

Artificial intelligence in marketing: A systematic literature review

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Abstract

The digital transformation fostered by the increasing leverage of artificial intelligence (AI) has been a critical influencing factor unleashing the next wave of enterprise business disruption. Marketing is one of the business streams witnessing this transformation on a very intense scale. Contemporary marketing has begun to experiment with modern, cutting-edge technologies, such as AI, deploying them in mainstream operations to ensure accelerated success. This article explores the use of AI in marketing as an emergent stream of research. Based on inferences from earlier studies, the study categorizes marketing into five distinct functional themes—integrated digital marketing, content marketing, experiential marketing, marketing operations, and market research—and 19 sub-functional themes (activity levers). Across the chosen themes and sub-themes, the study further dovetails into and identifies 170 featured use cases of the extant literature, where AI is leveraged by marketing in delivering superior quality outcomes and experiences. By way of a systematic literature review (SLR), the article evaluates 57 qualifying publications in the context of AI-powered marketing and qualitatively and quantitatively ranks them based on their coverage, impact, relevance, and contributed guidance, and elucidates the findings across various sectors, research contexts, and scenarios. The study discusses the practitioner and academic research implications and proposes a future research agenda to study the continuous transformation fostered by accelerated adoption of AI across the marketing landscape.

Keywords

artificial intelligence, consumer behavior, content marketing, experiential marketing, integrated digital marketing, market research, marketing operations

Introduction

Contemporary marketing is increasingly data driven, automated, and intelligent. The highly focussed approach of new-age marketing has had a direct influence on marketing outcomes (Kumar et al., 2019; Paschen et al., 2019). Technological advancements have consistently

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produced longitudinal shifts in the evolution of marketing and have strongly established that marketing can work hand-in-glove with artificial intelligence (AI) to make a difference (Siau, 2017; Wirth, 2018).

According to previous research “When technology works on a personal level, it creates an endearing bond with the users, when marketers tap into such a bond, the potential for customer value creation is enormous” (Kumar et al., 2019, p. 137). Advanced and innovative AI-powered marketing solutions can rapidly adapt to the changing needs of businesses and come up with communications and solution packages that are critical and lucrative to relevant stakeholders (Epstein, 2018). The CEO of the Marketing Artificial Intelligence Institute proposed a new framework (Roetzer, 2017) for the marketing mix, comprising Planning, Production, Personalization, Promotion, and Performance (the 5Ps).

Complementing the humongous opportunity that currently exists in the marketplace (Kumar et al., 2019; Pitt et al., 2018), the topic of AI-powered marketing has been increasing in relevance and attracting growing attention among the world’s researchers. There is a fair amount of prior research already available on independently evaluating the influence of AI on discrete marketing functions (Hadi et al., 2019; Hildebrand, 2019; Jarek & Mazurek, 2019; Jones, 2018; Siau, 2017; Stalidis et al., 2015). As yet, there has not been an exclusive study that distills the impact analysis approach down to functional themes and sub-activity levers within the gamut of marketing. Therefore, it is critical to fill this gap by means of a focussed, use case-driven study.

In this systematic literature review (SLR), the author attempts to evaluate the futuristic topic such as AI-powered marketing by gathering the extant research across the identified functional themes, activity levers, and research contexts; this SLR aims to establish the scientific evidence to argue the evolution of AI-powered marketing as a critical enabler of competent business outcomes.

AI

As novel as AI sounds, it is not new. The term itself was coined in 1956 in a proposal by an elite group of computer scientists and mathematicians who organized a summer workshop called the “Dartmouth Conference”. (Hildebrand, 2019, p. 11)

AI can be broadly defined as “intelligence exhibited by machines” (Siau, 2017). Russell and Norvig (2003, p. 31) defines AI as intelligence that uses sensors to perceive and effectors to react to the environment.

It is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable. (Stanford, 2007)

A seminal study by Wirth (2018) argues that AI, in its current stage of development, is capable of replacing or augmenting the requisite expertise to take informed marketing decision, whereas another critical study of De Bruyn et al. (2020) cautions against just defining AI as the “intelligence demonstrated by machines” and not defining the perimeter well enough which could potentially lead to more confusion.

AI in marketing: the impending need

An analysis of research and descriptive practitioner data about the usage of AI in marketing presents few interesting observations:

- Xu (2020) states that AI spending is expected to rise to US\$98 billion globally by 2023, with unprecedented 28.4% cumulative annual growth rates.
- A report by Balakrishnan et al. (2020) at McKinsey Analytics reports that 50% of enterprises have adopted AI in at least one of their business functions, and 75% of the enterprises that are using AI demonstrated 10% rise in customer experience (Christopher Stancombe, 2017).
- Superior power of AI is its ability to learn from large datasets (Davenport et al., 2020; Shah and Shay, 2019). Enterprises expect 99% return on investment (ROI) from AI implementation in the next 5 years and 187% in the next 10 years (Teradata, 2017).
- AI has transformed the business to business (B2B) human-centric sales process and started affecting the B2B sales funnel already (Paschen et al., 2019).

Gijs Overgoor et al. (2019, p. 157) defines marketing AI as “the development of artificial agents that, given the information they have about consumers, competitors, and the focal company, suggest and/or take marketing actions to achieve the best marketing outcome.” AI-marketing fusion will certainly grow in stature (Vishnoi & Bagga, 2019), and there will be more possibilities of the application of AI to marketing (Jones, 2018; Kumar et al., 2019; Pitt et al., 2018; Wirth, 2018). Van Esch (2018) defines AI as a multifaceted concept through the lens of a human-computer interaction.

From customer experience to marketing operations and up to business decision-making, AI is already affecting almost all the functional themes of Marketing (Hildebrand, 2019; Pitt et al., 2018) at varying degrees of severity.

Research objectives

In the absence of an SLR with clear focus on the implications of AI across all functional and sub-functional themes of marketing, this study aims to present real-world insights that reflect AI evolution. The author summarizes the findings across five research themes and collates the featured use cases across all of them:

1. Integrated digital marketing: Of 4.6 billion+ global smartphone users, roughly 2 billion access the Internet via only their smartphones (World Advertising Research Center, 2019).
2. Content marketing: A successful prediction claimed that 20% of content would be generated by machines by 2018 (Gartner, 2015).
3. Experiential marketing: More than 47% of consumers interact with bots during online shopping, and 40% of them do not mind talking to a bot (Dimitrieska et al., 2018).
4. Marketing operations: AI is so unobtrusive that 63% of businesses already use AI tools without realizing (An, 2016), and tools such as Phrasee and Persado transformed e-mail marketing (AI Roberts, 2017).
5. Market research: An intelligent AI algorithm from Stanford University identifies homosexual men with 81% accuracy and homosexual woman with 74% accuracy (Krsteva, 2016) using their photographs.

Research questions

As contemporary and advanced concept as it sounds, this topic demands thorough research and extensive information collection exercise across various functional areas of marketing, that makes the research question further dovetailed into three sub-questions:

RQ1. How is the prior and current research has been distributed across the functional themes?

RQ2. How to stimulate the importance of evaluating AI as a critical influencer of marketing process, and what are the prominent use cases of AI-powered marketing?

RQ3. What are the academic and practitioner implications of research in this topic? How is this futuristic trend expected to transform the overall marketing landscape?

In the subsequent sections, the author presents the results and findings of the literature review, followed by articulating the current objectives, research design, overall research findings of this SLR exercise, and conclusions and guidelines for future research enhancements.

Research design

The SLR must, as a first step, identify and understand the objectives priorly and define the criteria for inclusion and exclusion (Štrukelj, 2018) protocol that defines the rationale for identifying and assessing published research that should be included and stated (Afrooz & Navimipour, 2017; Boell & Cecez-kecmanovic, 2015).

The research started with a name string search across the databases such as Scopus, Google Scholar, Sage, Springer, and Emerald with “Artificial Intelligence in Marketing” and “Artificial Intelligence and Marketing” followed by pairwise search for “Artificial intelligence” and “Marketing.” Due to the diverse nature of the topic, qualification restricted only to the “title” level. Considering the topic has seen increasing attention since 2015, also to make the article reflect latest, most recent insights with greater scientific accuracy, qualification restricted to professional peer-reviewed publications after 2015 (Figures 1 to 9).

Inclusion criteria

IC1. Studies found using keywords “Artificial Intelligence in Marketing” and “Artificial Intelligence and Marketing” only in the title

IC2. “Artificial Intelligence” AND/OR “Marketing” only in the title

IC3. Published after January 2015

IC4. Only articles that are published in journals and scholarly articles

IC5. Only articles written in English language.

Exclusion criteria

EC1: Studies based on keyword and study focus

EC2. Duplicates found using digital object identifier

EC3: Non-English publications

EC3. Dissertation and conference papers.



Figure 1. Literature search process.

SLR execution

Fifty-seven qualified, peer-reviewed, journal publications were studied, and the findings were tabulated as per the following fields: author, publication year, title, sector, context, study measures, study focus, journal, first author's country, and quantitative (Q)-score.

Journal of the Academy of Marketing Science, California Management Review and International Journal of Market Research are the top 3 journals hosting most cited publications in this field.

Q-score

To ensure appropriate weightage to the most deserving publication, the author observed the following logic to calculate the Q-score. Subsequently, the research articles have been further evaluated and rated based on the formulated Q-Score (Table 1).

The final tabulated SLR findings can be found in the Appendix 1.

Table 1. Quantitative ranking (Q-score) methodology.

Parameter	Marks
Has the paper evaluated a futuristic use case?	Yes: 1 No: 0
Number of citations the paper received as on November 2020	Zero: 0 $>1 \text{ to } <5$: 1 $>5 \text{ to } <10$: 2 $>10 \text{ to } <15$: 3 $>15 \text{ to } <20$: 4 $20+$: 5
Whether the article clearly outlines limitations and advantages and defines future scope?	2 for both 1 for anyone of them 0 for none
Whether the analysis provided sufficient implicative understanding for academicians and practitioners?	2 for both 1 for only one 0 for none.

Literature review

RQ1. How is the prior and current research has been distributed across the functional themes?

SLR is a process of identifying underlying trends by exploring and analyzing a large amount of published data (Jilani & Mackworth-Young, 2015). SLR must be comprehensive to ensure that it aggregates, reviews, and assesses previous work while also utilizing pre-specified and standardized research techniques (Štrukelj, 2018). This study was conducted using an evidence-based approach by categorically evaluating and inspecting academic and scholarly articles and journal publications on the topic of AI and marketing. A detailed study and analysis of publications in the literature databases helped identify the most relevant, referenceable evidence of AI-enabled marketing within and across five identified functional themes and 19 sub-functional themes of marketing. It would be impossible to achieve this detail by studying only a single functional theme. Wherever possible, additional references have been included and insights have been derived from business websites, reports, and other publications of relevance to practitioners. The synthesized research data have helped formalize, disseminate, and connect the research evidence to the research objectives and identify the scope for future research expansion. To the author's knowledge, this is the first SLR studying the impact of AI at such a level of detail within marketing.

This study's unique contribution can be identified in two respects. First, the study presents an overarching perspective that covers the extant literature published across the research themes within the realm of AI in marketing. Second, from and within the identified academic literature, the study identifies 170 real-time applications/use cases of AI built around the 5 functional and 19 sub-functional themes. In addition, the study offers specific actionable insights and implicative understandings of this topic for global academics and practitioners.

Research themes

Table 2 is a comprehensive summary of the prior and current academic literature that is segregated across the 5 functional and 19 sub-functional themes.

Table 2. Prior and current research in AI in marketing organized by functional themes and sub-themes..

S. No	Functional area/theme	Sub-theme	Corresponding literature
1	Integrated digital marketing	Intelligent search	Chandra (2020); Dumitriu and Popescu (2020); Krsteva (2016); Thiraviyam (2018)
		Recommender systems	Capatina et al. (2020); Chandra (2020); Cosmin TĂNASE (2018); Elhajjar et al. (2020); Mogaji et al. (2020); Murgai (2018); Khokhar and Chitsimran (2019); Thiraviyam (2018); Vishnoi and Bagga (2019)
		Programmatic advertising	Capatina et al. (2020); Mogaji et al. (2020); Khokhar and Chitsimran (2019); Vishnoi and Bagga (2019)
2	Content marketing	Creation and curation of content	Kose et al. (2017); Kose & Sert (2016)
		Automated insights	Karimova and Shirkhanbeik (2019); Kose et al. (2017)
		Narrative science	Ahmad (2018); Karimova & Shirkhanbeik (2019)
		Content personalization	Ahmad (2018)

(Continued)

Table 2. (Continued)

S. No	Functional area/theme	Sub-theme	Corresponding literature
3	Experiential marketing	Voice recognition systems	De Bruyn et al. (2020); Devang et al. (2019); Grandinetti (2020); Hildebrand (2019); Jahan (2020); Jarek and Mazurek (2019); Jones (2018); Dumitriu and Popescu (2020)
		Virtual transformation	Devang et al. (2019); Eriksson et al. (2020); Grandinetti (2020); Jones (2018); Kaczorowska (2019); Marinchak et al. (2018b); Pitt et al. (2018); Xi and Siau (2020)
		Image recognition	Devang et al. (2019); Grandinetti (2020); Hildebrand (2019); Jarek and Mazurek (2019); Kaczorowska (2019); Khanna et al. (2020)
4	Marketing operations	Marketing automation	Rekha et al. (2016); Faggella (2019a); Kumar et al. (2019); Marinchak et al. (2018a); Shahid and Li (2019); Yang and Siau (2018)
		Forecasting	Faggella (2019a); Kumar et al. (2019); Stone et al. (2020)
		Predictive analytics	Faggella (2019b); Tiwari et al. (2020)
5	Market research	Campaign execution	Shahid and Li (2019); Shih-Yu (2019); Yang and Siau (2018)
		Customer segmentation	Davenport et al. (2020); Huang & Rust (2020); Paschen et al. (2019)
		Consumer behavior	Overgoor et al. (2019); Hadi et al. (2019); Markić et al. (2015); Siau (2017)
		Data mining	Gkikas and Theodoridis (2019); Mouncey (2018); Stalidis et al. (2015)

From the above classification of the select literature, it can be observed that integrated digital marketing is one of the most researched themes, followed by growing interest in the experiential marketing, whereas content marketing has been theme that evinced by far the limited interest.

Critical observations from Table 3 can be explained as the following:

Table 3. Prior and current research in AI in marketing organized by research context.

S. No	Research context	Corresponding literature
1	Academics	Devang et al. (2019); Elhajjar et al. (2020); Gkikas & Theodoridis (2019); Grandinetti (2020); Hadi et al. (2019); Manoj & Sinha (2019); Khokhar & Chitsimran (2019); Pitt et al. (2018)
2	Digital marketing agencies	Capatina et al. (2020); Chandra (2020); Cosmin TĂNASE (2018); Daniel Faggella (2019a, 2019b); Jones (2018); Kaczorowska (2019); Marinchak et al. (2018a); Murgai (2018); Kühl et al. (2019)
3	E-commerce	Hadi et al. (2019); Kose et al. (2017); Krsteva (2016); Kumar et al. (2019); Marinchak et al. (2018a); Markić et al. (2015); Khokhar & Chitsimran (2019); Kose & Sert (2016); Yang & Siau (2018)
4	Strategic marketing	Ahmad (2018); Eriksson et al. (2020); Huang & Rust (2020); Jahan (2020); Shahid & Li (2019); Stone et al. (2020); Thiraviyam (2018); Vishnoi & Bagga (2019)
5	Technology	Chen et al. (2016); De Bruyn et al. (2020); Karimova & Shirkhanbeik (2019); Jarek & Mazurek (2019); Shah & Shay (2019); Wirth (2018)

(Continued)

Table 3. (Continued)

S. No	Research context	Corresponding literature
6	Humanities	Davenport et al. (2020); Dimitrieska et al. (2018); Hildebrand (2019); Xi & Siau (2020); Yang & Siau (2018)
7	Financial services	Rekha et al. (2016); Mogaji et al. (2020); Tiwari et al. (2020)
8	Healthcare	Khanna et al. (2020)
9	Hospitality	Kumar & Ramachandran (2020); Stalidis et al. (2015)
10	Industrial	Paschen et al. (2019); Shih-Yu (2019)
11	Online gaming	Overgoor et al. (2019)
12	Social media	Capatina et al. (2020); Dumitriu & Popescu (2020); Mouncey (2018)

- “Digital marketing and e-commerce” are some of the of the most researched contexts, followed by human aspects of the AI, especially in relation to the functional implications of sales and marketing,
- Studies of the implications of AI in marketing from the contexts of technology and strategic marketing are distinctively gaining more attention of the world researchers (Table 4),
- Sectoral-based studies of AI in marketing: although limited in number at this time, there is a scope for organized research focusing on a specific industry/sector and appraising the power of AI in marketing (Table 5).

RQ2. How to stimulate the importance of evaluating AI as a critical influencer of marketing process, and what are the prominent use cases of AI-powered marketing?

Table 4. Relevant use cases classified and delineated as per the existent research.

Theme	Sub-theme	Relevant use cases captured in the existent research
Integrated digital marketing	Intelligent search	Amazon.com intelligent search ElasticSearch: Distributed open-source search Indix: Data as a service Google Inside Search Centiment: Social Semantics

Recommender systems	Spotify: Music recommender Amazon kindle: eBook recommender Discovery Aide Netflix: OTT content recommender Data Community DC Google Plus social network content recommendations Mezi: Travel assistant Pandora: Music assistant Cherry Sprite: Freestyle vending machine Layer 6 AI: Recommender system Net Promoter Score (NPS): Consumer recommender Amazon: Collaborative filtering Redballoon: Albert AI, recommender system
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(Continued)

Table 4. (Continued)

Theme	Sub-theme	Relevant use cases captured in the existent research
	Programmatic advertising	Seer Interactive: Big data-based digital marketing RapidMiner: Data science and machine learning platform digital campaigns Birst: Business intelligence and analytics Sisense: Business intelligence and software analytics platform DigiDay: An online trade magazine Wikipedia: Real-time advertising YouTube: Intelligent advertising HubSpot: Inbound marketing Google AdSense: Auto ads
Content marketing	Creation and curation	Twitter Analytics Google Accelerated Mobile Pages (AMP) Washington Post content curation Keeko robot kindergarten teacher for more than 600 schools in China Wordsmith: Content creation IBM Watson: Content curation Kantar's ad analytics for content creation Wylei's predictive AI for content creation
	Automated insights	NASA: Aqua Software—Prevention of oil spills through satellite imagery Olivia: Financial planning McCann's AI creative director
	Content generation	KNIME: Data mining Articoolo: Web content developer Persado: Cognitive content platform IBM Watson: Movie trailer creation Kia: ML-based Social media Influencers for Superbowl
Personalization		Adobe: content personalization tools Associated Press, Reuters: BBC, CBS, <i>The New York Times</i> , and <i>Forbes</i> Saatchi LA & IBM Watson: Ad personalization Amazon: personalized shopping recommendations Instagram: "Suggested for You" (feature) Swiggy: Top picks (feature) Facebook: People you may know (feature) Neosperience: A cloud platform that is enriched with a personalization feature by AI
	Narrative science	DeepL Translator Continued Learning Bots Google power Smart Reply LIV: Language translator Legal Robot: Legal language assistant
Experiential marketing	Voice	Google Assistant Iphone Siri Amazon Echo Facebook Messenger Baidu's Duer Alpine.ai Amazon Flywheel Mercedes MBUX Sephora Chatbots

(Continued)

Table 4. (Continued)

Theme	Sub-theme	Relevant use cases captured in the existent research
Virtual		Deakin University: Deakin Genie digital student assistant Microsoft Cortana IntelligentX Brew TVN Reality Show Fluid.AI: Conversational chatbots Amazon: Warehouses, service robots Macy's On Call Cogito: Emotional AI conversation analyzer Google Duplex IBM Project Debater Tesla tool to correct car overheating Self-driving car r2D2, C-3PO (Star Wars) Samantha (Her) Ava (Ex machina) Winston (Origin) H&M Intelligence Ecommerce IKEA Place app Lenskart Spectacle online portals Screenless Mixed Reality (Olympic games) Microsoft's HoloLens ING Bank Śląski Amazon Go Zaitt Brasil: Virtual experience Moby Mart: Autonomous shop NEST: Smart home solution Amazon: Anticipatory shopping experience Stitch Fix: Shipping-then-Shopping model Trunk Club: Men's fashion ROSS: First artificially intelligent lawyer Bixby: Virtual assistant Amazon Alexa: Virtual assistant Viv: Virtual assistant iPal: ICICI Bank's chatbot Eva: HDFC Bank's chatbot ILA: SBI Bank's chatbot LoweBot: Service robot Google AlphaGo Marketo: Brand automation software TopShop: Virtual changing rooms Lacoste: Mobile app that helps users try shoes virtually Amazon Prime Air: Shopping and delivery Dominos Pizza: Delivery robots Affectiva: Customer emotion monitoring Replika: A machine learning-based chatbot mimicking the style of communication Pepper: Customer greeting robot HaiDiLao's: Customer service

(Continued)

Table 4. (Continued)

Theme	Sub-theme	Relevant use cases captured in the existent research
	Image	CamFind: visual search and image recognition mobile app Instagram Image recognition algorithm Pinterest Image recognition algorithm KFC payments app Naver: GPS navigation system Shiseido: intelligent image app Ebay Photosearch Estée Lauder: Matching perfume with image FashionAI: Electronic mirrors BBVA: Image matching as customer authentication Adobe Sensei: Brand channels Everypixel: Automatic picture selection tool Haystack: Face recognition Check processing BOT by Axis bank IBM Watson intelligent X-ray and MRI scan reader Cloverleaf: Image recognizing grocery shelves Alibaba: Fashion AI smart mirrors
Marketing operations	Marketing automation	Salesforce CRM Thegrid.io: website builder Toyota, Saatchi&Saatchi: Direct marketing campaign Albert Al, Harley Davidson: Campaign platform Amazon MTurk
	Forecasting	ADEXT: Marketing campaign solution Amazon KIVA Systems Jaguar I-PACE: Intelligence car recharge KONE: Auto sync application Salesforce Einstein Analytics: cloud-based platform Online retailer Jet AI application for real-time pricing
	Predictive analytics	Heliograf: the trends detector Facebook suicide prevention solution IBM Personnel Retention Solution Phrasee: AI copywriting tool for digital campaigns Persado: AI platform for reference for choice of words Monteloeder: Auto UV protection filter iperfumy.pl, kontigo.pl: Dynamic price matching Lenddo: Credit scoring Uber Eats AI application to optimize delivery times Saffron: Predictive analytics tool
	Campaign execution	Oracle Eloqua campaign management tool Brandito: promotional marketing Sentinet: Ecommerce and digital marketing Conversica: Lead scoring
Market research	Customer segmentation	Acquia/Agile One: Customer data platform IBM Watson: Customer segmentation Emirates: Automatch travel destinations Intel: AI-enabled purchasing tool Lyft ridesharing powered by customer segmentation

(Continued)

Table 4. (Continued)

Theme	Sub-theme	Relevant use cases captured in the existent research
Consumer behavior		Google DeepMind IBM DeepBlue Touchpoint: Customer behavior analysis Plum: Development of individual savings plan Diageo Simi Bartender ING Bank Śląski HealthyfyMe: Digital health and wellness platform Starbucks Mobile app Daily IQ: Anonymized data collection and dissemination platform for Corporate Customers by Commonwealth Bank of Australia Data Republic: Anonymized data collection and dissemination platform for Corporate Customers by ANZ, Westpac, and NAB
Data mining		Slideshare: Professional content hosting Amazon retail forecasting methods IBM Elements Salesforce, Adidas Samsung SmartThings ecosystem

AI: artificial intelligence; OTT: over-the-top; MRI: magnetic resonance imaging; BBC: British Broadcasting Corporation; CBS: Columbia Broadcasting System.

Integrated digital marketing

As observed above, one of the most affected functions of the AI revolution is digital marketing. The areas in digital marketing that have already experienced the impact of AI and how AI has transformed the digital marketing landscape have been studied by Murgai (2018). Khokhar and Chitsimran (2019) attempted to explore the factors that lead to the adoption of AI in marketing. While a number of new uses of AI have created an unparalleled future in the world of marketing (Krsteva, 2016; Siau, 2017), documented insights into the AI ecosystem and the embedded technologies that aid such marketing processes have been enumerated by Vishnoi and Bagga (2019). Considering the reach and impact of online advertising in contemporary marketing, Cosmin TĂNASE (2018) explored the impact of AI on programmatic advertising, whereas the study by Thiraviyam (2018) suggested indicative measures to improve digital marketing strategies.

Some recent studies have attempted to explore the impact of AI on digital marketing from more specific research contexts, such as customer experience (Chandra, 2020) and marketing academics (Elhajjar et al., 2020). Chandra (2020) explored certain contemporary use cases, such as the Amazon Flywheel Approach and Amazon Collaborative Filtering, from the point of view of customer service and customer experience, whereas Elhajjar et al. (2020) took an interview-based approach to understand the factors that drive the student interest in AI in marketing courses.

One of the most exclusive studies of this area evaluated the impact of AI-enabled digital marketing programs on financially vulnerable customers (Mogaji et al., 2020). The study highlights the importance of human connection to ensure optimal customer engagement and experience and proposes a theoretical model that can serve as a critical connection between financial services marketers and financially vulnerable customers, which is an underserved area in the financial services domain.

Social media marketing has evinced critical transformation with AI, and numerous studies have attempted to explore the correlations between experience and level of knowledge of the applicability of machine learning (Gkikas & Theodoridis, 2019; Micu et al., 2018). Capatina et al. (2020) envisaged the potential uses of AI-based software in programmatic advertising. Supervised

machine learning approaches to Twitter data have also been explored as research themes by Mouncey (2018) and Kühl et al. (2019). An exclusive qualitative study based on fuzzy-sets comparative analysis by Capatina et al. (2020) classified the emerging causal configurations of AI-enabled software in social media marketing into three categories in the context of digital marketing agencies, namely audience, sentiment analysis, and image.

Content marketing

Many studies have focussed on intelligent content marketing and enabling web technologies (Kose et al., 2017; Kose & Sert, 2016) and the impact of such advancements on communication streams, such as corporate/marketing communications (Ahmad, 2018). Content has emerged as one of the most critical and influential marketing tools (Kose et al., 2017), and content creation and curation in particular have seen significant influence by adopting AI-powered marketing techniques (Kose et al., 2017; Kose & Sert, 2016). As more content is created and curated every passing hour across almost all media of information consumption, there has been a growing need for content personalization (Ahmad, 2018). Indeed, the need for extreme content personalization had emerged from the need to generate automated insights using AI-powered content marketing (Karimova & Shirkhanbeik, 2019; Kose et al., 2017) which has been served by building content recommender systems using narrative science methodologies (Ahmad, 2018; Karimova & Shirkhanbeik, 2019).

Experiential marketing

One of the most advanced and heavily invested areas in marketing is experiential marketing. Research has predominantly focussed on voice (Dumitriu & Popescu, 2020; Hildebrand, 2019; Jarek & Mazurek, 2019; Jones, 2018), virtual reality/transformation (De Bruyn et al., 2020; Devang et al., 2019; Grandinetti, 2020; Jones, 2018; Marinchak et al., 2018b; Xi & Siau, 2020), chatbots (Devang et al., 2019; Hildebrand, 2019; Jahan, 2020; Kaczorowska, 2019), and the implications for image recognition (Jarek & Mazurek, 2019; Khanna et al., 2020; Shah & Shay, 2019; Xi & Siau, 2020).

Shah and Shay (2019) presented a framework to summarize different applications of marketing that can employ transformative technologies and the corresponding implications. Previous research has evaluated the impact of customer trust on acceptance and adoption and the ethical implications and security requirements of AI agents (Marinchak et al., 2018b); moreover, it has discussed the timeline of AI evolution and the current maturity level (Jahan, 2020) and how AI plays a critical role in making better marketing decisions (Hildebrand, 2019). Other critical research themes have included a special focus on how deeply AI is applied in marketing (Jarek & Mazurek, 2019), the process of identifying opportunities connected with using chatbots in marketing (Kaczorowska, 2019), and advanced intelligent search mechanisms (Dumitriu & Popescu, 2020).

Dr Misbah Jahan's (2020) research details the current and potential uses of AI in the marketing landscape, as well as the enterprises and sectors that were the early adopters of AI in marketing. Some researchers have tested the softer aspects of AI-enabled experiential marketing, such as value-focussed marketing facilitated by AI (Xi & Siau, 2020), whether AI-powered marketing has any relevant market theory-based implications (Grandinetti, 2020) and what the critical priority of a marketer should be in the context of AI-powered experiential marketing and satisfaction of customer needs (Grandinetti, 2020). A more focussed sectoral study on the pharmaceutical industry by Khanna et al. (2020) evaluated the impact of AI and advanced analytics in the area of commercial pharmaceutical marketing.

A more contemporary and exclusive study has seen increasingly gaining attention in studying the impact of AI on strategic marketing. Eriksson et al. (2020) addressed this aspect by focussing on five critical antecedents of strategic marketing and posited that the use of AI in the context of strategic

marketing relates to not only rationale but also creative possibility perspectives. An important publication was by Eriksson et al. (2020). Another important publication by De Bruyn et al. (2020) discussed the pitfalls and opportunities of AI in marketing through the lenses of knowledge creation and knowledge transfer; they predicted that AI will fall short of its promises in some of the identified marketing domains if the problems of tacit knowledge transfer are not addressed (De Bruyn et al., 2020).

Marketing operations

Driving operational efficiencies in marketing, one of the foremost functions to witness the effects of AI, some new studies have focussed on direct marketing analytics using support vector data description (Rekha et al., 2016), AI-driven environments in branding (Kumar et al., 2019), various real-time use cases of AI-powered marketing automation (Faggella, 2019b), AI's integration in marketing (Shahid & Li, 2019), sales forecasting, and the softer changes in sales and marketing jobs (Yang & Siau, 2018).

Marketing Technology (MARTECH) is arguably one of the burgeoning fields of marketing operations, focussing exclusively on marketing automation (Marinchak et al., 2018b) and digital adoption (Stone et al., 2020). An exclusive study of 5,000 real-time use cases of MARTECH across content, sales, marketing, promotion, advertising, and experience has been studied by Marinchak et al. (2018b), whereas one of the foremost studies of AI implications connected to marketing strategy and decision-making process, conducted by Stone et al. (2020), serves as a seminal reference in this area. Marinchak et al. (2018a) posits that the exponential increase of the adoption of AI-powered marketing has the potential to affect virtually every marketing function. Twenty real-time use cases of digital adoption transforming the strategic decision-making approach (Stone et al., 2020) and a quantitative study using the fuzzy logic for marketing segmentation problem (Tiwari et al., 2020) can substantiate this claim further. At the same time, a more focussed geography-based study on machine tool manufacturers in Taiwan by Shih-Yu (2019) explores this domain from the perspective of Industry 4.0.

Market research

Studies in the market research field have predominantly focussed on understanding consumer behavior (Davenport et al., 2020; Overgoor et al., 2019; Stalidis et al., 2015). A study by Wirth (2018) explored the application of AI in market research and customer segmentation. Studies of consumer behavior (Mouncey, 2018; Paschen et al., 2019; Wirth, 2018) reflect critical decisive insights, including Hadi et al. (2019) which developed an algorithmic model. Some of the most seminal studies in this area have included an exploration of the soft factors of sales and marketing jobs (Davenport et al., 2020; Siau, 2017) in this era of extreme digitization. Davenport et al. (2020) illustrated how AI can be more effective when it augments (rather than replacing) human managers. Other studies have explored the implications of AI in B2B concepts (Paschen et al., 2019) and AI in the evaluation of marketing strategies (Rekha et al., 2016).

An extensive study outlining a strategic framework for AI in marketing by Huang and Rust (2020) proposed a three-pronged approach for strategic marketing planning. It categorized the current adoption of AI in marketing into three classes based on the nature of their operation/application in the overall marketing process, specifically, mechanical, thinking, and feeling AI.

Although data mining is one of the most researched topics in the context of data sciences, research that pertains to the marketing domain is relatively sparse. Mouncey (2018) discussed data mining strategies from the perspective of conversation patterns on social media. Gkikas and Theodoridis (2019) proposed a machine learning model for digital marketing in the context of Academia, whereas Stalidis et al. (2015) evaluated an intelligent tourism marketing information system.

Results and findings

The summative inferences have been further analyzed to create an independent theme/sub-theme classification to reflect the decisive aspects of the research agenda.

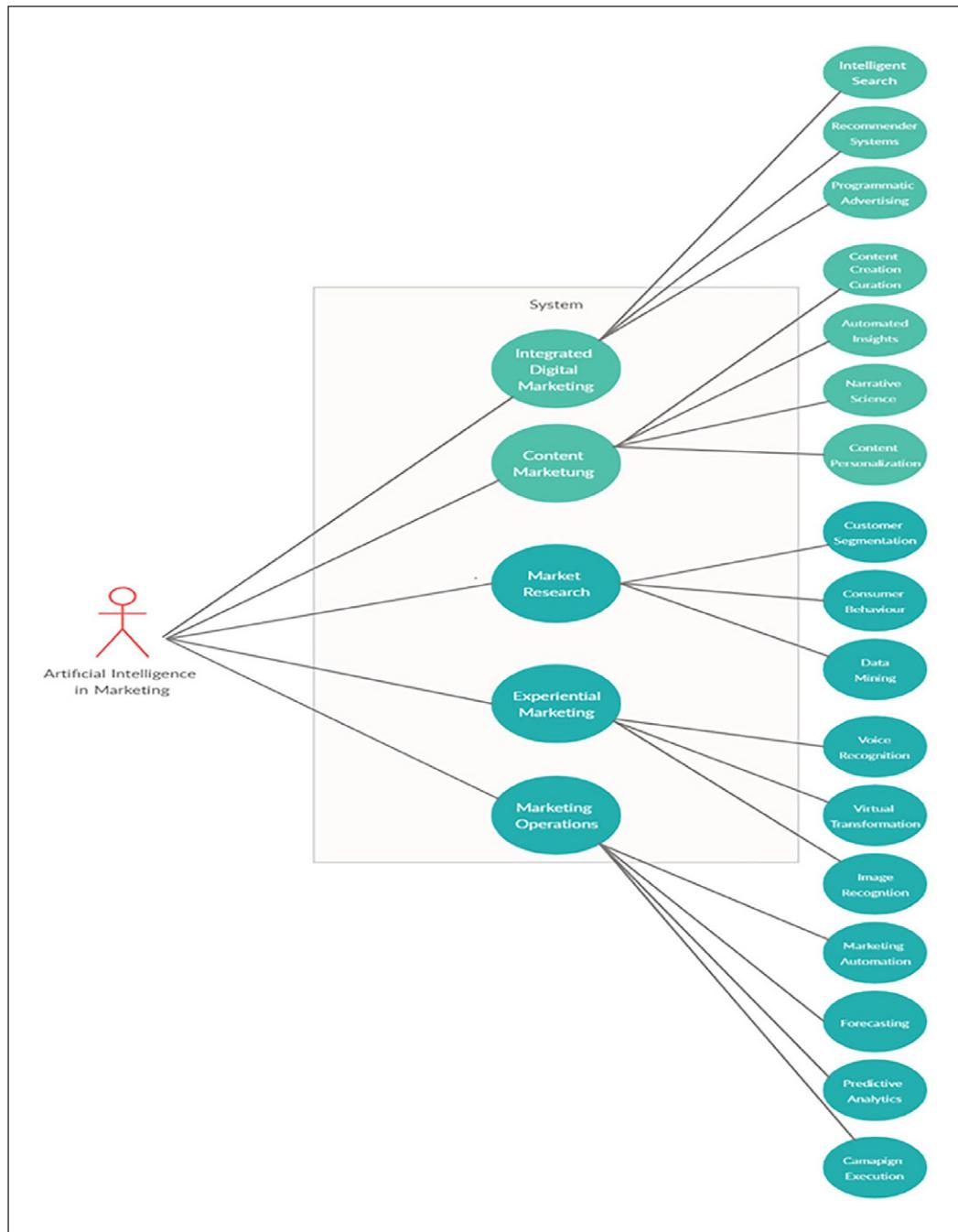


Figure 2. Descriptive tabulated findings of the SLR.

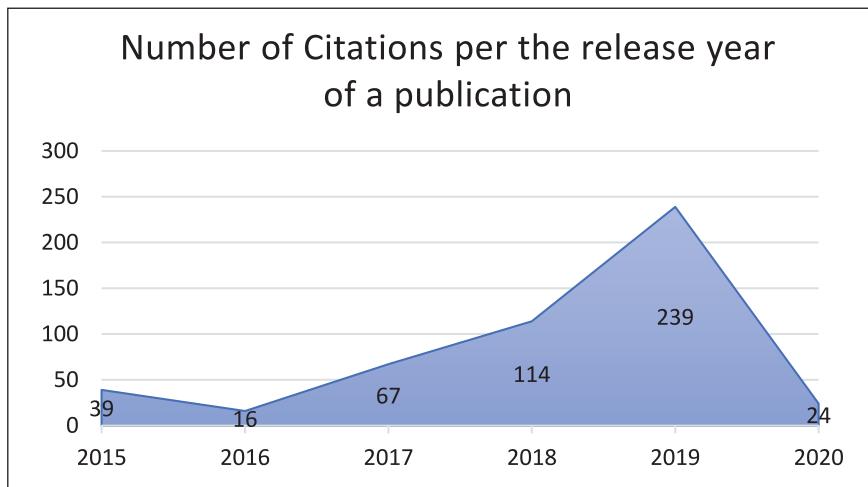


Figure 3. Number of citations per year.

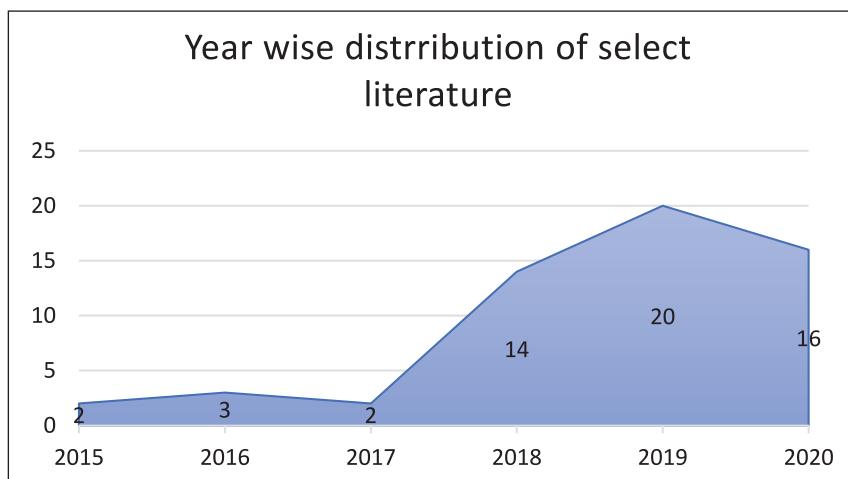


Figure 4. Year-wise distribution of selected publications.

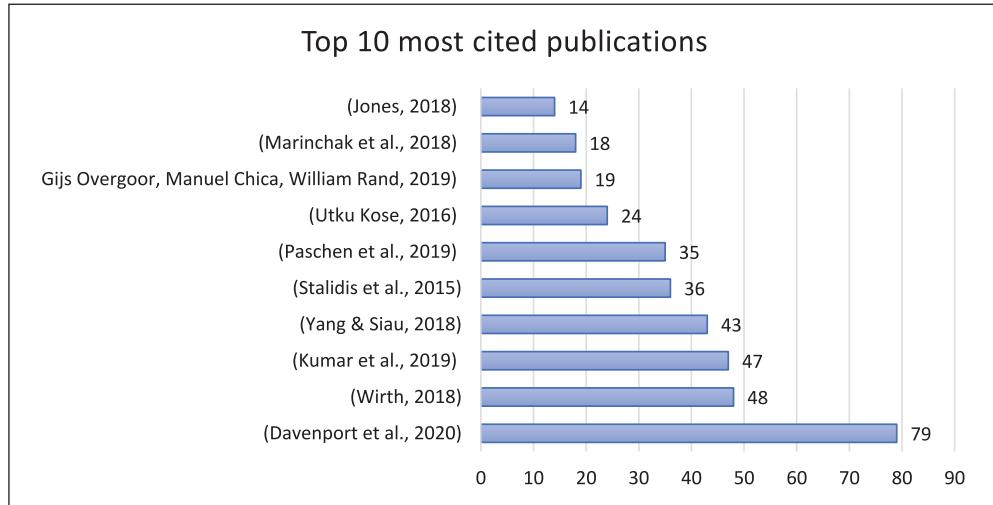


Figure 5. Top 10 most cited publications.

The top 10 most influential publications list has been formulated using the number of citations as explained in the research design.

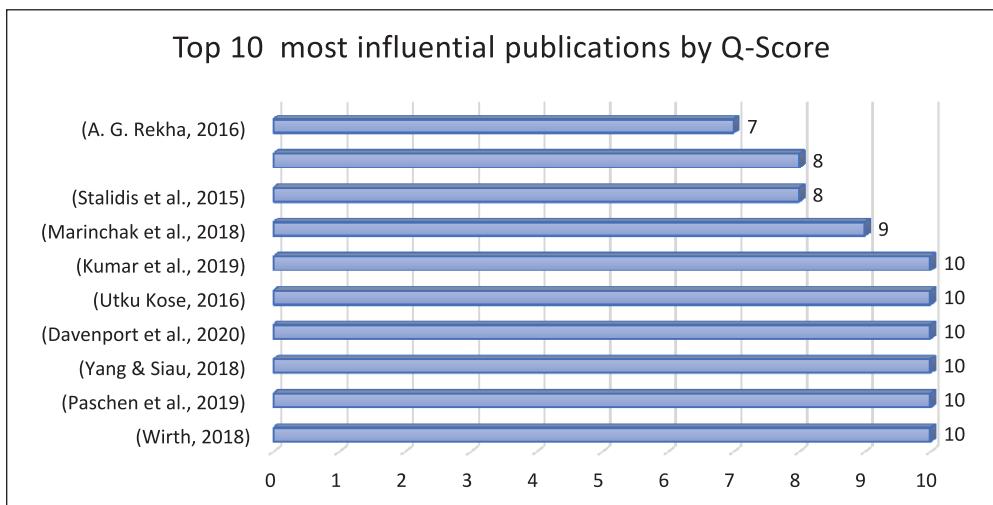


Figure 6. Top 10 most influential publications based on Q-score.

The top 10 most influential publications list has been formulated based on the Q-score calculated as explained in the research design.

From Figure 9, it can be observed that the most emergent stream of AI in marketing is experiential marketing. This finding correlates with theoretical assertions drawn from the literature review, that businesses spend roughly 20% of their annual revenue on customer experience (Adobe, 2020). With experiential marketing leading the pack, integrated digital marketing and

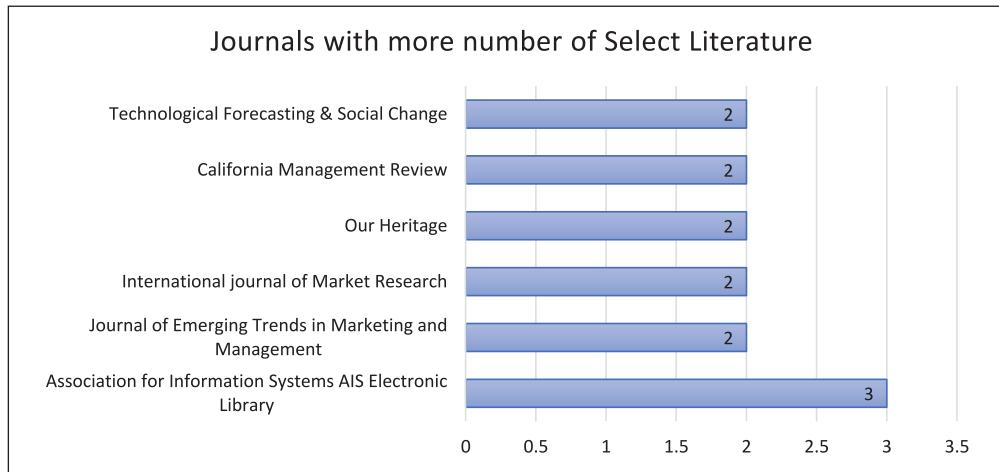


Figure 7. Journals hosting most select publications.

International Journal of Market Research, California Management Review, Association for Information Systems AIS Electronic library are top three journals with the largest number of selected publications.

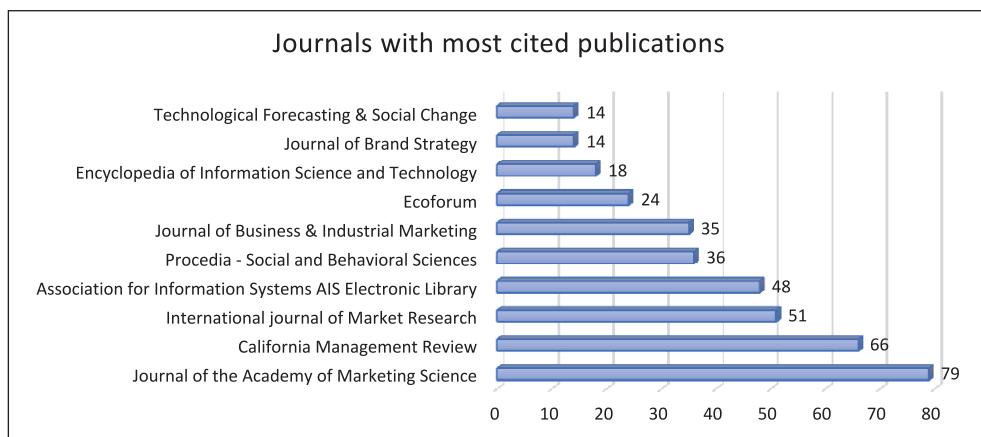


Figure 8. Journals with most cited articles.

marketing operations record the second and third active tractions. The least explored theme has been the content marketing, whereas market research is steadily growing and envisaging significant uptrend.

RQ3. What are the academic and practitioner implications of research in this topic? How is this futuristic trend expected to transform the overall marketing landscape?

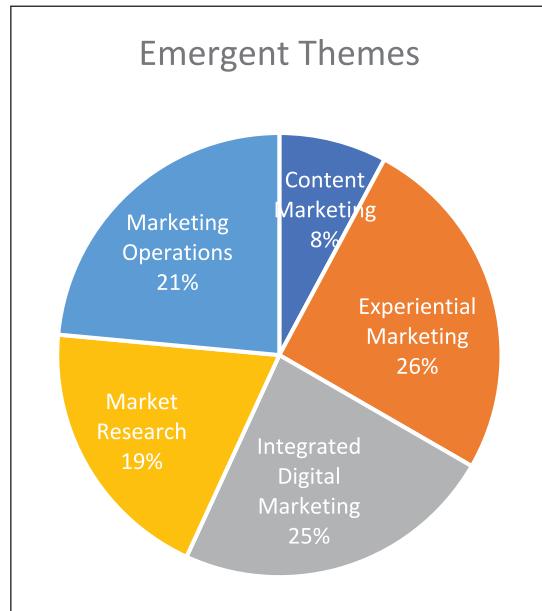


Figure 9. Emergent themes and research coverage.

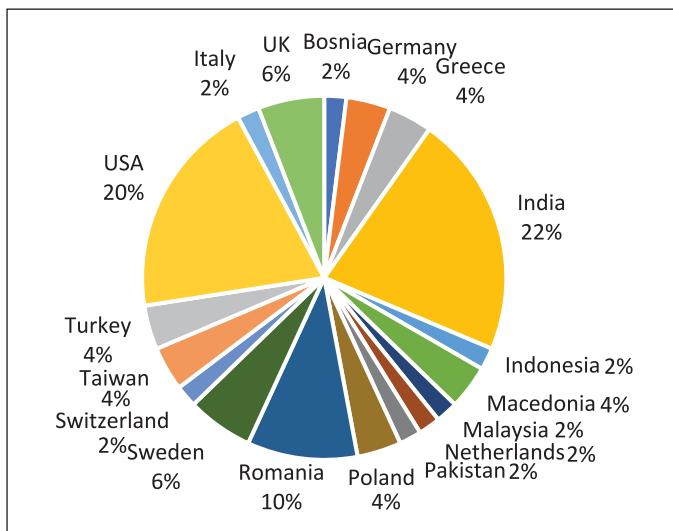


Figure 10. Research contribution by country.

Academician implications

AI has experienced a paradigm shift from a rules-based approach to a data- and insight-driven, deep learning-based approach (Kumar et al., 2019). Researching methodological enhancements and/or explainable AI algorithms will result in greater value for marketers. Another promising

research theme could be innovation in mixed/augmented reality to foster customer experience and engagement (Shah & Shay, 2019), bibliographic (Feng et al., 2020), and scientometric analysis of AI in marketing which could be certain areas of academic relevance in this field of study.

The academic literature on AI in marketing can be arranged into five functional segments, which are as follows: (a) human sciences, including their opportunities and pitfalls; (b) AI solutions for real-time marketing problems, that is, MARTECH-driven research; (c) AI perceptibility regarding the scenarios of the business; (d) AI in marketing studied in reference to a specific sector (finance/health care); and (e) AI in respect to strategic marketing and business decision-making scenarios.

At this point, the research on AI in marketing is heavily dominated by consultants and practitioners, although the topic has witnessed growing attention from academics in the past couple of years. While AI is set to revolutionize and change the ways of working of many traditional sales and marketing operations (Davenport et al., 2020), academics across the globe must brace themselves to actively research and engage in this journey, and they must prepare marketing students to control and drive this transformation through innovative research.

Practitioner implications

In the practitioner realm, AI has already been prominent in the form of accurate forecasting, improved marketing insights, superior product quality, real-time customized campaigns, increased operational efficiency, and enhanced customer experience.

According to a statement by IBM Watson's Chief Marketing Officer for customer engagement, "progressive sales and marketing executives have started to realize the potential of AI and started to think about adoption." The study that put forward this point of view had strong reference points to substantiate this claim. Ninety percentage of the companies that outperformed their peers in business value considered AI mature enough to be market ready; they usually considered themselves prepared to shift to cognitive computing (88%; Forbes, 2017). Gartner (2015) predicts that AI business value could potentially exceed US\$3.9 Bn by 2022, whereas Talwar and Koury (2017) predicted that AI could boost the world gross domestic product (GDP) by 1.2% by creating an additional economic output of US\$13 trillion by 2030 (Act-On, 2019). AI in marketing already exhibits enormous potential; the investments in this field have grown by US\$11 billion since 2014 (GP Bullhound, 2019).

Adapting AI-enabled marketing practices improves the innovation in marketing strategies and campaigns across all functional areas of marketing. This study also explores the existent implications and posits that best implication of AI so far has been in "enhancing customer experience," which has been categorized under experiential marketing in the context of this study. The number of use cases in the marketing operations and integrated digital marketing functional areas has seen the next best utilization of AI-enabled marketing concepts; at the same time, content marketing and market research offer significant potential for global practitioners to use AI as a catalyst for transformation. Studying the softer aspects of AI, such as the values of AI in marketing and how AI is more impactful when it augments the human aspects and not while replacing them (Davenport et al., 2020), are some of the explicit areas of practitioner relevance in this field of study.

Conclusion and direction for future research

According to Hildebrand (2019, p. 13), "AI is more than just technology: it's creating a new economy. AI is creating new forms of competition, value chains, and novel ways of orchestrating

Table 5. Research implications and directions for future research across the five identified functional themes.

Functional theme	How AI has transformed the landscape	Guidelines and agenda for future research
Integrated digital marketing	<p>Intelligent elastic search powered by recommender systems. Personalized content recommendations.</p> <p>Real-time data analytics of social media unstructured data, Social Semantics.</p> <p>Collaborative filtering, programmatic advertising.</p> <p>Using big, unstructured data to create more optimized marketing investments, intelligent advertising.</p>	<p>Advanced consumer sentiment analysis tools leveraging real-time data.</p> <p>Providing predictive insights using multi-lingual, unmonitored, unstructured data.</p> <p>Creating intelligent algorithms and trained models to envisage consumer behavior and engagement, automated marketing.</p> <p>Impact of cognitive technologies in relation to an industry/sectoral-specific marketing problem.</p> <p>Quantitative impact of AI-powered marketing from branding, messaging, and customer experience standpoint.</p> <p>Ethical, rational, environmental factors of AI-enabled marketing programs</p>
Content marketing	<p>Intelligent social media analytics</p> <p>Accelerated mobile pages.</p> <p>Intelligent content curation, predictive AI content creation.</p> <p>Cognitive content platforms, using images, user behavior, and structured data for automated insight creation.</p> <p>Content personalization based on unstructured data.</p>	<p>Real-time build and run of intelligent content platforms, predictive analytics.</p> <p>Implementing content creation and consumption insights across consumer buying lifecycle.</p> <p>The impact of big data on communication streams.</p> <p>Intelligent translators, continuous learning BOTS.</p>
Experiential marketing	<p>Conversational chatbots, handheld intelligent personal assistant, intelligent desktop search, assistants, service robots, emotional analysis.</p> <p>Self-driving vehicles, virtual assistants with exclusive niche skills, intelligent e-commerce, enhanced customer experience provided at customer touchpoints.</p> <p>Virtual shopping environment, customer communication.</p>	<p>Using the unstructured data collected by voice assistants to build marketing programs that ensure top-of-mind recall.</p> <p>Larger impact of AI to transform customer experience.</p> <p>Using IBM Watson for more intelligent marketing programs.</p> <p>Skill development and workforce readiness for large-scale AI-driven process transformation and automation and the impending philosophical disclosures.</p> <p>The impact of more advanced applications of AI such as mixed reality, blockchain in marketing.</p> <p>Study of AI at the macro-economic level, from the contexts of sustainability.</p> <p>Sectoral-specific studies such as impact of AI-enabled marketing in BFSI, healthcare, Telecom etc.</p> <p>Study of AI on strategic marketing, marketing strategy creation, impact on overall culture, digital readiness, adaptability.</p> <p>Using AI to enable the double-edged knowledge transfer between the machine and human.</p> <p>Deep-dive study into privacy personalization paradox.</p>

(Continued)

Table 5. (Continued)

Functional theme	How AI has transformed the landscape	Guidelines and agenda for future research
Marketing operations	<p>Intelligent marketing automation powered by campaign and sales enablement tools.</p> <p>Real-time forecasting, pricing and promotional recommender systems.</p> <p>Predictive analytics during campaign execution price, real-time copy writing, copy editing, consumer engagement tools.</p> <p>Automated campaign execution tools, lead scoring, and lead nurturing through AI-enabled insights.</p>	<p>Addressing the gap in consumer expectations and experience standards emerge out of the highly intelligent and detailed insights unleashed by AI.</p> <p>Improving customer value proposition using AI-powered, data- and insight-driven marketing programs.</p> <p>Structured analysis of the platforms, tools, applications that are critical in understanding AI-enabled data insights.</p> <p>Ability to produce better marketing outcomes by integrating products with smarter technologies.</p> <p>The need to prepare for the transformational change enabled by AI on the overall marketing approach, strategic decision-making.</p>
Market research	<p>Customer segmentation using behavior analysis, unstructured social media data, anonymized data collection.</p> <p>Customer personalized, automated recommendations based on the geographic, demographic factors.</p> <p>Intelligent data hosting, data mining, data visualization.</p> <p>Trend forecasting using social media data. NLP-based trends forecasting and analysts for service/product innovations.</p>	<p>Softer aspects of job creation, subjugation by smarter and more intelligent machines with ability of faster decision-making. The corresponding changes to the transformation in the culture, strategy of the enterprises.</p> <p>Ethical, data privacy guidelines and limitations of AI-enabled market research/data collection across the industries, geographies.</p> <p>Creating cross-industry standard protocols for intelligent advertising, data mining, data analysis, modeling, and visualization.</p> <p>Role of AI in product innovations, effective marketing engagement, serviceability with AI.</p> <p>Better understanding of consumer emotions, trends in service/products innovations, sentiments to build relational bonds, and the trade-off of replacing the need for thinking.</p>

NLP: natural language processing; AI: artificial intelligence; BFSI: banking, financial services, and insurance.

economies around the world" (Hildebrand, 2019, p. 13). As narrow AI moves toward hybrid AI and beyond (Wirth, 2018), the field of marketing has a stronger opportunity for tangible value creation. The chances offered by AI, when combined with insights provided by the other levers of AI, allow businesses to tailor their personalized digital campaigns in real time. There exist enough use cases of AI-powered marketing programs, already demonstrating significant ROI, engagement, retention, enhanced customer experience, and sustained value propositions.

Integrated digital marketing

Social media has emerged as the most influential channel of digital marketing, creating an impending need for digital marketers to increasingly leverage transformative marketing. Testing causal recipes of social media data for consumer sentiment analysis (Micu et al., 2018) has created additional opportunities for exploring programs built on social media platforms for collecting, understanding, and analyzing consumer data. One such model focussed on the context of Twitter to study and predict customer needs for the future by means of unsupervised, multi-lingual, larger datasets,

which could be a promising area of research in this field. Usage of a trained model to analyze, envisage, and interpret social media data in real time (Capatina et al., 2020) and study and visualize the pathways to achieve the most engaged audience (Capatina et al., 2020) to help digital agencies to bring about enhanced social media marketing leverage is another area of potential focus. Using intelligent algorithms to delve further into the concepts of automated marketing (Dumitriu & Popescu, 2020); studying the impact of cognitive technologies to enhance the customer experience in e-commerce systems (Krsteva, 2016), consumer service industries (Murgai, 2018), and educational programs (Elhajjar et al., 2020); and looking at how multichannel AI systems can help create a lean, smarter technology stack that empowers marketers to focus more time on branding and messaging than the operational aspects of technology (Cosmin TĂNASE, 2018) are some of the other promising research themes identified by researchers. Dr Alok Chandra (2020) argued that a difference in customer experience powered by AI must have a quantified measure related to economic outcomes. Another potential area of research, outlined by Mogaji et al. (2020), is studying the ethical and social responsibility components of using AI-enabled marketing programs beyond the materialistic and rationale factors.

Content marketing

The existing literature could be a starting point to understand the role of AI in the present and future state of content marketing. While there are already models developed to understand the impact and implications of AI on content marketing in the context of social media environments (Kose et al., 2017), future studies can focus on the real-time building and running of such applications to assess the impact of intelligent content marketing processes. AI-enabled web content development use cases should be evaluated in the context of “personality trust,” and the effectiveness of such techniques should be investigated in real time. Moreover, the impact of such pilots should be effectively communicated in the first stage of the consumer buying cycle (Karimova & Shirkhanbeik, 2019). Clearly, any arguments concerning the development of an AI product with special personality attributes require further empirical exploration. Studying the organizational-level impact of the big data processing framework on AI and how it can influence organization-level corporate communication could be another area for future researchers to focus on while studying the impact of AI on content marketing (Ahmad, 2018).

Experiential marketing

While voice-based assistants have already significantly influenced the field of marketing and advertising, it is increasingly critical for marketers to leverage more and more digital platforms as the world around them becomes increasingly digital. As voice-based assistants continuously collect information and become smarter, marketers should use the insights gained to ensure their products attain top-of-mind recall and visibility (Jones, 2018). Use of IBM Watson in qualitative and quantitative academic marketing research and future use cases could be an area for researchers to focus on (Pitt et al., 2018). Formidable areas of focus for future researchers could include studying the impact of AI not just as a tool that replaces a specific business function or a job, but instead, as a tool that fundamentally transforms the customer experience; looking at the way business is carried out, how the industry functions, and what implications emerge increased adoption of AI in business functions; and preparing for the envisioned transformation by gearing up to acquire relevant skills, data, people, and architecture (Hildebrand, 2019). Studying the impact of AI on marketing as a matter of philosophical discourse (Kaczorowska, 2019), and developing more practical, methodological enhancements to AI-based algorithms, such as mixed reality and

blockchain, to evaluate the impact of transformative technologies on marketing (Shah & Shay, 2019) are some other notable areas of emphasis for future researchers. Use of AI in developing nations, such as India, and within the gamut of a specific sector, such as healthcare (Kumar & Ramachandran, 2020), and delving deep into the effect and sustainability of experimental AI applications at the overall business level (Jarek & Mazurek, 2019) are more promising research themes that can be considered for future expansion for researchers looking to understand the impact of AI on experiential marketing.

Grandinetti (2020) focussed on the privacy-personalization paradox from the perspective of AI-powered applications in marketing with reference to the overall value co-creation process, which leaves a strong opportunity for further contribution to this debate. Dr Misbah Jahan's (2020) publication touched on the topic of user privacy from a focussed/behavioral targeting standpoint and introduced contextual targeting, which could be another area of research for marketers. One of the succinct limitations of the study by Eriksson et al. (2020) is that it studied the implications of AI in the marketing strategy creation process in relation to two distinct parameters—management intentionality and organizational actor autonomy—in addition to a critical observation of business culture, digital readiness, contingencies of adoption, and cost factors (Eriksson et al., 2020). Another study by Xi and Siau (2020) proposed to evaluate the “final means-ends objective network” of AI's integration into marketing. While acknowledging the necessity of augmenting the frontline workforce with insights from AI, a study by De Bruyn et al. (2020) exposed the “double edged knowledge transfer between AI and Humans as a critical area for future investigations.”

Marketing operations

There is rising use of AI-based predictive algorithms to follow and forecast the next purchasing move in contemporary marketing. While machines can play a significant role in identifying, interpreting and generating decisive insights based on secondary data, this can potentially expose the gaps in customer experiences and unreasonable levels of customer expectation, bringing forth a new challenge for world marketers (Dimitrieska et al., 2018). There are many futuristic use cases of AI-powered applications in marketing operations (Faggella, 2019b), which often involve creating more personalized experience and engagement with customers, as well as gradually improving the customer value proposition using AI-powered data in creating curated product and service recommendations (Kumar et al., 2019). One of the notable use cases for studying the impact of AI on marketing operations has been studying the data descriptions of an institution's marketing dataset (Rekha et al., 2016). This approach can be explored in more fragmented sectors that generate complex, unstructured data, which could be a prospective research topic in this area. A structured analysis is needed of the platforms, tools and applications of AI that are invading every function within the gamut of marketing operations and their impacts for consumers and marketers (Marinchak et al., 2018a) and more particularly, the imminent need to prepare for the ineluctable changes in strategic decision making, planning and forecasting, policy/strategy recommendations, transformational decision making related to AI, and most importantly, the impact of culture in such scenarios (Stone et al., 2020). Finally, the impending need to evaluate the ability of marketing to produce better outcomes by integrating products with smart technology (Shih-Yu, 2019) could potentially be more strategic imperatives for future research exploration.

Market research

As AI-enabled technological systems become increasingly intelligent, to the extent that they have already started replacing some sales and marketing jobs, how humans will live with this situation and work in tandem with this evolution is a point of debate. This is especially the case when, day

by day, there are fewer tasks that only humans can perform in the area of sales marketing (Siau, 2017). Just by using open-access toolboxes and technologies (Wirth, 2018) and at a scale of decision making that can simply overpower humans, it should be considered how—when used as the foundational element of B2B marketing—various building blocks of AI can create and construct the insights that can be translated from the data to various types of knowledge (Paschen et al., 2019). Another potential area of research for future expansion could involve assessing the magnitude of change in a company's marketing strategies, customer behaviors, data privacy, ethics and bias (Davenport et al., 2020). A highly interesting area of empirical investigation could involve using the algorithm model to study consumer behavior in the context of digital advertising (Hadi et al., 2019), using the "*Cross-Industry standard process for data mining*" to elucidate the business implications, understanding and interpretation of data, data preparation, modeling and evaluation, followed by deploying the AI-driven solution for marketing (Overgoor et al., 2019). Intelligent data analysis, data modeling using neural networks for decisive data crunching based on large sets of data (Stalidis et al., 2015), and quantitative models for passive data collection through social media research to gain consumer insights (Mouncey, 2018) are other impendent research themes for prospective researchers of this futuristic area.

A recent study by Huang and Rust (2020) attempted to categorize AI based on its functionalities as mechanical, thinking, and feeling AI. From a mechanical standpoint, AI addresses the data privacy and security limitations for marketing data collection, non-contextual data collection, and handling. From a thinking standpoint, AI creates optimal segmenting, targeting, and positioning insights by analyzing the multi-dimensional data, showing correlations between data- and theory-driven market analysis for better outcomes; the role of AI in product innovation, especially when the customer needs are intrinsic; and in price negotiations and approaches effective marketing engagement, collaboration, and serviceability with AI. From a feeling standpoint, AI provides better understanding and deciphering of consumer emotions and sentiments and its evolution toward building strong relational bonds and mutual communication with machines; there are trade-offs for replacing the need for thinking with just feeling, as shown in the context of fake news Huang and Rust (2020). These are some of the potential areas of exploration for future researchers in this area.

While the above points illustrate some of the potential micro-functional use cases of relevance in the field of AI in marketing, future studies can traverse into the 19 functional sub-themes/marketing levers identified in this study and try to focus on qualitatively and empirically evaluating the impact using scientific techniques. Such learning can formalize prospective practical utilization of AI in marketing, which could be truly beneficial for world marketing practitioners and academics.

Conclusion

This study attempted to understand and elucidate the larger implications of AI in marketing. The authors have explored the various real-time implications of AI in marketing and attempted to rate the best and most active sectors of marketing by means of this SLR. There is a humongous scope to study some of the understated interventions of AI in traditional operating models of sales and marketing. AI will continue to evolve to become smarter and more intelligent to augment human thinking, and it will be ripe for more humanization, eventually dominating the human creative thinking ability. The evolution of AI is set to raise more concerns about security, and the ongoing privacy versus personalization debate is set to expand its scope into softer aspects of marketing. The ability of AI to continuously learn and interpret/forecast the customer buying intents and emotions will help make channel and focus future marketing efforts, leading to extreme automation and personalization. While there will be continued, current, and live debates around deep reasoning, smart AI, continuous/catastrophic learning, and many other attributes pertaining to

human AI delegation, this field of study is expected to exponentially evolve. Moreover, the sustainability frontier of AI in marketing is expected to become deeper and wider, progressively creating research inputs with stronger actionable insights.

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References

- Act-On. (2019). *How AI will change marketing in 2019*. <https://act-on.com/blog/marketing-artificial-intelligence-2019/>
- Adobe. (2020). *Five marketing highlights from the 2020 Digital Trends report*. <https://business.adobe.com/in/resources/reports/digital-trends-2020.html>
- Afrooz, S., & Navimipour, N. (2017). Memory designing using quantum-dot cellular automata: Systematic literature review, classification and current trends. *Journal of Circuits, Systems and Computers*, 26, Article 1730004.
- Ahmad, M. F. (2018). The impact of big data processing framework for artificial intelligence within corporate marketing communication. *International Journal of Engineering & Technology*, 7, 384–388.
- AI Roberts. (2017). *How artificial intelligence is changing email marketing*. <https://www.clickz.com/how-artificial-intelligence-is-changing-email-marketing/113211/>
- An, M. (2016). *Artificial intelligence is here—people just don't realize it*. <https://blog.hubspot.com/marketing/artificial-intelligence-is-here>
- Balakrishnan, T., Chui, M., Hall, B., & Henke, N. (2020, November 13). Global survey: The state of AI in 2020. *McKinsey Analytics*. <https://www.mckinsey.com/~/media/McKinsey/BusinessFunctions/McKinseyAnalytics/OurInsights/GlobalsurveyThestateofAIin2020/Global-survey-The-state-of-AI-in-2020.pdf>
- Boell, S. K., & Cecez-kecmanovic, D. (2015). On being “systematic” in literature reviews in IS. *Journal of Information Technology*, 30, 161–173. <https://doi.org/10.1057/jit.2014.26>
- Capatina, A., Kachour, M., Lichy, J., Micu, A., Micu, A., & Codignola, F. (2020). Matching the future capabilities of an artificial intelligence-based software for social media marketing with potential users' expectations. *Technological Forecasting & Social Change*, 151, Article 119794. <https://doi.org/10.1016/j.techfore.2019.119794>
- Chandra, A. (2020). Customer experience is catalyst to new marketing strategy in the era of artificial intelligence and machine learning. *Economic Challenger*, 87, 53–60.
- Chen, T. F., Tan, T., & Ko, C. (2016). Application of artificial intelligence to cross-screen marketing: A case study of AI technology company. *Advances in Intelligent Systems Research*, 133, 517–519.
- Christopher Stancombe. (2017). *The five senses of artificial intelligence the five senses of artificial intelligence: A deep source of untapped potential*. Capgemini Consulting.
- Cosmin TĂNASE. (2018). Artificial intelligence: Optimizing the experience of digital marketing Cosmin TĂNASE. *Romanian Distribution Committee Magazine*, 9, 24–29.
- Davenport, T., Guha, A., Grewal, D., Bressgott, T., & Davenport, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*, 48, 24–42.
- De Bruyn, A., Viswanathan, V., Beh, Y. S., Brock, J. K. U., & von Wangenheim, F. (2020). Artificial intelligence and marketing: Pitfalls and opportunities. *Journal of Interactive Marketing*, 51, 91–105. <https://doi.org/10.1016/j.intmar.2020.04.007>
- Devang, V., Chintan, S., Gunjan, T., & Krupa, R. (2019). Applications of artificial intelligence in marketing. *Annals of Dunarea de Jos University of Galati. Fascicle I. Economics and Applied Informatics*, 25(1), 28–36. <https://doi.org/10.35219/eai158404094>

- Dimitrieska, S., Stankovska, A., Efremova, T., Dimitrieska, S., & Stankovska, A. (2018). Artificial intelligence and marketing. *Enterpreneurship*, 6, 298–304.
- Dumitriu, D., & Popescu, M. A.-M. (2020). Artificial intelligence solutions for digital marketing. *Procedia Manufacturing*, 46(2019), 630–636. <https://doi.org/10.1016/j.promfg.2020.03.090>
- Elhajjar, S., Karam, S., & Borna, S. (2020). Artificial intelligence in marketing education programs. *Marketing Education Review*, 31, 2–13. <https://doi.org/10.1080/10528008.2020.1835492>
- Epstein, M. J. (2018). Adapting for digital survival. *Strategic Finance*. <https://sfmagazine.com/post-entry-february-2018-adapting-for-digital-survival/>
- Eriksson, T., Bigi, A., & Bonera, M. (2020). Think with me, or think for me? On the future role of artificial intelligence in marketing strategy formulation. *TQM Journal*, 32(4), 795–814. <https://doi.org/10.1108/TQM-12-2019-0303>
- Faggella, D. (2019a). Artificial intelligence industry — An overview by segment. <https://emerj.com/ai-sector-overviews/artificial-intelligence-industry-an-overview-by-segment/>
- Faggella, D. (2019b). Artificial intelligence in marketing and advertising-5 real time tractions. <https://emerj.com/ai-sector-overviews/artificial-intelligence-in-marketing-and-advertising-5-examples-of-real-traction/>
- Feng, C. M., Park, A., Pitt, L., Kietzmann, J., & Northey, G. (2020). Artificial intelligence in marketing: A bibliographic perspective. *Australasian Marketing Journal (AMJ)*. <https://doi.org/10.1016/j.ausmj.2020.07.006>
- Forbes. (2017, September 13). IBM study finds outperforming companies more ready to adopt AI for marketing. *Forbes*. <https://www.forbes.com/sites/johnellett/2017/09/13/ibm-study-finds-outperforming-companies-more-ready-to-adopt-ai-for-marketing/?sh=116f30845952>
- Gartner. (2015). *Gartner's top 10 predictions herald what it means to be human in a digital world*. <https://www.gartner.com/smarterwithgartner/gartner-predicts-our-digital-future/>
- Gkikas, D. C., & Theodoridis, P. K. (2019). Artificial intelligence (AI) impact on digital marketing research. In A. Kavoura, E. Kefallonitis & A. Giovanis (Eds.), *Strategic innovative marketing and tourism* (pp. 1251–1259). Springer.
- GP Bullhound. (2019). *The impact of AI and data on digital marketing*. <https://www.gpbullhound.com/insights/the-impact-of-ai-and-data-on-digital-marketing/>
- Grandinetti, R. (2020). How artificial intelligence can change the core of marketing theory. *Innovative Marketing*, 16(2), 91–103. [https://doi.org/10.21511/IM.16\(2\).2020.08](https://doi.org/10.21511/IM.16(2).2020.08)
- Hadi, S., Prabowo, W., Murdiono, A., Hidayat, R., & Rahayu, W. P. (2019). Digital marketing optimization in artificial intelligence era by applying consumer behavior algorithm. *Asian Journal of Entrepreneurship and Family Business*, 3(1), 41–48.
- Hildebrand, C. (2019). The machine age of marketing: How artificial intelligence changes the way people think, act, and decide. *NIM Marketing Intelligence Review*, 11, 10–17.
- Huang, M. H., & Rust, R. T. (2020). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*, 49, 30–50. <https://doi.org/10.1007/s11747-020-00749-9>
- Jahan, D. M. (2020). The expanding footprint of artificial intelligence in marketing abstract. *Journal of the Social Sciences*, 23(2), 551–563. <http://www.apciss.com/publication-show/2020/April/90/2825>
- Jarek, K., & Mazurek, G. (2019). Marketing and artificial intelligence. *Central European Business Review*, 8, 46–55. <https://doi.org/10.18267/j.cebr.213>
- Jilani, A. A., & Mackworth-Young, C. G. (2015). The role of citrullinated protein antibodies in predicting erosive disease in rheumatoid arthritis: A systematic literature review and meta-analysis. *International Journal of Rheumatology*, 2015, Article 7286910.
- Jones, V. K. (2018). Voice-activated change: Marketing in the age of artificial intelligence and virtual assistants voice-activated change: Marketing in the age of artificial intelligence and virtual assistants. *Journal of Brand Strategy*, 7, 239–251.
- Kaczorowska, D. (2019). How chatbots influence marketing. *Sciendo*, 23(1), 251–270. <https://doi.org/10.2478/managment-2019-0015>
- Karimova, G. Z., & Shirkhanbeik, A. (2019). Marketing artificial intelligence-creating the AI archetype for evoking the personality trust. *Academy of Marketing Studies Journal*, 23, 1–13.

- Khanna, V., Ahuja, R., & Popli, H. (2020). Role of artificial intelligence in pharmaceutical marketing: A comprehensive review. *Journal of Advanced Scientific Research*, 11, 54–61.
- Khokhar, P., & Chitsimran. (2019). Evolution of artificial intelligence in marketing, comparison with traditional marketing. *Our Heritage*, 5, 375–389.
- Kose, U., & Sert, S. (2016, September). *Intelligent content marketing with artificial* [Conference session]. Scientific Cooperation for the Future in the Social Sciences, Uşak, Turkey.
- Kose, U., Sert, S., & Kose, U. (2017). Improving content marketing processes with the approaches by artificial intelligence. *Ecoforum*, 6, 1–8.
- Krsteva, M. S. T. (2016). Artificial intelligence in marketing and advertising. *International Journal of Science and Arts*, 85.
- Kühl, N., Mühlthaler, M., & Goutier, M. (2019). Supporting customer-oriented marketing with artificial intelligence: Automatically quantifying customer needs from social media. *Electronic Markets*, 30, 351–367.
- Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019). Understanding the role of artificial intelligence in personalized engagement marketing. *California Management Review*, 61, 135–156. <https://doi.org/10.1177/0008125619859317>
- Kumar, V., & Ramachandran, D. (2020). Influence of new-age technologies on marketing: A research agenda. *Journal of Business Research*, 125, 864–877.
- Manoj, M. S., & Sinha, R. (2019). Application and integration of artificial intelligence in marketing automation for increasing prospective students recruitment in higher education institution. *Journal of the Gujarat Research Society*, 21(5), 435–442.
- Marinchak, C. L. M., Forrest, E., & Hoanca, B. (2018a). Artificial intelligence: Redefining marketing management and the customer experience. *International Journal of E-Entrepreneurship and Innovation*, 8(2), 14–24. <https://doi.org/10.4018/IJEEI.2018070102>
- Marinchak, C. L. M., Forrest, E., & Hoanca, B. (2018b). The impact of artificial intelligence and virtual personal assistants on marketing. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (4th ed., pp. 5748–5750). IGI Global. <https://doi.org/10.4018/978-1-5225-2255-3.ch499>
- Markić, B., Bijakšić, S., & Šantić, M. (2015). UMJETNA INTELIGENCIJA U ODREĐIVANJU MARKETINŠKE STRATEGIJE KUPACA [Artificial intelligence in determination of marketing customer strategy]. *Informatologija*, 48, 39–47.
- Micu, A., Capatina, A., & Micu, A.-E. (2018). Exploring artificial intelligence techniques' applicability in social media marketing. *Journal of Emerging Trends in Marketing and Management*, 1, 156–165.
- Mogaji, E., Soetan, T. O., & Kieu, T. A. (2020). The implications of artificial intelligence on the digital marketing of financial services to vulnerable customers. *Australasian Marketing Journal (AMJ)*. <https://doi.org/10.1016/j.ausmj.2020.05.003>
- Mouncey, P. (2018). Gaining insights without questions. *International Journal of Market Research*, 60, 425–434. <https://doi.org/10.1177/1470785318787248>
- Murgai, A. (2018). Transforming digital marketing with artificial intelligence. *International Journal of Latest Technology in Engineering, Management & Applied Science*, VII(IV), 259–262.
- Nandan, S., & Nath, M. D. (2020). Impact of artificial intelligence in making better marketing decisions in healthcare industries. *Our Heritage*, 8, 53–59.
- Overgoor, G., Chica, M., Rand, W., & Weishampel, A. (2019). Letting the computers take over. *California Management Review*, 61, 156–186. <https://doi.org/10.1177/0008125619859318>
- Paschen, J., Kietzmann, J., & Kietzmann, T. C. (2019). Artificial intelligence (AI) and its implications for market knowledge in B2B marketing. *Journal of Business & Industrial Marketing*, 34, 1410–1419. <https://doi.org/10.1108/JBIM-10-2018-0295>
- Pitt, C., Eriksson, T., Dabirian, A., & Vella, J. (2018, May). *Elementary, My Dear Watson: The use of artificial intelligence in marketing research: An abstract* [Conference session]. Academy of Marketing Science, New Orleans, LA, United States. <https://doi.org/10.1007/978-3-319-99181-8>
- Rekha, A. G., Abdulla, M. S., & Asharaf, S. (2016). Artificial intelligence marketing: An application of a novel lightly trained artificial intelligence marketing: An application of a novel lightly trained support vector data description. *Journal of Information and Optimization Sciences*, 37, 681–691. <https://doi.org/10.1080/02522667.2016.1191186>

- Roetzer, P. (2017). *The 5Ps of marketing artificial intelligence*. <https://www.marketingaiinstitute.com/blog/the-5ps-of-marketing-artificial-intelligence>
- Russell, S. J., & Norvig, P. (2003). *Artificial intelligence a modern approach*. Pearson Education.
- Shah, D., & Shay, E. (2019). How and why artificial intelligence, mixed reality and blockchain technologies will change marketing we know today. In A. Parvatiyar & R. Sisodia (Eds.), *Handbook of advances in marketing in an era of disruptions: Essays in honour of Jagdish N. Sheth* (pp. 377–390). SAGE.
- Shahid, M. Z., & Li, G. (2019). Impact of artificial intelligence in marketing: A perspective of marketing professionals of Pakistan. *Global Journal of Management and Business Research: E-Marketing*, 19(2), 26–33.
- Shih-Yu, C. (2019). The era of artificial intelligence: Relationship between Taiwan's machine tool international trade show marketing and international agents. *International Journal of Business and Economic Affairs*, 4(3), 116–123. <https://doi.org/10.24088/ijbea-2019-43002>
- Siau, K. L. (2017). Impact of artificial intelligence, robotics, and machine learning on sales and marketing impact of artificial intelligence, robotics, and machine. *Association for Information Systems AIS Electronic Library*. <https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1047&context=mwais2017>
- Stalidis, G., Karapostolis, D., & Vafeiadis, A. (2015). Marketing decision support using artificial intelligence and knowledge modeling: Application to tourist destination management. *Procedia—Social and Behavioral Sciences*, 175, 106–113. <https://doi.org/10.1016/j.sbspro.2015.01.1180>
- Stanford. (2007). *What is AI? / Basic Questions*. <http://jmc.stanford.edu/artificial-intelligence/what-is-ai/index.html>
- Stone, M., Aravopoulou, E., Ekinci, Y., Evans, G., Hobbs, M., Labib, A., Laughlin, P., Machtynger, J., & Machtynger, L. (2020). Artificial intelligence (AI) in strategic marketing decision-making: A research agenda. *The Bottom Line*, 33(2), 183–200. <https://doi.org/10.1108/BL-03-2020-0022>
- Štrukelj, E. (2018). *Writing a systematic literature review*. <https://blog.efpsa.org/2018/01/03/writing-a-systematic-literature-review/>
- Talwar, R., & Koury, A. (2017). Artificial intelligence—the next digital frontier? *Network Security*, 2017(4), 14–17. [https://doi.org/10.1016/S1353-4858\(17\)30039-9](https://doi.org/10.1016/S1353-4858(17)30039-9)
- Teradata. (2017). *Survey: 80 percent of enterprises investing in AI, but cite significant challenges ahead*. <https://www.teradata.in/Press-Releases/2017/Survey-80-Percent-of-Enterprises-Invest-in-AI>
- Thiraviyam, T. (2018). Artificial intelligence marketing. *International Journal of Recent Research Aspects*, 5, 449–452.
- Tiwari, R., Srivastava, S., & Gera, R. (2020). Investigation of artificial intelligence techniques in finance and marketing. *Procedia Computer Science*, 173(2019), 149–157. <https://doi.org/10.1016/j.procs.2020.06.019>
- Van Esch, P. (2018). Marketing AI recruitment: The next phase in job application and selection. *Computers in Human Behavior*, 90, 215–222.
- Vishnoi, S. K., & Bagga, T. (2019). Artificial intelligence enabled marketing solutions: A review. *Indian Journal of Economics and Business*, 17, 167–177.
- Wirth, N. (2018). Hello marketing, what can artificial intelligence help you with? *International Journal of Market Research*, 60, 435–438. <https://doi.org/10.1177/1470785318776841>
- World Advertising Research Center. (2019). Nearly three quarters of the world will use just their smartphones to access the internet by 2025. *CNBC*. <https://www.cnbc.com/2019/01/24/smartphones-72percent-of-people-will-use-only-mobile-for-internet-by-2025.html>
- Xi, Y., & Siau, K. (2020). Values of artificial intelligence in marketing. *Association for Information Systems AIS Electronic Library*. [https://aisel.aisnet.org/mwais2020/27/#:~:text=Artificial%20Intelligence%20\(AI\)%20is%20causing,areas%20of%20the%20marketing%20field.&text=This%20research%20results%20in%20a,in%20marketing%20by%20the%20subjects](https://aisel.aisnet.org/mwais2020/27/#:~:text=Artificial%20Intelligence%20(AI)%20is%20causing,areas%20of%20the%20marketing%20field.&text=This%20research%20results%20in%20a,in%20marketing%20by%20the%20subjects)
- Xu, R. (2020). *A design pattern for deploying machine learning models to production*. California State University.
- Yang, Y., & Siau, K. L. (2018). A qualitative research on marketing and sales in the artificial intelligence age. *Association for Information Systems AIS Electronic Library*. <https://aisel.aisnet.org/mwais2018/41/>

Appendix I

Detailed list of publications reviewed as part of this SLR

1. Impact of artificial intelligence, robotics, and machine learning on sales and marketing (Siau, 2017)
2. Hello marketing, what can artificial intelligence help you with (Wirth, 2018)
3. Improving content marketing processes with the approaches by artificial intelligence (Kose et al., 2017)
4. The impact of artificial intelligence and virtual personal assistants on marketing (Marinchak et al., 2018a)
5. Artificial intelligence marketing: An application of a novel lightly trained support vector data description (Rekha et al., 2016)
6. Understanding the role of artificial intelligence in personalized engagement marketing (Kumar et al., 2019)
7. Artificial intelligence (AI) and its implications for market knowledge in B2B marketing (Paschen et al., 2019)
8. Voice-activated change: Marketing in the age of AI and virtual assistants (Jones, 2018)
9. How artificial intelligence will change the future of marketing (Davenport et al., 2020)
10. Artificial intelligence in marketing and advertising-5 real time tractions (Faggella, 2019b)
11. Intelligent content marketing with artificial intelligence (Kose & Sert, 2016)
12. A qualitative research on marketing and sales in the artificial intelligence age (Yang & Siau, 2018)
13. Artificial intelligence in determination of marketing customer strategy (Markić et al., 2015)
14. Impact of artificial intelligence in marketing: A perspective of marketing professionals of Pakistan (Shahid & Li, 2019)
15. Artificial intelligence marketing (Thiraviyam, 2018)
16. Artificial intelligence and marketing (Dimitrieska et al., 2018)
17. Elementary, My Dear Watson: The use of artificial intelligence in marketing (Pitt et al., 2018)
18. Supporting customer-oriented marketing with artificial intelligence automatically quantifying customer needs from social media (Kühl et al., 2019)
19. Artificial intelligence–enabled marketing solutions: A review (Vishnoi & Bagga, 2019)
20. The machine age of marketing: How artificial intelligence changes the way people think, act, and decide (Hildebrand, 2019)
21. Application and integration of artificial intelligence in marketing automation for increasing prospective students recruitment in higher education institution (Manoj & Sinha, 2019)
22. Application of artificial intelligence to cross-screen marketing: A case study of AI technology company (Chen et al., 2016)
23. Artificial intelligence (AI) impact on digital marketing research (Gkikas & Theodoridis, 2019)
24. Artificial intelligence in marketing and advertising (Krsteva, 2016)
25. Digital marketing optimization in artificial intelligence era by applying consumer behavior algorithm (Hadi et al., 2019)
26. Evolution of artificial intelligence in marketing, comparison with traditional marketing (Khokhar & Chitsimran, 2019)
27. Exploring artificial intelligence techniques' applicability in social media (Micu et al., 2018)
28. How chatbots influence marketing (Kaczorowska, 2019)

29. How and why artificial intelligence, mixed reality and blockchain technologies will change marketing we know today (Shah & Shay, 2019)
30. Impact of artificial intelligence in making better marketing decisions in healthcare industries (Nandan & Nath, 2020)
31. Letting the computers take over using AI to solve marketing problems (Overgoor et al., 2019)
32. Marketing and artificial intelligence (Jarek & Mazurek, 2019)
33. Marketing artificial intelligence: Creating the AI archetype for evoking the personality trust (Karimova & Shirkhanbeik, 2019)
34. Marketing decision support using artificial intelligence and knowledge modeling: Application to tourist destination management (Stalidis et al., 2015)
35. Matching the future capabilities of an artificial intelligence-based software for social media marketing with potential users' expectations (Capatina et al., 2020)
36. The impact of big data processing framework for artificial intelligence within corporate marketing communication (Ahmad, 2018)
37. Transforming digital marketing with artificial intelligence (Murgai, 2018)
38. Gaining insights without questions (Mouncey, 2018)
39. Artificial intelligence: Optimizing the experience of digital marketing (Cosmin TĂNASE, 2018)
40. How artificial intelligence can change the core of marketing theory (Grandinetti, 2020)
41. Artificial intelligence: Redefining marketing management and the customer experience (Marinchak et al., 2018a)
42. Applications of artificial intelligence in marketing (Devang et al., 2019)
43. Artificial intelligence (AI) in strategic marketing decision making: A research agenda (Stone et al., 2020)
44. Customer experience is catalyst to new marketing strategy in the era of AI and ML (Chandra, 2020)
45. Investigation of artificial intelligence techniques in finance and marketing (Tiwari et al., 2020)
46. Matching the future capabilities of an artificial intelligence-based software for social media marketing with potential users' expectations (Capatina et al., 2020)
47. The era of artificial intelligence: Relationship between Taiwan's machine tool international tradeshow marketing and international agents (Shih-Yu, 2019)
48. The expanding footprint of artificial intelligence in marketing (Jahan, 2020)
49. The implications of artificial intelligence on the digital marketing of financial services to vulnerable customers (Mogaji et al., 2020)
50. Think with me, or think for me? On the future role of artificial intelligence in marketing strategy formulation (Eriksson et al., 2020)
51. Values of artificial intelligence in marketing (Xi & Siau, 2020)
52. Artificial intelligence and marketing: Pitfalls and opportunities (De Bruyn et al., 2020)
53. Artificial intelligence solutions for digital marketing (Dumitriu & Popescu, 2020)
54. Role of artificial intelligence in pharmaceutical marketing: A comprehensive review (Khanna et al., 2020)
55. A strategic framework for artificial intelligence in marketing (Huang & Rust, 2020)
56. Artificial intelligence in marketing: A bibliographic perspective (Feng et al., 2020)
57. Artificial intelligence in marketing education programs (Elhajjar et al., 2020)