Journal of Statistics & Management Systems
ISSN 0972-0510 (Print), ISSN 2169-0014 (Online)
Vol. 28 (2025), No. 6, pp. 1091–1117
DOI : 10.47974/JSMS-1428

Navigating brand image dynamics : A bibliometric Odyssey in education marketing

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Abstract

This study aims to conduct a bibliometric analysis using VOSviewer to offer insights to researchers focusing on "brand Image"(BI) in brand management. It seeks to provide perspectives to managers and marketers for devising marketing strategies (MS) to enhance brand image. This study employs the Dimension.ai database to investigate the productivity of authors, co-authorship patterns, institutional affiliations, and the geographic distribution of scholarly output. Additionally, it examines the most frequently cited papers and citing

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articles. The research conducts bibliometric analysis covering bibliographic data from 2015 to 2024, encompassing all articles relevant to the specified keywords such as "Brand Image OR Branding OR Brand OR Brand Identity OR Brand Equity OR Brand Loyalty OR Brand Trust AND Marketing AND University OR Institution" Furthermore, VOSviewer software is utilized to visualize graphs and map relationships among journals, keywords, and institutions through bibliographic coupling and co-citation analysis. The findings underscore the dynamic nature of BI & Marketing. The research articles in the study have seen a paradigm shift from influencer marketing to a predominant focus on green marketing, to digital marketing, and social media marketing in influencing the brand image, brand equity, trust & loyalty in recent years. Emerging 4 thematic areas, and diverse international collaborations shaping the landscape. Further exploration of these trends and collaborative patterns could provide valuable insights for advancing research in the field and fostering international knowledge dissemination. The practical implications of this study lie in its ability to offer valuable insights to researchers, managers, and marketers in the field of brand management within the education sector. By conducting a comprehensive bibliometric analysis using VOSviewer, this study sheds light on the key authors, keywords, institutions, countries, Sources and research trends related to brand image (BI) and marketing strategies (MS). This study contributes to the existing literature by providing a comprehensive analysis of BI and MS specifically within the education sector. By focusing on this niche area, the study offers unique insights that can offer both theoretical understanding and practical applications in brand management within educational contexts. Additionally, the use of bibliometric analysis and VOSviewer software adds a methodological rigor to the study, further enhancing its credibility and originality. In conclusion, the findings of this study underscore the dynamic nature of branding and marketing research within the education sector. The analysis reveals significant shifts in research focus, particularly from influencer marketing to digital marketing in recent years. Additionally, the study highlights emerging thematic areas and diverse international collaborations that shape the research landscape.

Subject Classification: *91B60, 91C99, 68R10.*

Keywords: *Branding, Brand image, Marketing strategy, Bibliometric analysis, VOSviewer.*

Introduction

Building a brand and maintaining its longevity is crucial in a highly competitive market. Brand awareness embodies tangible elements of a brand, including its name, logo, symbol, and slogan, while BI encapsulates the brand's positioning in the consumer's psyche beyond these visual cues [1]. BI is the outcome of strategic and well-executed marketing efforts designed to create highly reputable brands. [2, 3]. For marketers, regardless of their organization's marketing strategies, the fundamental goal of their marketing efforts is to shape consumer perceptions of a brand, cultivate a positive brand image (BI) in consumers' minds, and stimulate concrete purchasing decisions related to the brand. Sharma, Agarwal, and Aggarwal

[4] in their study underscores the pivotal role of social media and influencers in shaping brand awareness and BI in education marketing. The endeavor aims to enhance sales performance, maximize market penetration, and foster the accumulation of brand equity [2].

In the contemporary competitive marketplace, branding is a fundamental strategy for distinguishing products and services, fostering consumer preference, and cultivating brand awareness and identity. As a result, businesses place significant emphasis on implementing strategic initiatives to capture consumer attention and enhance brand equity through comprehensive brand communication. Effective marketing strategies (MS) are instrumental in strengthening BI by conveying authenticity, value, and commitment, thereby reinforcing the brand-consumer relationship and shaping consumer perceptions and purchasing decisions [1]. Furthermore, in the increasingly interconnected digital environment, content marketing has emerged as a vital mechanism for shaping the BI of modern enterprises [5]. It is imperative for organizations to develop Key capabilities and establish a compelling brand experience that significantly influences consumer decision-making processes [6].

Literature Review

In the context of branding, "brand" and "image" represent distinct yet interconnected notions. The term "image" refers to the perceived impression of the brand held by its intended audience, akin to a comprehensive portrayal [7]. The qualities that contribute to shaping this image are deliberately cultivated by the brand, influencing public perception. With an effective marketing strategy. (MS)

Bearden and Etzel, [8] and Park, [9] contend that BI is intrinsically linked to the distinctiveness of a product category. According to Park [9] the establishment and maintenance of BI are fundamental aspects of effective brand management. BI can be defined as the opinion of a brand that forms in customers' minds based on its associated attributes and meanings [10, 11]. Aaker [12] posits that BI consists of a set of associations that hold significant value for consumers. Moreover, Jacoby, Olson, and Haddock [13] suggest that consumers rely on a product's BI to develop overall perceptions of its quality and worth, with a stronger BI often leading to higher perceived quality and value. Supporting this view. Richardson, Dick, and Jain [14] conducted an empirical study demonstrating that BI plays a crucial role in shaping consumer perceptions of product quality and value.

Customers' perceptions of a brand are shaped by marketing communications, their experiences with the product, and social influences [15]. BI can also be described as the perceptions, emotions, and associations that consumers have toward a brand. [16] According to Hsieh and Li, [17], suggest that a strong BI conveys a more compelling brand message compared to competing brands. As a result, BI plays a crucial role in shaping and influencing customer behavior. [18] Iversen and Hem [19], asserted that BI encapsulates the subjective symbolism constructed by consumers, comprising their interpretations and assessments associated with the brand. This concept encompasses the knowledge and perceptions held by consumers regarding the various offerings and attributes of the brand's products [20]. BI encompasses consumers' overall perceptions and emotional associations with a brand, playing a significant role in shaping consumer behavior [2]. Saxena and Dhar [21] BI is defined as the collective thoughts and sentiments that consumers associate with a brand.

In theoretical terms, products and services can be portrayed through functional, Psychological and experiential aspects, contributing to the formation of BI. Thus far, scholars have not reached a consensus on the precise definition of BI. Previous studies have delineated BI from various viewpoints, including overarching definitions, semantic implications, personification, and cognitive or psychological attributes [2]. Nevertheless, a synthesis of these definitions indicates that BI can be segmented into three discernible categories grounded in consumer perceptions and evaluations.

Functional Aspect: This pertains to the concrete indicators of a brand, such as its name, logo, symbol, and slogan, which serve as recognizable elements representing the brand's functionality and utility in fulfilling consumer needs and preferences.

Psychological Aspect: BI encompasses consumers' personal symbolism associated with the brand, including their perceptions, attitudes, and emotional connections towards it. This psychological dimension reflects the subjective meanings and values individuals attribute to the brand beyond its tangible attributes.

Experiential Aspect: The BI also encompasses consumers' experiential interactions and associations with the brand, which are shaped by their consumption experiences, social influences, and marketing communications. This dimension captures the overall impression and perception of the brand formed through real-life encounters and interactions with the brand's products or services.

Methodology

This study undertakes an extensive bibliometric analysis of publications centered around "Branding & Marketing" through the VOSviewer tool. The dataset uses keywords on critical terms such as Brand Image, Branding, Brand, Brand Identity, Brand Equity, Brand Loyalty, and Brand Trust on Dimension.ai was extracted on the 3rd of February 2024, spans 6925 records from the year 2015 to 2024. A specific search for Title & Abstract yielded 4879 articles within a total of 5886 publications. Further, a refined search using the marketing keyword along with focusing on critical terms such as Brand Image, Branding, Brand, Brand Identity, Brand Equity, Brand Loyalty, and Brand Trust resulted in only 3302 datasets. Subsequently, by introducing the additional keyword "University & institution" alongside Marketing and the brand-related terms, 1053 articles were identified. This data is meticulously cleaned to extract 1027 articles from dimension.ai, forms the basis for our study, allowing us to explore trends from 2015 to 2024. The study employs bibliometric analysis to unravel patterns, trends, and significant contributors in the field. The findings provide valuable insights into the evolving landscape of Branding & Marketing research within the education sector.

Bibliometric Analysis

Bibliometrics, coined by Alan Pritchard in 1969, applies mathematical and statistical methods to analyze scientific data, aiding in quality assessment and identifying research trends [22, 23, 24, 25, 26]. Online databases like Web of Science, Scopus, PubMed, and Dimension.ai house vast research collections, with built-in analysis tools for generating illustrative figures. Exporting search results to software like VOSviewer allows for more detailed analysis, constructing bibliometric networks and visualizing relationships between scholars, publications, and organizations [27, 28, 29]. VOSviewer features text mining functionality for co-occurrence network analysis and offers various visualization techniques such as network visualization, overlay visualization and density visualization, enabling a deeper understanding of network structures, patterns, and dynamics [29].

VOSviewer serves as a valuable tool for visualizing and examining the relationships existing among authors and organizations through network visualizations, which depict the connections and associations between various entities. Overlay visualization, a complementary

technique, involves superimposing additional information, often represented by distinct colors or visual indicators, onto a base visualization, thereby highlighting factors such as the year of publication. Density visualization, on the other hand, portrays the extent of scholarly activity within the network, thereby aiding in the comprehension of its structure, trends, and dynamics. These visualizations offer insights into collaborative networks, thematic clusters, and information dissemination patterns, thereby facilitating a deeper understanding of the complex interrelations among different components. Moreover, they provide researchers with the flexibility to select specific images for in-depth analysis, thereby enhancing the exploratory capabilities of the tool.

Results

The bar graph, **(Fig 1),** sourced from dimension.ai as of February 3rd, 2024, illustrates the distribution of publications across different research categories. Among the selected keywords encompassing "Brand Image, Branding, Brand, Brand Identity, Brand Equity, Brand Loyalty, and Brand Trust," along with "Marketing & University or institution," and a specific search for Title & Abstract, the category yielding the highest number of publications is Commerce, Management, Tourism, and Services. From the period spanning 2015 to 2024, a total of 1053 articles were identified within this category. This observation suggests a significant scholarly interest and emphasis on exploring.

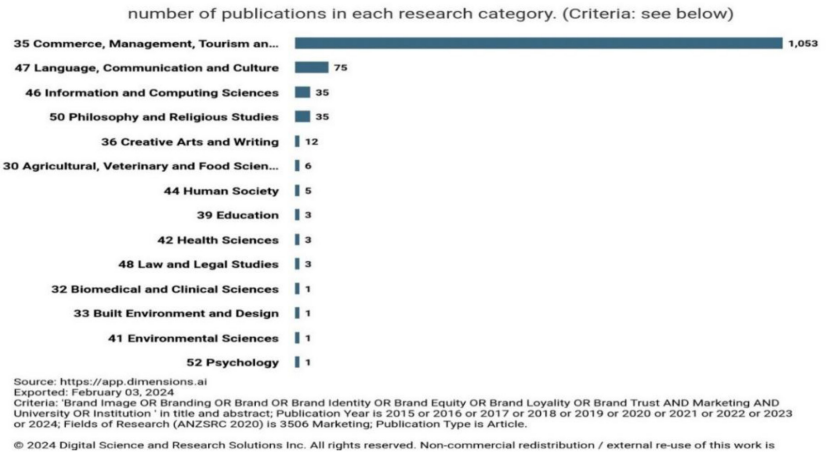

Figure 1

Bar chart on publication for the period 2015-2024 from Dimension.ai

The provided graph (**Fig 2)** depicts the annual distribution of publications related to branding and marketing up to February 3rd, 2024. The trend observed in the graph illustrates the evolving scholarly interest in exploring various facets of BI and its dimensions over time. Particularly notable is the increasing attention towards investigating the impact of BI on business practices. For instance, in 2015, there were only 34 publications on this topic, followed by a modest rise to 38 in 2016. However, there has been a consistent upward trajectory in the number of publications each subsequent year, with a substantial surge observed from 2022 to 2023, indicating a growing recognition of the significance of BI in academic discourse and its implications for business strategies. (In the year 2015-34 publication, 2016-38, 2017-52,2018-62, 2019-91, 2020-104, 2021-151,2022-198, 2023-309 and 2024-14 publications just in a month)

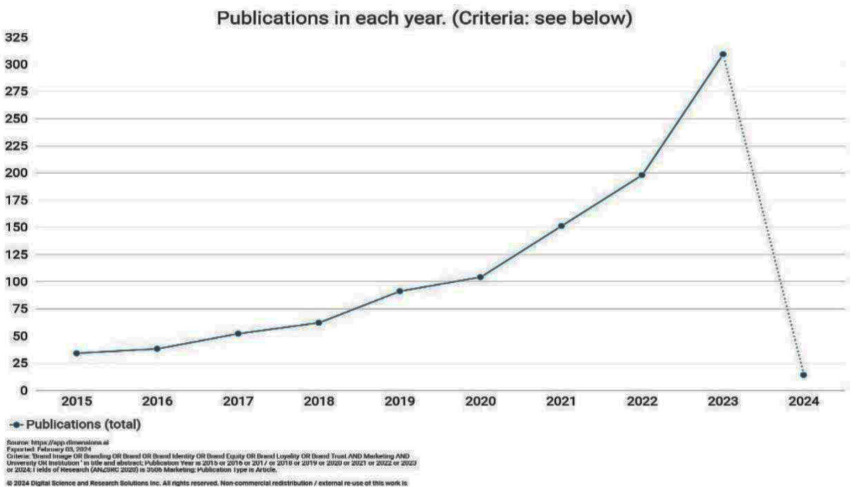

Figure 2

Publication year wise from dimension.ai

The co-authorship network **(Fig 3a)** data was retrieved from dimension.ai. The analysis revealed that there are 10 total co-authorship links involving 5 researchers, forming a single cluster within the network. This indicates a moderate level of collaboration among the researchers, with potential for further exploration and expansion of collaborative endeavors in the field.

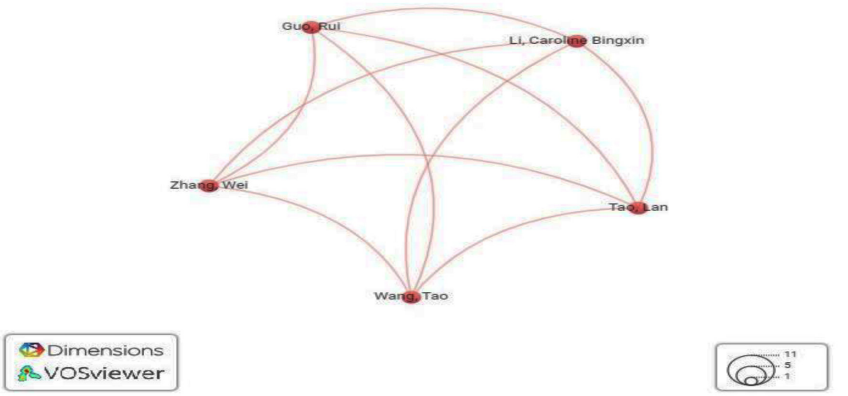

Figure 3a

Co Authorship Network from Dimension.ai

The co-authorship network of overlay visualization **(Fig 3b)** represents 10 total co-authorship links involving 5 researchers, forming a single cluster within the network. This indicates a moderate level of collaboration among the researchers, with potential for further exploration and expansion of collaborative endeavors in the field. And most of the collaboration also is seen during 2018.

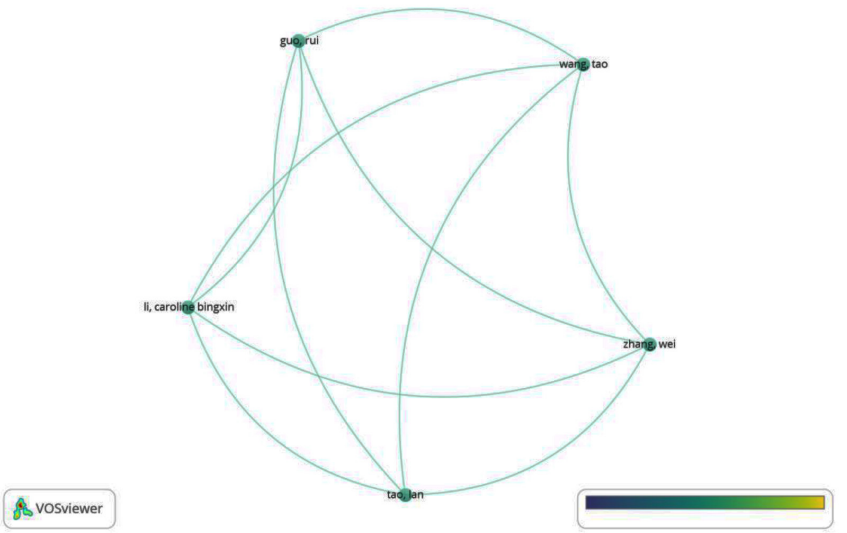

Figure 3b

Co Authorship Network from VOSviewer representing overlay visualization

(Fig 4a), in this study, derived from VOSviewer, delineates the bibliographic coupling among articles/ Documents. A total of 1027 articles were analyzed, each necessitating a minimum of ten citations for inclusion, leading to the identification of 230 articles meeting this criterion. Among these 230 articles, the study calculated the total strength of bibliographic coupling link with other documents. The document with the greatest link will be selected. Notably, some articles within this network remain disconnected, while the largest connected set comprises 223 documents, distributed across 7 clusters, with a collective total of 25289 links strength. The analysis further highlights prominent authors and their respective citation counts. For instance, Lou and Yuan [30] emerges as the most cited author, with 961 citations, followed by Hollebeek and Macky [31] with 398 citations, Khare [32] with 239 citations, and Reinikainen et al. [33] with 238 citations, exhibiting corresponding total link strengths of 219, 340, 71, and 233, respectively. Moreover, the study identifies significant papers within specific clusters, such as the influential work by Lou and Yuan [30] & Reinikainen et al. [33] on influencer marketing, within cluster 1 with 59 articles celebrating the influence of marketing. Cluster 2, with 45 articles, largely focuses on brand equity, brand experience consumer or customer perspective along with interplay of marketing activities. Cluster 3, with 34 articles, discourse delves into brand loyalty, brand trust, BI & relationship marketing on consumer word of mouth. Cluster 4, with 30 articles, delving into brand love, effects of brand attachment, trust, emotions, brand value co creation, and brand addition. Also, study observed an article in the area of current study that is Education sector precisely B School, by Dass et al. [34] "Empirically examining the psychological mechanism loved & trusted business school brand" with total strength of 377 and 13 citations under cluster 4. Cluster 5, with 20 articles focuses largely on result of social media activity on various brand dimensions, Tatar and Eren-Erdoğmuş [35] "The Effect of Social Media Marketing on Brand Trust & Brand Loyalty for Hotels," represents the inaugural paper in the cluster examining the influence of social media, accruing 72 citations and a total link strength of 266. Cluster 6, comprising 18 articles, is primarily focused on themes such as green consumption value, green trust, green word-of-mouth (WoM), and consumer-based green brand equity, all of which contribute to advancing sustainable development initiatives, Tan et al. [36] "Investigating the Impact of Green Marketing Components on Purchase Intention: The Mediating Role of Brand Image and Brand Trust," which is part of this cluster, has garnered 27 citations and a total link strength of 70. Cluster 7, which consists of 17 articles, delves into the dynamics of customer brand

engagement, relationship cultivation through customer engagement, and the effectiveness of marketing communication, Hollebeek and Macky [31] is a prominent scholar within this domain, with their influential article, "Digital Content Marketing's Role in Fostering Customer Engagement, Trust, and Value: Framework, Fundamental Propositions, and Implications" emerging as the most cited paper in this cluster, with 398 citations, and the second most cited work in the current dataset. This paper also boasts a total link strength of 340.

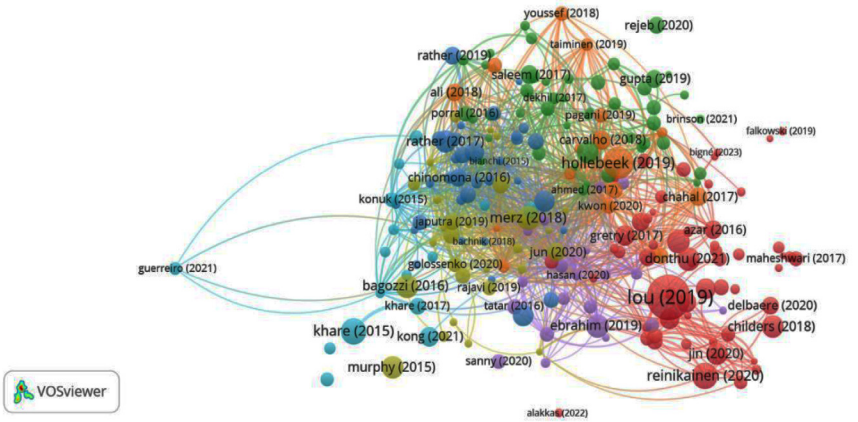

Figure 4a

Network Visualization for Bibliographic coupling & documents VOS viewer

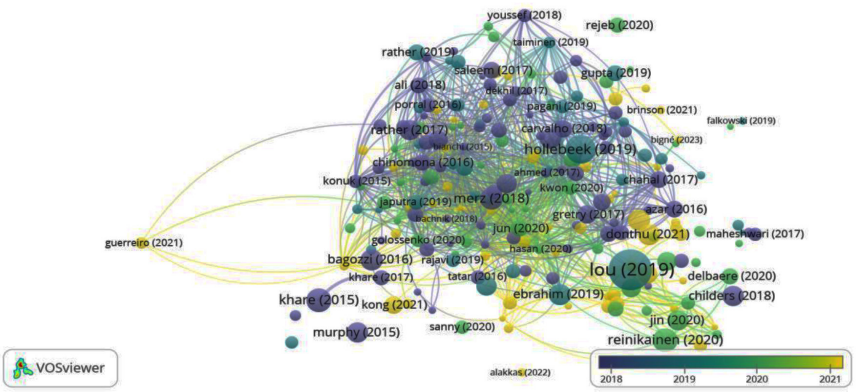

Figure 4b

Overlay Visualization for Bibliographic coupling & documents VOSviewer

The progression of research in the field of Branding & Marketing over recent years is depicted in (**Fig 4b**), through an overlay visualization. This visualization highlights a discernible shift from influencer marketing to a predominant emphasis on digital marketing and social media marketing, particularly notable since 2016. This transition underscores the growing importance of digital marketing. (**Fig 4c)**, is the graphical representation of the top ten citations in the area of study.

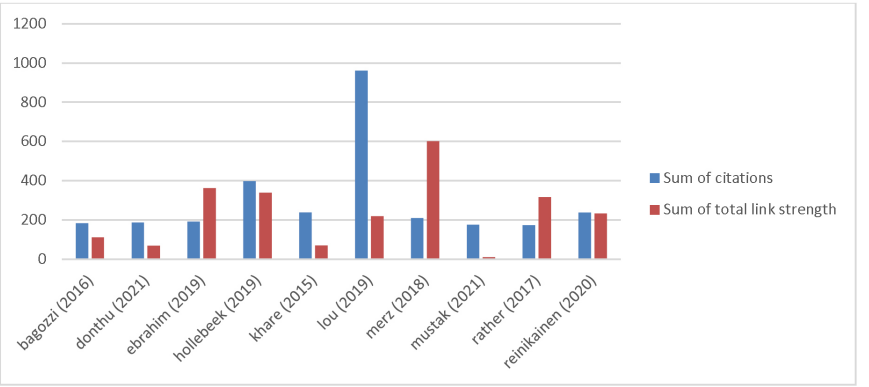

Figure 4c

Bar graph represent top ten citation of bibliographic coupling and citation, (2015-2024)

The inference from the above analysis is that certain articles, particularly those focusing on influencer marketing and digital content marketing, have garnered significant attention and citations within the academic community. This suggests that these topics are of particular interest and relevance in contemporary research on branding and marketing. Additionally, the clustering of articles indicates distinct thematic areas within the field, with specific articles being cited more frequently within their respective clusters.

The analysis of the bibliographic coupling of authors / co authorship network **(Fig 5a)** reveals a comprehensive overview of scholarly collaboration within the field of study. The presence of 2479 authors, albeit with varying degrees of contribution, underscores the extensive participation and engagement within the academic community. However, the relatively small proportion of authors meeting the predefined citation threshold suggests variability in the impact and influence of individual scholars. The identification of three distinct clusters further highlights the

existence of cohesive subgroups within the research landscape, potentially indicative of shared research interests or thematic concentrations. Additionally, the temporal emphasis depicted by the overlay visualization **(Fig 5b)** underscores the evolving nature of research trends, with a discernible uptick in scholarly activity observed from 2017 onwards. This temporal pattern may reflect shifting research priorities, emerging areas of inquiry, or evolving methodological approaches within the field.

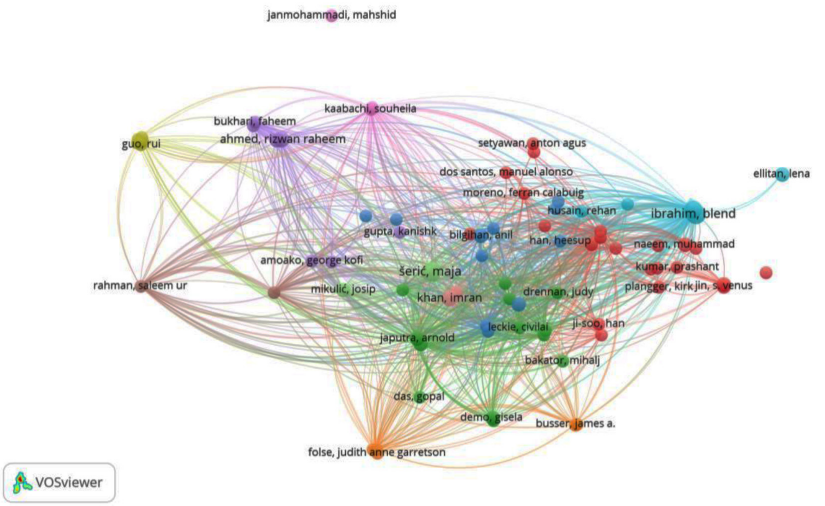

Figure 5a

Network Visualization authors- bibliographic Coupling

(Fig 5b), in the analysis of the research progression in Branding & Marketing indicates a noticeable shift towards digital marketing and social media marketing, particularly evident from 2022 to 2023. This suggests an increasing recognition of the role of digital channels in shaping brand perceptions and consumer behavior. (**Fig 5b)**, is the illustration of overlay visualization, which highlights the patterns & trends along with the paradigm shift in collaboration of authors over the years. The colors in network represent the year in which the authors collaborated.

The bibliometric analysis conducted using VOSviewer reveals several significant findings. The study involved a comprehensive examination of 2479 authors, each required to have contributed a minimum of two articles with at least two citations to be included. Among these authors, 82 met the established threshold criteria, with their total citation links with other authors calculated. Notably, a portion of the authors remained unconnected

within the network, while the largest connected set comprised 81 items. The visualization generated by VOSviewer displays eleven distinct clusters, collectively characterized by a substantial link strength of 18741. Additionally, overlay visualizations indicate a significant surge in research activity from 2017 onwards.

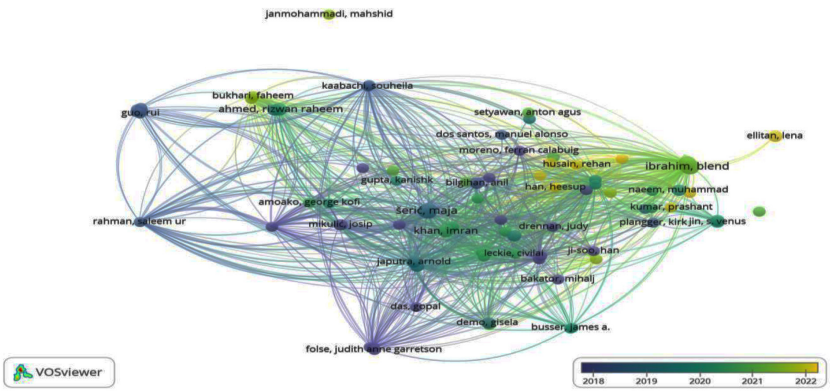

Figure 5b

Overlay Visualization Author- bibliographic Coupling

Khare, Arpita stands out as the most cited author in the analysis, with 318 citations across two documents and a total link strength of 141. Among Khare's notable works are "Role of green self-identity and peer influence in fostering trust towards organic food retailers" and "Antecedents to green buying behavior: a study on consumers in an emerging economy". Following Khare, Jin, S. Venus makes a significant contribution to the literature with three prominent articles, including "Instagram fashionistas, luxury visual image strategies, and vanity", "I trust what she's endorsing on Instagram: Moderating effects of parasocial interaction and social presence in fashion influencer marketing", and their most recent and highly cited work,, "I will buy what she's wearing: The roles of envy toward and parasocial interaction with influencers in Instagram celebrity-based brand endorsement and social commerce".

Similarly, Ryu Ehri's contributions are noteworthy, with 276 citations attributed to 3 documents and a total link strength of 425. Additionally, Ibrahim Blend and Seric, Maja each present significant contributions, with 6 documents each and the highest document citation counts of 162 and 111, respectively. These scholars' works exhibit substantial link strengths, with Ibrahim Blend's total link strength totaling 1383 and Seric, Maja's

totaling 1146, underscoring the influence and impact of their research within the scholarly community.

Upon closer examination of articles published in 2024, it is observed that 14 remain uncited, with only two specifically addressing brand-related dimensions. These articles explore topics such as the effect of digital marketing on BI formation in technology companies and the influence of perceived brand ethics in cultivating customer trust in Moroccan Islamic banks. This development indicates growing interest among scholars in identifying effective marketing strategies (MS) for businesses.

Although drawing definitive conclusions for 2024 may be premature, significant research activity was observed in the years 2022 and 2023, with 232 and 334 studies conducted, respectively. Despite this, there appears to be a limited focus on the university or higher education sector. Specifically, only one article addressing BI research in the education sector, titled "The Effect of Brand Image and Trust on Freshmen's Decision Making" by Muzakki and Putri [37], remained uncited. Further exploration revealed a scarcity of research in this domain, with only 12 papers identified since 2015, most of which were written post-2017. Among these, five articles concentrate on school-level education, while seven relate to higher education. This highlights a significant research gap in the education sector, an area deserving further scholarly attention.

Moreover, while significant research activity is evident in recent years, there appears to be a lack of focus on the education sector, particularly higher education. The scarcity of studies addressing brand image in education highlights a significant research gap that warrants scholarly attention to better understand the dynamics of branding in educational contexts.

Subsequently, a co-authorship and organizational affiliation **(Fig 6)** analysis was undertaken, revealing 845 organizations with a minimum document citation threshold of 5. Of these, only 7 institutions met the specified criteria. Notably, there was no discernible connection observed between authors and organizations. Consequently, the decision was made to adjust the parameters, reducing both the minimum number of documents and citations per organization to 2, resulting in 139 organizations meeting the revised threshold. The total co-authorship link strength with other organizations was calculated for each of the 139 organizations, and the organization with the highest overall link strength was determined.

Several entities were found to be disconnected within the network, while the largest connected set comprised 16 organizations. The subsequent network visualization **(Fig 6)** revealed 5 distinct clusters, collectively possessing a total link strength of 27. Each cluster represented a specific collaborative region, exemplified by Cluster 1, which featured 5 articles from 5 different countries, including King Fahd University of Petroleum and Minerals from Saudi Arabia, King's College London from England, Monash University Malaysia from Malaysia, and Swinburne University of Technology from Australia. Cluster 2 consisted of 3 articles from Catholic University of the Most Holy Conception in Chile, Charles Sturt University in Australia, and the University of Granada in Spain. Cluster 3 involved collaboration among universities in South Korea, including Kyung Hee University, Sejong University, and Seoul National University. Cluster 4 encompassed 3 universities, namely the University of Valencia in Spain, the University of Zagreb in Croatia, and Valencia Catholic University, also in Spain. Finally, Cluster 5 included 2 universities, Boston College in the United States and Northwestern University in Illinois, USA. The total link strength across all 5 clusters amounted to 27.

Sejong University has the highest citation count with 404 and a cumulative connection strength of 6 and University of Jammu in second with 366 citations with total link strength of 2, Indian institute of Management Rohtak in third with 352 citations with total link strength 1 may not be visible in the network visualization.

The findings of this analysis are that while a significant number of organizations met the initial criteria for co-authorship and organizational affiliation, only a small fraction of them exhibited substantial collaboration and connectivity. Adjustments to the parameters resulted in a larger pool of organizations meeting the revised threshold, indicating a broader network of potential collaborative partners. However, despite this expansion, there remained a notable proportion of disconnected entities within the network, highlighting potential gaps or limitations in collaboration efforts. The identification of distinct clusters representing specific collaborative regions suggests the existence of localized networks within the broader academic landscape. Additionally, the disparity in citation counts and total link strength among organizations underscores variations in research impact and collaboration effectiveness across different entities.

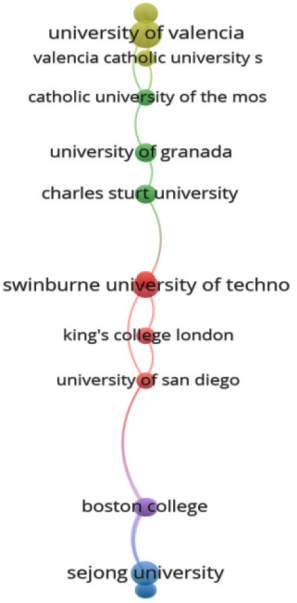

Figure 6

Co-authorship and organizational affiliation analysis

Furthermore, the author conducted an analysis of co-authorship patterns and country affiliations. (**Fig 7a)** presents a network visualization of research collaborations, generated using the default settings of the VOSviewer tool, which required a minimum of five documents per country, regardless of citation count. Among the 74 countries initially examined, only 34 met this criterion. However, by reducing the minimum document and citation threshold to two each, a total of 54 countries qualified under the revised parameters. The cumulative strength of co-authorship links between these 54 countries was then computed. Additionally, the strength of co-authorship links with various institutions was evaluated across 139 organizations, identifying the institution with the highest connectivity. link strength. Among the countries within the network, some remained unconnected, with the largest connected network comprising 52 countries. The countries with the highest co-authorship link strength were also determined. The United States emerged as the most cited country, accumulating 4,425 citations across 91 documents and a cumulative link strength of 58. India followed with 1,712 citations across 63 documents and a link strength of 15, while Singapore ranked third with

1,137 citations from just two documents and a link strength of 3. China, the United Kingdom, and France were also prominent in the network, each showing varying document and citation counts. Eight clusters were identified, with a total link strength of 215. Below, two images are presented: a network visualization depicting the eight clusters **(Fig 7a**) and an overlay visualization illustrating the growth of research over time. **(Fig 7b).**

Inferring from the analysis, it is evident that the United States holds a dominant position in terms of citation count and total link strength, indicating its significant contribution to international research collaborations. However, it is noteworthy that countries like India and

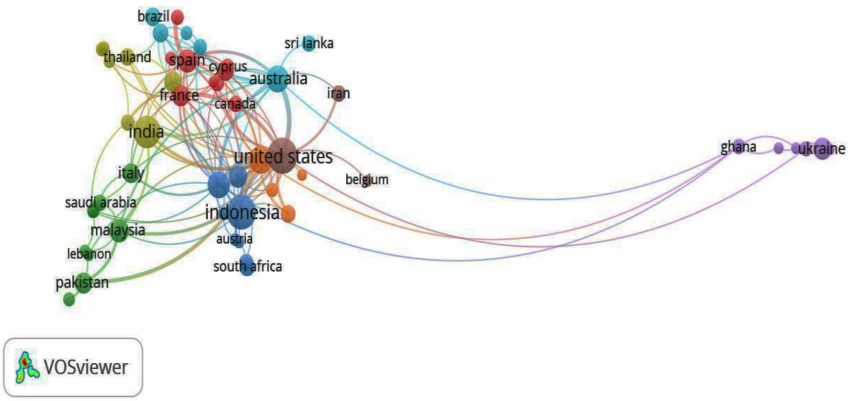

Figure 7a

Co-authorship and country affiliation analysis- Network visualization 8 clusters

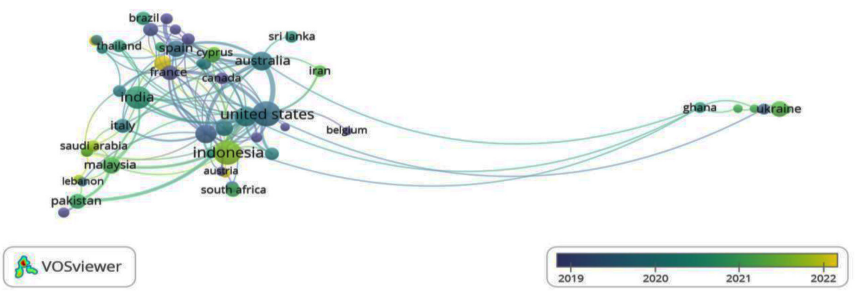

Figure 7b

Co-authorship and country affiliation analysis- Overlay visualization

Singapore, despite having fewer documents, also exhibit considerable citation impact, suggesting the potential for further research collaborations and knowledge exchange. The presence of eight distinct clusters underscores the diverse collaborative networks existing among countries, highlighting the multidimensionality of global research partnerships. Further exploration of these collaborative patterns and their underlying factors could yield valuable insights for fostering international research collaborations and advancing knowledge dissemination on a global scale.

The analysis presented in **(Fig 8a)** provides insightful information regarding the co-citation and cited authorship patterns within the scholarly network. A total of 33,928 authors were identified as co-cited in the articles, with 375 authors meeting the predefined threshold of a minimum of 20 citations per author. The cumulative strength of co-citation links was calculated for each of these 375 authors to identify those with the highest overall link strength. Among them,

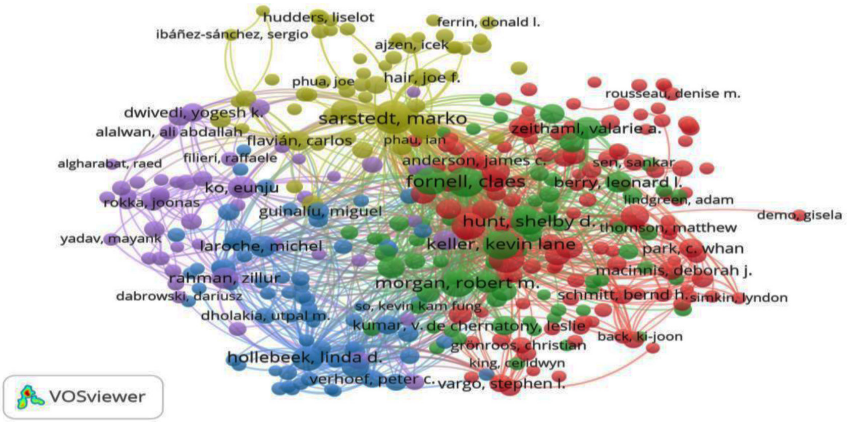

Figure 8a

Network visualization of Co citation and cited authors

Fornell, Cales emerged as the most cited author, with 228 citations and a link strength of 10,493, reflecting substantial connections within the network. Interestingly, Sarstedt, Marko, demonstrated a higher total link strength of 10,575, surpassing Fornell despite having slightly fewer citations (226), indicating even more robust collaborative ties within the academic community.

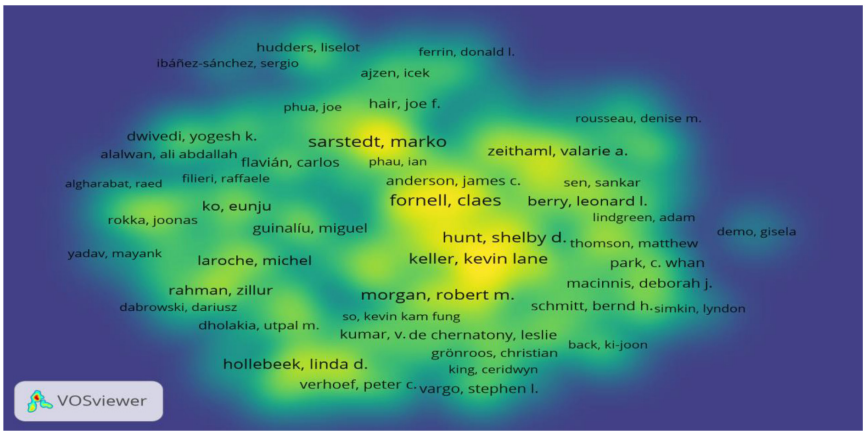

Figure 8b

Density visualization of Co citation and cited authors

The clustering analysis revealed that the 375 authors formed five distinct clusters, collectively exhibiting a total link strength of 369,490. Additionally, (**Fig 8b**), depicting the density visualization, provides further insights into the network structure by illustrating the concentration or density of connections between entities. Darker shades indicate areas of higher density, highlighting regions of significant collaboration or co-occurrence among authors.

In essence, the analysis underscores the extensive collaborative networks existing within the scholarly community, as evidenced by the numerous co-citations and strong linkages between authors. The identification of prominent authors with substantial link strengths, such as Fornell and Sarstedt, highlights their significant contributions and influence within their respective research domains. Furthermore, the clustering and density visualizations offer valuable tools for identifying areas of research focus and understanding the structural dynamics of scholarly networks.

The bibliometric analysis conducted using the Dimension.ai dataset provided valuable insights into the citation patterns and source connectivity within the scholarly network as in the **(Fig 9a).**

Initially, the default criteria mandated a minimum of five documents per source and zero citations, resulting in 27 sources that met the qualification. The cumulative strength of citation links for these sources was then calculated, and those with the highest link strength were identified. When the criteria were modified to require a minimum of two

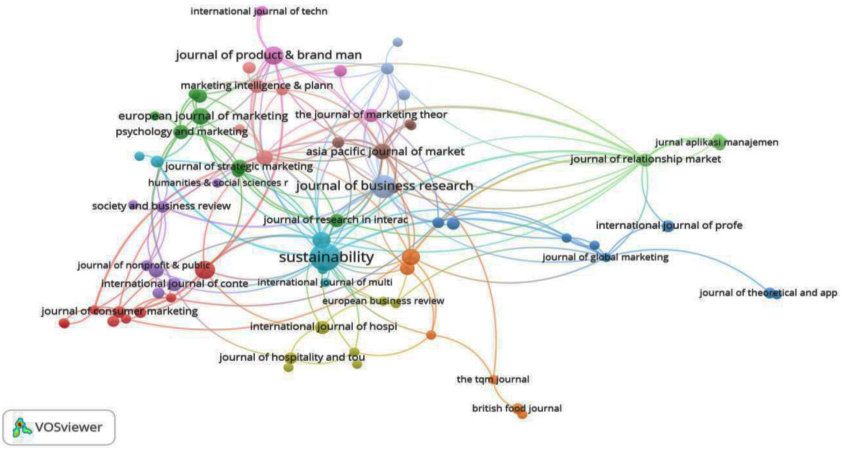

Figure 9a

Citation & Journal or sources involved in the study

documents and two citations, 105 sources out of a total of 636 met the revised threshold. The total strength of citation links for these 105 sources was subsequently calculated, highlighting those with the greatest link strength. The resulting network consisted of 12 clusters, with an aggregate link strength of 196, where the size of each bubble indicated the connectivity strength of each journal.

(Fig 9b) presents an overlay visualization of the network, elucidating the interconnectivity among journals and their temporal distribution. It is

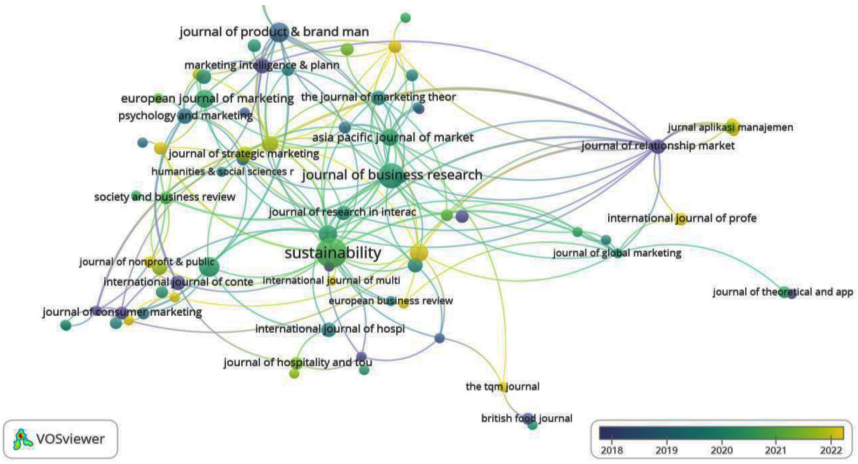

Figure 9b

Overlay visualization of Citation & Journal or sources involved in the study

noteworthy that the Sustainability Journal recorded the highest document count, comprising 32 publications and a cumulative link strength of 20, predominantly observed from the year 2020 onward. Likewise, the Journal of Business Research contributed 17 documents in 2020, while the Journal of Product & Brand Management produced 11 documents in 2018, accompanied by a total link strength of 15.

Represents 12 clusters over the years

Overall, the analysis provides valuable information for researchers, publishers, and practitioners interested in understanding the dynamics of scholarly communication and collaboration within the field of sustainability, business research, and brand management. The identification of key journals and their connectivity patterns offers valuable insights for future research directions and strategic decision-making in academic publishing and knowledge dissemination

The keyword analysis, done using word sift depicted in **(Fig 10)** suggests a noteworthy emphasis on various concepts within the research landscape pertaining to brand image and marketing in the education sector. Particularly, there is a frequent occurrence of terms such as "Brand," "Marketing," "Customer," "Trust," and "Relationship." Interestingly, the term "Image" appears significantly less frequently, being mentioned only

Figure 10

Keyword analysis using word sift

38 times compared to "Brand," which is mentioned 310 times, "Trust" 152 times, "Marketing" 100 times, "Consumer" 78 times, and "Relationship" 62 times. This observation underscores the importance attributed to comprehending and managing brand perception within educational contexts.

Word Cloud: A total of 9615 words from the top cited title and abstract used in the study were selected to generate the most prevalent word in the study, about 200 most relevant words were picked. Font size in the word cloud represents the frequency of occurrence. The most frequently re occurred word is "Brand", "Trust", "Marketing" & "Consumer". The word "Image" re occurred 38 times in this context.

The substantial occurrence of terms such as "Brand," "Marketing," "Customer," "Trust," and "Relationship" in the keyword analysis indicates a predominant focus on these aspects within the realm of brand image and marketing in the education sector. However, the comparatively lower frequency of the term "Image" suggests a potential gap in the literature concerning the explicit exploration of visual representation and perception in educational branding contexts. This implies a need for further research to delve into the nuanced dynamics of brand imagery and its implications for educational institutions.

Discussion

The thematic analysis reveals various potential areas for future research concerning the topic of brand image and its relevance within higher education. Firstly, scholars may explore the specific "Determinants that shape brand perception within educational institutions, encompassing the influence of marketing strategies". Secondly, further investigation could focus on "Elucidating the effect of green marketing on brand image and its influence on student enrollment decisions".

Additionally, "Investigating the role of trust in shaping brand image within the education sector." could provide valuable insights into how institutions can foster positive relationships with stakeholders, including students, faculty, alumni, and the broader community. This could involve investigating the effectiveness of communication strategies, service quality, and ethical practices in building trust and enhancing brand image.

Furthermore, "Examining the influence of brand image, brand identity, brand awareness and marketing on student decision-making processes, enrollment trends, and academic outcomes" could offer

practical implications for higher education institutions seeking to attract and retain students in an increasingly competitive landscape.

Overall, the thematic analysis suggests that further research in the realm of brand image and marketing in higher education should focus on understanding the complex interplay between branding strategies, stakeholder perceptions, and institutional outcomes to inform strategic decision-making and enhance institutional effectiveness.

Conclusion

In conclusion, this study conducted a comprehensive bibliometric analysis using the Dimension.ai database to explore various dimensions of scholarly output related to brand image and marketing in the education sector. The analysis encompassed the productivity of authors, co-authorship patterns, institutional affiliations, and geographic distribution of research output. By examining the most frequently cited papers and citing articles, the study provided insights into the evolving landscape of brand image research within educational contexts. The bibliometric analysis, spanning from 2015 to 2024, shed light on emerging trends and thematic clusters in the field, revealing the dynamic nature of research in this area. Moreover, the utilization of VOSviewer software facilitated the visualization of relationships among journals, keywords, and institutions, offering a comprehensive understanding of collaborative networks and research themes. This study enhances the understanding of brand image and marketing within the education sector while highlighting the significance of bibliometric analysis in evaluating academic literature and identifying emerging research trends

References

[1] Y. Bilgin, "The effect of social media marketing activities on brand awareness, brand image and brand loyalty," *Business and Management Studies an International Journal*, vol. 6, no. 1, pp. 128–148, Apr. (2018). doi: 10.15295/bmij.v6i1.229.

[2] Y. Zhang, "The Impact of Brand Image on Consumer Behavior: A Literature Review," *Open Journal of Business and Management,* vol. 3, pp. 58-62, (2015). https://doi.org/10.4236/ojbm.2015.31006.

[3] M. Saglam, "Key themes in brand reputation research: a bibliometric analysis with VOSVIEWER software," *Research Journal of Business and Management,* vol. 9, no. 1, 1-12, (2022).

[4] A. Sharma, R. Agarwal, and S. Aggarwal, "Factors influencing social media marketing having the impact on brand awareness and brand image," *Journal of Statistics and Management Systems*, vol. 26, no. 3, pp. 745–754, Jan. (2023). doi: 10.47974/jsms-1063.

[5] S. Fatima, H. Alqahtani, A. Naim, and F. Alma'alwi, "E-CRM through social media marketing activities for brand awareness, brand image, and brand loyalty," in Advances in marketing, customer relationship management, and e-services book series, pp. 109–138, (2022). doi: 10.4018/978-1-6684-5386-5.ch006.

[6] N. M. Yasin, and A. R. Zahari, "Does Family and Viral Marketing Have any Effect on Brand Equity," *Contemporary Marketing Review*, vol. 1, no. 8, 1-13, Jan. (2011). [Online]. Available: http://www.businessjournalz.org/articlepdf/cmr1704o18.pdf

[7] O. M. Kalieva, "Development of territory Brand image: the marketing aspect," *Review of European Studies,* vol. 7, no. 2, Jan. (2015). doi: 10.5539/res.v7n2p23.

[8] W. O. Bearden and M. J. Etzel, "Reference group influence on product and brand purchase decisions," *Journal of Consumer Research*, vol. 9, no. 2, p. 183, Sep. (1982). doi: 10.1086/208911.

[9] C. W. Park, B. J. Jaworski, and D. J. MacInnis, "Strategic Brand Concept-Image Management," *Journal of Marketing,* vol. 50, no. 4, pp. 135–145, Oct. (1986). doi: 10.1177/002224298605000401.

[10] K. L. Keller, "Conceptualizing, measuring, and managing Customer-Based Brand Equity," *Journal of Marketing*, vol. 57, no. 1, p. 1, Jan. (1993). doi: 10.2307/1252054.

[11] K. L. Keller, "Managing the growth tradeoff: Challenges and opportunities in luxury branding," *Journal of Brand Management,* vol. 16, no. 5–6, pp. 290–301, Jan. (2009). doi: 10.1057/bm.2008.47.

[12] D. Aaker, "Brand equity," La gestione del valore della marca, 347, 356, (1991).

[13] J. Jacoby, J. C. Olson, and R. A. Haddock, "Price, brand name, and product composition characteristics as determinants of perceived quality.," *Journal of Applied Psychology*, vol. 55, no. 6, pp. 570–579, Dec. (1971). doi: 10.1037/h0032045.

[14] P. S. Richardson, A. S. Dick, and A. K. Jain, "Extrinsic and intrinsic cue effects on perceptions of store brand quality," *Journal of Marketing*, vol. 58, no. 4, p. 28, Oct. (1994). doi: 10.2307/1251914.

[15] H. J. Riezebos, B. Kist, and G. Kootstra, Brand management: a theoretical and practical approach. (2003). [Online]. Available: https://ci.nii.ac.jp/ncid/BA59260083

[16] D. Roy and S. Banerjee, "CARE-ing strategy for integration of brand identity with brand image," *International Journal of Commerce and Management*, vol. 17, no. 1/2, pp. 140–148, Jul. (2007). doi: 10.1108/10569210710776512.

[17] A. Hsieh and C. Li, "The moderating effect of brand image on public relations perception and customer loyalty," *Marketing Intelligence & Planning*, vol. 26, no. 1, pp. 26–42, Feb. (2008). doi: 10.1108/02634500810847138.

[18] C. Burmann, K. Schaefer, and P. Maloney, "Industry image: Its impact on the brand image of potential employees," *Journal of Brand Management*, vol. 15, no. 3, pp. 157–176, Sep. (2007). doi: 10.1057/palgrave.bm.2550112.

[19] N. M. Iversen and L. E. Hem, "Provenance associations as core values of place umbrella brands," *European Journal of Marketing*, vol. 42, no. 5/6, pp. 603–626, May (2008). doi: 10.1108/03090560810862534.

[20] H. Lee, C. Lee, and C. Wu, "Brand image strategy affects brand equity after M&A," *European Journal of Marketing*, vol. 45, no. 7/8, pp. 1091–1111, Jul. (2011). doi: 10.1108/03090561111137624.

[21] N. K. Saxena and U. Dhar, "Brand image: A seasoned review," Asian Journal of Management, vol. 8, no. 1, pp. 103-6, (2017).

[22] R. A. Fairthorne, "Empirical Hyperbolic distributions (Bradford-Zipf-Mandelbrot) for bibliometric description and prediction," *Journal of Documentation*, vol. 25, no. 4, pp. 319–343, Apr. (1969). doi: 10.1108/eb026481.

[23] C. Chen, R. Dubin, and M. C. Kim, „Emerging trends and new developments in regenerative medicine: a scientometric update (2000–2014)," *Expert opinion on biological therapy*, vol. 14, no. 9, 1295-1317, (2014).

[24] N. Donthu, S. Kumar, N. Pandey, N. Pandey and A. Mishra, "Mapping the electronic word-of-mouth (eWOM) research: A systematic review and bibliometric analysis," *Journal of Business Research*, vol. 135, 758-73, (2021).

[25] Yuetian Yu, Yujie Li, Zhongheng Zhang, Zhichun Gu, Han Zhong, Qiongfang Zha, Luyu Yang, Cheng Zhu, Erzhen Chen, "A bibliometric analysis using VOSviewer of publications on COVID-19," *Annals of Translational Medicine,* vol. 8, no. 13, p. 816, Jul. (2020). doi: 10.21037/atm-20-4235.

[26] K. Navaneetha and P. Mohan, "Bibliometric And Visualization Analysis on Financial Technology Using Scopus Database," *Scandinavian Journal of Information Systems*, vol. 35, no. 1, 961-75, (2023).

[27] AA Chadegani, H Salehi, MM Yunus, H Farhadi, M Fooladi, M Farhadi, NA Ebrahim, "A Comparison between Two Main Academic Literature Collections: Web of Science and Scopus Databases," *Asian Social Science,* vol. 9, no. 5, Apr. (2013). doi: 10.5539/ass.v9n5p18.

[28] N. J. Van Eck and L. Waltman, "Accuracy of citation data in Web of Science and Scopus," ISSI, pp. 1087–1092, Jun. (2019). [Online]. Available: https://dblp.uni-trier.de/db/journals/corr/corr1906.html#abs-1906-07011

[29] N. J. Van Eck and L. Waltman, "Software survey: VOSviewer, a computer program for bibliometric mapping," *Scientometrics*, vol. 84, no. 2, pp. 523–538, Dec. (2009). doi: 10.1007/s11192-009-0146-3.

[30] C. Lou and S. Yuan, "Influencer Marketing: How message value and credibility affect consumer trust of branded content on social media," *Journal of Interactive Advertising,* vol. 19, no. 1, pp. 58–73, (2019), doi: 10.1080/15252019.2018.1533501.

[31] L. D. Hollebeek and K. Macky, "Digital content Marketing's role in fostering consumer engagement, trust, and value: Framework, fundamental propositions, and implications," *Journal of Interactive Marketing,* vol. 45, no. 1, pp. 27–41, (2019), doi: 10.1016/j.intmar.2018.07.003.

[32] A. Khare, "Antecedents to green buying behaviour: a study on consumers in an emerging economy," *Marketing Intelligence & Planning,* vol. 33, no. 3, pp. 309–329, May. (2015), doi: 10.1108/mip-05-2014-0083.

[33] H. Reinikainen, J. Munnukka, D. Maity, and V. Luoma-Aho, "'You really are a great big sister' – parasocial relationships, credibility, and the moderating role of audience comments in influencer marketing," *Journal of Marketing Management,* vol. 36, no. 3–4, pp. 279–298, Jan. (2020), doi: 10.1080/0267257x.2019.1708781.

[34] S. Dass, S. Popli, A. Sarkar, J. G. Sarkar, and M. Vinay, "Empirically examining the psychological mechanism of a loved and trusted

business school brand," *Journal of Marketing for Higher Education*, vol. 31, no. 1, pp. 23–40, Jan. (2021), doi: 10.1080/08841241.2020.1742846.

[35] Ş. B. Tatar and İ. Eren-Erdoğmuş, "The effect of social media marketing on brand trust and brand loyalty for hotels," I*nformation Technology & Tourism,* vol. 16, pp. 249–263, (2016), doi: 10.1007/s40558-015-0048-6.

[36] Z. Tan, B. Sadiq, T. Bashir, H. Mahmood, and Y. Rasool, "Investigating the impact of green marketing components on purchase intention: the mediating role of brand image and brand trust," *Sustainability,* vol. 14, no. 10, p. 5939, May (2022), doi: 10.3390/su14105939.

[37] M. H. N. Muzakki and S. R. Putri, "The effect of brand image and trust on freshmen's decision making," *JBTI Jurnal Bisnis Teori Dan Implementasi,* vol. 13, no. 1, pp. 38–50, Apr. (2022), doi: 10.18196/jbti.v13i1.14072.

Received June, 2024