

Marketing analytics: The bridge between customer psychology and marketing decision-making

Rituparna Basu¹  | Weng Marc Lim^{2,3,4}  | Anil Kumar⁵  | Satish Kumar^{2,6} 

¹International Management Institute Kolkata, Kolkata, India

²Sunway Business School, Sunway University, Sunway City, Selangor, Malaysia

³Faculty of Business, Design and Arts, Swinburne University of Technology Sarawak Campus, Kuching, Sarawak, Malaysia

⁴School of Business, Law and Entrepreneurship, Swinburne University of Technology, Hawthorn, Victoria, Australia

⁵Business Management and Marketing Department, School of Business and Economics, Westminster International University in Tashkent (WIUT), Tashkent, Uzbekistan

⁶Indian Institute of Management Nagpur, Nagpur, India

Correspondence

Weng Marc Lim, School of Business, Sunway Business School, Sunway University, Sunway City, 47500 Selangor, Malaysia.
Email: marclim@swin.edu.au

Abstract

As modern marketing environments become increasingly data-intensive, the role of marketing analytics in illuminating the dynamics of customer psychology to inform marketing decision-making becomes critical. This study conducts a systematic literature review using a bibliometric analysis of 122 studies identified and retrieved from Scopus, focusing on the expansive domain of marketing analytics. Our review serves as a conduit binding the fragmented past, present, and future of marketing analytics, presenting an organized framework that highlights the characteristic theoretical underpinnings associated with it. Beyond offering a panoramic perspective of key resources—encompassing journals, authors, countries/territories, and institutions—we delve deeply into predominant themes in marketing analytics. These themes underscore its vital applications, from decision-making, forecasting, and capability building, to understanding customer journeys and gaining a competitive edge. Central to our discourse is the study's implication, emphasizing marketing analytics as a bridge to a more informed grasp of customer psychology in today's customer-centric, data-driven environment. Through this lens, marketing analytics becomes a potent tool to capture psychological nuances, uncovering facets that might be bypassed by traditional marketing, thereby empowering enriched decision-making in modern marketing strategies.

KEYWORDS

bibliometric analysis, customer psychology, decision-making, marketing analytics, systematic literature review

1 | INTRODUCTION

Marketing analytics is a critical component of marketing defined herein as “the collection, management, analysis, and reporting of data¹ in data-rich environments² by marketing professionals³

periodically⁴ using technologies and tools in ways that can effectively and efficiently consolidate big data and generate meaningful and useful insights across touchpoints⁵ to locate market trends, understand market phenomenon, inform marketing decision-making, and improve the success of marketing

¹This refers to the “what” of marketing analytics (e.g., engagement, sales).

²This refers to the “where” of marketing analytics (e.g., point of entry, shopping, and sales; social media).

³This refers to the “who” of marketing analytics (e.g., marketing analyst and researcher).

⁴This refers to the “when” of marketing analytics (e.g., daily, weekly, monthly, quarterly, yearly).

⁵This refers to the “how” of marketing analytics (e.g., artificial intelligence, big data analytics, blockchain, cloud computing, internet of things).

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pursuits.⁶ This original definition offers a comprehensive encapsulation of the “what,” “where,” “who,” “when,” “how,” and “so what” of marketing analytics.⁷

Gaining a profound understanding of the state of extant research on marketing analytics is *necessary* to set the scene on current progress so that future directions are shaped with an informed understanding, which is *important* to accelerate progress and mitigate replication in the field (Kraus et al., 2022; Lim, Kumar, et al., 2022). While several scholars have attempted to do so, they remain *limited* in coverage (e.g., less than 100 studies), rigor (e.g., nonsystematic method, subjective), and scope (e.g., overlooking performance analysis and science mapping), which may be due to the choice of review method (e.g., nonobjective) and the field’s stage of development (e.g., infancy, 2018–2020). For example, Iacobucci et al. (2019) considered 62 articles up to 2018 across various scholarly and practice sources using a quasi-systematic approach involving ABI Inform and EBSCO Host as well as an ad hoc selection of marketing journals, shedding light on the definition of marketing analytics and its manifestation in academic research, practice, and education, whereas Dar et al. (2021) included 59 articles up to 2020 that were deemed to be relevant and highly cited through a backward and forward search, revealing a list of issues relating to marketing analytics (e.g., ethics, legality), while France and Ghose (2019) delivered an integrative review that showcased the visualization, segmentation, and class prediction aspects of marketing analytics. It is noteworthy that no study on marketing analytics, to date, has leveraged one of the world’s major and most comprehensive scientific database—that is, Scopus—which is the “gold standard” source of high-quality research for review studies (Paul et al., 2021). Likewise, no study on marketing analytics, to date, has leveraged the power of bibliometric analysis for objectively assessing performance and mapping scientific knowledge of the field (Donthu, Kumar, Mukherjee, et al., 2021; Mukherjee et al., 2022). These *limitations* along with the *relevance* of marketing analytics in the digital era and the *urgency* for insights that can inform agile and transformative responses in the new normal (Lim, 2022, 2023) provide a strong case for engaging in a comprehensive and rigorous study that can shed light on current insights and future directions of marketing analytics. Therefore, the present study *aims* to provide a state-of-the-art overview of marketing analytics, focusing on the growing scope of this domain in the broader context of business decisions.

We employ a systematic literature review approach driven by bibliometric analysis to answer four critical research questions (RQs), in line with the convention of bibliometric research (Donthu, Kumar, Mukherjee, et al., 2021; Mukherjee et al., 2022), where RQ1 offers an evaluation of research productivity, RQ2 presents a directory of research expertise, RQ3 reveals the nomological network of extant

research, and RQ4 signposts the avenues to extend understanding on marketing analytics:

RQ1: *What is the publication and citation trends of marketing analytics research?*

RQ2: *Who are the top contributors (i.e., journals, authors, countries/territories, and institutions) of marketing analytics research?*

RQ3: *What does existing research (i.e., themes, topics) inform us about marketing analytics?*

RQ4: *Where should future research be heading to advance marketing analytics?*

This study holds significant value as it offers an exhaustive and systematic review of the burgeoning field of marketing analytics research. As the landscape continues to evolve at an unprecedented pace, synthesizing the existing body of knowledge, identifying lacunas, and suggesting future research trajectories becomes imperative. Addressing this crucial need, our study applies a rigorous review methodology and draws from a wide spectrum of academic sources to craft a comprehensive overview. Our study serves as a conduit that binds the fragmented past, present, and future of marketing analytics, presenting an organizing framework that charts its evolution. This aspect is particularly instrumental in underlining marketing analytics’ role as a bridge toward an informed understanding of customer psychology and decision-making, thereby enriching its theoretical underpinnings. Specifically, this study makes a significant contribution to the understanding of marketing analytics in contemporary business contexts, especially in relation to decision-making processes, and provides valuable insights into how marketing analytics can inform psychology, highlighting the unique intersection of these domains and offering valuable guidance for future research in this area. Consequently, the insights gleaned from this study are invaluable not just for scholars who seek to advance academic discourse, but also for practitioners aiming to leverage data-driven strategies in the real-world business environment, guiding both academia and industry toward a more insightful, efficient, and customer-centric future.

2 | CONCEPTUAL AND CONTEXTUAL BACKGROUND

The importance of marketing analytics has surged in the era of big data and technological advancement. To illustrate, the global market for marketing analytics is projected to grow at a compound annual growth rate of 14.9% from 2021 to 2026, increasing from \$3.2 billion in 2021 to \$6.4 billion by 2026 (BCC Research, 2021). This growth is propelled by the advent of digital marketing and social media, coupled with increasing access to available data, disrupting existing marketing practices and techniques (Moorman, 2016; Verhoef et al., 2016). Noteworthy, traditional marketing practices often focus on broad

⁶This refers to the “so what” of marketing analytics (e.g., grand challenges, intergenerational shifts, mega disruptions, seasonality).

⁷The original definition of marketing analytics that we offer herein is, to date, the most comprehensive and relevant for the marketing discipline. This new definition represents an upgrade to existing definitions, for example, Lilien’s (2011, p. 5) definition in the *Journal of Marketing* (i.e., “technology-enabled and model-supported approach to harness customer and market data to enhance marketing decision-making”), as well as the other definitions compiled by Iacobucci et al. (2019).

segmentation and generalized promotional strategies. For instance, advertising in print media (e.g., newspapers) is typically not targeted to a specific individual but to a wider audience. However, with the advent of marketing analytics, businesses can now target advertisements to specific customer segments or even to individual customers based on their demographics, online activities, and purchasing behavior. For example, Amazon uses customer browsing and purchase history data to provide personalized recommendations, effectively changing the dynamics of customer engagement and product promotion (Huang & Rust, 2021). Similarly, predictive analytics techniques are allowing companies to anticipate future buying behaviors, thus enabling proactive customer relationship management—a significant shift from the reactive strategies of the past.

Customer behavioral data from sources such as clickstream data to online navigational activities presents a rich source of information that can be leveraged to derive critical insights about customers (Erevelles et al., 2016). These insights provide an evidence-based platform for decision-making, bridging the gap between the visible and invisible aspects of customer behavior. For instance, one of the common and invisible aspects of customer behavior is customer churn, which pertains to the “when” and “why” a customer decides to stop buying or doing business with a company (Tamaddoni et al., 2010). Predictive analytics can help identify early signs of churn by analyzing patterns in customer data. This might include changes in purchase behavior, a decrease in engagement, or sentiment analysis of customer reviews and feedback. Once these patterns are identified, marketing teams can implement strategies to retain these customers, such as personalized engagement and promotional offers (Chandra et al., 2022). In this way, marketing analytics supports decision-making processes by providing evidence-based insights into both visible and invisible aspects of customer behavior. This is a realm traditionally associated with psychology, where marketers try to understand and anticipate human behavior to inform their strategies (Donthu, Kumar, Pattnaik, et al., 2021). Therefore, marketing analytics presents an opportunity to reinforce the psychological underpinnings of marketing strategy, providing tangible, data-driven evidence to inform decision-making processes.

Despite its potential, the implementation of marketing analytics presents certain obstacles. These challenges primarily stem from difficulties in effectively integrating big data analytics into the decision-making processes (Akter et al., 2019). A dearth of internal expertise is often to blame, given that handling and interpreting the volumes of data generated requires a high degree of statistical knowledge, programming skills, and a solid understanding of business processes (Seth, 2018). For example, tasks such as cleaning, integrating, and analyzing data collected from numerous sources like customer transactions, social media interactions, and website analytics demand specific technical prowess. Furthermore, the insights obtained must be interpreted within the context of the business to inform strategic decisions, necessitating a deep understanding of the firm's business model and industry. Another common hindrance is the absence of an end-to-end approach to analytics (Rana et al., 2022). A seamless integration of analytics

throughout the decision-making process, from defining the business problem to applying the insights generated to decision-making, is often lacking. Many firms face difficulties in achieving this, as they tend to treat analytics as an isolated function rather than an integral part of decision-making. However, it is crucial for businesses to surmount these obstacles, given the pivotal role marketing analytics plays. Noteworthy, marketing analytics furnishes relevant metrics and analytical techniques to enhance data-driven marketing operations and inform business decision-making. Metrics such as customer acquisition cost or customer lifetime value can aid in optimizing marketing spend. Moreover, sophisticated techniques like predictive modeling or customer segmentation can help companies better comprehend their customers and personalize their marketing strategies accordingly. Therefore, by facilitating data-driven insights, marketing analytics empowers firms to make informed decisions, thereby improving marketing effectiveness and business outcomes (Sheth, 2021; Wedel & Kannan, 2016).

Indeed, evidence from a diverse range of industries—including consumer packaged goods, retail, and services—underlines the transformative potential of integrating analytics components, such as artificial intelligence (AI), big data, and machine learning, into business operations. For instance, the implementation of these advanced analytical tools can allow businesses to dissect massive volumes of data and unlock valuable insights that can shape both strategic and operational decisions, and in turn, boost long-term business performance (Davis et al., 2021). A study by McKinsey underscored the tangible benefits of thoroughly integrating analytics into business operations, wherein such integration could lead to a 15%–20% decrease in marketing spending, significantly contributing to a healthier bottom line and thus directly benefiting overall business performance (Bhandari et al., 2014). In *consumer-packaged goods*, the incorporation of big data analytics can significantly enhance the precision of demand forecasting (Behera et al., 2023). Machine learning algorithms analyze historical sales data, market trends, and seasonal variations, allowing companies to accurately predict future sales volumes. This proactive approach optimizes inventory management, reducing stockouts and overstocks and leading to improved customer satisfaction and substantial cost savings. In *retailing*, AI-driven predictive analytics are transforming the way businesses understand and interact with their customers (Guha et al., 2021). The examination of customer behavior, purchase history, and demographic information allows firms to generate highly personalized marketing content and product recommendations. Such personalization increases customer engagement and loyalty, thereby significantly enhancing the return on marketing investment (Chandra et al., 2022). In *services*, a similar reliance on marketing analytics can provide immense value. For instance, in financial services, the use of machine learning and big data can help firms identify patterns and trends in large data sets, allowing them to predict market movements and make informed decisions (Goodell et al., 2021). Additionally, in *hospitality*, predictive analytics can optimize pricing strategies and improve capacity management, resulting in higher profitability (Hornig et al., 2022). Thus, across diverse industry landscapes, the integration

of analytics is not just reshaping how businesses operate but also unlocking new avenues for growth and profitability.

et al., 2021). The review process using this protocol is illustrated in Figure 1.

3 | METHODOLOGY

This study adopts the Scientific Procedures and Rationales for Systematic Literature Reviews (SPAR-4-SLR) protocol to curate a comprehensive corpus of relevant articles relating to marketing analytics and bibliometric analysis as a technique to analyze that corpus in an objective way. The SPAR-4-SLR process is divided into three stages: assembling (which requires finding and obtaining relevant articles), arranging (which involves organizing and cleaning up articles), and assessing (which, in the context of the current study, involves content evaluation using bibliometric analysis) to report the findings specific to the RQs (Paul

3.1 | Assembling

The first stage of the SPAR-4-SLR protocol is *assembling*, which involves the *identification* (i.e., review domain, RQs, source type, and source quality) and *acquisition* (i.e., search mechanism and material acquisition, search period, search keywords) of articles for review (Paul et al., 2021).

In terms of *identification*, the *review domain* is marketing analytics, which is the primary subject under consideration in this review, whereas the RQs pertain to the bibliometric performance and intellectual structure of marketing analytics research. The *source type* considers conceptual and empirical “articles” in

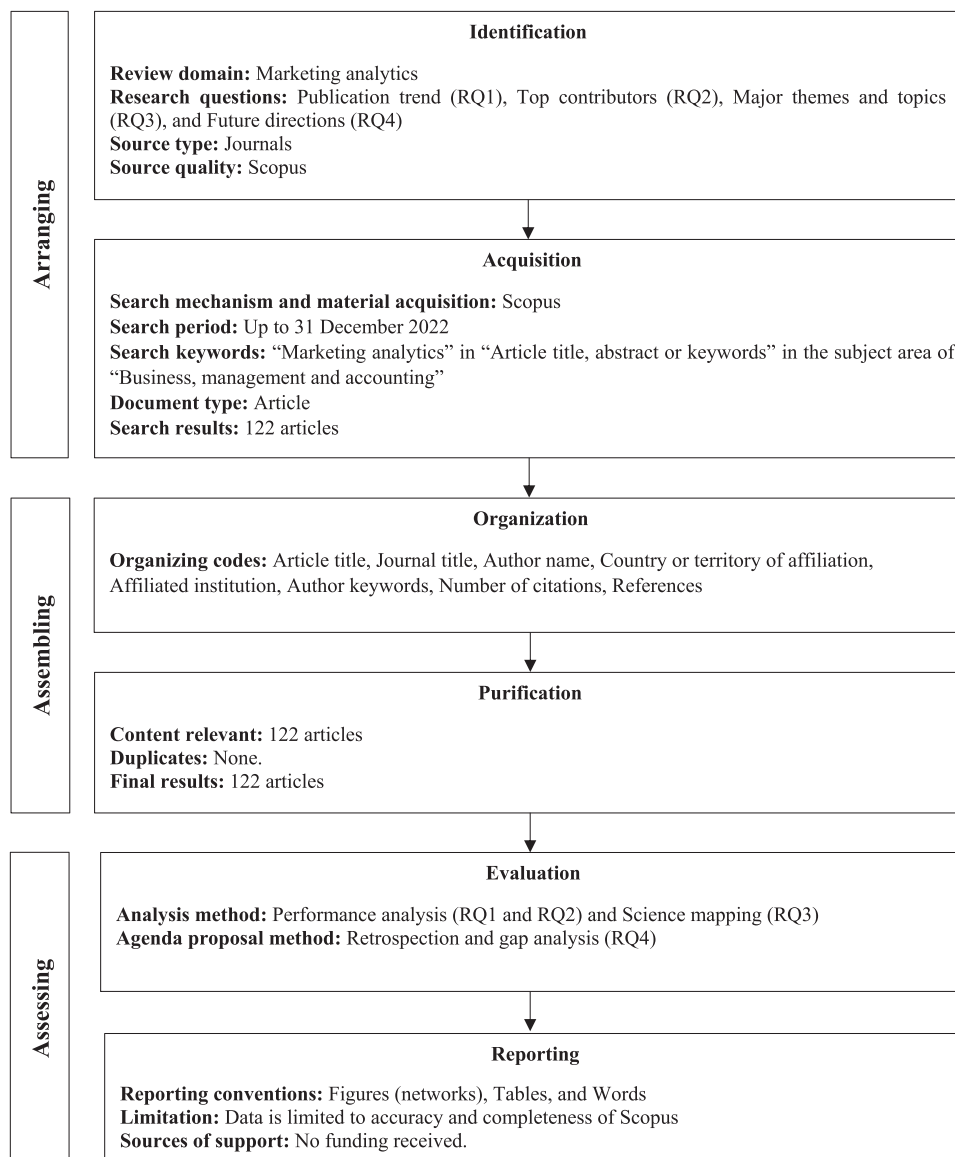


FIGURE 1 The review process for the study on marketing analytics research.

“journals” only, as they are the most credible and validated source of academic literature that has been rigorously peer-reviewed; other sources such as books, book chapters, conference papers, commentaries, and editorials are not considered as they typically do not receive comparable high standards and processes of scrutiny as in the case of conceptual or empirical articles in journals (Paul et al., 2021). Although review papers qualify as an authentic source of academic literature, they were excluded to avoid repetition owing to double-barrel reporting (Lim, Kumar, et al., 2022; Lim, Rasul, et al., 2022). Scopus was used as a measure of *source quality* as journals indexed in this scientific database are relatively more inclusive than their counterparts (e.g., Web of Science) but yet meet the stringent quality criteria for indexation (Donthu, Kumar, Mukherjee, et al., 2021; Paul et al., 2021; Vanhala et al., 2020). No refined measures (e.g., quartiles) were imposed to ensure an inclusive representation of the state of marketing analytics research. Besides mitigating errors emerging from duplicates and formatting differences, the decision to use only a single database for systematic literature reviews using bibliometric analysis is inarguably pragmatic because bibliometric data such as citations often differ across databases (Donthu, Kumar, Mukherjee, et al., 2021).

In terms of *acquisition*, the *search mechanism and material acquisition* employed was the Scopus database itself, which could provide the bibliometric information required for this review along with the option to directly download and review the articles with relevant links. The *search period* was up to December 31, 2022 (i.e., the latest full year at the time this study was conducted). The *search keyword* was “marketing analytics” in the “article title, abstract, or keywords” and subject area of “business, management and accounting” criteria on Scopus, which is in line with Lim, Rasul et al.'s (2022) recommendation for using a single keyword (phrase) search in the context of global review domains. In total, 122 articles on marketing analytics published in English were returned. The bibliometric data was downloaded on January 1, 2023, and stored in comma-separated values (.csv) and research information system (.ris) formats as they are compatible with the bibliometric analysis and visualization programs used in this study (i.e., BibExcel and VOSviewer).

3.2 | Arranging

The second stage of the SPAR-4-SLR protocol is *arranging*, which involves the *organization* (i.e., organizing codes) and *purification* (i.e., exclusion and inclusion criteria) of articles returned from the search (Paul et al., 2021). In terms of *organization*, the bibliometric data of articles were coded according to article title, journal title, author name, country or territory of affiliation, affiliated institution, author keywords, number of citations, and references. In terms of *purification*, no articles were excluded due to duplication or irrelevant content, and thus, all 122 articles were included for review.

3.3 | Assessing

The third and final stage of the SPAR-4-SLR protocol is *assessing*, which involves the *evaluation* (i.e., analysis method, agenda proposal method) and *reporting* (i.e., reporting conventions, limitations, and sources of support) of articles under review (Paul et al., 2021).

In terms of *evaluation*, the *analysis methods* involved the use of bibliometric analysis and software to delineate the *past* and *present* trends of marketing analytics research. Microsoft Excel was used to compute the publication trend and the journal, article, author, country/territory, and institutional performance, whereas two popularly used software—that is, BibExcel (Persson et al., 2009) and VOSviewer (Van Eck & Waltman, 2010)—were employed to unpack and map the content of research in the field. The ideas for *future* research were curated based on a retrospection of the field alongside emerging trends.

In terms of *reporting*, this review presents its results through graphical representations of networks (network visualization), tabular data (bibliometrics), and associated narratives (e.g., Donthu, Kumar, Pattnaik, et al., 2021; Kumar et al., 2021, 2022). The *limitations* and *sources of support* are also acknowledged. Specifically, no ethics clearance was sought nor required since the study is a review based on secondary data that can be accessed by anyone with a Scopus subscription. Moreover, it is acknowledged that the present review did not receive any funding and that the quality and completeness of the bibliometric information available on Scopus and the scope of bibliometric reviews may limit its ability to draw definitive conclusions.

4 | PERFORMANCE ANALYSIS OF MARKETING ANALYTICS RESEARCH

4.1 | Marketing analytics publication trends (RQ1)

Marketing analytics has a publication track record of 22 years and trends on an upward trajectory, indicative of the field's established status and growing importance (Figure 2). The seminal publication in the field explains the importance of increasing the availability of customers' transaction data at the point of sale, which opens new avenues for marketing analytics that can improve marketing decision-making (Banerjee & Banerjee, 2000). Despite the early publication of this seminal article, less than 10 articles were published each year up to 2018, with some years having no publication (e.g., 2001–2006, 2008–2009). This indicates that marketing analytics as a subject grew slowly and sporadically in its early years, which may be explained by the large-scale use of traditional quantitative and qualitative methodologies for marketing research (Hauser, 2007). The growth of publications on marketing analytics accelerated in 2019, wherein close to 70% of all publications were published in the span of 4 years: 2019 (21 articles), 2020 (16 articles), 2021 (18 articles), and 2022 (29 articles). This increased interest and productivity could have been spurred by the advent of the Fourth Industrial Revolution, which

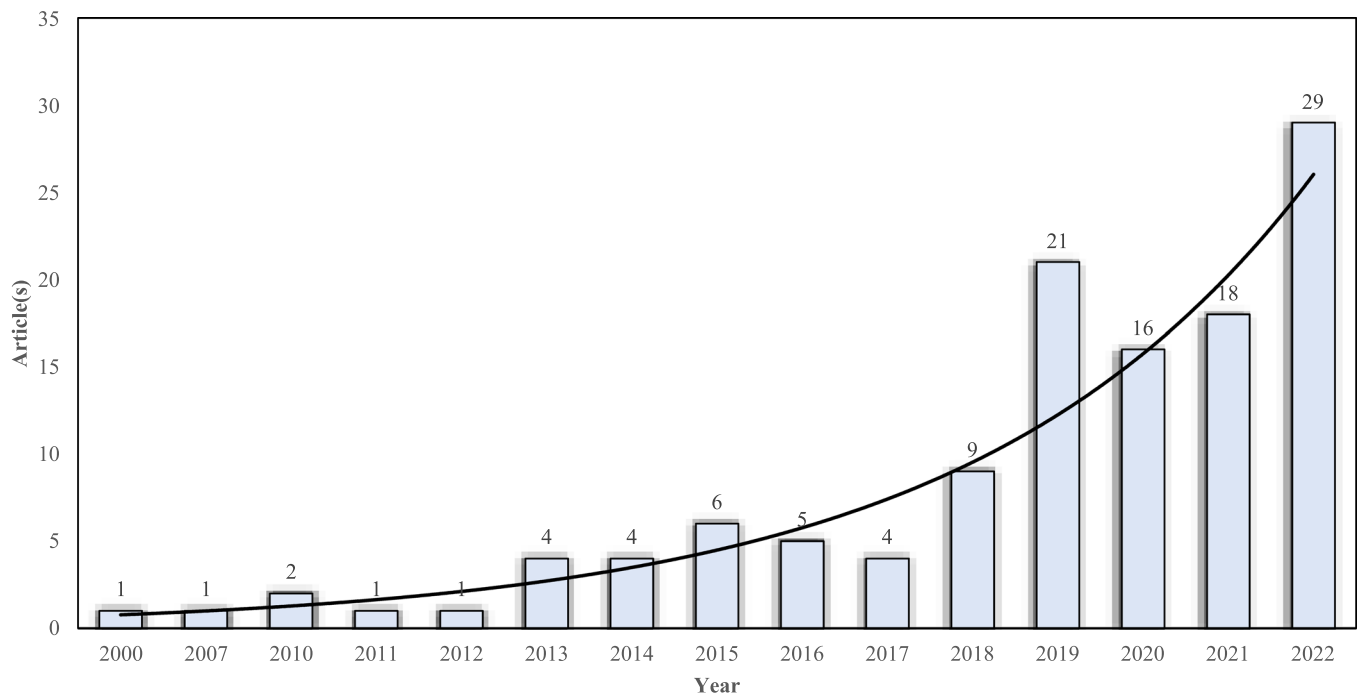


FIGURE 2 Publication trend of marketing analytics research.

made big data analytics mainstream, in tandem with the expansion of the digital environment (e.g., mobile apps, social media) and its associated issues (e.g., cyberbullying, election rigging, fake news, social media addiction). It is also intriguing to see the publication surge during the COVID-19 pandemic, indicating that marketing analytics might have played a significant role in managing the back end as well as the front end of marketing management processes during times of uncertainty (Petrescu & Krishen, 2020). For instance, during crises, firms would need to provide their customers with personalized interactions that take place in real time (Loftis, 2021) while the growth of the conversion rate of website visitors during the COVID-19 has been made possible through conversion rate optimization tools (Bond, 2022). The recent special issues on “Digitalization and its impact on contemporary marketing strategies and practices” published by the *Journal of Marketing Analytics* in 2022 (Cham et al., 2022) and “Analytics insights for public policy and marketing” published by the *Journal of Public Policy & Marketing* in 2021 (Davis et al., 2021) also seemed to have positively influenced research attention on marketing analytics, propelling greater research productivity in this space in the recent years.

Table 1 presents the top publications in marketing analytics that have garnered the greatest citation impact, both in terms of global citations across fields as well as local citations within the field of marketing analytics (Donthu, Kumar, Mukherjee, et al., 2021; Goodell et al., 2021). In terms of *global citations*, the top article is “Marketing analytics for data-rich contexts” by Wedel and Kannan (2016) with 398 global citations. The study highlighted that marketing analytics lends support to marketing decisions along with customer relationship management covering all aspects of acquisition, retention, and

satisfaction of customers. They reinforce the effectiveness of marketing mix analytics in performance-driven marketing resource allocation and personalize solutions for customers with an honest commitment to data privacy and security in the process. This is followed by Rust and Huang’s (2014) article on “The service revolution and the transformation of marketing science” with 247 global citations and Xu et al.’s (2016) article on “Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective” with 218 global citations. It is interesting to note that marketing analytics appears to play a key role in some articles while taking on a supporting role in other articles, as evident from the title of the articles.

In terms of *local citations*, which were determined by analyzing the citations that emerge among the 122 articles on marketing analytics in the review (i.e., within the field), the top article is once again “Marketing analytics for data-rich environments” by Wedel and Kannan (2016) with 16 local citations, indicating that 13% of articles on marketing analytics have referred to this article in their articles. In this regard, it is unsurprising that local citations are lower than global citations, especially given the fact that available articles in the field are substantially lower than those available across fields. The next top articles are “Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective” by Xu et al. (2016) with 11 local citations and “Performance implications of deploying marketing analytics” by Germann et al. (2013) with 10 local citations. Despite the fact that the citation impact of these articles in the field of marketing analytics itself is significantly lower than that across fields, it is noteworthy that marketing analytics is core to each of the articles on the list of local

TABLE 1 Top articles on marketing analytics.

Rank	Global citations			Local citations				
	Article	Reference	Journal	Citations	Article	Reference	Journal	Citations
1	Marketing analytics for data-rich environments	Wedel and Kannan (2016)	<i>Journal of Marketing</i>	398	Marketing analytics for data-rich environments	Wedel and Kannan (2016)	<i>Journal of Marketing</i>	16
2	The service revolution and the transformation of marketing science	Rust and Huang (2014)	<i>Marketing Science</i>	247	Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective	Xu et al. (2016)	<i>Journal of Business Research</i>	11
3	Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective	Xu et al. (2016)	<i>Journal of Business Research</i>	218	Performance implications of deploying marketing analytics	Germann et al. (2013)	<i>International Journal of Research in Marketing</i>	10
4	Estimating demand for mobile applications in the new economy	Ghose and Han (2014)	<i>Management Science</i>	195	A dynamic capability view of marketing analytics: Evidence from UK firms	Cao et al. (2019)	<i>Industrial Marketing Management</i>	8
5	Big data and consumer behavior: Imminent opportunities	Hofacker et al. (2016)	<i>Journal of Consumer Marketing</i>	111	Big data consumer analytics and the transformation of marketing	Erevelles et al. (2016)	<i>Journal of Business Research</i>	8
6	Demonstrating the value of marketing	Hanssens and Pauwels (2016)	<i>Journal of Marketing</i>	108	How to improve firm performance using big data analytics capability and business strategy alignment?	Akter et al. (2016)	<i>International Journal of Production Economics</i>	7
7	Performance implications of deploying marketing analytics	Germann et al. (2013)	<i>International Journal of Research in Marketing</i>	107	The role of big data and predictive analytics in retailing	Bradlow et al. (2017)	<i>Journal of Retailing</i>	6
8	Big data analytics and business analytics	Duan and Xiong (2015)	<i>Journal of Management Analytics</i>	102	Demonstrating the value of marketing	Hanssens and Pauwels (2016)	<i>Journal of Marketing</i>	6
9	Advancing research on loyalty programs: A future research agenda	Breugelmans et al. (2015)	<i>Marketing Letters</i>	80	The state of marketing analytics in research and practice	Iacobucci et al. (2019)	<i>Journal of Marketing Analytics</i>	6
10	Fostering B2B sales with customer big data analytics	Hallikainen et al. (2020)	<i>Industrial Marketing Management</i>	69	Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models	Preacher and Hayes (2008)	<i>Behavior Research Methods</i>	6

Abbreviation: B2B, business-to-business.

citations. This underlines the importance of local citations in determining the extent of within-field influence of published research. Unanimously across global and location citations, the most influential work in the field of marketing analytics is co-authored by Michel Wedel and P. K. Kannan who are two established and well-known professors of marketing.

4.2 | Top journals, authors, countries/territories, and institutions for marketing analytics research (RQ2)

Table 2 lists the top journals, authors, countries/territories, and institutions for marketing analytics research, wherein a minimum threshold of two articles was imposed for inclusion. In total, 122 articles on marketing analytics were published. As per the threshold criterion, the top 18 journals amassed 80 articles (65.57%), whereas the top 16 authors contributed 38 articles (31.14%), the top 23 countries/territories contributed 96 articles (78.69%), and the top 26 institutions contributed 65 articles (53.28%).

In terms of *top journals*, *Applied Marketing Analytics* emerges as the most prolific journal for marketing analytics research with 25 articles, representing 20.5% of total articles in the field. This is followed by *Journal of Marketing Analytics* with 13 articles, *Industrial Marketing Management* and *Journal of Business Research* with six articles each, and *Management Science* and *Marketing Science* with three articles each. The list of top journals for marketing analytics research suggests that this area of research is well accepted in the scientific community as many reputed journals have a track record of publishing relevant work related to marketing analytics.

In terms of *top authors*, Md Afnan Hossain from University of Wollongong in Australia emerges as the most prolific author with four articles, followed by Guangming Cao from Azman University in UAE, Muhammad Sabbir Rahman from North South University in Bangladesh, Shahriar Akter from University of Wollongong in Australia, and Laura Patterson from VisionEdge Marketing in United States with three articles each. The rest of the 11 authors, which include stalwarts like Jagdish N. Sheth of Emory University in the United States, published two articles each. Among the most prolific authors, Md Afnan Hossain in his co-authored article entitled “Marketing analytics capability, artificial intelligence adoption, and firms’ competitive advantage: Evidence from the manufacturing industry” revealed that firms marketing analytics capabilities play a vital role in sensing, seizing, and reconfiguring the market to foster sustainable competitive advantage for the firm (Hossain et al., 2022). All the articles written by Hossain and his co-authors are mainly focused on competitive advantage in data-rich environments. For example, another article entitled “Why doesn’t our value creation payoff: Unpacking customer analytics-driven value creation capability to sustain competitive advantage” by Hossain et al. (2021) illustrated the determinants of customer analytics-driven value creation capability and its impact on sustained competitive advantage of the firm, revealing that utilization of data-driven customer analytics guide

firms to perform real-time analyses to make speedy offers to customers that ultimately lead to sustainable competitive advantage for the firm. Another prolific author, Guangming Cao, reaffirms in his co-authored works that marketing analytics can enhance a firm’s marketing capabilities and decision-making (Cao & Tian, 2020; Cao et al., 2019, 2022). When *co-authorships*—that is, the type and extent of partnerships between authors that form the social network of the field (Donthu, Kumar, Mukherjee, et al., 2021; Donthu, Kumar, Pattnaik, et al., 2021)—are considered, the most prolific group of co-authors comprised of Md. Afnan Hossain and Muhammad Sabbir Rahman with three articles while the other groups wrote two articles. Though all co-authorships demonstrated the existence of cross-university collaborations, a deeper probe reveals that some articles were written by co-authors who worked at the same university at some point. For instance, Guangming Cao and Yanqing Duan were working at the same university at some point (University of Bedfordshire) and they continued to collaborate even when they moved as seen through their different affiliations thereafter. Out of eight groups of co-authorships, seven had a yield of two articles, where Md. Afnan Hossain featured in two more groups while Muhammad Sabbir Rahman was in one more group. The co-authored article by top authors Rahman, Hossain, Abdel Fattan, and Akter (Rahman et al., 2020) is reflected in the coauthorship statistics.

In terms of *top institutions*, the University of Wollongong in Australia emerges as the most prolific institution with five articles, followed by Babson College in the United States, North South University—Dhaka in Bangladesh, and the University of Nevada—Las Vegas in the United States with four articles each. It is noteworthy that a total of 34 articles were published by 13 institutions in the United States, while Australia and China are represented by two institutions each that have published seven and four articles, respectively. At least two articles were contributed by each of the institutions listed in Table 1. This points to the need for encouraging other academic institutions in Africa, Asia, and Europe as well as commercial organizations to become more involved in engaging and publishing marketing analytics research.

In terms of *top countries/territories*, a total of 39 countries/territories have contributed to marketing analytics research, with the top five being the United States with 72 articles, followed by the United Kingdom with 14 articles, Australia with eight articles, and China and India with six articles each. Another 23 countries/territories published two articles each while the rest produced one article each.

5 | SCIENCE MAPPING OF MARKETING ANALYTICS RESEARCH

5.1 | Major clusters/themes in marketing analytics research via bibliographic coupling (RQ3)

Two articles that quote an identical article are said to be bibliographically coupled (Donthu, Kumar, Mukherjee, et al., 2021).

TABLE 2 Top contributors of marketing analytics research.

Journal(s)	n	Author(s)	n	Co-authorship(s)	n	Institution(s)	n	Country(ies) or territory(ies)	n
<i>Applied Marketing Analytics</i>	25	M. A. Hossain	4	M. A. Hossain M. S. Rahman	3	University of Wollongong	5	United States	72
<i>Journal of Marketing Analytics</i>	13	S. Akter, G. Cao, L. Patterson, and M. S. Rahman	3	G. Cao	2	Babson College, North South University—Dhaka, and University of Nevada—Las Vegas	4	United Kingdom	14
<i>Industrial Marketing Management and Journal of Business Research</i>	6	F. A. M. Abdel Fattah, A. F. Branda, C. L. Comm, Y. Duan, A. Krishen, G. L. Lilien, D. F. X. Mathaisel, M. Petrescu, J. Sheth, N. Tian, and F. Villarreal Ordenes	2	A. S. Krishen	1	Emory University, University of Maryland—College Park, University of Massachusetts—Lowell, and VisionEdge Marketing	3	Australia	8
<i>Management Science and Marketing Science</i>	3		1	G. Cao	2	A'Sharqiyah University, Ajman University, Colorado State University, Florida State University, ICN Business School, Luiss University, Michigan State University, Monash University, Northeastern University, Northwestern Polytechnical University, Northwestern University, Peking University, Pennsylvania State University, Symbiosis International Deemed University, Universidad de Chile, University of Bedfordshire Business School, and University of Michigan—Ann Arbor	2	China and India	6
<i>Academy of Marketing Studies Journal, Decision Sciences Journal of Innovative Education, Decision Support Systems, Innovative Marketing, International Journal of Research in Marketing, Journal of Business and Industrial Marketing, Journal of Consumer Marketing, Journal of Digital and Social Media Marketing, Journal of Direct Data and Digital Marketing Practice, Journal of Marketing, Journal of Marketing Research, and Revista Brasileira De Marketing</i>	2		2	F. A. M. Abdel Fattah S. Akter	1	M. A. Hossain	1	Canada	5
			1	M. A. Hossain	1		1	Bangladesh, France, Switzerland, and the United Arab Emirates	4
			1	F. A. M. Abdel Fattah	1	M. S. Rahman	1	Germany, Ireland, Italy, and The Netherlands	3
			1	C. L. Comm	1	D. F. X. Mathaisel	1	Belgium, Brazil, Chile, Finland, Hong Kong, Oman, Spain, Taiwan, and Tunisia	2

Note: Where multiple entries are included in a single cell, *n* reflects the number of articles for each entry. Abbreviation: *n*, number of articles.

According to Martyn (1964, p. 236), "two papers that share one reference include one unit of coupling" and thus a connection between two papers with one or more shared references is of strength one, two, etc. In this regard, bibliographic coupling provides information on the similarities between a given set of documents. This method is predicated on the supposition that any two articles (A and B) that reference the same article (C) are said to be connected to one another and thus can be grouped together in a cluster on the visualization map. In this review, bibliometric coupling was used to find the clusters of knowledge that exemplify the major themes in marketing analytics research. This technique is powerful as it is feasible to depict recent contributions that have not yet had a significant influence (Bretas & Alon, 2021). The coupling of articles in the corpus of marketing analytics research using bibliographic coupling has resulted in the identification of seven major clusters/themes, which each cluster/theme consisting of a set of articles (Figure 3), with the top five articles in each cluster/theme presented in Table 3.

Cluster/Theme #1 is about *marketing decision-making using big data in marketing analytics*. Using big data, firms can now make

decisions in real time to increase sales and productivity (Xu et al., 2016). Hanssens and Pauwels (2016) demonstrated marketing value assessment from the three perspectives of metrics, models, and communication. They highlight the use of marketing analytics and its role in the improvement of marketing decision-making at different levels of the organization. In this regard, it is noteworthy that high-performing companies rely on data rather than intuition five times more than low-performing companies do (LaValle et al., 2011). Indeed, Jeble et al. (2018) have reaffirmed that big data can assist firms in gaining competitive advantage and enable them to discover insights, patterns, correlations, and linkages that conventional small data analysis could not reveal.

Cluster/Theme #2 is about *marketing analytics for forecasting*. Marketing analytics allow firms to learn and forecast marketing outcomes and thus enable them to provide better recommendations, test the efficacy of their targeting of both customers and non-customers, target promotions, personalize offerings, encourage spending among customers, and by extension, increase revenues from marketing activities in the short and long run (Wedel & Kannan, 2016). In this regard, marketing analysts will need to have

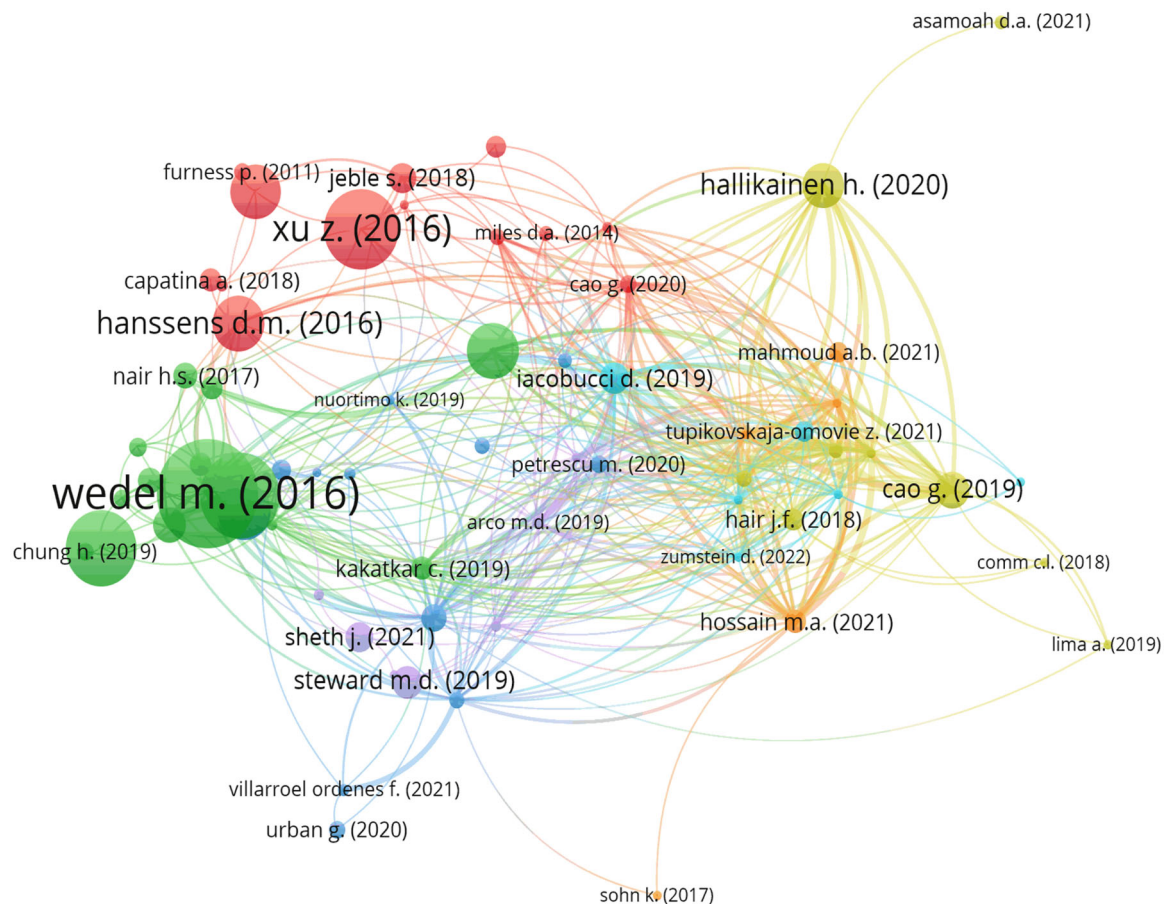


FIGURE 3 Nomological network of major themes in marketing analytics research. Cluster/Theme #1 (red): Marketing decision-making using big data in marketing analytics. Cluster/Theme #2 (green): Marketing analytics for forecasting. Cluster/Theme #3 (dark blue): Marketing analytics for understanding and shaping customer behavior. Cluster/Theme #4 (yellow): Marketing analytics capabilities. Cluster/Theme #5 (purple): Marketing analytics for customer journey mapping. Cluster/Theme #6 (light blue): Marketing analytics applications. Cluster/Theme #7 (orange): Marketing analytics as a source of competitive advantage.

TABLE 3 Major themes in marketing analytics research.

Article	Reference	Journal	Citations
<i>Cluster/Theme #1: Marketing decision-making using big data in marketing analytics</i>			
Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective	Xu et al. (2016)	<i>Journal of Business Research</i>	218
Demonstrating the value of marketing	Hanssens and Pauwels (2016)	<i>Journal of Marketing</i>	109
Big data analytics and business analytics	Duan and Xiong (2015)	<i>Journal of Management Analytics</i>	102
Role of big data in decision making	Jeble et al. (2018)	<i>Operations and Supply Chain Management</i>	31
Country-based comparison of accommodation brands in social media: An fsQCA approach	Capatina et al. (2018)	<i>Journal of Business Research</i>	20
<i>Cluster/Theme #2: Marketing analytics for forecasting</i>			
Marketing analytics for data-rich environments	Wedel and Kannan (2016)	<i>Journal of Marketing</i>	398
The service revolution and the transformation of marketing science	Rust and Huang (2014)	<i>Marketing Science</i>	247
Estimating demand for mobile applications in the new economy	Ghose and Han (2014)	<i>Management Science</i>	195
Performance implications of deploying marketing analytics	Germann et al. (2013)	<i>International Journal of Research in Marketing</i>	108
Retail forecasting: Research and practice	Fildes et al. (2022)	<i>International Journal of Forecasting</i>	44
<i>Cluster/Theme #3: Marketing analytics for understanding and shaping customer behavior</i>			
Big data and consumer behavior: Imminent opportunities.	Hofacker et al. (2016)	<i>Journal of Consumer Marketing</i>	111
Marketing ecosystem: An outside-in view for sustainable advantage	Zhang and Watson (2020)	<i>Industrial Marketing Management</i>	26
Imbalanced customer classification for bank direct marketing	Marinakos and Daskalaki (2017)	<i>Journal of Marketing Analytics</i>	15
Is deep learning a game changer for marketing analytics?	Urban et al. (2019)	<i>MIT Sloan Management Review</i>	12
The internet of everything: Implications of marketing analytics from a consumer policy perspective	Petrescu et al. (2020)	<i>Journal of Consumer Marketing</i>	11
<i>Cluster/Theme #4: Marketing analytics capabilities</i>			
Fostering B2B sales with customer big data analytics	Hallikainen et al. (2020)	<i>Industrial Marketing Management</i>	69
A dynamic capability view of marketing analytics: Evidence from UK firms	Cao et al. (2019)	<i>Industrial Marketing Management</i>	46
Marketing research in the 21st century: Opportunities and challenges	Hair et al. (2018)	<i>Brazilian Journal of Marketing</i>	16
Optimizing competitive performance of service firms in data-rich environment	Rahman et al. (2020)	<i>Journal of Service Theory and Practice</i>	10
Does marketing analytics capability boost firms' competitive marketing performance in data-rich business environment?	Rahman et al. (2021)	<i>Journal of Enterprise Information Management</i>	8
<i>Cluster/Theme #5: Marketing analytics for customer journey mapping</i>			
From transactions to journeys and beyond: The evolution of B2B buying process modeling	Steward et al. (2019)	<i>Industrial Marketing Management</i>	37
New areas of research in marketing strategy, consumer behavior, and marketing analytics: The future is bright	Sheth (2021)	<i>Journal of Marketing Theory and Practice</i>	30
Embracing AI and big data in customer journey mapping: From literature review to a theoretical framework	D'Arco et al. (2019)	<i>Innovative Marketing</i>	6
Avoiding digital marketing analytics myopia: Revisiting the customer decision journey as a strategic marketing framework	Vollrath and Villegas (2022)	<i>Journal of Marketing Analytics</i>	5
The digital self and customer loyalty: From theory to virtual reality	Bischoff et al. (2019)	<i>Journal of Marketing Analytics</i>	4

TABLE 3 (Continued)

Article	Reference	Journal	Citations
<i>Cluster/Theme #6: Marketing analytics applications</i>			
The state of marketing analytics in research and practice	Iacobucci et al. (2019)	<i>Journal of Marketing Analytics</i>	34
Eye tracking technology to audit Google Analytics: Analysing digital consumer shopping journey in fashion m-retail	Tupikovskaja-Omovie and Tyler (2021)	<i>International Journal of Information Management</i>	14
Analytics capability in marketing education: A practice-informed model	Kurtzke and Setkute (2021)	<i>Journal of Marketing Education</i>	3
Developing context-relevant project experiences for marketing analytics students	Lim and Heinrichs (2021)	<i>Decision Sciences Journal of Innovative Education</i>	2
Benefits, challenges and future developments in digital analytics in German-speaking countries: An empirical analysis	Zumstein et al. (2022)	<i>Applied Marketing Analytics</i>	1
<i>Cluster/Theme #7: Marketing analytics as a source of competitive advantage</i>			
Why doesn't our value creation payoff: Unpacking customer analytics-driven value creation capability to sustain competitive advantage	Hossain et al. (2021)	<i>Journal of Business Research</i>	20
A generational investigation and sentiment and emotion analyses of female fashion brand users on Instagram in Sub-Saharan Africa	Mahmoud et al. (2021)	<i>Journal of Brand Management</i>	14
Firm performance and marketing analytics in the Chinese context: A contingency model	Liang et al. (2022)	<i>Journal of Business Research</i>	3
How should marketers deal with growth pattern changes in viral marketing campaigns?	Sohn et al. (2017)	<i>International Journal of Internet Marketing and Advertising</i>	2
Effectual market creation in the cross-border e-commerce of small- and medium-sized enterprises	Tolstoy et al. (2022)	<i>International Small Business Journal</i>	1

Abbreviations: B2B, business-to-business; fsQCA, fuzzy-set qualitative comparative analysis.

sufficiently deep knowledge of marketing modeling techniques for predicting marketing response, marketing-mix optimization, and personalization. Other authors such as Rust and Huang (2014) emphasized the importance of marketing analytics to personalized marketing, whereas Germann et al. (2013) explained the drivers for the adoption of marketing analytics and why that adoption leads to positive financial returns for firms. Similarly, Fildes et al. (2022) showed evidence of comparative forecasting accuracy at strategic and operation levels in retail settings, thereby reaffirming the value of marketing analytics for forecasting.

Cluster/Theme #3 is about *marketing analytics for understanding and shaping customer behavior*. Hofacker et al. (2016) highlighted the power and utility of marketing analytics for understanding the decision-making process among customers. This is echoed by Zhang and Watson IV (2020), who proposed that marketing strategies should be informed through the lens of the marketing ecosystem that considers the interrelated and dynamic megatrends. They recommend capturing and using of detailed customer data to understand and react to marketplace trends. By mapping megatrends using marketing analytics, firms can precisely understand customers' evolving preferences and design suitable engagement tactics. In another article, Urban et al. (2019) demonstrated that deep learning provides benefits over standard statistical modeling for anticipating client attitude

changes and shopping behavior, which can boost profits. In the same light, Petrescu et al. (2020) talked about the benefits of using marketing analytics in the context of the Internet of everything for increased revenue, reduced costs, and improved real-time response rates as well as efficiency in decision-making. They also noted that customers and firms prefer varying levels of information privacy and that it is vital to find a common ground where all parties can come together and share information willingly to fully leverage and realize the rewards of marketing analytics to improve customer experience and returns.

Cluster/Theme #4 is about *marketing analytics capabilities*. Hallikainen et al. (2020) found that marketing analytics improves customer relationship performance and sales growth in business-to-business (B2B) firms, noting that marketing analytics engagement and returns are stronger for firms with a strong than a weak analytics culture. Cao et al. (2019) echoed the positive relationship between marketing analytics with marketing decision-making and management of product development, noting that dynamic marketing analytics capability can lead to sustained competitive advantage. This is also supported by Rahman et al. (2020). Extending this line of thought, Rahman et al. (2021) established that firms' competitive marketing performance increases with marketing analytics capability under a data-rich marketing environment through advanced technology usage.

Cluster/Theme #5 is about *marketing analytics for customer journey mapping*. Steward et al. (2019) demonstrated that mapping the evolution of B2B buying process models establishes the historic path of its scientific development, showing that B2B marketers are lagging behind in marketing analytics use as compared to their business-to-consumer (B2C) counterparts. Sheth (2021) in his study presented six new frontiers of research in marketing analytics such as text mining, imaging research, emoji analytics, video analytics, fuzzy logic, and forensic research, indicating that automation of consumption is now a reality that will encourage marketing to explore the fundamental shift from the customer going to the market to the market coming to the home or office of the customer. In the same cluster, the article by Bischoff et al. (2019) explained how attachment is formed from the digital self and its subsequent integration with real-world selves alongside digital objects, as well as the challenges and opportunities for loyalty marketing analytics, highlighting that marketing professionals should be better understanding what customers want and how to engage with them by mapping their choice paths. To address customer requirements and harmonize digital and firm-level marketing strategies, Vollrath and Villegas (2022) provided a framework for digital marketing analytics tools and channels in the context of a firm's marketing plan, encouraging the actual execution of customer decisions in the realm of digital marketing analytics.

Cluster/Theme #6 is about *marketing analytics applications*. Iacobucci et al. (2019) conducted a systematic review of marketing analytics and found that customers play a central role in this domain. Different themes were identified in this review such as marketing strategy and data mining, marketing research and metrics, big data in retail and services, digital analytics and social media, value-added, and modeling and business performance. Tupikovskaja-Omovie and Tyler (2021) presented the use of eye-tracking technology to create digital users' buying journeys that helped audit the Google Analytics tool and uncover the characteristics needed to cluster digital customers depending on their shopping behavior. To bridge the theory-practice gap and improve students' chances of finding work after graduation, Kurtzke and Setkute (2021) identified the knowledge and abilities that marketing graduates need for analytics practice. Such studies reaffirm the wide-ranging applications and issues to consider in relation to marketing analytics.

Cluster/Theme #7 is about *marketing analytics as a source of competitive advantage*. Hossain et al. (2021) in their research demonstrated that customer analytics-driven value creation capability significantly and positively impact the sustained competitive advantage in the retailing business. Liang et al. (2022) extended this discourse and investigated the ways in which a firm's use of marketing analytics might affect its success as well as the situations under which this can take place, showing that a rise in firm performance can be attributed to a favorable effect of marketing analytics on the firm's agility to respond to market trends. Tolstoy et al. (2022) furthered understanding by adding the dimension of international marketing analytics, revealing that effectual market creation affects international performance in small and medium-sized enterprises that engage in cross-border e-commerce.

5.2 | Topical evolution in marketing analytics research via keyword co-occurrence analysis (RQ3)

Authors specify keywords to communicate the essence of their articles. In this regard, the *author keywords* of an article can serve as the main descriptors of the focus of that article (Donthu, Kumar, Mukherjee, et al., 2021) and thus they are often used to signify the topics that are being discussed and researched in the field (Bamel et al., 2023; Sahoo et al., 2022; Varma et al., 2022).

This review adopts a science mapping technique called co-occurrence analysis using author keywords as inputs—or in short, a keyword co-occurrence analysis—wherein a temporal lens is also applied to enable the examination of topical evolution in marketing analytics research. The author keywords are included in the analysis if they have occurred at least in two or more articles (i.e., the minimum threshold for inclusion into the keyword co-occurrence analysis). The results from the analysis are illustrated as a nomological network in Figure 4.

Early research on marketing analytics up to 2016 centered around the topics of data quality, market research, marketing models, marketing return on investment (ROI), and social media marketing, implying that analytics has been *absorbed* into marketing in the *introductory* stage of marketing analytics.

The second wave, which took place between 2016 and 2018, concentrated on customer lifetime value, customer relationship management, marketing technology, and predictive analytics, among others. Relationship marketing in the 21st century entails sophisticated customer analytics. Customer lifetime value and client relationship management cannot be addressed without mining, analyzing, and interpreting data. Wedel and Kannan (2016) provided innovative research methodologies for marketing analytics and portrayed the relationship between personalization, privacy and data security, and the marketing mix. These observations imply that analytics has been *adapted* into marketing in the *growth* stage of marketing analytics.

The third wave, which took place between 2018 and 2020, shows that marketing has embraced analytics and the value it can deliver at a larger scale, as seen through the prominence of marketing analytics as well as the concentration on topics such as big data, big data analytics, marketing metrics, marketing performance, and social media analytics in this period. These observations imply that the *adaptation* of analytics into marketing continued and thus reaffirmed as part of the marketing analytics' ongoing *growth*.

The most recent period, which has followed from 2020 to 2022, indicates that marketing has not only engaged in *adaptation* but also *innovation* through the use of analytics in marketing. This can be seen through the incorporation of dynamic tools and practices such as artificial intelligence, customer engagement, and digital analytics, as well as leveraging marketing analytics capabilities in data-rich environments.



FIGURE 4 Trajectory of topical evolution in marketing analytics research.

6 | IMPLICATIONS AND FUTURE DIRECTIONS FOR MARKETING ANALYTICS RESEARCH (RQ4)

The chronological evolution of the seven identified major clusters/themes in marketing analytics research (as seen in Figure 5) presents a captivating picture of the field's progressive development and guides our proposals for future research directions. At the onset, research in marketing analytics chiefly sprung from traditional marketing research and relationship marketing practices. However, the advent of big data analytics spurred a significant transformation in the field.

6.1 | Implications from the review of marketing analytics research

The period following 2018 witnessed the emergence of new, distinguishable clusters in marketing analytics research. This surge was largely catalyzed by the rapid assimilation of big data analytics across business functions, further expedited by the unavoidable shift toward digital business operations amid the COVID-19 pandemic (Bond, 2022; Cham et al., 2022). This crisis-driven adaptation has been instrumental in triggering extensive technological implementations, thereby revolutionizing the

business and marketing landscapes. With this backdrop, we delineate several key implications drawn from our review of marketing analytics research, which can inspire and guide future research trajectories.

6.1.1 | Productivity and impact of marketing analytics research

Our analysis of publication (productivity) and citation (impact) trends reveals a noticeable uptake in the field of marketing analytics, particularly post-2018. This growth reflects the increasing managerial importance of marketing analytics in supporting actions in today's data-rich business environment (Rahman et al., 2020, 2021; Wedel & Kannan, 2016). The pandemic-led embrace of technology-based business solutions has further bolstered research productivity during and post-pandemic (Bond, 2022). We recommend continued explorations in this field, ideally leveraging diverse research teams to assess the adoption and effectiveness of marketing analytics across multicultural business contexts. This approach would be particularly beneficial for global firms operating in multiple countries (Nam & Kannan, 2020), offering a more inclusive perspective across underrepresented regions such as Africa, Asia, and Europe.

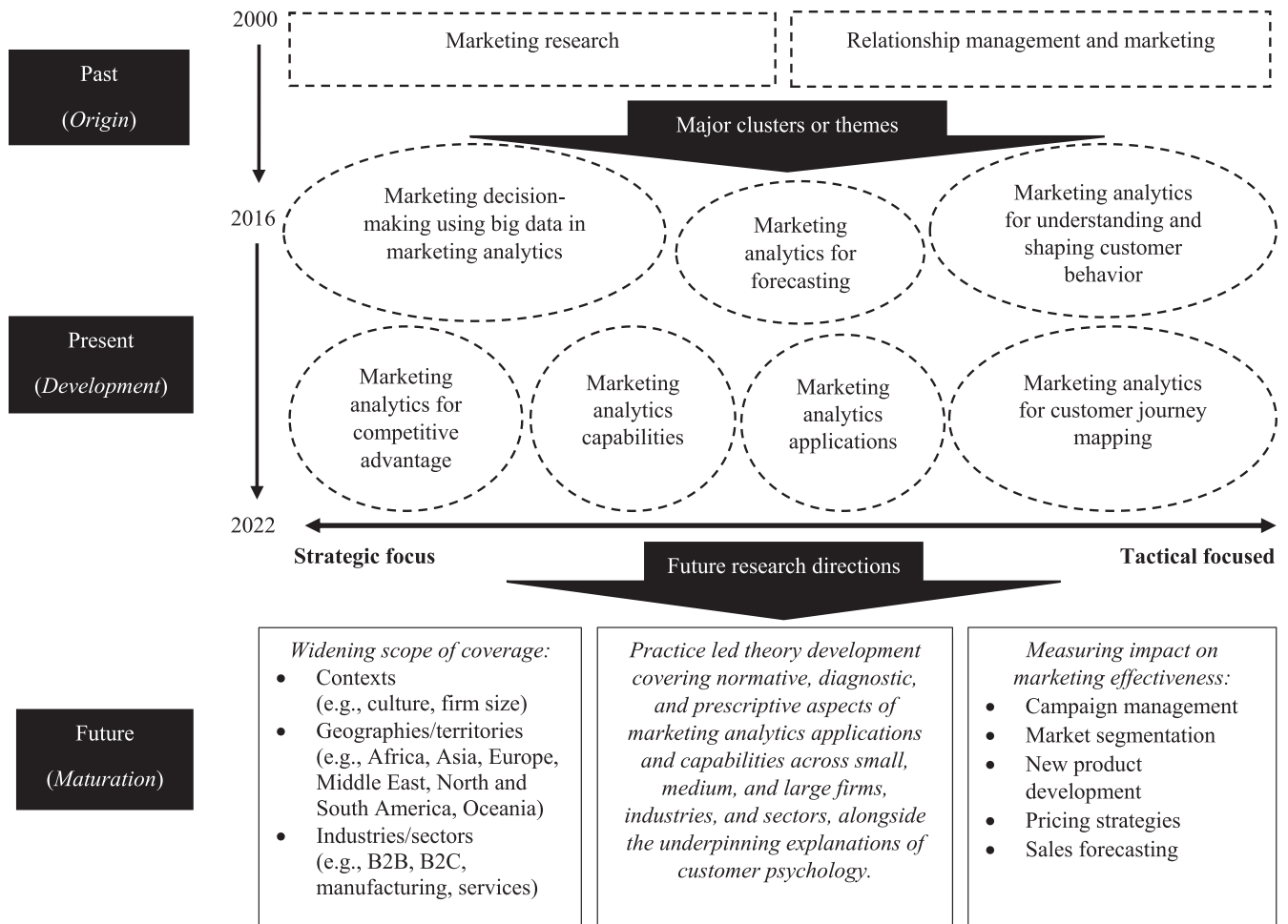


FIGURE 5 A framework of marketing analytics research.

6.1.2 | Emergence of clusters/themes in marketing analytics research

Our findings show a spike in publications during 2019 and 2022, triggered by the growing practical relevance of marketing analytics, leading to the emergence of additional research clusters. We posit that the seminal article by Wedel and Kannan (2016) was the catalyst for the first wave of growth, attracting considerable research interest. The second wave in 2022 can be attributed to increased digitalization in data-rich business environments (Rahman et al., 2020, 2021) compounded by widespread digital adaptations during the pandemic (Bond, 2022). Looking ahead, the technological transformations across industries and sectors hint at an expanding scope for marketing analytics research. Initially prevalent in service or retail sector research (Banerjee & Banerjee, 2000; Cao et al., 2019; Rahman et al., 2021), the field is now predicted to pervade contexts like healthcare (Agarwal et al., 2020), manufacturing, and B2B spaces (Steward et al., 2019).

6.1.3 | Evolution of marketing analytics research

The historical narrative of marketing analytics research suggests its origin in marketing research, eventually expanding to embrace new

big data frontiers empowered by advanced technologies (Hauser, 2007; Iacobucci et al., 2019). While the focus on big data, digital marketing, and social media marketing has broadened the field's scope, there are myriad aspects of marketing analytics that warrant future investigations. These range from the practical applications, challenges, and opportunities of marketing analytics in small, medium, and large enterprises worldwide, across various industries and sectors, to exploring the wider ecosystem of marketing analytics and its interaction with the marketing environment.

6.2 | Avenues for future research on marketing analytics

6.2.1 | Avenues emerging from cluster-specific reflection

Our detailed scrutiny of the top five articles from each cluster, emerging from bibliographic coupling, alongside a thorough examination of the co-occurrence networks from the author's keyword co-occurrence analysis, has enriched our understanding of existing research. This scrutiny allows us to propose more specific avenues for future research in marketing analytics. Notably, these future

research directions, stemming from the seven identified clusters/themes, can be enumerated as follows.

In terms of *marketing decision-making using big data*, it is imperative to expand our understanding by investigating various firm sizes and business types. This is vital as the use of big data and its influence may vary depending on the size and nature of businesses. An integrative framework that capitalizes on diverse information sources—like competitive or market intelligence, social media, web analytics, and supply chain—will aid strategic decision-making in multicountry or multicultural settings (Jebble et al., 2018; Xu et al., 2016). Additionally, given the ongoing concerns about data privacy and management, future research could focus on the ethics of data usage, offering valuable insights into how companies can leverage big data ethically for decision-making. Accordingly, future explorations would do well to address these RQs:

1. How do the challenges, opportunities, and strategies of employing marketing analytics differ across firms of varying sizes and business natures, especially when leveraging big data for marketing decision-making?
2. How can an integrative framework be developed and optimized to harness data from diverse sources like competitive or market intelligence, social media, web analytics, and supply chains for strategic marketing decision-making in the global marketplace?
3. What are the potential ethical implications of using big data in marketing analytics, especially in relation to consumer data privacy and security concerns?
4. How can companies balance the benefits of marketing analytics derived from big data with the increasing demands for data transparency and ethical usage from customers and regulators?
5. In what ways can marketing analytics be employed to anticipate and address cultural nuances and customer preferences in different regional markets?

In the realm of *marketing analytics for forecasting*, there is a pressing need for the exploration of adaptive forecasting approaches that utilize individual-level data captured through multiple devices and touchpoints (Ghose & Han, 2014; Wedel & Kannan, 2016). As businesses increasingly adopt personalized marketing strategies (Chandra et al., 2022), understanding these approaches would be a significant addition to the field. Research on business decisions for personalization based on forecasting in closed-loop operations and strategies that help in diagnostic, predictive, and prescriptive modeling of structured as well as unstructured data is needed. Furthermore, considering the velocity of data generation, future research could investigate the integration of real-time data in improving the accuracy of predictive models. As such, future research is encouraged to focus on the following RQs:

1. How can adaptive forecasting models be refined to optimally leverage individual-level data from diverse devices and touchpoints for real-time marketing decision-making?

2. What are the most effective methods for integrating structured and unstructured customer and market data in diagnostic, predictive, and prescriptive models tailored to personalization strategies in marketing?
3. How do closed-loop operations affect the accuracy and relevance of forecasts in personalized marketing strategies, and what best practices can firms adopt to optimize their outcomes?
4. In what ways can real-time data integration enhance the precision and reliability of predictive models in the context of rapid data generation and ever-evolving customer behavior?
5. How might firms evolve their decision-making processes to ensure that the velocity, variety, and volume of marketing data are adequately harnessed to improve personalization and, in turn, customer engagement and loyalty?

As for *marketing analytics for understanding and shaping customer behavior*, the time is opportune to synthesize traditional customer behavior research with inductive data mining (Hofacker et al., 2016). This is necessary as customer behavior evolves in the era of big data, and hence traditional theories may need to be supplemented with insights derived from large-scale data analysis. Future research can build theory-oriented applications of marketing analytics to trace and understand all phases of customer engagement, providing crucial insights for effective customer relationship management. Given the increasing importance of emotional connections in brand–customer relationships, future research could delve into the role of emotional factors in customer behavior, possibly leveraging sentiment analysis techniques. Consequently, the following RQs are proposed for future investigation:

1. How can data from traditional marketing research methods be effectively integrated with insights from large-scale data analytics to provide a more comprehensive understanding of evolving customer behaviors in the digital era?
2. To what extent can marketing analytics be utilized to trace and elucidate the various phases of customer engagement, and how can these insights be translated into actionable strategies for enhanced customer relationship management?
3. Given the significant role of emotions in brand–customer relationships, how can sentiment analysis techniques be applied to uncover the emotional triggers influencing customer behavior, and how do these triggers vary across different customer segments?
4. As brands emphasize building emotional connections with their customers, how can marketing analytics tools be refined to measure the depth, quality, and longevity of these emotional bonds in real time?
5. With the increasing convergence of online and offline marketing channels, how can marketing analytics adapt to provide a unified view of customer touchpoints across both realms and how does this holistic perspective influence strategy for customer acquisition and retention?

Regarding *marketing analytics capabilities*, multilevel studies should capture the effects of big data analytics on strategic and tactical decisions, particularly in data-rich business environments (Hallikainen et al., 2020; Rahman et al., 2020, 2021). As firms operate in a business landscape that is increasingly becoming data-driven, understanding these effects would be crucial for the success of businesses. Besides studying the role of granular data and the effects of the business environment using qualitative data (Cao et al., 2019), future research could also explore the role of data literacy within organizations. As businesses increasingly need to make data-driven decisions, understanding the role of data literacy would be crucial in determining how effectively they can leverage their marketing analytics capabilities. Hence, it would be beneficial for future researchers to delve into these RQs:

1. How do marketing analytics influence strategic and tactical marketing decision-making processes in data-intensive marketplaces, and what are the potential variances in these influences across different industries or sectors?
2. To what extent does the granularity of data (e.g., microlevel customer insights vs. macrolevel market trends) affect the effectiveness and outcomes of marketing analytics-driven decisions?
3. How do differing market environments, characterized by their level of data-intensiveness, impact the adaptability and utility of marketing analytics tools and methodologies?
4. How does data literacy within a firm influence the accuracy, efficiency, and effectiveness of data-driven marketing decision-making? Are there specific elements of data literacy (e.g., familiarity with data visualization techniques, and understanding of statistical methods) that have a more pronounced impact?
5. As organizations aim to enhance their marketing analytics capabilities, what role does training and development in data literacy play, and how can such organizations best cultivate a data-literate workforce to optimize the use of marketing analytics?

In terms of *marketing analytics for customer journey mapping*, there is a need for future research to cover underresearched contexts such as B2B environments and rapidly evolving omnichannel landscapes (Hossain et al., 2020; Steward et al., 2019). As the customer journey becomes more complex with the advent of new channels and technologies, exploring these areas will provide a more complete picture of customer behavior. A focus on the efficacy of newer analytical methods in mapping customer decision journeys will add to the existing knowledge (Vollrath & Villegas, 2022). Additionally, emerging technologies such as virtual and augmented reality are poised to significantly alter customer journeys. Leveraging marketing analytics, new research into how these technologies are changing customer journeys will provide insights into future trends and guide businesses in their strategy development. In light of this, forthcoming research should consider exploring the following inquiries:

1. How does the application of marketing analytics differ in B2B customer journey mapping compared to B2C, and what unique challenges and opportunities arise in such contexts?
2. As consumers transition between multiple channels during their purchasing journey, how can marketing analytics be effectively employed to understand and predict behavioral shifts across these rapidly evolving omnichannel landscapes?
3. With the increasing complexity of customer decision journeys, which emerging analytical methods and tools are proving most effective in capturing and analyzing these intricate pathways, especially in relation to real-time decision-making?
4. How are virtual and augmented reality technologies reshaping the customer decision journey, and how can marketing analytics be utilized to understand the implications of these technologies for customer behavior and preferences?
5. As marketing analytics continues to evolve alongside technological advancements, what predictions can be made about its future trajectory, and how should brands adapt their strategies to anticipate and leverage these shifts?

For *marketing analytics applications*, despite its dependence on capabilities and big data research, it is vital to align this cluster's progression with the rapid technological advancements in the business environment. This is because the pace of technological development is rapidly reshaping the application landscape of marketing analytics. Future research could address how marketing analytics applications can be applied to support real-life business decisions (Kurtzke & Setkute, 2021; Lim & Heinrichs, 2021). Moreover, given the increasing use of digital platforms in customer shopping journeys, it is crucial to explore marketing analytics applications beyond these traditional realms, or in the context of new tools and technologies (Tupikovskaja-Omovie & Tyler, 2021; Zumstein et al., 2022). Another fruitful area could be exploring the challenges in translating analytic insights into actionable business strategies. This will bridge the often-discussed gap between analytics and action, providing insights on how firms can leverage their analytic capabilities more effectively. Therefore, the next wave of research could potentially be directed at these RQs:

1. How can companies effectively integrate and evolve their marketing analytics applications in tandem with the rapidly advancing technological landscape to ensure continued relevance and efficiency in marketing decision-making processes?
2. With the surge in the use of digital platforms for customer shopping journeys, how can marketing analytics be adapted or reinvented to cater to these changing behaviors and provide meaningful insights into customer decision patterns on these platforms?
3. What are the main barriers preventing marketing organizations from transforming analytic insights into actionable business strategies? How can these barriers be mitigated or overcome?

4. In the context of emerging tools and technologies, how can marketing analytics be applied to garner insights that were previously unavailable or unattainable with traditional methods?
5. Given the ever-expanding realm of data and tools available, how can brands ensure that their marketing analytic capabilities are not only up-to-date but also effective and efficient in yielding actionable marketing insights?

Lastly, in terms of *marketing analytics as a source of competitive advantage*, it is anticipated that research should develop an integrative framework connecting internal practices with the external environment, thereby promoting long-term firm performance in data-driven business settings (Liang et al., 2022). Given the increasing competition in the global business landscape, understanding how to use marketing analytics for competitive advantage is becoming a priority for many firms. Moreover, with the rise of digital platforms breaking geographical barriers, research into emerging areas like cross-border e-commerce would provide valuable insights into business decisions related to international performance or scaling up operations (Tolstoy et al., 2022). Future studies could also delve into how smaller companies with fewer resources can leverage marketing analytics to compete with larger, more resource-rich companies. This will help us understand how the democratization of data and analytics can potentially reshape the competitive landscape. Thus, we invite future researchers to ponder over these specific questions:

1. How can marketing analytics bridge the connection between a firm's internal practices and the rapidly shifting external environment to ensure sustained competitive advantage?
2. What strategies can companies employ in leveraging marketing analytics to enhance performance and decision-making in the realm of cross-border e-commerce, especially given the proliferation of digital platforms?
3. How can smaller firms, with limited resources, effectively employ marketing analytics to compete against and even outperform their larger, more established counterparts?
4. In what ways can the democratization of data and marketing analytics challenge and potentially redefine the existing competitive hierarchies and paradigms in various industries or sectors?
5. How might firms align their marketing analytics strategies with evolving customer behaviors and preferences in an increasingly globalized and digitalized marketplace, ensuring adaptability and responsiveness to emerging trends?

6.2.2 | Avenues emerging from synthesis-driven reflection

Against the backdrop of burgeoning AI and the emergent metaverse, modern-day grand challenges and evolving social practices are progressively reshaping both business and societal landscapes (Davenport et al., 2020; Dwivedi et al., 2021, 2023; Kraus et al.,

2023; Lim, 2022, 2023). This evolving landscape necessitates innovative research to harness marketing analytics, facilitating the formulation of contemporary marketing theories responsive to these modern-day shifts. Consequently, critical insights that could reshape marketing practices in the future are emerging.

Figure 5 shows that the seven clusters of marketing analytics research, which originate from the foundations of marketing research and customer relationship management philosophy, have gained impressive momentum. This trajectory is likely to continue due to the growing interest in big data analytics. Given big data analytics' multidisciplinary nature, its impact will permeate all clusters. This convergence underscores the need for practice-led research to map capabilities and performance amidst technological disruptions, which are consistently altering the landscape of data generation, collection, and analysis. To leverage the opportunities presented by these disruptions, researchers will need to develop and apply novel methodologies that are inherently adaptive and integrative.

Strategic and tactical business decisions within the marketing domain span a broad spectrum. Therefore, the relevance of marketing analytics across this continuum is evidenced by the coverage and critical intersections of the identified research clusters. For example, clusters that focus on long-term competitive advantage, rooted in a larger value creation philosophy (Hossain et al., 2021), underscore the strategic role of marketing analytics research. They highlight the potential of data-driven insights to guide key business decisions that shape firms' market positioning, innovation, and growth strategies. In contrast, clusters that focus on providing critical market and customer insights—including aspects like demand estimations (Ghose & Han, 2014) and day-to-day customer behavior mapping—underline the tactical role of marketing analytics in assessing marketing actions' performance (Germann et al., 2013; Sheth, 2021; Steward et al., 2019). These clusters bring to the forefront the importance of microlevel insights in informing immediate and short-term marketing decisions, such as campaign design and product promotions.

Within the strategic-tactical continuum, the seven research clusters range from those primarily focused on strategic decisions, to those addressing tactical decisions, and intermediary clusters serving operational roles with long-term business process reengineering objectives. Each of these clusters represents unique opportunities and challenges for marketing analytics research. Considering these roles, the future direction of this domain should be approached with three specific agendas.

First, the research scope needs to be broadened as the relevance of marketing analytics for supporting long-term strategic decision-making becomes increasingly evident. Currently, much of the existing research focuses on the retail and service sectors. However, given the universal applicability of big data and analytics, it is essential to extend explorations to other sectors and industries, including but not limited to education, healthcare, manufacturing, and logistics. The research should also address the growing integration of big data analytics and AI in decision-making processes (Davenport et al., 2020). As digital methods are increasingly being adopted in contemporary

marketing practices across diverse cultural settings or geographies, future research should aim to understand how these methods are impacting business practices in underrepresented markets (Cham et al., 2022). Guided by this, the next trajectory for scholarly investigation should encompass these RQs:

1. How can the applications and techniques of marketing analytics, which have shown profound implications in the retail and service sectors, be adapted and applied to industries like education, healthcare, manufacturing, and logistics to drive strategic decision-making?
2. In what ways are big data analytics and AI converging in the domain of marketing analytics, and how is this integration influencing both short-term and long-term strategic marketing decision-making across industries or sectors?
3. As digital marketing practices become pervasive across various geographies and cultural settings, how do the methods and outcomes of marketing analytics differ across these diverse contexts? What are the key cultural variables that impact the effectiveness of marketing analytics tools and strategies?
4. How are marketing analytics and related digital methods influencing marketing practices in markets that have historically been underrepresented or less researched in the domain of marketing science? What unique challenges and opportunities arise in these markets?
5. How will the integration of advanced technologies and the expansion into new industries or sectors reshape the foundational principles and methodologies of marketing analytics in the next decade?

Second, with the surge in publications, the domain is ripe for generating a focused pool of contemporary, practice-led research. Given the increasing availability of rich, granular data from diverse sources—ranging from customer interaction logs on digital platforms to social media sentiments, from transaction histories to real-time market trends—there is a unique opportunity to foster the development of theories that encompass the normative, diagnostic, and prescriptive facets of marketing analytics applications and capabilities for both strategic and tactical decision-making. For instance, normative aspects of marketing analytics could investigate best practices in data governance or ethical implications of data-driven marketing strategies. Diagnostic aspects could delve into understanding patterns and anomalies in customer behavior across different markets, leveraging advanced techniques such as machine learning and predictive modeling. An example here could be identifying which factors influence online purchasing decisions during a significant event, like a pandemic, using large-scale e-commerce transaction data. Prescriptive aspects, on the other hand, could focus on developing robust frameworks or models for optimizing marketing outcomes based on the insights derived from analytics. For instance, developing models that can predict and prescribe optimal pricing strategies based on real-time market fluctuations and customer demand patterns. By focusing on these aspects, the field can help

bridge the gap between theoretical advancements and practical applications, leading to more robust, dynamic, and actionable marketing strategies. Such an approach would not only enhance the practical relevance of marketing analytics research but also contribute to the academic body of knowledge by providing empirically validated, theory-based frameworks that can guide future investigations and applications in the field. To further this discourse, upcoming research should grapple with these inquiries:

1. How can businesses establish best practices for data governance in the realm of marketing analytics to ensure ethical and effective utilization of data-driven strategies?
2. In what ways can advanced machine learning techniques be deployed to detect and understand anomalies in customer behavior across various markets during significant global events?
3. How can large-scale e-commerce transaction data be leveraged to identify the core factors influencing online purchasing decisions during pivotal events?
4. How can businesses develop adaptive models, using marketing analytics, that prescribe optimal pricing strategies in real time based on market trends and fluctuating customer demands?
5. What are the key components of a robust framework that allows marketers to optimize their marketing outcomes, drawing upon analytical insights, especially in a rapidly changing digital landscape?

Third and finally, it is time to elevate marketing analytics research beyond its current role as a crisis-induced transformational business response. Future inquiries should focus on quantifying marketing analytics' impact on marketing actions and effectiveness. This could involve a critical examination of various tactical decisions, including but not limited to campaign management, market segmentation, new product development, pricing strategies, and sales forecasting. By doing so, we can generate data-driven evidence to demonstrate the real-world impact of marketing analytics, thus advancing the field from a transactional focus to a more strategic orientation. The ultimate objective of this research progression is to push the boundaries of marketing analytics beyond its current confines, fostering transformative marketing practices that can effectively navigate the future's complex and evolving landscape. With this in mind, the following questions are ripe for further exploration:

1. How does the integration of marketing analytics into various marketing actions (e.g., campaign management, market segmentation) quantifiably affect their overall effectiveness and ROI and return on value?
2. In what ways can marketing analytics optimize tactical decisions such as new product development, pricing strategies, and sales forecasting? What empirical evidence exists to support these optimizations?
3. How can marketing analytics transition from primarily serving transactional functions to influencing broader strategic orientations in businesses? What frameworks can facilitate this shift?

4. Given the evolving and complex nature of the future marketing landscape, how can marketing analytics tools and methodologies be developed or refined to better predict and navigate forthcoming challenges and opportunities?
5. What transformative marketing practices can be identified and fostered through the advanced application of marketing analytics? How can these practices redefine the industry standards and best practices for marketing in a data-driven world?

7 | CONCLUSION

This study provides an expansive and up-to-date examination of marketing analytics research in an era marked by technological advancements such as AI and the metaverse. Combing through a corpus of 122 articles published in the field until 2022, this investigation illuminates various aspects of marketing analytics as a pivotal tool in today's business practice, especially in its capacity to unravel complexities of customer psychology and decision-making. Moreover, it outlines potential directions for future research, anchoring these prospects in reflections on the past and present. The salient takeaways from this study are as follows.

First, our analysis of publication and citation trends (RQ1) underscores the growing relevance of marketing analytics in improving business decision-making. This growing relevance has been particularly pronounced over the 4 years leading up to 2022, with the COVID-19 pandemic accelerating the adoption of data-driven decisions. The increasing volume of data and the interdisciplinary nature of marketing analytics have emphasized its role as a tool for not only marketing but multidimensional, cross-functional business decisions.

Second, regarding contributions (RQ2), the seminal article by Wedel and Kannan (2016) continues to foster explorations in the field, igniting interdisciplinary research across both product and service industries. The utilization of marketing analytics in business decisions has expanded beyond customer relationship management to encompass more strategic, long-term aspects of business performance and management. Furthermore, the increasing relevance of marketing analytics research, coupled with contributions from a diverse group of researchers globally, paints a bright future for the field.

Third, the seven identified themes (RQ3) within the marketing analytics domain underscore their multifaceted nature, warranting a multidimensional understanding. Among these, the theme of marketing analytics for competitive advantage reveals an interesting trend: as businesses increasingly use marketing analytics for long-term strategic decisions, they rely heavily on understanding customer psychology and decision-making processes. This trend is pulling other clusters, such as marketing decision-making with big data and marketing analytics capabilities, toward strategic business decisions, emphasizing the importance of understanding customers at a deeper level.

Indeed, a fundamental dimension of this study revolves around elucidating the intricate relationship between marketing analytics and customer psychology. At its core, marketing analytics represents a data-driven approach that uncovers patterns, insights, and trends from vast repositories of customer data. However, it is not merely about crunching numbers; the real essence emerges when these patterns are contextualized within the framework of customer psychology. Customer psychology delves into understanding the motivations, desires, and behaviors of customers. When marketing analytics is employed with a deep understanding of these psychological elements, it allows businesses to predict, influence, and respond to customer behaviors in a more nuanced manner. In essence, while marketing analytics offers the "what" in terms of behavioral trends and patterns, customer psychology provides the "why" by elucidating the underlying motivations and triggers for these behaviors. By intertwining these two domains, businesses can transform raw data into actionable insights, crafting strategies that resonate deeply with the target audience, catering not just to their overt needs but also to their psychological underpinnings.

Importantly, the confluence of marketing analytics and customer psychology equips businesses with an enriched compass to navigate complex market landscapes. The value proposition of marketing analytics is not simply in the accumulation of data but in its distillation into meaningful and actionable intelligence. With the underlying psychological drivers illuminated, businesses are better positioned to make strategic decisions that are both analytically sound and emotionally resonant. Whether it is segmenting markets, developing new products, or crafting brand narratives, the amalgamation of analytical insights and psychological understanding ensures that these decisions align closely with genuine customer needs and desires. Furthermore, in an era characterized by rapid market shifts and evolving customer preferences, this combined lens of analytics and psychology provides businesses with a dynamic, adaptive decision-making framework. Instead of being reactive, businesses become proactive, anticipating market changes, preempting customer needs, and thereby securing a competitive edge in the marketplace. It becomes evident that marketing analytics, when integrated with deep psychological insights, forms the cornerstone of astute, customer-centric business decision-making.

Lastly, looking toward the future (RQ4), prospective authors can explore various contemporary topics across the seven identified clusters/themes. Crucially, future research should focus on developing integrative theoretical models of marketing analytics in practice, encompassing customer psychology, information processing, and response models. These investigations will lay the groundwork for future inquiries across the clusters/themes. Moreover, considering the evolving digital environment and impending metaverse powered by AI and virtual reality, research should be broadened to include these areas. This expanded focus should particularly consider the psycho-social dimensions of modern consumption behavior (Dwivedi et al., 2023; Lim et al., 2023), which will play a critical role in marketing analytics as we navigate the future.

In light of our exploration of marketing analytics as a lens to decipher intricate elements of customer psychology, we recommend blending insights from traditional psychological principles with the robust analytical capabilities of contemporary data analytics. While marketing analytics provides powerful tools to discern patterns, true innovation emerges when these insights are interpreted against the backdrop of established psychological theories. As digital touchpoints multiply and customer behavior continues to evolve in this big data era, it is imperative to revisit, refine, and potentially recalibrate traditional theories using the revelations from data analytics. Delving deeper into psychological aspects like motivation, perception, and emotional valence can enhance our understanding of the intricacies of customer behavior. For instance, while sentiment analysis techniques offer a glimpse into the emotional state of customers, integrating these findings with psychological underpinnings can offer richer, more nuanced insights.

Turning our attention from takeaways to contributions, embedded within this study's fabric is a rich tapestry of theoretical contributions. By systematically analyzing the extant literature on marketing analytics, our review builds bridges between isolated islands of knowledge, weaving a coherent, integrated narrative. The identification of the major clusters of knowledge (themes) within the domain not only structures the existing landscape but also pinpoints areas where theoretical underpinnings of marketing analytics might be lacking or fragmented. Furthermore, by spotlighting the increasing role of customer psychology within marketing analytics, our review accentuates a paradigm shift from a purely transactional to a more psychological understanding of marketing phenomena. The suggestion for future integrative theoretical models combining elements of customer psychology, information processing, and response models sets the stage for a more holistic understanding of marketing analytics, preparing the grounds for future scholars to mold and adapt theories to the changing dynamics of the business world.

Moving onto a practical standpoint, this study offers invaluable insights for professionals immersed in the world of marketing and business decision-making. Recognizing the surge in the adoption of data-driven decisions, especially post the COVID-19 pandemic, this research provides a roadmap for managers to identify potential strategic orientations. The growing centrality of customer psychology and decision-making in the application of marketing analytics underscores the need for businesses to adopt a more customer-centric approach, tailoring their strategies to the intricate nuances of modern consumer behavior. Furthermore, the foresight into the evolving digital environment and the impending influence of realms such as the metaverse serve as a beacon for managers to align their strategies with futuristic trends. Thus, marketing managers are equipped with both a retrospective understanding and a forward-looking vision, allowing them to harness the transformative potential of marketing analytics effectively.

In the imminent trajectory of business landscapes, marketing analytics will undoubtedly become the fulcrum of strategic decision-making processes. As businesses confront an ever-expanding cascade of data, the challenge no longer resides in data acquisition but in

harnessing that data to forge pivotal business choices. Given the confluence of heightened customer expectations, intensified market competition, and the rapid digitization of commerce, it is crucial for businesses to not merely react but to anticipate, innovate, and strategize based on insights birthed from astute analytical practices. Therefore, the future beckons for a tighter symbiosis between marketing analytics and business strategy. This will involve deciphering not just the overt trends but plumbing deeper to understand the underlying currents shaping market dynamics. Tomorrow's successful businesses will be those that adeptly intertwine data-driven insights with strategic foresight, leveraging marketing analytics as both a compass and catalyst to steer them toward uncharted terrains of opportunities. This proactive, forward-looking approach will ensure that businesses remain resilient, relevant, and primed for growth in an ever-evolving marketplace.

Last but not least, we acknowledge that this review is bound by the completeness and accuracy of bibliographic records in Scopus, though we must also assert that this limitation does not significantly compromise the value of our findings. This assertion is anchored in Scopus' renowned inclusivity and its strict indexing quality criteria that ensure source reliability (Paul et al., 2021). Additionally, we have taken robust measures to uphold the integrity of our review, such as adhering to a structured review protocol—SPAR-4-SLR—and utilizing a scientific database (Scopus) known for establishing source quality (Kraus et al., 2022; Lim, Kumar, et al., 2022; Lim, Rasul, et al., 2022).

Looking ahead, there are promising avenues for future reviews. These include undertaking a framework-guided content analysis and meta-analysis, whose construct- and relationship-specific focus can advance the broad performance- and theme-based insights from this bibliometric analysis. In particular, delving deeper into the role of marketing analytics in unraveling customer psychology and decision-making could prove fruitful, given its increasing prominence in strategic business decisions.

Taken collectively, our review offers a comprehensive examination of marketing analytics research within the context of business decisions and customer psychology. We believe it serves as a valuable guide for grasping the current trends and future trajectories in this innovative marketing practice, particularly as businesses navigate an increasingly data-rich and rapidly evolving environment.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in Scopus at <https://www.scopus.com>.

ORCID

Rituparna Basu  <http://orcid.org/0000-0001-9954-4216>

Weng Marc Lim  <http://orcid.org/0000-0001-7196-1923>

Anil Kumar  <http://orcid.org/0000-0001-9057-6043>

Satish Kumar  <http://orcid.org/0000-0001-5200-1476>

REFERENCES

Agarwal, R., Dugas, M., Gao, G., & Kannan, P. K. (2020). Emerging technologies and analytics for a new era of value-centered

- marketing in healthcare. *Journal of the Academy of Marketing Science*, 48(1), 9–23.
- Akter, S., Bandara, R., Hani, U., Fosso Wamba, S., Foropon, C., & Papadopoulos, T. (2019). Analytics-based decision-making for service systems: A qualitative study and agenda for future research. *International Journal of Information Management*, 48, 85–95.
- Akter, S., Wamba, S. F., Gunasekaran, A., Dubey, R., & Childe, S. J. (2016). How to improve firm performance using big data analytics capability and business strategy alignment. *International Journal of Production Economics*, 182, 113–131.
- Bamel, N., Kumar, S., Bamel, U., Lim, W. M., & Sureka, R. (2023). The state of the art of innovation management: Insights from a retrospective review of the European Journal of Innovation Management. *European Journal of Innovation Management*.
- Banerjee, A., & Banerjee, B. (2000). Effective retail promotion management: Use of point of sales information resources. *Vikalpa: The Journal for Decision Makers*, 25(4), 51–60.
- BCC Research. (2021). *Marketing analytics* (Report No. IFT230A). BCC Publishing. <https://www.bccresearch.com/market-research/information-technology/marketing-analytics-market.html>
- Behera, R. K., Bala, P. K., & Rana, N. P. (2023). Creation of sustainable growth with explainable artificial intelligence: An empirical insight from consumer packaged goods retailers. *Journal of Cleaner Production*, 399, 136605.
- Bhandari, R., Singer, M., & Scheer, H. V. D. (2014). Using marketing analytics to drive superior growth. *McKinsey & Company*. <https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/using-marketing-analytics-to-drive-superior-growth>
- Bischoff, J., Berezan, O., & Scardicchio, L. (2019). The digital self and customer loyalty: From theory to virtual reality. *Journal of Marketing Analytics*, 7(4), 220–233.
- Bond, S. (2022). Why COVID-19 disruptions to shopping behaviors underscore the need for a coordinated, cross-functional conversion rate optimisation strategy. *Journal of Digital & Social Media Marketing*, 10(1), 6–17.
- Bradlow, E. T., Gangwar, M., Kopalle, P., & Voleti, S. (2017). The role of big data and predictive analytics in retailing. *Journal of Retailing*, 93(1), 79–95.
- Bretas, V. P. G., & Alon, I. (2021). Franchising research on emerging markets: Bibliometric and content analyses. *Journal of Business Research*, 133, 51–65.
- Breugelmans, E., Bijmolt, T. H., Zhang, J., Basso, L. J., Dorotic, M., Kopalle, P., & Wunderlich, N. V. (2015). Advancing research on loyalty programs: A future research agenda. *Marketing Letters*, 26, 127–139.
- Cao, G., Duan, Y., & El Banna, A. (2019). A dynamic capability view of marketing analytics: Evidence from UK firms. *Industrial Marketing Management*, 76, 72–83.
- Cao, G., & Tian, N. (2020). Enhancing customer-linking marketing capabilities using marketing analytics. *Journal of Business & Industrial Marketing*, 35(7), 1289–1299.
- Cao, G., Tian, N., & Blankson, C. (2022). Big data, marketing analytics, and firm marketing capabilities. *Journal of Computer Information Systems*, 62(3), 442–451.
- Capatina, A., Micu, A., Micu, A. E., Bouzaabia, R., & Bouzaabia, O. (2018). Country-based comparison of accommodation brands in social media: An fsQCA approach. *Journal of Business Research*, 89, 235–242.
- Cham, T. H., Cheah, J. H., Memon, M. A., Fam, K. S., & László, J. (2022). Digitalization and its impact on contemporary marketing strategies and practices. *Journal of Marketing Analytics*, 10, 103–105.
- Chandra, S., Verma, S., Lim, W. M., Kumar, S., & Donthu, N. (2022). Personalization in personalized marketing: Trends and ways forward. *Psychology & Marketing*, 39(8), 1529–1562.
- Dar, I. B., Khan, M. B., Khan, A. Z., & Mujtaba, B. G. (2021). A qualitative analysis of the marketing analytics literature: Where would ethical issues and legality rank? *Journal of Marketing Analytics*, 9(3), 242–261.
- D'Arco, M., Lo Presti, L., Marino, V., & Resciniti, R. (2019). Embracing AI and big data in customer journey mapping: From literature review to a theoretical framework. *Innovative Marketing*, 15(4), 102–115.
- Davenport, T., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*, 48(1), 24–42.
- Davis, B., Grewal, D., & Hamilton, S. (2021). The future of marketing analytics and public policy. *Journal of Public Policy & Marketing*, 40(4), 447–452.
- 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.
- Donthu, N., Kumar, S., Pattnaik, D., & Lim, W. M. (2021). A bibliometric retrospective of marketing from the lens of psychology: Insights from Psychology & Marketing. *Psychology & Marketing*, 38(5), 834–865.
- Duan, L., & Xiong, Y. (2015). Big data analytics and business analytics. *Journal of Management Analytics*, 2(1), 1–21.
- Dwivedi, Y. K., Hughes, L., Wang, Y., Alalwan, A. A., Ahn, S. J., Balakrishnan, J., & Wirtz, J. (2023). Metaverse marketing: How the metaverse will shape the future of consumer research and practice. *Psychology & Marketing*, 40(4), 750–776.
- Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., Jain, V., Karjalahto, H., Kefi, H., Krishen, A. S., Kumar, V., Rahman, M. M., Raman, R., Rauschnabel, P. A., Rowley, J., Salo, J., Tran, G. A., & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 59, 102168.
- Van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538.
- Erevelles, S., Fukawa, N., & Swayne, L. (2016). Big data consumer analytics and the transformation of marketing. *Journal of Business Research*, 69(2), 897–904.
- Fildes, R., Ma, S., & Kolassa, S. (2022). Retail forecasting: Research and practice. *International Journal of Forecasting*, 38(4), 1283–1318.
- France, S. L., & Ghose, S. (2019). Marketing analytics: Methods, practice, implementation, and links to other fields. *Expert Systems with Applications*, 119, 456–475.
- Germann, F., Lilien, G. L., & Rangaswamy, A. (2013). Performance implications of deploying marketing analytics. *International Journal of Research in Marketing*, 30(2), 114–128.
- Ghose, A., & Han, S. P. (2014). Estimating demand for mobile applications in the new economy. *Management Science*, 60(6), 1470–1488.
- Goodell, J. W., Kumar, S., Lim, W. M., & Pattnaik, D. (2021). Artificial intelligence and machine learning in finance: Identifying foundations, themes, and research clusters from bibliometric analysis. *Journal of Behavioral and Experimental Finance*, 32, 100577.
- Guha, A., Grewal, D., Kopalle, P. K., Haenlein, M., Schneider, M. J., Jung, H., Moustafa, R., Hegde, D. R., & Hawkins, G. (2021). How artificial intelligence will affect the future of retailing. *Journal of Retailing*, 97(1), 28–41.
- Hair Jr., J. F., Harrison, D. E., & Risher, J. J. (2018). Marketing research in the 21st century: Opportunities and challenges. *Revista Brasileira de Marketing*, 17(5), 666–699.
- Hallikainen, H., Savimäki, E., & Laukkanen, T. (2020). Fostering B2B sales with customer big data analytics. *Industrial Marketing Management*, 86, 90–98.
- Hanssens, D. M., & Pauwels, K. H. (2016). Demonstrating the value of marketing. *Journal of Marketing*, 80(6), 173–190.

- Hauser, W. J. (2007). Marketing analytics: The evolution of marketing research in the twenty-first century. *Direct Marketing: An International Journal*, 1(1), 38–54.
- Hofacker, C. F., Malthouse, E. C., & Sultan, F. (2016). Big data and consumer behavior: Imminent opportunities. *Journal of Consumer Marketing*, 33(2), 89–97.
- Hong, J. S., Liu, C. H., Chou, S. F., Yu, T. Y., & Hu, D. C. (2022). Role of big data capabilities in enhancing competitive advantage and performance in the hospitality sector: Knowledge-based dynamic capabilities view. *Journal of Hospitality and Tourism Management*, 51, 22–38.
- Hossain, M. A., Agnihotri, R., Rushan, M. R. I., Rahman, M. S., & Sumi, S. F. (2022). Marketing analytics capability, artificial intelligence adoption, and firms' competitive advantage: Evidence from the manufacturing industry. *Industrial Marketing Management*, 106, 240–255.
- Hossain, T. M. T., Akter, S., Kattiyapornpong, U., & Dwivedi, Y. (2020). Reconceptualizing integration quality dynamics for omnichannel marketing. *Industrial Marketing Management*, 87, 225–241.
- Hossain, M. A., Akter, S., & Yanamandram, V. (2021). Why doesn't our value creation payoff: Unpacking customer analytics-driven value creation capability to sustain competitive advantage. *Journal of Business Research*, 131, 287–296.
- Huang, M. H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*, 49, 30–50.
- Iacobucci, D., Petrescu, M., Krishen, A., & Bendixen, M. (2019). The state of marketing analytics in research and practice. *Journal of Marketing Analytics*, 7(3), 152–181.
- Jebble, S., Kumari, S., & Patil, Y. (2018). Role of big data in decision making. *Operations and Supply Chain Management: An International Journal*, 11(1), 36–44.
- Kraus, S., Breier, M., Lim, W. M., Dabić, M., Kumar, S., Kanbach, D., Mukherjee, D., Corvello, V., Piñeiro-Chousa, J., Liguori, E., Palacios-Marqués, D., Schiavone, F., Ferraris, A., Fernandes, C., & Ferreira, J. J. (2022). Literature reviews as independent studies: Guidelines for academic practice. *Review of Managerial Science*, 16(8), 2577–2595.
- Kraus, S., Kumar, S., Lim, W. M., Kaur, J., Sharma, A., & Schiavone, F. (2023). From moon landing to metaverse: Tracing the evolution of technological forecasting and social change. *Technological Forecasting and Social Change*, 189, 122381.
- Kumar, S., Lim, W. M., Pandey, N., & Christopher Westland, J. (2021). 20 years of electronic commerce research. *Electronic Commerce Research*, 21(1), 1–40.
- Kumar, S., Sahoo, S., Lim, W. M., & Dana, L. P. (2022). Religion as a social shaping force in entrepreneurship and business: Insights from a technology-empowered systematic literature review. *Technological Forecasting and Social Change*, 175, 121393.
- Kurtzke, S., & Setkute, J. (2021). Analytics capability in marketing education: A practice-informed model. *Journal of Marketing Education*, 43(3), 298–316.
- LaValle, S., Lesser, E., Shockley, R., Hopkins, M. S., & Kruschwitz, N. (2011). Big data, analytics and the path from insights to value. *MIT Sloan Management Review*, 52(2), 21–32.
- Liang, X., Li, G., Zhang, H., Nolan, E., & Chen, F. (2022). Firm performance and marketing analytics in the Chinese context: A contingency model. *Journal of Business Research*, 141, 589–599.
- Lilien, G. L. (2011). Bridging the academic–practitioner divide in marketing decision models. *Journal of Marketing*, 75(4), 196–210.
- Lim, W. M. (2022). Ushering a new era of Global Business and Organizational Excellence: Taking a leaf out of recent trends in the new normal. *Global Business and Organizational Excellence*, 41(5), 5–13.
- Lim, W. M. (2023). Transformative marketing in the new normal: A novel practice-scholarly integrative review of business-to-business marketing mix challenges, opportunities, and solutions. *Journal of Business Research*, 160, 113638.
- Lim, J. S., & Heinrichs, J. H. (2021). Developing context-relevant project experiences for marketing analytics students. *Decision Sciences Journal of Innovative Education*, 19(2), 150–156.
- Lim, W. M., Kumar, S., & Ali, F. (2022). Advancing knowledge through literature reviews: 'What', 'why', and 'how to contribute'. *The Service Industries Journal*, 42(7–8), 481–513.
- Lim, W. M., Kumar, S., Pandey, N., Verma, D., & Kumar, D. (2023). Evolution and trends in consumer behaviour: Insights from Journal of Consumer Behaviour. *Journal of Consumer Behaviour*, 22(1), 217–232.
- Lim, W. M., Rasul, T., Kumar, S., & Ala, M. (2022). Past, present, and future of customer engagement. *Journal of Business Research*, 140, 439–458.
- Loftis, L. (2021). Data and decisioning: It takes two to tango in customer experience. *Applied Marketing Analytics*, 7(1), 58–64.
- Mahmoud, A. B., Hack-Polay, D., Grigoriou, N., Mohr, I., & Fuxman, L. (2021). A generational investigation and sentiment and emotion analyses of female fashion brand users on Instagram in Sub-Saharan Africa. *Journal of Brand Management*, 28(5), 526–544.
- Marinakos, G., & Daskalaki, S. (2017). Imbalanced customer classification for bank direct marketing. *Journal of Marketing Analytics*, 5, 14–30.
- Martyn, J. (1964). Bibliographic coupling. *Journal of Documentation*, 20(4), 236.
- Moorman, C. (2016). Celebrating marketing's dirty word. *Journal of the Academy of Marketing Science*, 44(5), 562–564.
- Mukherjee, D., Lim, W. M., Kumar, S., & Donthu, N. (2022). Guidelines for advancing theory and practice through bibliometric research. *Journal of Business Research*, 148, 101–115.
- Nam, H., & Kannan, P. K. (2020). Digital environment in global markets: Cross-cultural implications for evolving customer journeys. *Journal of International Marketing*, 28(1), 28–47.
- Paul, J., Lim, W. M., O'Cass, A., Hao, A. W., & Bresciani, S. (2021). Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR). *International Journal of Consumer Studies*, 45(4), O1–O16.
- Persson, O., Danell, R., & Schneider, J. W. (2009). How to use Bibexcel for various types of bibliometric analysis. *International Society for Scientometrics and Informetrics*, 5, 9–24.
- Petrescu, M., Krishen, A., & Bui, M. (2020). The internet of everything: Implications of marketing analytics from a consumer policy perspective. *Journal of Consumer Marketing*, 37(6), 675–686.
- Petrescu, M., & Krishen, A. S. (2020). The importance of high-quality data and analytics during the pandemic. *Journal of Marketing Analytics*, 8(2), 43–44.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891.
- Rahman, M. S., Hossain, M. A., & Abdel Fattah, F. A. M. (2021). Does marketing analytics capability boost firms' competitive marketing performance in data-rich business environment? *Journal of Enterprise Information Management*, 35(2), 455–480.
- Rahman, M. S., Hossain, M. A., Abdel Fattah, F. A. M., & Akter, S. (2020). Optimizing competitive performance of service firms in data-rich environment. *Journal of Service Theory and Practice*, 30(6), 681–706.
- Rana, N. P., Chatterjee, S., Dwivedi, Y. K., & Akter, S. (2022). Understanding dark side of artificial intelligence (AI) integrated business analytics: Assessing firm's operational inefficiency and competitiveness. *European Journal of Information Systems*, 31(3), 364–387.
- Rust, R. T., & Huang, M. H. (2014). The service revolution and the transformation of marketing science. *Marketing Science*, 33(2), 206–221.
- Sahoo, S., Kumar, S., Abedin, M. Z., Lim, W. M., & Jakhar, S. K. (2022). Deep learning applications in manufacturing operations: A review of

- trends and ways forward. *Journal of Enterprise Information Management*, 36(1), 221–251.
- Seth, N. (2018). Analytics are a source of competitive advantage, if used properly. *Forbes*. <https://www.forbes.com/sites/forbestechcouncil/2018/07/18/analytics-are-a-source-of-competitive-advantage-if-used-properly/?sh=7a8d3fef1894>
- Sheth, J. (2021). New areas of research in marketing strategy, consumer behavior, and marketing analytics: The future is bright. *Journal of Marketing Theory and Practice*, 29(1), 3–12.
- Sohn, K., Canbolat, M. S., & Gardner, J. T. (2017). How should marketers deal with growth pattern changes in viral marketing campaigns. *International Journal of Internet Marketing and Advertising*, 11(2), 137–157.
- Steward, M. D., Narus, J. A., Roehm, M. L., & Ritz, W. (2019). From transactions to journeys and beyond: The evolution of B2B buying process modeling. *Industrial Marketing Management*, 83, 288–300.
- Tamaddoni, A., Sepehri, M. M., Teimourpour, B., & Choobdar, S. (2010). Modeling customer churn in a non-contractual setting: The case of telecommunications service providers. *Journal of Strategic Marketing*, 18(7), 587–598.
- Tolstoy, D., Melén Hånell, S., & Özbek, N. (2022). Effectual market creation in the cross-border e-commerce of small-and medium-sized enterprises. *International Small Business Journal*.
- Tupikovskaja-Omovie, Z., & Tyler, D. (2021). Eye tracking technology to audit google analytics: Analysing digital consumer shopping journey in fashion m-retail. *International Journal of Information Management*, 59, 102294.
- Urban, G. L., Timoshenko, A., Dhillon, P. S., & Hauser, J. R. (2019). Is deep learning a game changer for marketing analytics? *MIT Sloan Management Review*, 61(2), 71–76.
- Vanhala, M., Lu, C., Peltonen, J., Sundqvist, S., Nummenmaa, J., & Järvelin, K. (2020). The usage of large data sets in online consumer behaviour: A bibliometric and computational text-mining-driven analysis of previous research. *Journal of Business Research*, 106, 46–59.
- Varma, A., Kumar, S., Sureka, R., & Lim, W. M. (2022). What do we know about career and development? Insights from Career Development International at age 25. *Career Development International*, 27(1), 113–134.
- Verhoef, P., Kooge, E., & Walk, N. (2016). *Creating Value With Big Data Analytics: Making Smarter Marketing Decisions*. Routledge.
- Vollrath, M. D., & Villegas, S. G. (2022). Avoiding digital marketing analytics myopia: Revisiting the customer decision journey as a strategic marketing framework. *Journal of Marketing Analytics*, 10(2), 106–113.
- Wedel, M., & Kannan, P. K. (2016). Marketing analytics for data-rich environments. *Journal of Marketing*, 80(6), 97–121.
- Xu, Z., Frankwick, G. L., & Ramirez, E. (2016). Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective. *Journal of Business Research*, 69(5), 1562–1566.
- Zhang, J. Z., & Watson, IV, G. F. (2020). Marketing ecosystem: An outside-in view for sustainable advantage. *Industrial Marketing Management*, 88, 287–304.
- Zumstein, D., Brauer, C., & Zelic, A. (2022). Benefits, challenges and future developments in digital analytics in German-speaking countries: An empirical analysis. *Applied Marketing Analytics*, 7(3), 246–259.

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