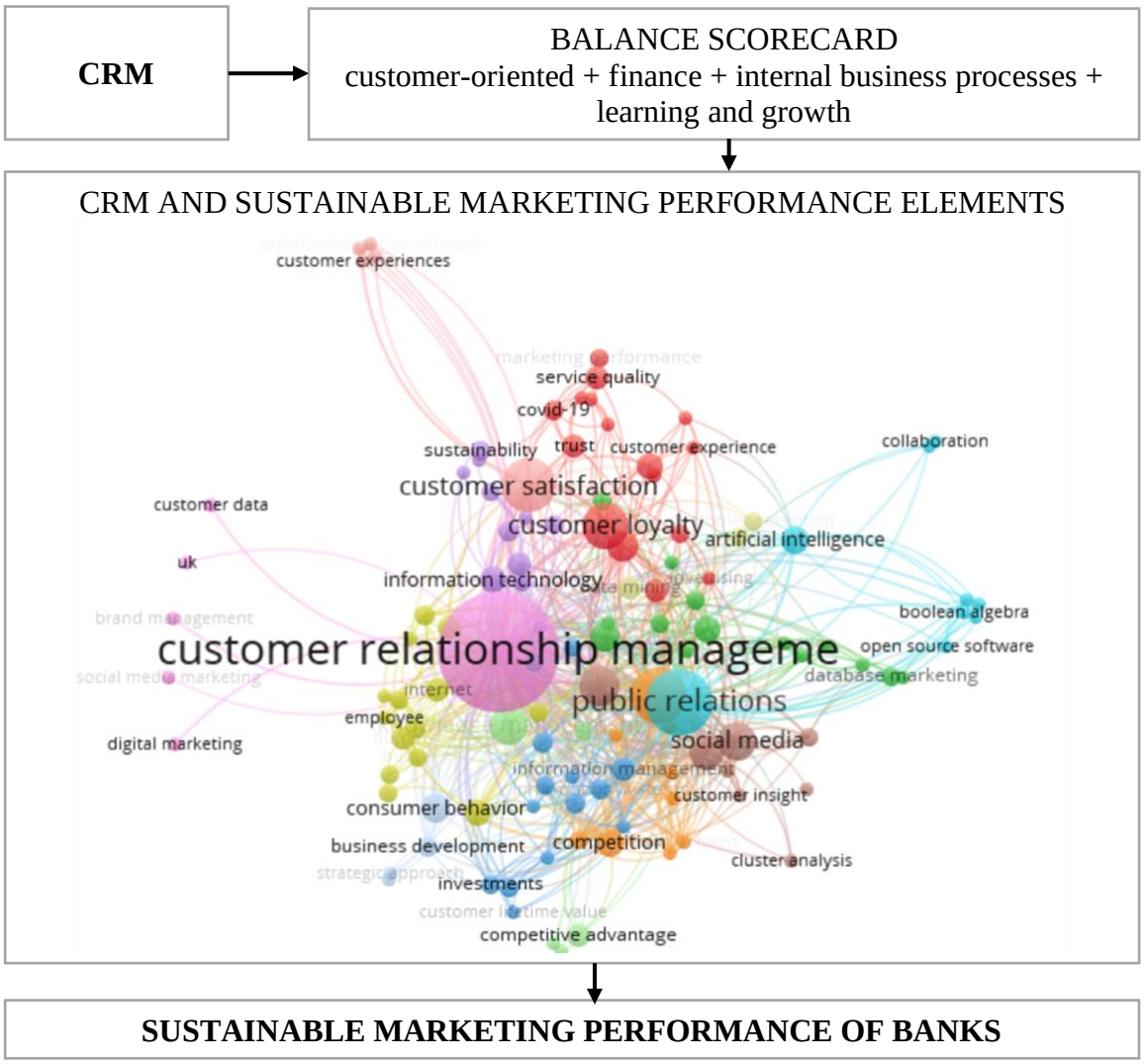

Figure 1. Theoretical framework depicting the integration of the sustainable marketing performance of bank elements, including financial and nonfinancial factors.
Source: Developed by the authors based on CRM, balanced scorecard concepts, Scopus and VOSviewer visualization mapping.

CRM is a collaboration of all the departments in the bank [38]. Hoseini et al. [39] researched CRM and business performance and developed a conceptual framework based on a balance score card, and the results indicated a relationship between CRM processes and banking performance. Banking is a customer-based service because the customer is the highest priority [36]. Zulkifli & Tahir [36] conducted research, and the results indicated six CRM measurements, namely, customer acquisition, customer value evaluation and customer information process. This study integrated CRM into financial determinants as a holistic approach to the sustainable marketing performance of banks.

3. Methods

Researchers [34,40] have resorted to a bibliometric analysis to research contemporary issues, including customer loyalty in banks, bank efficiency, promoting green university branding through social media, new trends [41–43] and patterns in green competitiveness, green policy on renewable energy [44–46], and trends and patterns in sustainable entrepreneurship research [47–51].

The study adopts the Scopus online database for the analysis because it has the most extensive database and the most prominent research papers and VOSviewer for visualization analysis. The analysis covers quantity, quality and structural indicators, which measure a researcher's productivity, output performance, and institutional collaborations. Performance analysis investigates the contributions of academic research elements to a particular discipline [52]. This is a descriptive approach and the foundation for bibliometric analysis [53].

Input terms for the search were "customer relationship management" OR "sustainable marketing performance of banks". The researchers inputted "customer relationship management" AND "role" OR "sustainable marketing performance" OR "digital economy" and yielded 1485 documents, refined to 248. Refine; document type: Article, book chapter, conference paper, review, book, note, editorial, erratum. Subject categories: Arts and Humanities, Business Management/Accounting, Economics, Econometrics, Decision Sciences and Social Sciences. Others include finance, computer science, environmental science, agricultural and biological science, and mathematics. Language: English; the reason is that most metadata are in English. Refine results for keywords: A total of 248 documents were exported to VOSviewer for visualization analysis. VOSviewer identified 1301 author keywords, of which 187 met the threshold, and the researchers eliminated repetition and irrelevant words for visualization mapping.

To achieve the objective regarding the role CRM plays in sustainable marketing performance in the digital economy, a specific bibliometric analysis was performed:

1. co-authorship analysis to examine the collaboration patterns between authors and countries and to identify the most influential countries;
2. keyword concurrence analysis to examine the frequency of different keywords or the most influential elements in the sustainable marketing performance of banks in the digital economy;
3. literature reviews on performance measurement and developed a sustainable banking performance framework.

4. Results and Discussion

The CRM role in sustainable marketing performance in the contemporary digital economy was assessed holistically, including the impact on productivity trends, collaboration, funding, and integration. First, CRM contributes to publication output from 2003 to 2023, and this is analysed in comparative terms for the pre-and post-digitalization periods (Figure 2). Before 2003 represents pre-digitalization when banks had not integrated digital technology into banking and research output was zero. After digitalization in 2003, banks could use digital network infrastructure to connect stakeholders, including customers, shareholders, and

regulators; therefore, CRM is an enabler of the digital economy and a promoter of the sustainable marketing performance of banks.

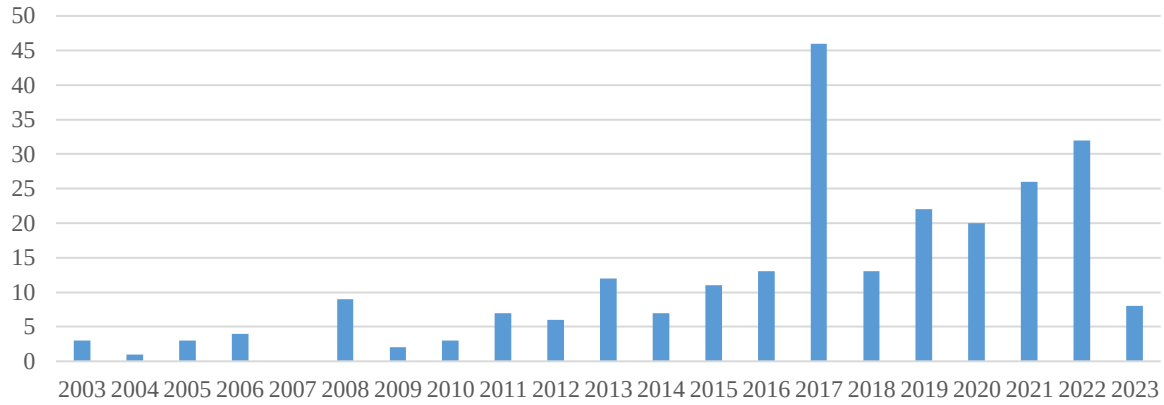

Figure 2. The Role of CRM in the Output Trend and Sustainable Marketing Performance of Banks in Digital Economy from 2003 to 2023.
Source: Generated by the authors from the Scopus database.

The study results show increased research publications in the area of study between 2003 and 2023 globally, although the growth rate fluctuates. The fluctuations are indicated in Figure 1 by the upwards and downward growth trends of research documents produced from 2003 to 2023. The statistics indicate documents as follows: 2003 =3, 2004 = 1, 2007 =0, 2008 = 9, 2013 = 12, 2014 = 7, 2015 =11, 2016 = 13, 2017 = 46, 2018 =13, 2019 =22, 2020 =20, and 2022 =32 research documents.

Publication activity on customer loyalty to banking systems increased in the financial crisis era (2008-2009 and 2014-2015) [54]. The study results reveal that the outflow of customers and capital emerged from the economic crisis. An increasing growth but fluctuation results from the research is due to the world crisis, including the financial crisis, and COVID-19. A crisis is a motivation to research and diagnose the causes and find solutions. Technological innovations such as computers and the internet are also a motivation for research fluctuations within the period of 2003 to 2023. The year 2010 was the explosion of technology and the rise of CRM providers and today further sophistication of CRM, building customer strategy [29]. It should be noted that 2010 was the explosion of technology and the rise of CRM providers and today further sophistication of CRM, building customer strategy [29]. A total of 248 documents were produced during the digital age in the global economy, with an average of 11.8 documents per year, as indicated above. The average results are used to project future research output. As of March 2023, when conducting the research, 8 research documents were produced, and all things being equal, 32 documents are expected to be produced by the end of 2023. A search of the Scopus database indicates no publication in the area of study before 2003 (predigital era), as Figure 2 shows. Banks took advantage of the available digital infrastructure in the 2000s to build the capacity of employees through training and integrated digital technology into daily business operations as well as developing a database of customers and customizing their services.

The growing research has also resulted in banking innovations, including the Internet banking, ATMs, branchless banking, and the development of new banking application software to manage customers, products and transactions. At the same time, CRM innovations and digital integration resulted in the network, high operational cost, software/hardware and cybersecurity challenges, including internet fraud and hacking. The results show no research in 2007 that marks the beginning of the banking crisis and which might have interested researchers to take keen interest to intensify research in 2008, with 9 research documents being the highest since the predigital and digital era. This implies that crisis is an important motivation for research.

The graph in Figure 3 indicates the country contribution of the top countries in the research area of CRM on sustainable marketing performance in the digital economy. The results revealed a total of 189 research documents produced with an average of 18.9 per country.

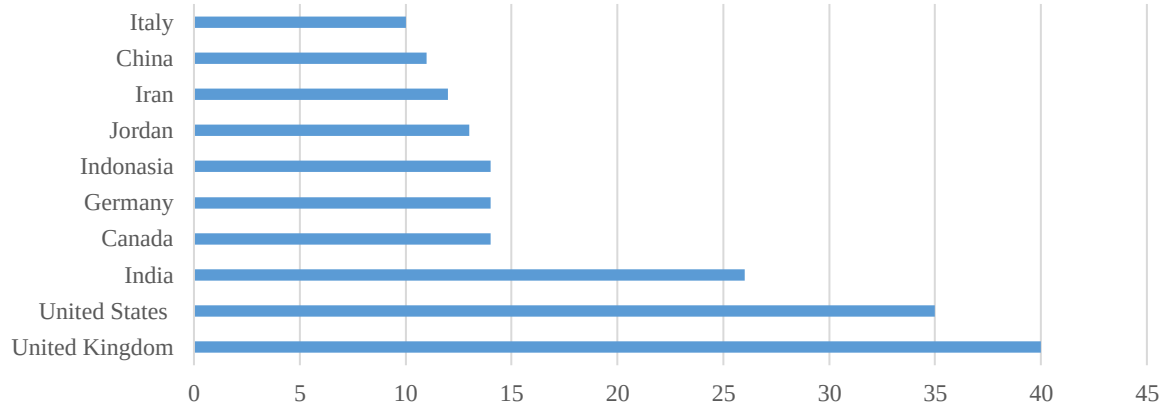

Figure 3. The Publication Structure on CRM Role in Sustainable Marketing Performance of Banks, from 2003 to 2023.
Source: Generated by the authors from the Scopus database.

The United Kingdom produced the highest number of research documents, 40, and the United States came second, with 35 research documents. The rest of the contributions were India = 26, Canada = 14, Germany = 14, Indonesia 14, Jordan = 13, China = 11, and Italy = 10 documents. Increased research of CRM, sustainable marketing performance and digitalization might have contributed to the growing innovations and development of banking software solutions and applications in the United Kingdom, the United States, India, etc.

There is an increase in business and private funding to support art organizations in the United Kingdom to enable them to stay in business with integrity [55]. The United Kingdom and the United States promote research funding in business, including CRM. The results further revealed that no African country was among the top countries that contributed to the research in the study area. This suggests that countries in Africa have not shown much interest in CRM and sustainable marketing performance in the digital economy or have limited access to research funding, thereby resulting in low innovations in the banking sector and creating a digital divide challenge.

The findings in Figure 4 for network visualization indicate that the researchers in the United Kingdom contributed more than in any other country. The country co-authorship visualization

map indicates the following: items-23, clusters-7, links-59, total link strength-88, out of which the United Kingdom cluster had 15 links with 27 total link strengths in cluster 2 (green).

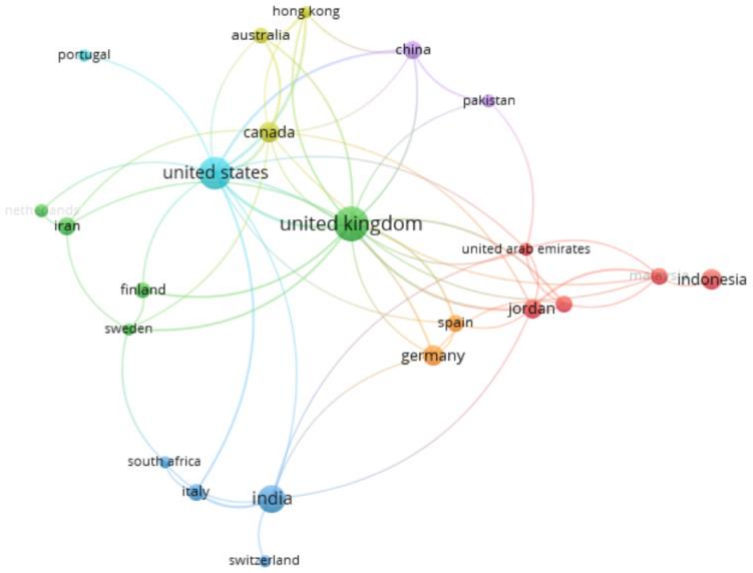

Figure 4. The co-authorship network of countries' research documents.
Source: Visualization mapping generated by the authors from Scopus and VOSviewer 1.6.17.

Opoku et al. [57] studied the influence of project sponsorship, realizing the impact in the United Kingdom, and noted that customer value creation is the foundation for business survival, hence, for the need for government departments and local authorities to focus on sponsorship. Figure 5 shows that in terms of collaboration, the UK authors collaborate more with other countries to promote research on CRM and sustainable marketing performance in the digital economy, as indicated by 27 links being the highest.

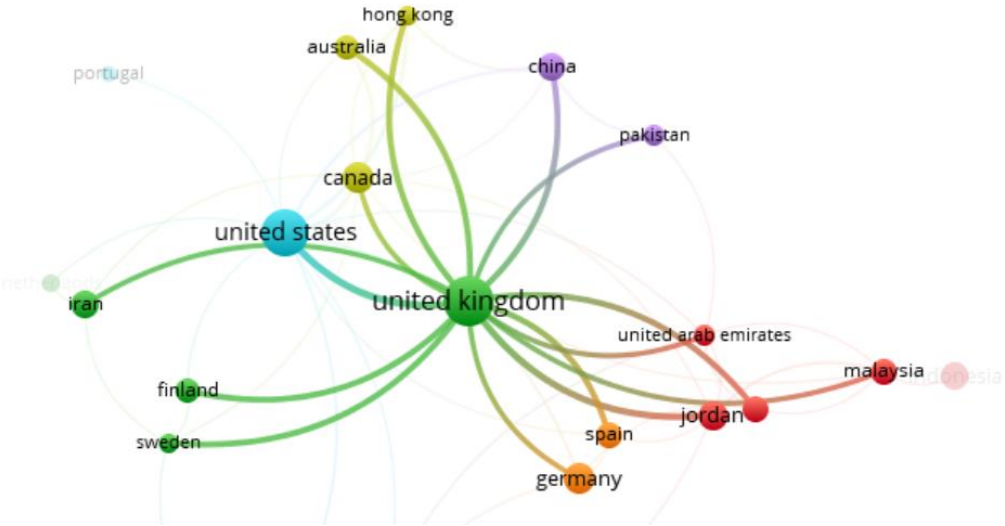

Figure 5. The Map of Co-authorship Research Network for the United Kingdom cluster.
Source: Visualization mapping generated by the authors from Scopus and VOSviewer 1.6.17.

Figure 6 depicts mapping for the US cluster (6), which was the second with 13 links, 35 documents, and 26 link strengths, showing more collaborations apart from the United Kingdom. The third largest with collaborations is India, then Canada, etc., with no African country among the top 10 researchers.

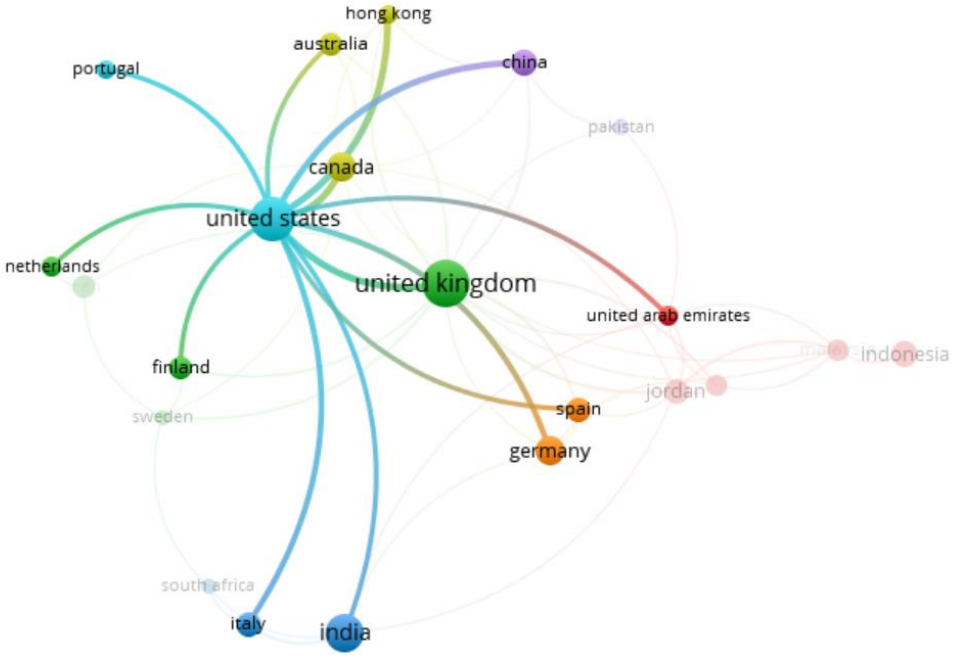

Figure 6. The Map of Co-authorship Research Network of the United States cluster, 2003-2023.
Source: Visualization mapping generated by authors from Scopus and VOSviewer 1.6.17.

The graph in Figure 7 depicts 16 sponsored documents, out of which the National Science Foundation sponsored 3 and four others. The US Air Force, National Natural Science, European Regional Development Fund, Economic and Social, sponsored 2 documents each and the rest of the sponsors 1 document each. This result indicates growing funding to promote research in the study area throughout 2003 and 2023, mostly from Europe and North America.

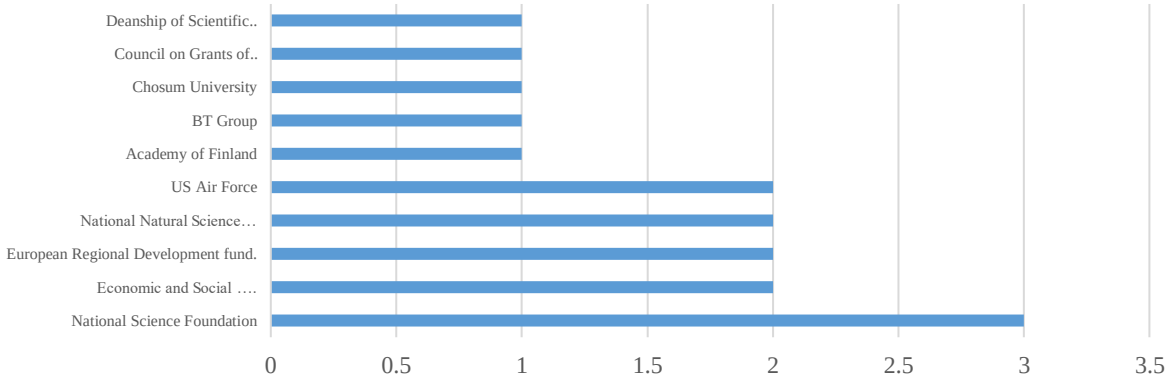

Figure 7. The Most Influential Sponsors of Papers on the Role of CRM, and Sustainable Marketing Performance of Banks in the Digital Economy (from 2003 to 2023).
Source: generated by authors from the Scopus database.

The results in Figure 8 represent items, clusters, links and total link strengths of the keywords in CRM and the sustainable marketing performance of banks in the digital economy.

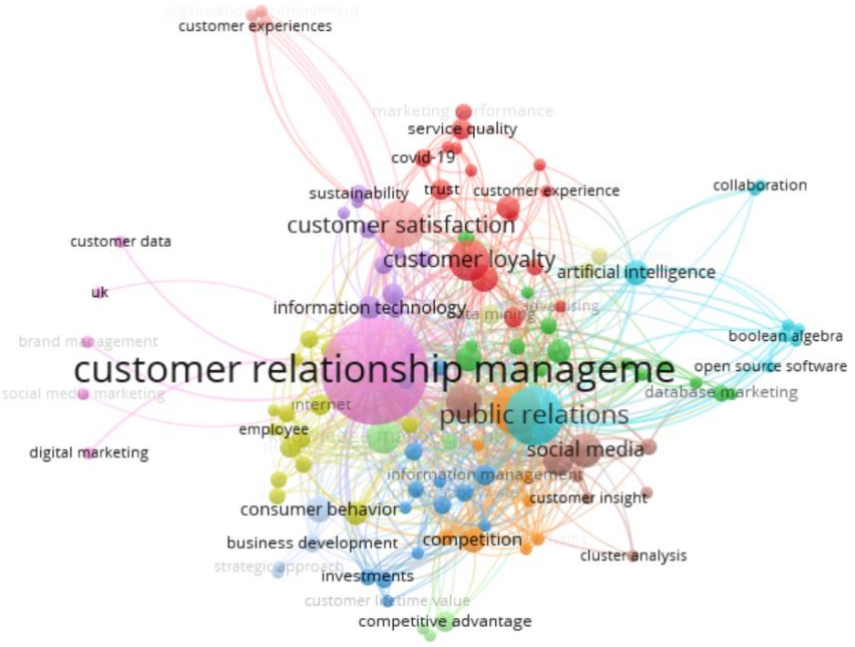

Figure 8. Visualization mapping for Keyword Co-occurrence, 2003-2023.
Source: Visualization mapping generated by the authors from Scopus and VOSviewer 1.6.17.

In all, there were 13 clusters, 118 items, 716 links and 1178 total link strengths. Customer relationship management with the pink colour in cluster 9 has the largest node or circle being the highest frequency, most influential, and impactful keyword – 127, links-103, total link strength-306.

The mapping indicates VOSviewer visualization links that CRM has with other keywords (Figure 9). The visualization analysis from the study of the researchers based on scientific methodology in developing questionnaires to collect primary data and formulating and testing hypotheses enables relationships to be established among keywords.

The visualization links in the map demonstrate the direct and indirect roles CRM plays in sustainable marketing performance in the digital economy. The CRM cluster includes keywords such as customer experiences, customer data, brand management, marketing through social media, and digitalization of marketing. The CRM concept has increased the demand for customer data and promoted social media marketing, digital marketing, etc., which results in customer satisfaction. CRM directly or indirectly connects almost all 13 clusters; hence, its influence is significant.

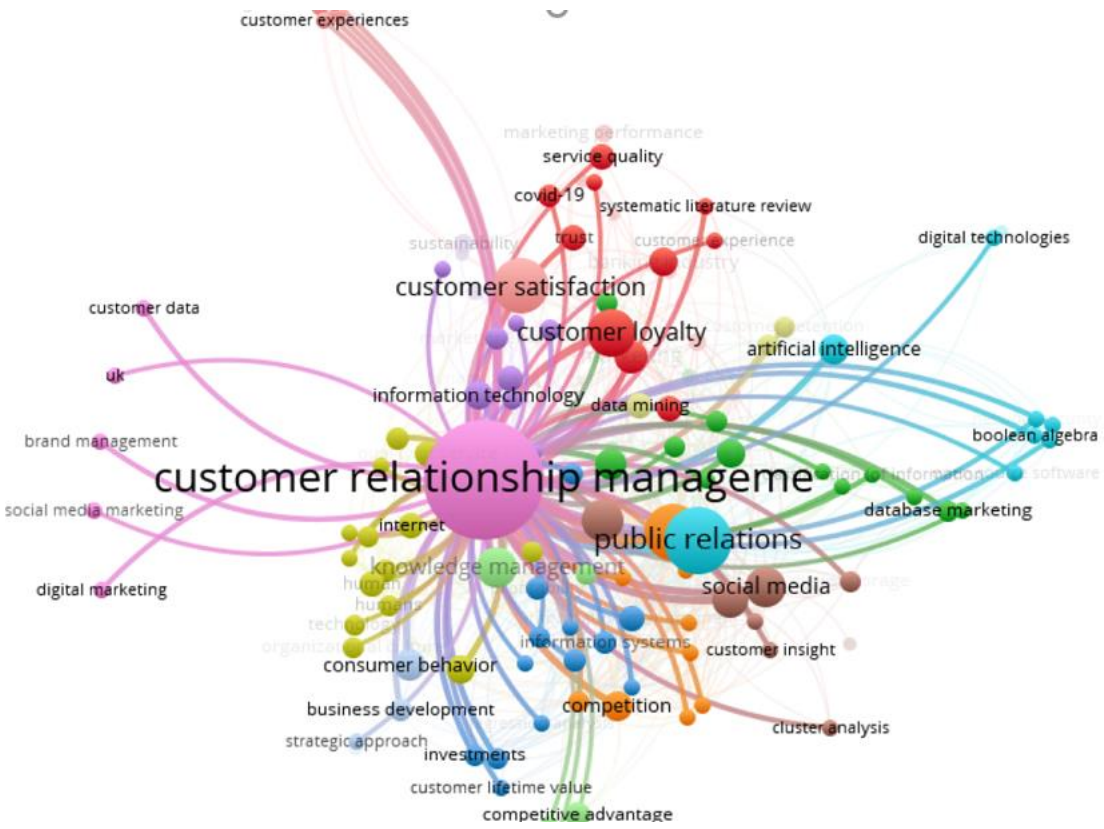

Figure 9. VOSviewer Keyword Visualization Link for Customer Relationship Cluster.
Source: VOSviewer Visualization mapping generated by authors from Scopus and VOSviewer 1.6.17.

Considering Figure 10, CRM has a direct link with technology cluster (4) with yellow colour, 6 links, 6 occurrences and 3 total link strengths. The elements of cluster 4 include technology, the internet, human, and organizational culture. The CRM linkage suggests the role it plays in digital technology and possibly sustainable marketing performance.

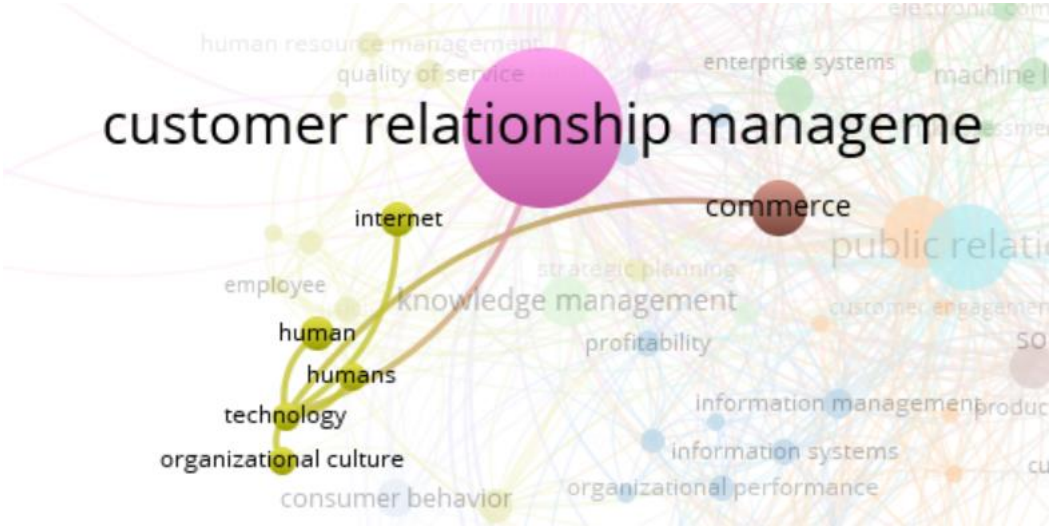

Figure 10. VOSviewer Keyword Visualization link for Technology.
Source: VOSviewer Visualization mapping generated by the authors from Scopus and VOSviewer 1.6.17.

The outcome of the VOSviewer visualization itemized mapping depicts significant information, as each of the clusters is linked to the CRM cluster (Figure 11). This confirms that CRM plays an important role as the lifeblood or an engine that enables machines or systems to work.

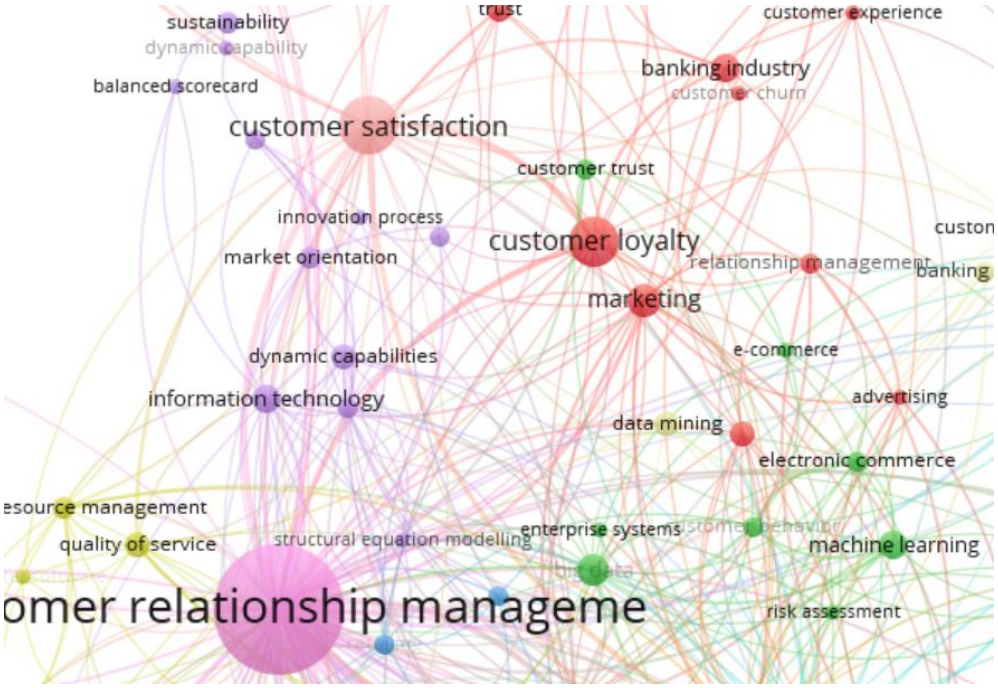

Figure 11. Item-by-Item Keyword Co-Occurrence in Violet, Green, and Red categories, namely, information technology, electronic commerce, and marketing clusters
Source: VOSviewer Visualization mapping generated by the authors from Scopus and VOSviewer 1.6.17

Each of the clusters, namely, information technology, electronic commerce, marketing, etc., is associated with other important keywords, all of which work together as a team or collaborate to work for a holistic result, similar to parts of a vehicle or human body work. The violet cluster includes keywords such as information technology, dynamic capabilities, sustainability, innovation process, balanced scorecard, and marketing orientation. A balanced scorecard includes finance, marketing, process, and human resources and is a holistic strategic approach to achieving sustainable results or goals.

Additionally, information technology or digital infrastructure alone cannot work to achieve results unless humans are trained and CRM systems and elements are synchronized to develop dynamic capabilities for the innovation process. In research on customer loyalty in bank services by Dubina et al. [55]. The researchers analysed the correlation between consumer loyalty and gender age. Shetch et al. [32] revealed that CRM and marketing efficiency are the outcomes of transaction and development cost minimization through collaborative processes. Therefore, in this study, the red cluster includes keywords such as customer satisfaction, customer loyalty, banking industry, marketing, data mining, relationship management, advertising and customer experience, which all relate to CRM and achieve results.

Dubina et al. [55], in research on customer loyalty to bank services, noted that the COVID-19 crisis was a wake-up call to stabilize financial institutions. Among the red cluster is COVID-

19, which has affected the way business is done and has therefore become an integral part of CRM and contemporary business systems. Shetch et al. [32] noted that CRM marketing efficiency is achieved through cooperative and collaborative processes that help to reduce transaction and development costs. In this study, the elements in the green cluster, including enterprise systems, machine learning, electronic commerce, risk assessment, customer trust, etc., also constitute integral parts of CRM and collaboratively play a holistic role in sustainable marketing performance in the digital economy. The results suggest that the integrated elements of CRM have been a transformation factor from an industrial to a digital economy, eliminating brick-and-mortar boundaries and unnecessary bureaucracy and promoting 24/7 business around the globe.

Nigamananda [58] researched sustainable green banking and noted that profit maximization and business prospects are the results of innovative and environmentally sustainable business practices. Although VOSviewer mapping did not highlight green banking, it is an important sustainable performance factor. The benefits of green banking include cost savings, risk minimization, banks' reputational enhancement, and environmental sustainability promotion. Therefore, it plays both commercial and social responsibility roles. In this regard, the green banking element needs to be researched and integrated into CRM and sustainable banking in the digital economy.

5. Conclusions

The authors resorted to the Scopus database to extract 1485 documents and filtered 248 for Scopus analysis and to determine the roles of CRM. The results of the study indicate a growing interest in sponsorship and funding with the National Science Foundation leading to promoting the growth and sustainability of marketing performance in the digital economy. There is an upwards growth in research documents between 2003 and 2023 that leads to innovations and increased collaborations among countries, and the United Kingdom collaborates the most.
The emerging financial crisis is a motivation for research in the area of study. The results also indicate that CRM promotes digitalization while digitalization enhances CRM, hence a reciprocal relationship and together promotes sustainable marketing performance in the digital economy. The researchers developed an integrated theoretical framework to include nonfinancial sustainability factors of CRM, namely, customer acquisition, retention, loyalty, and satisfaction, as an integral part of financial performance indicators to ensure a holistic assessment approach to banking performance. The transformation from an industrial to a digital economy requires a proper and fit approach to assess banking performance and possibly to ensure sustainability. The integrated theoretical model is recommended for future studies by researchers.

COVID-19, which has affected the way business is done and has therefore become an integral part of CRM and contemporary business systems, is an outcome of the study, as indicated in the figure, among the red cluster. The increasing growth but fluctuation results from the research are due to the world crisis, including the financial crisis and COVID-19. A crisis is a motivation for research to diagnose the causes and find solutions. Technological innovations such as computers and the internet are also a motivation for research fluctuations within the period of 2003 to 2023. The year 2010 was the explosion of technology and the rise of CRM providers and today further sophistication of CRM, building customer strategy [29].

Although bibliometric methods facilitate a review of volumes of research documents, they have some limitations, including language selection and the influence of citations on research outcomes. Green banking is a researchable factor integrated into the CRM system and is recommended for future research, although it is not highlighted in the VOSviewer bibliometric mapping. The study will be used as a basis for further research and for the government and bankers to shape the policy.

The growth rate of annual research publications has been increasing over the past fifty years; hence, some countries and institutions are adopting the bibliometric method to perform reviews [59]. However, there are some limitations to bibliometric research. The fact that a paper has more citations may not necessarily mean it is more influential because citations are based on different reasons, including methodology assessment and checking for flaws. Whether citations are influential depends on the purpose of their use. Belter [59] stated that most cited papers tend to be very influential to authors for further research, and the usefulness of the papers requires some probing. An open-access paper may have more citations than restricted documents since most researchers with funding challenges, especially in developing countries, cannot access them, thereby affecting research outcomes. The database selection was limited to Scopus and other relevant data from other sources were excluded. This can be improved by analysing data from other reliable sources.

VOSviewer did not select the most relevant keywords that might influence the outcome of the research. This could be resolved by manually selecting the most relevant keywords for VOSviewer mapping analysis. The research was limited to English documents because metadata are in the English language. There may be some useful other languages but excluded and affecting the accuracy of the research outcome. This could be addressed by integrating automatic translators into various software, including Scopus and Web of Science systems.

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References

1. Blery, E., & Michalakopoulos, M. (2006). Customer relationship management: A case study of a Greek bank. *Journal of financial services marketing*, *11*, 116-124.
2. Lazaric, N. (2007). Economic growth, development, and institutions–lessons for policy and the need for an evolutionary framework of analysis EAEPE Conference 1-3 November 2007, Porto, Portugal.
3. Sofiati, N. A., & Limakrisna, N. (2017). Holistic marketing implementation to increase company trust and image on state banking industries (a customer survey on customers of state banks in West Java province). *International Journal of Applied Business and Economic Research*, *15*(6), 117-130.
4. Kellen, V. (200). CRM measurement frameworks. http://www.kellen.net/crm_mf.pd
5. Rigby, D. K., & Ledingham, D. (2004). CRM done right. *Harvard business review*, *82*(11), 118-130.
6. Donkor, J., Donkor, G. N. A., & Kankam-Kwarteng, C. (2017). Strategic planning and family business performance in Ghana: Moderating role of IT capability. *Academy of Entrepreneurship Journal*, *23*(2), 1-12.
7. Kwilinski, A. (2019). Implementation of Blockchain Technology in Accounting Sphere. *Academy of Accounting and Financial Studies Journal*, *23*(SI2), 1-6.
8. Kwilinski, A., Tkachenko, V., & Kuzior, A. (2019). Transparent Cognitive Technologies to Ensure Sustainable Society Development. *Journal of Security and Sustainability Issues*, *9*(2), 561-570.
9. Kwilinski, A., & Kuzior, A. (2020). Cognitive Technologies in the Management and Formation of Directions of the Priority Development of Industrial Enterprises. Management Systems in Production Engineering, 28(2), 133-138. https://doi.org/10.2478/mspe-2020-0020.
10. Kwiliński, A., Polcyn, J., Pająk, K., & Stępień, S. (2021). Implementation of Cognitive Technologies in the Process of Joint Project Activities: Methodological Aspect. In *Conference Proceedings - VIII International Scientific Conference Determinants of Regional Development* (pp. 96-126). Pila, Poland: Stanislaw Staszic University of Applied Sciences in Piła. https://doi.org/10.14595/CP/02/006.
11. Miśkiewicz, R. (2021), Knowledge and innovation 4.0 in today's electromobility, in: Z. Makieła, M.M. Stuss, and R. Borowiecki (Eds.), *Sustainability, Technology and Innovation 4.0* (pp. 256-275), London, UK: Routledge.
12. Vaníčková, R., & Szczepańska-Woszczyna, K. (2020). Innovation of business and marketing plan of growth strategy and competitive advantage in exhibition industry. *Polish Journal of Management Studies, 21*(2), 425-445. https://doi.org/10.17512/pjms.2020.21.2.30
13. Chen, Y., Kwilinski, A., Chygryn, O., Lyulyov, O., & Pimonenko, T. (2021). The Green Competitiveness of Enterprises: Justifying the Quality Criteria of Digital Marketing Communication Channels. *Sustainability, 13*(24), Article 13679. https://doi.org/10.3390/su132413679.
14. Chen, Y., Lyulyov, O., Pimonenko, T., & Kwilinski, A. (2023). Green development of the country: Role of macroeconomic stability. *Energy & Environment, 0*(0). https://doi.org/10.1177/0958305X231151679
15. Chygryn, O., Bilan, Y., & Kwilinski, A. (2020). Stakeholders of Green Competitiveness: Innovative Approaches for Creating Communicative System. *Marketing and Management of Innovations*, (3), 358-370. https://doi.org/10.21272/mmi.2020.3-26.
16. Dacko-Pikiewicz, Z. (2019). Building a family business brand in the context of the concept of stakeholder-oriented value. *Forum Scientiae Oeconomia, 7*(2), 37-51. https://doi.org/10.23762/FSO_VOL7_NO2_3.
17. O'Connor, B., Anderson, P., Bynum, M., Gaston, P., de Castro, M. H. G., Malyn-Smith, J., & Schweizer, J. (2001). International Ict Literacy Panel. *En ligne*. https://www.ets.org/Media/Research/pdf/ICTREPORT.pdf
18. Dzwigol, H., Dzwigol-Barosz, M., Miskiewicz, R., & Kwilinski, A. (2020). Manager Competency Assessment Model in the Conditions of Industry 4.0. *Entrepreneurship and Sustainability Issues, 7*(4), 2630-2644. https://doi.org/10.9770/jesi.2020.7.4(5).
19. Streimikiene, D., Mikalauskiene, A., & Burbaite, G. (2023). The role of sustainable finance in achieving sustainable development goals. *Economics and Sociology*, 16(1), 256-283. doi:10.14254/2071-789X.2023/16-1/17
20. Kwilinski, A., Lyulyov, O., Pimonenko, T., Dzwigol, H., Abazov, R., & Pudryk, D. (2022). International Migration Drivers: Economic, Environmental, Social, and Political Effects. *Sustainability, 14*(11), Article 6413. https://doi.org/10.3390/su14116413.
21. Szczepańska-Woszczyna, K., & Gatnar, S. (2022). Key Competences of Research and Development Project Managers in High Technology Sector. Forum Scientiae Oeconomia, 10(3), 107-130. https://doi.org/10.23762/FSO_VOL10_NO3_6.
22. Trzeciak, M., Kopec, T.P., & Kwilinski, A. (2022). Constructs of Project Programme Management Supporting Open Innovation at the Strategic Level of the Organisation. *Journal of Open Innovation: Technology, Market, and Complexity, 8*(1), Article 58. https://doi.org/10.3390/joitmc8010058.

23. Foya, A. H., Kilika, J., Muathe, S., & Herman Foya, A. (2015). Relating technology-based CRM to service quality in the telecommunications industry in Arusha city, Tanzania. *Science Journal of Business and Management*, *3*(6), 209-218.
24. Rostami, M. (2015). Determination of Camels model on bank's performance. *International journal of multidisciplinary research and development*, *2*(10), 652-664.
25. Demyanyk, Y., & Hasan, I. (2010). Financial crises and bank failures: A review of prediction methods. *Omega*, *38*(5), 315-324.
26. Dwamena, K. O., & Yusoff, M. E. (2022). Banking Crisis in Ghana: Major Causes. *Journal of Academic Research in Accounting Finance and Management Sciences*, *12*(3), 406-418.
27. Mints, A. (2019). Analysis of the stability factors of Ukrainian banks during the 2014–2017 systemic crisis using the Kohonen self-organizing neural networks. *Banks and Bank Systems*, *14*(3), 86.
28. Adam, N. A., & Alarifi, G. (2021). Innovation practices for the survival of small and medium enterprises (SMEs) in the COVID-19 times: The role of external support. Journal of Innovation and Entrepreneurship, 10(1), 15.
29. Pingrey J, (2022). The History of CRM from the 1950s to Today, Fit Small Business. https://fitsmallbusiness.com/history-of-crm/,
30. Chen, I. J., & Popovich, K. (2003). Understanding customer relationship management (CRM): People, process and technology. *Business process management journal*, *9*(5), 672-688.
31. Raut, R., Cheikhrouhou, N., & Kharat, M. (2017). Sustainability in the banking industry: A strategic multi-criterion analysis. *Business Strategy and the Environment*, *26*(4), 550-568.
32. Sheth, J. N., & Parvatiyar, A. (2000). The domain and conceptual foundations of relationship marketing. *Handbook of relationship marketing*, 3-38.
33. Sheth, J. N., & Sisodia, R. S. (1995). Improving Marketing Productivity, Encyclopedia of Marketing in the Year 2000. *Chicago: American Marketing Association-NTC Publishing*.
34. Rashiti, L., & Sopi, X. (2022). Digital Marketing in Retail Banking–Client Attitudes Analysis. *Economic Alternatives*, (3), 454-472.
35. Möller, K., & Halinen, A. (2000). Relationship marketing theory: its roots and direction. *Journal of marketing management*, *16*(1-3), 29-54.
36. Zulkifli, Z., & Tahir, M. (2011). A conceptual framework for Customer Relationship Management (CRM) practices among banks from the customer's perspective. *Marketing Management*, 34, 2447-2450
37. Jham, V. & Kaleem, M. K. (2008). Customer Satisfaction in the Indian Banking Sector: A Study. IIMB Management Review, 84-93.
38. Liang, C. J., Wang, W. H., & Dawes Farquhar, J. (2009). The influence of customer perceptions on financial performance in financial services. *International Journal of Bank Marketing*, *27*(2), 129-149.
39. Hoseini, S. H. K., & Naiej, A. K. (2013). Customer relationship management and organizational performance: A conceptual framework based on the balanced scorecard (Study of Iranian banks). *IOSR Journal of Business and Management (IOSR-JBM)*, *10*(6), 18-26.
40. Us, Y., Pimonenko, T., Lyulyov, O., Chen, Y., & Tambovceva, T. (2022). Promoting green brand of university in social media: Text mining and sentiment analysis. *Virtual Economics*, *5*(1), 24-42.
41. Kwilinski, A., Dalevska, N., & Dementyev, V.V. (2022). Metatheoretical Issues of the Evolution of the International Political Economy. *Journal of Risk and Financial Management, 15*(3), Article 124. https://doi.org/10.3390/jrfm15030124.
42. Streimikiene, D. (2022). Renewable energy technologies in households: challenges and low carbon energy transition justice. *Economics and Sociology*, 15(3), 108-120. doi:10.14254/2071-789X.2022/15-3/6
43. Szczepańska-Woszczyna, K., Gedvilaitė, D., Nazarko, J., Stasiukynas, A., Rubina, A. (2022). Assessment of Economic Convergence among Countries in the European Union. *Technological and Economic Development of Economy, 28*(5), 1572-1588. https://doi.org/10.3846/tede.2022.17518.
44. Miskiewicz, R. (2020). Efficiency of electricity production technology from post-process gas heat: Ecological, economic and social benefits. *Energies, 13*(22), Article 6106. https://doi.org/10.3390/en13226106.
45. Miskiewicz, R. (2022). Clean and Affordable Energy within Sustainable Development Goals: The Role of Governance Digitalization. *Energies, 15*(24), Article 9571. https://doi.org/10.3390/en15249571.
46. Miśkiewicz, R., Matan, K., & Karnowski, J. (2022). The Role of Crypto Trading in the Economy, Renewable Energy Consumption and Ecological Degradation. *Energies, 15*(10), Article 3805. https://doi.org/10.3390/en15103805.
47. Abazov, R. (2021). Engaging in the internationalization of education and SDGs: Case study on the global hub of UNAI on sustainability. *E3S Web of Conferences*, 307, Article 06001. https://doi.org/10.1051/e3sconf/202130706001.

48. Florek, M., & Lewicki, M. (2022). Destinations, virtual reality and covid-19. how isolation has shaped the behaviours and attitudes towards VR. *Economics and Sociology*, 15(1), 205-221. doi:10.14254/2071-789X.2022/15-1/13
49. Kwilinski, A. (2018). Mechanism of Modernization of Industrial Sphere of Industrial Enterprise in Accordance with Requirements of the Information Economy. *Marketing and Management of Innovations*, (4), 116-128. https://doi.org/10.21272/mmi.2018.4-11.
50. Kwilinski, A., Slatvitskaya, I., Dugar, T., Khodakivska, L., Derevyanko, B. (2020). Main Effects of Mergers and Acquisitions in International Enterprise Activities. *International Journal of Entrepreneurship*, 24, 1-8.
51. Pudryk, P., Kwilinski, A., Lyulyov, O., & Pimonenko, T. (2023). Towards Achieving Sustainable Development: Interactions between Migration and Education. *Forum Scientiae Oeconomia*, *11*(1), 113-131.
52. Ziabina, Y., & Pimonenko, T. (2020). The Green Deal Policy for renewable energy: a bibliometric analysis. *Virtual Economics*, *3*(4), 147-168.
53. Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011). An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field. *Journal of informetrics*, *5*(1), 146-166.
54. Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, *133*, 285-296.
55. Dubina, O., Us, Y., Pimonenko, T., & Lyulyov, O. (2020). Customer loyalty to bank services: The bibliometric analysis. *Virtual Economics*, *3*(3), 53-66.
56. Thomas, S. R., Pervan, S. J., & Nuttall, P. J. (2009). Marketing orientation and arts organisations: the case for business sponsorship. *Marketing Intelligence & Planning*, *27*(6), 736-752.
57. Opoku, A., & Tallon, A. (2019). The role of project sponsors in defining and realising project benefits. *Management*, *710*, 719.
58. Biswas, N. (2011). Sustainable green banking approach: The need of the hour. *Business Spectrum*, *1*(1), 32-38.
59. Belter, C. W. (2015). Bibliometric indicators: opportunities and limits. *Journal of the Medical Library Association: JMLA*, *103*(4), 219.