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DOI:

[10.1002/mar.21699](https://doi.org/10.1002/mar.21699)

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Document Version

Publisher's PDF, also known as Version of record

Citation for published version (Harvard):

Ameen, N, Sharma, GD, Tarba, S, Rao, A & Chopra, R 2022, 'Toward advancing theory on creativity in marketing and artificial intelligence', *Psychology and Marketing*, vol. 39, no. 9, pp. 1802-1825.
<https://doi.org/10.1002/mar.21699>

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Toward advancing theory on creativity in marketing and artificial intelligence

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Abstract

Creativity has been identified as the future of marketing; at the same time, artificial intelligence (AI) is enabling more automation in this field. The theories and frameworks in the literature have not yet sufficiently explained the impact of AI on creativity in marketing. Hence, this research aims to advance theories on creativity in marketing and AI by conducting a comprehensive review of the literature. Our review covers 156 papers published between 1990 and 2021, compiled on the basis of the Scientific Procedures and Rationales for Systematic Literature Reviews (SPAR-4-SLR) protocol and the theory–context–characteristics–methodology framework. We advance theory in the field by proposing a new organizing framework to guide the integration of the identified themes and synthesize the antecedents, dimensions, and outcomes of creativity in marketing and AI. Furthermore, to assist academics and practitioners we propose a typology of the key skills required for creativity in marketing and the impact of specific AI capabilities on these skills. This article serves as a foundation for researchers by providing a holistic understanding of the integration of AI into creativity in marketing.

KEYWORDS

artificial intelligence, automation, creativity, marketing, skills, systematic literature review

1 | INTRODUCTION

Psychologists define creativity as the capacity to produce ideas that are both original and adaptive (Simonton, 2001). Authors have defined creativity as the generation of new, useful ideas that can be implemented in problem solving, procedures, processes, and products (Amabile, 1983; Frare & Beuren, 2021; Verganti et al., 2020). The creativity of individuals is a key factor in implementing new ideas, and it results in innovation (Amabile et al., 1996). In addition, the capacity

to develop creative products is an important lever of profitability and sustainability in firms (Bollinger, 2020). Due to globalization and the associated potential for marketing products and services internationally, the impact of creativity and the creative industries is now felt at the global economic level (Gouvea & Vora, 2018).

Recent reviews of the literature have focused on artificial intelligence (AI) in marketing in general. For example, Schiessl et al. (2021) focused on the impact of AI on brand role, the components of interactions in marketing, and the results of those interactions. In a

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review of the literature, Vlačić et al. (2021) concentrated on the adoption, use, and acceptance of AI technology in marketing; the role of data protection and ethics; the role of institutional support for marketing AI; and the revolution of the labor market and marketers' competencies. Verma et al. (2021) conducted a bibliometric analysis with a focus on AI, big data, neural networks, and machine learning. Mustak et al. (2021) focused on AI, customer interactions, relationships, satisfaction, sentiments, and brand management. Mariani et al. (2022) focused on AI in the interrelated fields of marketing in general, consumer research, psychology, and the adoption of technology. Chintalapati and Pandey (2022) concentrated on the prominent use of AI-powered marketing and consumer behavior. However, as yet, no systematic literature reviews have advanced the theory of how AI impacts creativity in marketing or offered a framework and agenda for future research in this area.

Creativity is discussed in various contexts in the literature, including the psychology behind it and its application in marketing. Although the definitions and theories help us conceptualize creativity in marketing, recent developments resulting from the integration of AI have led to calls for a holistic understanding of the current state of research on creativity and AI in the marketing domain, accompanied by an organizing framework to advance theory in this field. Despite calls for further research on AI's potential to support creativity in marketing (e.g., Huang & Rust, 2021b; Korteling et al., 2021), there is still a lack of synchronization in work that exhibits the detailed pattern of research in creativity in the marketing field and AI.

Different definitions of AI highlight different attributes of this technology. In service research, AI has been defined as "machines that exhibit aspects of human intelligence" (Huang & Rust, 2018; p. 155). In computer science, Russell and Norvig (2009) described AI as intelligence demonstrated by computers that mimics human cognitive functions, such as problem solving. In consumer research, Longoni et al. (2019, p. 630) defined it as "any machine that uses any kind of algorithm or statistical model to perform perceptual, cognitive, and conversational functions typical of the human mind."

Even though creativity is seen as the future of marketing, the findings of the literature on the role of AI in this regard are fragmented and far from providing a clear direction for advancing knowledge in this area. Hence, the main aim of our research is to advance theories on creativity in marketing and AI by conducting a comprehensive review of the existing literature. Specifically, we aim to answer the following research questions:

1. What theories, theoretical constructs, methodologies, and contexts of interest are examined in the existing body of knowledge on creativity in marketing and AI?
2. Are the existing theories on creativity still valid when AI is integrated with marketing?
3. What are the current gaps and future directions of research in the psychology of creativity in marketing, humans, and AI?

Through this comprehensive review, we provide several theoretical contributions. *First*, we advance the existing literature by

proposing a new organizing framework of creativity in marketing and AI. According to Hulland and Houston (2020), an organizing framework helps to guide the integration of themes that are identified inductively. In particular, the organizing framework synthesizes the antecedents, dimensions, and outcomes of creativity in marketing and AI, based on what we find in the literature. *Second*, we offer a typology of AI capabilities and skills required for creativity in marketing, providing insights for academics and practitioners. *Third*, we advance the research on creativity in marketing and AI by providing a clear and relevant agenda for impactful future research, thus helping to establish a more relevant marketing discipline.

Our specific focus is on creativity in marketing and AI from the perspective of firms and employees. Academic research has started to investigate AI interventions that support creativity in marketing, as evidenced by the inclusion of 156 papers in our review through the Scientific Procedures and Rationales for Systematic Literature Reviews (SPAR-4-SLR) approach (Paul et al., 2021). Rather than structuring this paper in a conventional bibliometric way, we have adopted a framework-based approach; specifically, the theory-context-characteristics-methodology (TCCM) framework proposed by Paul and Rosado-Serrano (2019). The TCCM framework is useful for reviews that aim to make theoretical contributions to a body of knowledge (e.g., Chakma et al., 2021; Chen et al., 2021; Hassan et al., 2022; Mishra et al., 2021).

The rest of this paper is structured as follows. The next section provides an overview of the data and methods used in this research. This is followed by our findings with respect to theories, context, characteristics, and methods. We then present a discussion of our findings, our proposed organizing framework, and a typology of AI capabilities and skills required for creativity in marketing. This is followed by the managerial implications of our research and directions for future research.

2 | DATA AND METHODS

To ensure the literature review was conducted transparently, we followed the SPAR-4-SLR protocol (Paul et al., 2021). Other techniques (such as PRISMA and PRISMA-P) are more descriptive, therefore, they have limited scope for reviews that aim to make theoretical contributions (Paul et al., 2021). The SPAR-4-SLR protocol (Figure 1) comprises three stages: assembling, arranging, and assessing (Paul et al., 2021). Across these, there are six substages: identification, acquisition, organization, purification, evaluation, and reporting (Paul et al., 2021). In line with Paul and Barari's (2022) study, we provide a structured review. A structured review focuses on the development of a research domain by compiling information on the associated theories, models, constructs, contexts, or methods. Researchers can then identify research gaps with reference to methods, theories, and constructs (Paul & Criado, 2020).

For the first stage (assembling), we chose to use peer-reviewed published research articles and early access articles indexed in Web of Science (WoS) and Scopus. This ensured that the quality of the papers reviewed was consistent (Liu et al., 2012). We were also

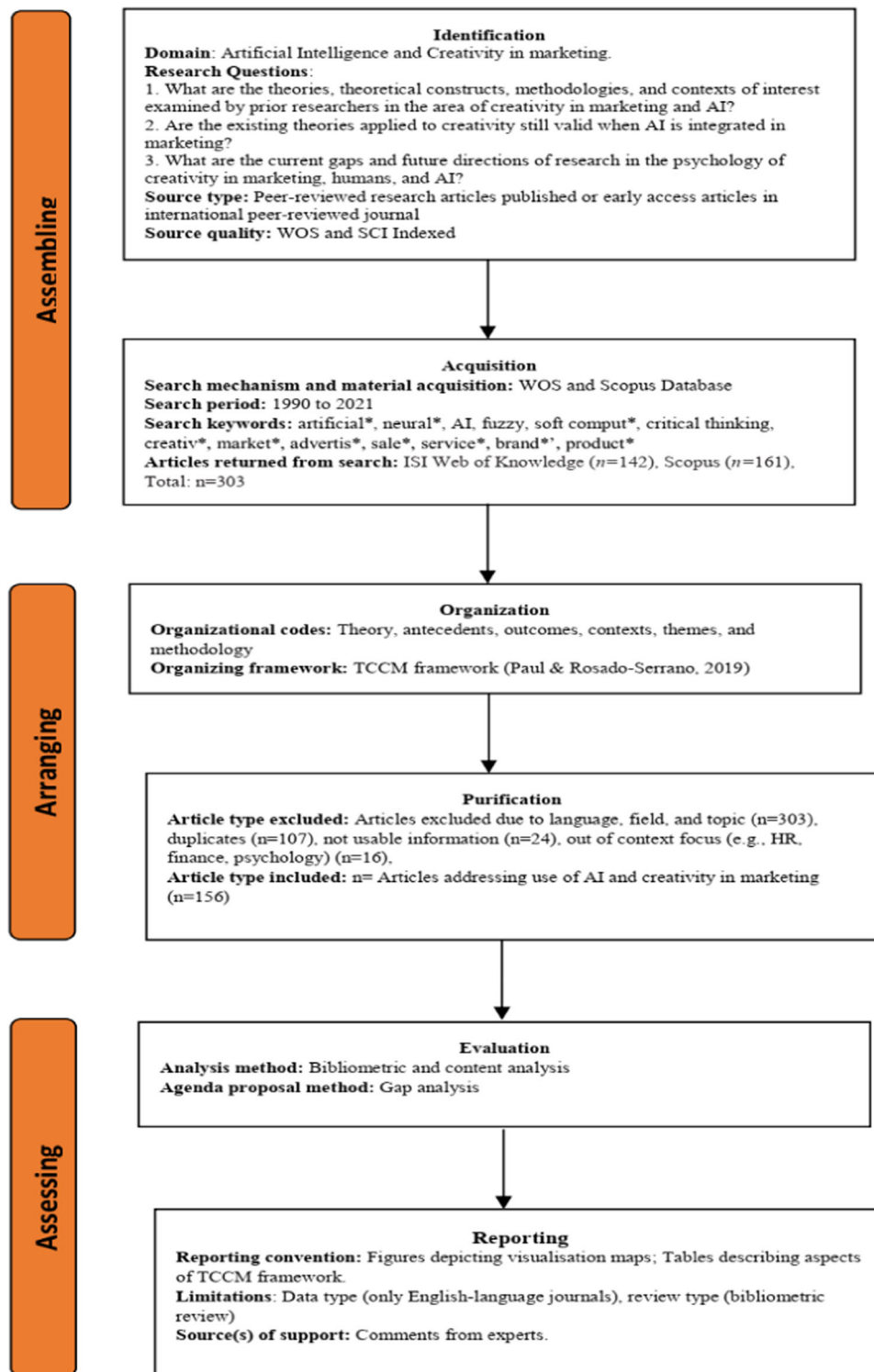


FIGURE 1 The SPAR-4-SLR protocol followed in this research

motivated by the fact that these two databases are also widely accepted, frequently used, and multidisciplinary in nature (Yang et al., 2013). We searched the two databases for research articles and early access articles published between January 1990 and June 2021, using the search terms “artificial*,” “neural*,” “AI,” “fuzzy,” “soft comput*,” “critical thinking,” “creativ*,” “market*,” “advertis*,” “sale*,”

“service*,” “brand*,” and “product*,” with the asterisk (*) representing any character, any group of characters, or no character. We included the Boolean operators (AND, OR, NOT, NEAR, and W/n). The search returned 303 articles: 142 studies in WoS and 161 studies in Scopus.

In the second stage (arranging), we coded the articles in line with the TCCM framework (Paul & Rosado-Serrano, 2019), in which the

organizational codes are theory, contexts, characteristics (antecedents, outcomes, themes), and methodology. In the purification substage, we discarded the duplicates (107) and screened the remaining (196) articles twice by evaluating the title, abstract, and full text. This led to the exclusion of 24 articles. We then excluded another 16 articles that were inconsistent with the literature on AI, creativity and marketing, leaving us with a final list of 156 articles for analysis.

In the assessing stage, we evaluated the material using a bibliometric analysis and a content analysis. For the bibliometric analysis, we used three software applications: VOSviewer to perform the cocitation analysis, Gephi to create the maximum spanning tree, and the Bibliometrix R-tool (Aria & Cuccurullo, 2017) to create the remaining visualizations. We then performed a content analysis to address the elements of the TCCM framework (theory formation, context, characteristics, and methodology). Using the TCCM framework as a structure for evaluating and analyzing the content of the literature improved the reliability of the results. After conducting a gap analysis to identify the research gaps, we devised an agenda for future research by concentrating on specific components of the TCCM framework. In the final substage (reporting), we compiled tables to organize the content in the evaluated literature related to theory formation, research setting, antecedents, outcomes, and methodology. We then assessed the limitations of our review and the practical consequences of the findings.

The research output and citations for each year (1990–2021) in our sample are presented in Figure 2. Around 20% of our sample was made up of articles published between 1990 and 2010, and the remaining 80% comprised articles published between 2011 and 2021. Citations of the literature on AI, creativity, and marketing grew exponentially after 1990 but did not peak until 2020 (503 citations). This may be attributed to the increasing adoption of customer-centric marketing techniques and the rising use of social media for promotion, which received a boost during the COVID-19 pandemic. The intellectual aura of AI, creativity, and marketing research extended to 104 articles being cited at least 2.412 times every year,

with an article by Dahl and Moreau (2002) being the most cited (308 times). This shows a growing interest in articles on the topic among researchers.

3 | THEORIES ON CREATIVITY

Various theories on creativity were applied in the articles we reviewed. These included, among others, creative cognition theory (Baliotti & Riedl, 2021), theory of creativity (Im et al., 2013; Vitrano et al., 2021), the theory of emotional intelligence (Khalili, 2016), empowerment theory (Cheng et al., 2019), self-determination theory (Fischer et al., 2019), generative theory (Peteranetz et al., 2017), and the explicit-implicit interaction theory of creativity (Hélie & Sun, 2009).

3.1 | Theory of creativity

The theory of creativity proposed by Mednick (1962) indicates that highly creative individuals can produce more word connections to a stimulus than less creative individuals can (Vitrano et al., 2021). The theory states that creative thinking involves grouping these “associative elements” into new and useful combinations (Altarriba & Avery, 2021). It suggests that the structure of an individual's associative elements influences whether or not the person produces a creative solution. The theory has been applied in previous research on marketing creativity; for example, in product innovation management (Im et al., 2013), creative new products (Griffiths-Hemans & Grover, 2006), and advertising (Smith & Yang, 2004).

3.2 | Big five personality traits

Previous research has indicated that the “big five” personality traits (Barrick et al., 1998)—agreeableness, extroversion, openness

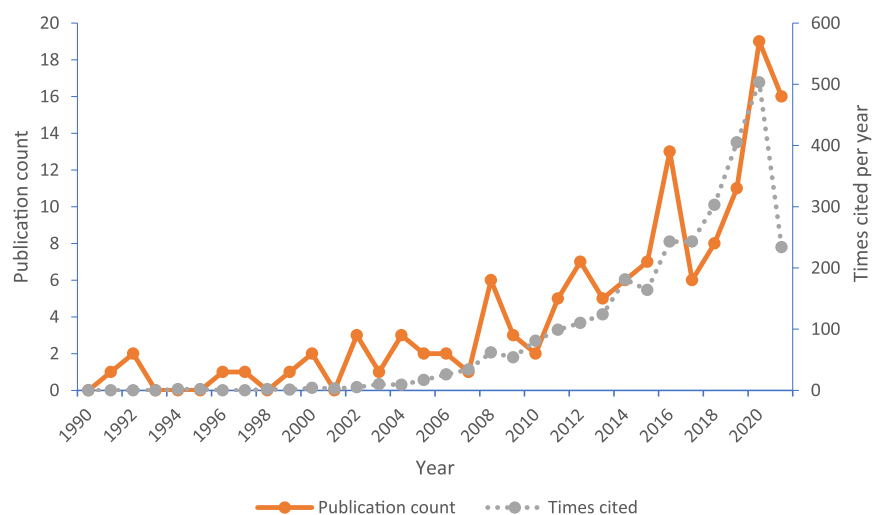


FIGURE 2 Publication output and citations per year

to experience, neuroticism, and conscientiousness—are important antecedents of employee voice and creativity (e.g., Hsu et al., 2011). Openness to experience and extroversion have a positive association with creativity, whereas conscientiousness and agreeableness have a negatively association with creativity (Kwang & Rodrigues, 2002). However, the big five personality traits framework may be too broad to predict criteria for creativity (Hough, 1992).

3.3 | Collective intelligence theory

Collective intelligence seems to have a mind of its own but is actually an intelligence that is assembled of contributions from individuals (Lévy, 1998). Creativity is considered to be an outcome of an emergent supra-individual collective intelligence (Peters & Reveley, 2015). Lee and Chang (2010) developed a creative stimulation system for designers that harnessed collective intelligence to assist with product design. Authors have also provided a cultural perspective on collective intelligence. Sawyer (2011, p. 429) anticipated a shift “away from the Western cultural model of creativity—away from individualist conceptions and toward collaborative, sociocultural conceptions of creativity.” From this perspective, a team's collective efforts are more likely to bring fruitful results for creativity than an individual's efforts alone.

3.4 | Componential theory of creativity

In the componential theory of creativity, Amabile (1983) proposed an “interactionist” perspective of creativity as a function of an individual's personal characteristics and social environment. Amabile (1983) explained that creativity is not a dichotomous, “either-or” phenomenon but a continuum, upon which reside increments of innovation and variety as well as key technological and artistic achievements. Griffiths-Hemans and Grover (2006) used the componential theory of creativity to classify individual-level variables into aspects that managers can leverage to enhance innovation in firms.

3.5 | Intrinsic motivation theory

The intrinsic motivation theory proposes that an employee's intrinsic motivation is the extent to which the employee is enthusiastic about a work activity and interested in engaging in it for its own sake (Coelho et al., 2011). The positive relationship between intrinsic motivation and creativity was widely acknowledged in the literature (e.g., Amabile, 1993; Amabile et al., 1994; Fischer et al., 2019). Intrinsically motivated employees are more likely to search for new and novel ways to create products and services; and take greater risks (Amabile et al., 1990).

3.6 | Generative theory

Generative theory (Epstein, 1991) has been adopted to capture novelty, challenge existing patterns of thinking and behaving, and broaden individual knowledge. Competence in achieving these aims can be developed with practice (Peteranetz et al., 2017). Furthermore, Runco (2007) used the generative theory to extend the framework of the four Ps of creativity—process, product, person (or personality), and place (or press)—by adding two more: persuasion and potential. Simon (1987) utilized the theory and focused on little-c to big-C, explaining that people can find creative solutions to ill-defined issues by following a rational method that relies on general cognitive processes, domain expertise (Runco, 2007).

3.7 | Creative cognition theory

Creative cognition theory suggests that certain mental and contextual states can either enhance or hinder an individual's cognitive capacity to act creatively (Baliotti & Riedl, 2021). One widely known creative cognition theory is Amabile's model of creativity and innovation in organizations (Amabile, 1988; Fischer et al., 2019), which was later updated by Amabile and Pratt (2016) to encompass the theoretical developments in the field of creativity and innovation. Enhanced by new research findings on synergistic extrinsic motivation and construct creativity and innovation, this model represents a promising conceptual framework for the scope of existing research.

3.8 | Empowerment theory

Empowerment theory focuses on how leaders can encourage creativity (Cheng et al., 2019). It comprises processes as well as outcomes, which implies that certain acts, activities, and structures can be empowering and that the conclusion of such structure results in a state of empowerment in terms of creativity. The dynamic componential model of creativity and innovation in organizations (Amabile & Pratt, 2016) also emphasizes this strong relationship between creative acts and feelings of empowerment.

3.9 | Other theories

The explicit-implicit interaction theory of creativity proposed by Hélie and Sun (2009) attempts to provide a more unified explanation of relevant phenomena by integrating several earlier theories. The honing theory, which was principally developed by psychologist Liane Gabriela, states that creativity is established as a result of the self-organizing and self-repairing nature of a worldview. This theory emphasizes not only the externally visible creative outcome but also the internal cognitive restructuring and repair of the worldview. The theory of emotional intelligence (Howe, 2008) focuses on individuals' emotional intelligence and is an ability-based test that aims to

measure emotional intelligence. The self-determination theory has also been applied in studies of creativity and it states that when self-determination is present, extrinsic motivators can improve the creative outcome (Fischer et al., 2019).

4 | CONTEXT

In this section, we present the contexts of the studies reviewed for this paper by describing the patterns of international research collaborations in this domain.

Between 1990 and 2021, the articles related to AI, creativity, and marketing were affiliated with 29 countries; from this perspective, the most productive country was China (21% publication count). The United States was ranked second for productivity (20%), but it was the undisputed leader in terms of total citations (838). Researchers in the United States published articles on the topics of creativity, product design, innovation, new product development, and advertising effectiveness. The most cited article was that of Dahl and Moreau (2002) focusing mainly on creativity and AI, which was affiliated with Canada which was ranked seventh by publication count (7.4%).

In eight of the countries with publishing affiliations in the topic of AI, creativity, and marketing—Croatia, Finland, Greece, Iran, Ireland, Japan, Pakistan, and Portugal—none of the authors were involved in international collaborations. In contrast, authors from the remaining 21 countries were found to have published at least one internationally co-authored study. The most common international research collaborations were between the Netherlands and the United States (5), Canada and the United States (3), and China and the United States (3).

5 | CHARACTERISTICS

We present the characteristics of the domain—antecedents, moderators, and mediators—followed by the outcomes and themes covered in the literature (Table 1).

5.1 | Antecedents

We grouped the antecedents into variables related to (1) individuals; (2) products and services; (3) organization and environment; and (4) AI. The variables grouped under “individuals” captured characteristics related to individual employees. Those investigated in our sample include, among others, collective intelligence (Lee & Chang, 2010; Peters & Reveley, 2015), convergent thinking (Shen et al., 2020), creative advertising insight (Shen et al., 2020), creative performance (Khalili, 2016), engagement with the creative process (Fischer et al., 2019), divergent thinking (Nusbaum & Silvia, 2011; Shen et al., 2020), innovative behavior (Khalili, 2016), explorative learning (Valaei et al., 2017), exploitative learning (Valaei et al., 2017), green creativity skills (Ogbeibu et al., 2021), green task motivation (Ogbeibu

et al., 2021), innovativeness (Ummar & Saleem, 2020), intelligence (Desmet et al., 2021; Fischer et al., 2019; Squalli & Wilson, 2014; Vitrano et al., 2021), and opportunity recognition beliefs (Fearon et al., 2021).

The variables related to products and services that were investigated in our sample include commercial appeal (Ummar & Saleem, 2020), new product/service meaningfulness (appropriateness or usefulness) (Fearon et al., 2021; Im et al., 2013), new product/service novelty (Im et al., 2013; Smith & Yang, 2004), and product involvement and product motivation (Wilson et al., 2015). In terms of the organization and environment, the variables capture characteristics related to comprehensive performance-measurement systems (Frare & Beuren, 2021), cross-functional integration (Im et al., 2008), customer orientation (Im et al., 2008), encouragement to take risks (Im et al., 2013), green expertise (Ogbeibu et al., 2021), green human resource management (Ogbeibu et al., 2020), green organizational innovative evidence (Ogbeibu et al., 2021), green performance and compensation (Ogbeibu et al., 2020), organizational ambidexterity (Fischer et al., 2019), competitor orientation (Im et al., 2008), creative marketing strategy (Azimpour et al., 2015), environmental dynamic capability (Ogbeibu et al., 2020), and environmental dynamism (Ogbeibu et al., 2021).

Finally, a few articles in our sample integrated variables related to AI. These include leader smart technologies, AI, competence in robotics and algorithms (Ogbeibu et al., 2021), AI capability (Mikalef & Gupta, 2021), and AI strategy (Younis & Adel, 2020).

5.2 | Mediating and moderating variables

Existing studies have used some mediating variables. We grouped them by relation to individuals, organizations, or products. The variables related to individuals include, for example, role clarity (Frare & Beuren, 2021), green creativity skills (Ogbeibu et al., 2021), entrepreneurial self-efficacy (Fearon et al., 2021), creative process engagement (Fischer et al., 2019), and executive switching (Nusbaum & Silvia, 2011). The variables related to organizations include, among others, strategic flexibility (Frare & Beuren, 2021), organizational climate for initiative (Hassi, 2019), green team creativity (Ogbeibu et al., 2021), and job autonomy (Hassi, 2019). The variables for products include new product novelty (Fearon et al., 2021; Im et al., 2013; Smith & Yang, 2004) and new product meaningfulness (Fearon et al., 2021; Im et al., 2013). Overall, only a small number of the articles that used mediating variables integrated those variables into a proposed model.

With regard to moderating variables, those used in the existing literature include: venture scalability (Fearon et al., 2021), product/service adaptability (Fearon et al., 2021), technological turbulence (Ogbeibu et al., 2020), organizational ambidexterity (Fischer et al., 2019), motivation, opportunity and the ability to process an advert (Wilson et al., 2015). Similar to our finding for mediating variables, our analysis shows that only a few researchers integrated these moderators into their proposed models.

TABLE 1 Sample articles: antecedents, mediating and moderating variables, and outcomes

Study	Antecedents	Mediators	Moderators	Outcomes
Alves, Wangenheim, and Martins-pacheco (2021)	Originality, condensation, appropriateness	-	-	Product creativity
Azimpour et al. (2015)	Creativity marketing strategy	Effectiveness of strategy implementation	-	Individual/organizational performance
Cheng et al. (2019)	Leader encouragement of creativity, innovation speed, creative process engagement.	-	Organizational ambidexterity	Product/service innovation
Fischer et al. (2019)	Leader encouragement of creativity, organizational ambidexterity	Creative process engagement	Organizational ambidexterity	Product creativity
Fearon et al. (2021)	New product/service meaningfulness, opportunity recognition beliefs, self-efficacy	Entrepreneurial self-efficacy, new product novelty	Venture scalability, product/service adaptability	Product/service creativity
Frare and Beuren (2021)	Comprehensive performance measurement systems	Role clarity, strategic flexibility	-	Individual creativity
Hassi (2019)	CEO empowering leadership, middle manager innovative work behavior	Organizational climate for initiative, job autonomy	-	Organizational creativity
Hernández et al. (2015)	Resilience	Divergent explanatory production	-	Individual creativity
Hwang and Won (2021)	Anxiety in group communication, self-efficacy	Perception toward teamworking partners, conversational experiences capture	-	Collective/team Creativity
Im et al. (2008)	Competitor orientation, cross-functional integration, customer orientation	-	Market and technological turbulence	Organizational creativity
Im et al. (2013)	Encouragement to take risks, market-based reward system, new product/service meaningfulness, new product/service novelty, planning process formalization, social cohesion, superordinate identity	New product novelty, new product meaningfulness	-	Strategic innovation
Khalili (2016)	Creative performance, employees' innovative behavior, leader's emotional intelligence, competencies	-	-	Job outcomes
Lassk and Shepherd (2013)	Emotional intelligence, sales creativity	-	-	Individual creativity
Lee and Park (2019)	Personal creativity, knowledge sharing, innovation behavior	Self-management, competency	-	Product/service innovation
Lucchiari et al. (2018)	Intellect, memory, thinking, cognition, production, evaluation	-	-	Individual creativity
Mikalef and Gupta (2021)	Artificial intelligence capability, organizational capability, organizational performance	-	-	Individual/organizational performance
Nguyen, Mai, et al. (2020)	Social interaction, external network ties, relationship quality, firm performance	Proactiveness, innovativeness, risk-taking	-	Organizational performance

TABLE 1 (Continued)

Study	Antecedents	Mediators	Moderators	Outcomes
Nusbaum and Silvia (2011)	Strategy, verbal fluency, Divergent thinking, clustering, fluid intelligence quotient	Executive switching	-	Individual creativity
Ogbeibu et al. (2020)	Environmental dynamic capability, green human resource management, green performance and compensation, green training, involvement and development	Green team creativity	Technological turbulence	Product/service innovation
Ogbeibu et al. (2021)	Environmental dynamism, green expertise, green organizational innovative evidence, green task motivation, leader smart technologies, artificial intelligence, robotics and algorithms competence (STARA)	Green creativity skills	-	Product/service innovation
Orth and Volmer (2017)	Self-efficacy, job autonomy, work engagement, innovative behavior	-	Creative self-efficacy	Individual creativity
Peters and Reveley (2015)	Internet-based collective intelligence, creative labor	-	-	Individual creativity
Primi (2014)	Creativity, intelligence	-	-	Individual creativity
Quan, Li, and Duan (2018)	Product semantics, product properties	-	-	Product innovation
Şahin (2014)	Intelligence, mentoring strategy, creative thinking skills	-	-	Individual creativity
Shen et al. (2020)	Convergent thinking, creative advertising insight, divergent thinking	-	-	Advertising creativity
Simonton (1997)	Creative productivity, career trajectories and landmarks	-	-	Creative production
Squalli and Wilson (2014)	Intelligence, innovation	-	-	Individual creativity
Tran, Goulding, and Shiu (2018)	Motivation, knowledge, instrument skills	-	-	Product innovation/new idea product
Ummar and Saleem (2020)	Idea creativity, innovativeness, originality, idea evaluation, taxonomic product, thematic product, relatedness in daily life	-	-	Product innovation/new idea product
Valaei et al. (2017)	Explorative learning, exploitative learning, transformative learning	-	-	Product/service innovation, organizational creativity

5.3 | Outcomes

We classified the outcomes examined by the research in our sample into broad organization-related and production-related variables. The outcomes related to organizations include collective/team creativity (e.g., Héraud, 2021; Yuan et al., 2022), individual creativity (e.g., Leon et al., 2019; Nguyen, Mai, et al., 2020; Weingarten et al., 2020), individual/organizational performance (e.g., Naseer et al., 2021), and organizational creativity (e.g., Hsueh et al., 2021; Orth & Volmer, 2017; Valaei et al., 2017). The outcomes related to production include such factors as creative production (e.g., Baliatti & Riedl, 2021; Lee et al., 2003), product creativity (e.g., Alves et al., 2021; Hsueh et al., 2021; Vitrano et al., 2021), product/service innovation (e.g., Ogbeibu et al., 2020; Ogbeibu et al., 2021; Weingarten et al., 2020) and advertising creativity (e.g. Lies, 2021; Shen et al., 2020; Vakratsas & Wang, 2020).

5.4 | Themes in the literature

The thematic map (Figure 3) displays the four typologies of themes that we analyzed using the “keyword plus” field. This field is normalized and distinct from the author’s keywords, so it can capture the depth and breadth of an article’s content. The upper-right quadrant shows the themes that are highly developed in the literature: creativity and idea. These themes are further connected with culture, psychology, decisions, semantics, and neuroimaging. Terms such as *design*, *cognitive*, and *analytical* are associated with creativity and are some of the most frequently recurring words associated with the creativity and idea clusters: the keywords used in fetching the documents were “critical thinking,” “creativ*,” “market*,” “advertis*,” “sale*,” “service*,” “brand*,” and “product*.” Indeed, Botega and da Silva (2020)

stated that design teams need to be creative if they are to come up with innovative and beneficial ideas.

The upper-left quadrant pertains to niche themes. It includes clusters such as communication, entrepreneurship and advertisements, which are rich in content but lacking in connection to other themes.

Computational approaches are important for conducting a thorough literature review. These methods do not replace human effort, but augment our information-processing and analytical capacities (Antons et al., 2021; Fan et al., 2022). Therefore, to enable us to recognize patterns and examine recurring themes, we used the R-Bibliometrix package to perform qualitative coding of the themes covered by the papers under review (Table 2) on the topic of creativity in marketing and AI. In line with previous systematic reviews (e.g., Domenico et al., 2021), we manually extracted the data on the main characteristics of each paper in our review (publication details, methodologies used, findings, etc.). We then used inductive coding to group the themes in the identified articles, with the help of a manual review. This gave us a broader and more complete understanding of the emerging themes.

Our analysis revealed five themes in the literature: (1) creativity in different areas of marketing; (2) applications of AI in marketing and the customer journey; (3) skills needed to support creativity in marketing; and (4) types of AI capability and the skills needed for creativity in marketing.

5.4.1 | Creativity in different areas of marketing

In the context of marketing, creativity can be described as the creation of new and useful ideas—for example, when developing and designing new products and services or brand communications (Lies, 2021). Our analysis of the literature revealed that creativity is

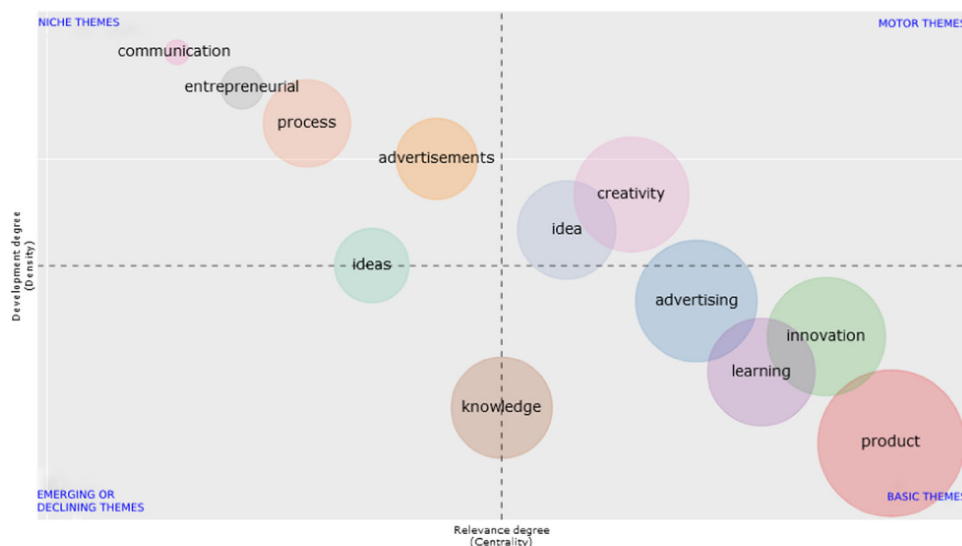


FIGURE 3 Thematic map of the domain

TABLE 2 Summary of emerging themes in the literature

Theme	Key contributions	Sample references
Creativity in various areas in the marketing domain	Advertisements, new product design, logo design, services design, sales and promotions, marketing strategy implementation, Internet/digital marketing	Sætre and Brun (2012); Azimpour et al. (2015); Jin et al. (2019); Shen et al. (2020); Ummar and Saleem (2020); Lies (2021); Hsueh et al. (2021); Vakratsas and Wang (2020)
Applications of AI in marketing and the customer journey	Machine learning, deep learning, and natural language processing train machines to handle big data for the generation of market intelligence; personalized recommendations and programmatic advertising; price/place management; customer service automation; experiential marketing; branding and sales forecasting; market research; segmentation; targeting; positioning	Guo et al. (2017); Y. Yang and Siau (2018); Davenport et al. (2020); Huang and Rust (2021b); Ma and Sun (2020); Verma, and Kenji, Hieu, et al. (2021); Ameen, Hosany, et al. (2021)
Skills required to support creativity in marketing	Psychological aspects include innovativeness, intelligence, cognitive ability, learning, attention, resilience, memory, emotions, intuition, thinking abilities, intellect, perception, ideas, intrinsic motivation, cognitive or perceptual styles, and thinking skills, Design thinking, intelligence, verbal fluency, emotional intelligence skills, individual know-how, and abilities	Joy (2005); Spendlove (2007); Jou et al. (2010); Spendlove (2007); Haag and Coget (2010); de Vere et al. (2010); Peters and Reveley (2015); Wilson et al. (2015); Hernández et al. (2015); Kellner et al. (2016); Burhan et al. (2017); Valaei et al. (2017); Fischer et al. (2019); Spendlove (2008); Lassk and Shepherd (2013); Squalli and Wilson (2014); Hoffmann et al. (2020); Altarriba and Avery (2021); Hsueh et al. (2021); Wu et al. (2021)
AI capability types and the skills required for creativity in marketing	Types of AI capabilities; Narrow AI; strong AI; super AI; mapping creativity skills	Schwartz et al. (2017); Wang (2017); Nguyen, Mai, et al. (2020); Vakratsas and Wang (2020); Lies (2021); Huang and Rust (2021a)

important in different areas of marketing, such as advertising, product design and development, marketing strategy, logo design, process and service design, sales and promotions, and relatively new areas of digital marketing.

Previous research has explained that creativity is the most important determinant of advertising effectiveness (Sasser & Koslow, 2008). Shen et al. (2020) found that the recognition hit rate and recognition latency are higher for creative advertisements than for standard ones. They also found that advertisements that are rated as more creative—those with new, surprising, or insightful aspects that instantly and unconsciously capture consumers' attention—are more easily remembered and less likely to be forgotten by customers (Shen et al., 2020). Furthermore, creative advertisements that evoke insights are easier to remember: when customers understand the meaning of an advertisement through the clues that are present in it, they experience a sudden, deep understanding (which the authors refer to as the “Aha!” moment), accompanied by feelings of joy or surprise (Shen et al., 2020). Similarly, Jin et al. (2019) found that customer recall is better for creative brand advertisements than for regular ones. Smith and Yang (2004) developed a model that characterizes creative advertisements as both divergent (i.e., original or unusual) and relevant.

Aside from creativity in advertising, some articles have focused on creativity in new product design and development. In the context of ideas for new products, Hu et al. (2013, p. 46) defined creativity as “the degree to which products are perceived to have unique differences from competitor's products in ways that are meaningful

to target customers.” Novelty and meaningfulness, which were identified as the basis of creativity in advertising (Vakratsas & Wang, 2020), also play a significant role in the context of product design and development (Fearon et al., 2021). Furthermore, Ummar and Saleem (2020) explained that the competitiveness of new products is improved through creativity and innovativeness. Although cultural and creative products are not hindered by short life cycles (as general goods are), their design, mass production, and sale present major challenges (Ummar & Saleem, 2020). Focusing on innovation teams, Sætre and Brun (2012) studied four new product-development projects in the medical device sector and developed a model for managing ambiguity in the creativity process through the iterative process of grounded theory. Their model shows that innovation teams with more tolerance for ambiguity can be more successful in developing and designing new products. Research on creativity in marketing has also focused on strategy. For example, Azimpour et al. (2015) investigated the effects of commercial and creative marketing strategies on firm performance. They found that, when implemented effectively, creative marketing strategies yield significant positive effects on firm performance.

The domain of digital marketing is a driver of performance marketing; as such, it can be seen as a less creative field. However, the popularity of social media marketing, viral marketing, and content marketing has given momentum to creative marketing driven by marketing intelligence. Lies (2021) grouped marketing creativity and digitalization into four categories: (1) viral advertising, which entails creating posts on social networks to attract high levels of

engagement; (2) social listening on social media platforms, where brands engage with customers to develop a better understanding of the type of creativity customers would appreciate; (3) semantic marketing and conversational commerce, which requires creativity in the language used by voice-recognition technologies and chatbots to enable personalized dialog with customers; and (4) content marketing, which includes branded artifacts, social rituals, cultural icons, and customized content driven by micro-targeting (e.g., mobile marketing intelligence). Creativity in conceiving and designing the digital customer experience is now seen as the future of marketing.

5.4.2 | Applications of AI in marketing and the customer journey

The literature has identified strengths and capabilities of AI that have led to its use in the following areas of marketing: decision making, customer service, tracking touchpoints on the customer journey, segmentation, targeting, positioning, personalized recommendations, content creation and curation, price and place management, experiential marketing, branding, forecasting sales, and market research. Nevertheless, several limitations have been associated with the use of AI in contexts that require creativity.

Global issues such as the financial crisis of 2007–2008 and the COVID-19 pandemic have led to a major shift that has driven advances in technology, including AI, that aim to save costs and improve efficiency. AI mimics the human mind through neural networks (Verma & Kenji, Hieu, et al., 2021). To make this mimicking more realistic, AI integrates human language, reasoning, and emotions (Poria et al., 2015). AI is used to automate business processes, gain insights from data, and generate consumer and market insights through a program-based algorithm (Davenport et al., 2020). Machine learning, deep learning, and natural language processing are used to train AI to generate market intelligence from big data (Davenport et al., 2020). Deep learning is based on the principle of artificial neural networks; as such, it imitates neurons or brain cells (Verma et al., 2021).

The strengths of AI have proven to be beneficial in marketing. Through machine learning, AI can make predictions, extract features, make estimates, and optimize results by using algorithms that allow it to train efficiently on large datasets (Ma & Sun, 2020). AI-based systems can make split-second decisions and handle large amounts of unstructured data because they are based on machine learning algorithms (Ma & Sun, 2020). The advantages linked to using AI in marketing decision making include faster and more accurate decision making, the ability to identify missing data, reduced cognitive bias, and higher-quality management of marketing projects (Stone et al., 2020). In addition, the use of AI-driven chatbots, drones, algorithms, robots, and digital voice assistants is increasing in multiple areas of marketing (Ameen, Tarhini, et al., 2021; Borau et al., 2021; Moriuchi, 2020).

Wu et al. (2021) proposed a value constellation strategy for developing service encounters with AI robots that connects

an experience-driven service model with advances in robotics. Moreover, by addressing the theoretical priorities of service and robot design, customer-robot interaction, and customer experiences, Wu et al. (2021) emphasized the critical nature of value-adding robotic service design. This type of design integrates robots and employees in an organic way to sustain an organization's long-standing competitive advantage while achieving economies of scale.

The use of AI in marketing goes beyond integrating the traditional marketing mix and extends into the new landscape of digital marketing. Indeed, researchers have found that automated systems now guide much of the customer journey: search rankings are determined by the sophisticated AI-enabled Google system; reviews are placed on the basis of an evaluation algorithm; customer questions are answered by AI-driven chatbots; and posts on social media are analyzed for sentiment and feedback using social listening engines (Verma & Kenji et al., 2021). Probabilistic graphical models, deep learning, and reinforcement learning are giving firms a holistic view of the entire customer journey, with all its various touchpoints, and allowing them to simultaneously determine the true contribution of each touchpoint (Grewal et al., 2020; Ma & Sun, 2020).

AI can also support marketers with segmentation, targeting, and positioning (Huang & Rust, 2018; Verma & Kenji et al., 2021). Deep learning can personalize recommendations and programmatic advertising, assisting marketers with exploring new products, services, places, and offerings to satisfy customers' needs (Guo et al., 2017; Ma & Sun, 2020). Emotive AI algorithms can track customers' likes and dislikes (Verma & Yadav, 2021). Furthermore, AI is heavily used to ensure that new or curated content is personalized and relevant to customers (Chintalapati & Pandey, 2022; Grewal et al., 2020; Ma & Sun, 2020).

In addition, AI is used in price management to enable firms to adapt quickly to constantly changing pricing scenarios in e-commerce (Verma & Kenji et al., 2021). Organizations have also adopted AI in place management; for example, to track orders and in using drones for deliveries (Huang & Rust, 2021b). In service contexts, robots are being used to greet and engage customers (Huang & Rust, 2018). AI-enabled chatbots automating customer services by responding to inquiries (Ameen et al., 2021).

In experiential marketing and advertising, a range of AI tools that can learn by constantly collecting and analyzing data from customer interactions are being used. These include voice assistants, such as Google Assistant, iPhone Siri, Amazon Echo, and the Sephora voice-enabled chatbot (Chintalapati & Pandey, 2022). In addition, virtual transformation (which integrates AI and virtual reality) and image recognition (used on social media platforms, e.g.) are increasingly being used in marketing (Xi & Siau, 2020).

AI-based predictive algorithms referred to as "intelligent marketing automation" have been driving marketing operations and efficiencies, including branding and sales forecasting (Davenport et al., 2020; Yang & Siau, 2018). This type of AI also includes predictive analytics for real-time copywriting, copyediting, and engagement tools (Chintalapati & Pandey, 2022). Furthermore, use in market research seems to be one of the most promising

applications of AI in marketing (Davenport et al., 2020; Huang & Rust, 2021b). In addition, AI is being used to mine data by analyzing conversation patterns on social media (Mouncey, 2018). In the new marketing environment, AI-powered tools can generate insights and provide solutions, presenting them in a media-rich format that incorporates text, images and video. Ma and Sun (2020) described the new marketing environment as a complex place that goes beyond the intuitive understanding and capabilities of human analysts, hence requiring automation and real-time optimization.

5.4.3 | Skills needed to support creativity in marketing

Su et al. (2021) argued that integrating AI into creativity in marketing will lead to a surge in a skilled workforce that can make effective use of AI in an ever-complex environment. Creativity has been associated with divergent thinking and the ability to follow unconventional methods of reasoning, which produces new ideas and solutions (Lucchiari et al., 2018). At the individual level, creativity describes abilities and traits that are linked to generating original ideas and solving problems (Ummar & Saleem, 2020). Creativity can be cognitive, emotional or both (Dietrich, 2004; Kaufman & Baer, 2005; Sánchez-Ruiz et al., 2011).

The link between psychology and creativity is emphasized in the literature, with investigations focusing on a range of cognitive and emotional skills. Regarding cognitive skills, research has focused on intelligence (Burhan et al., 2017; Peters & Reveley, 2015), cognitive ability (Kellner et al., 2016), learning (Jou et al., 2010; Valaei et al., 2017), attention (Wilson et al., 2015), resilience (Hernández et al., 2015), memory (Wilson et al., 2015), thinking abilities (de Vere et al., 2010), intellect (Joy, 2005), generation of ideas (Farid et al., 1993) and intuition (Haag & Coget, 2010). Regarding emotional skills, research has focused on positive and negative emotions (Spendlove, 2007), empathy (Su et al., 2021), and emotional intelligence (Hoffmann et al., 2020).

Over the years, academics have attempted to study the relationship between creativity and intelligence. For example, Squalli and Wilson (2014) conducted the first test of the intelligence-innovation hypothesis, which contributes to the debates on intelligence affects creativity in psychology and innovation-growth in economics. The authors found that, having controlled for other variables, people with a high IQ are more innovative; therefore, they attached importance to developing our knowledge of the relationship between intellect and creative achievement. However, Altarriba and Avery (2021) and Desmet et al. (2021) recently found that there is no significant relationship between intelligence and creativity. Alves et al. (2021) identified several other psychological traits related to individual creativity: personality, intellect, temperament, physique, habits, attitudes, value systems, self-concept, decision making, and behavior. In an investigation of the creative process, Leon et al. (2019, p. 2) found that developing new creative ideas is dependent upon developing orderly relationships or “finding the thread that unites.”

Emotional intelligence skills have been highlighted as one of the main requirements for individuals who need to be creative, especially frontline employees (Hoffmann et al., 2020). In the context of creativity in marketing, emotional intelligence is required in different areas; for example, when employees interact with customers to offer services and in the context of service failure and recovery. Emotional intelligence can contribute to a better understanding of customer behavior and expectations (Burroughs & Mick, 2004), which, in turn, can lead to the design and development of new products and services that are creative and relevant. To thrive in today's highly competitive and constantly changing business climate, firms must fully leverage their employees' creative potential and emotional intelligence (Boden, 1998). The need to improve creative performance to achieve long-term success is likely most apparent in the sales profession, where individual and organizational success is contingent upon providing novel and valuable solutions to customers. Owing to this, Lassk and Shepherd (2013) examined how the emotional intelligence of sales representatives affects their creativity and key work outcomes. Their findings indicate that a leader's emotional intelligence benefits employees' creative performance and emotional intelligence.

At the organizational, societal, and market levels, creative activities refer to the development of new ideas among teams, leading to innovation. For instance, Im et al. (2013) analyzed the effect of team dynamics on creativity and connected creativity with strategic innovation outcomes. The authors found that managing team dynamics to develop innovative new products and marketing strategies requires a dynamic capability that can provide a competitive edge. Their results show that a culture that fosters innovation can have a significant impact on employee perceptions of innovation.

The presence of a comprehensive performance-based system for measuring creativity (in terms of both financial and nonfinancial performance), strategic flexibility, and role clarity are important for promoting individual creativity (Frare & Beuren, 2021). However, many scholars have explained that assessing performance in terms of creativity is challenging (e.g., Alves et al., 2021; Lies, 2021), despite the multiple skills that are associated with creativity in the literature. Managing creativity in firms is challenging because high levels of human/social and information system control will dampen all creative efforts, while low managerial control is simply an absence of control and cannot be sustained in the long run. Measuring the effectiveness of creativity in the context of marketing is equally challenging, because it depends on multiple variables at the firm, employee, customer, and industry level.

5.4.4 | Types of AI capability and the skills needed for creativity in marketing

A few studies have attempted to explore the application of AI in creativity in marketing. For example, Weingarten et al. (2020) explored whether AI could outperform human experts in creative markets by using a case involving the creation of logos. They found

that human creative expertise results in logos that are more expressive and differentiated than those produced by AI. Furthermore, Vakratsas and Wang (2020) proposed a system for generating and testing creative ideas in advertising. The authors explained that the goal of AI creativity is to enhance human creativity. How AI technology fosters creativity depends on how and what we use AI for, the transparency of an AI algorithm, and how it makes decisions, as well as the processes and mechanisms in place to regulate its use (Nguyen, Mai, et al., 2020). In addition, Gobet and Sala (2019) explained that AI can offer novel methods of studying creativity in psychology, because it can simulate complex worlds that challenge human creativity. making unexpected connections and revealing new relationships. Boden (1998) explained that AI techniques can create new ideas in three ways: (1) by producing novel combinations of familiar ideas; (2) by exploring the possible of conceptual spaces; and (3) by enabling the generation of ideas that would have been impossible without AI.

The literature has categorized AI capabilities into three types: narrow AI, general AI, and super AI (Benbya et al., 2020; Kaplan & Haenlein, 2019). In the following sections, we provide an overview of each type of AI capability and map them with the key (emotional and cognitive) skills required for creativity in marketing presented in Section 5.4.3. Figure 4 depicts our proposed typology of AI capabilities and the skills required for creativity in marketing.

5.4.4.1 | Narrow AI

Narrow AI, which includes all AI currently in use, is tailored to a specific problem or task (e.g., making a drink). It outperforms or equals humans in that task (Kaplan & Haenlein, 2019), but it cannot deal with other challenges autonomously without being retrained and/or modified. Therefore, it is considered to be a weaker form of AI (Goralski & Tan, 2020). Narrow AI falls into symbolic AI and machine learning, which both capture components of human intelligence (Dickson, 2020). However, narrow AI systems lack the flexibility of human intelligence because they fall short in the scope of these components (Wirth, 2018). Narrow AI somewhat maps on to mechanical and analytical intelligences and can handle simple

cognitive tasks (Davenport et al., 2020). In the context of creativity in marketing, it can apply some of the key cognitive skills, such as intelligence, learning, and the ability to process and analyze massive data. Narrow AI algorithms can process vast amounts of data in seconds without needing breaks or suffering from fatigue (Larkin, 2022). In terms of memory, narrow AI is either reactive (with no memory) or has a limited memory (Escott, 2017). Reactive AI is incredibly basic, without data storage capabilities; it simply emulates the human mind's ability to respond to different stimuli without prior experience (Agnihotri, 2021). Limited memory AI is more advanced, equipped with data storage and learning capabilities that enable machines to use historical data to inform decisions (Agnihotri, 2021; Escott, 2017). Limited memory AI can also use large volumes of data for deep learning.

Although AI can be adopted successfully in task automation—which involves standardized AI applications that require consistency and logic—it is still considered underdeveloped for situations where an awareness of the context is needed, which require the technology to learn to handle unique or unprecedented situations (Davenport et al., 2020). The differences between task automation and context awareness map on to the concepts of narrow versus general AI (Kaplan & Haenlein, 2019). So far, firms have been using only narrow AI; for example, chatbots and voice assistants such as Siri, Alexa, and Google Echo (Wirth, 2018).

The current limitations and misuses of AI in creativity in marketing were highlighted in the literature we reviewed. For example, Huang and Rust (2021a) explained that, for marketers, a common misuse of AI involves its premature employment in lieu of human intelligence; for example, putting AI fully in charge of product design (which requires creativity) or price negotiation (which requires intuition and emotional intelligence). In addition, AI cannot yet apply the same information to different contexts (Su et al., 2021). Although AI is already being used to automate the media buying process, the creative advertising process still requires extensive human efforts (Lies, 2021). Referring to a specific situation, Wang (2017) explained that understanding culture and cultural differences between the East and West while being creative requires the human factor, because

Type of artificial intelligence (AI) capability	Key skills required for creativity in marketing	
	Cognitive	Emotional
Narrow AI (Weak, Below Human-Level AI) -Applies AI only to specific areas -Unable to autonomously solve problems in other areas -Outperforms/equals humans in the specific area	-Intelligence -Learning -Processing massive amounts of data	-----
General AI* (Strong, Human-Level AI) -Applies AI to several areas -Able to autonomously solve problems in other areas -Outperforms/equals humans in several areas	-Problem solving -Reasoning -Planning -Decision making -Memory	-----
Super AI* (Conscious/Self-Aware, Above Human-Level AI) -Applies AI to any area -Able to solve problems in other areas instantaneously -Outperforms humans in all areas	-Cognitive ability -Idea generation -Persuasion	-Empathy -Emotions -Emotional intelligence

FIGURE 4 Typology of AI capabilities and skills required for creativity in marketing. AI, artificial intelligence

humans understand the differences in representation that occur between cultures.

It is impossible for narrow AI to assess the value of novel ideas, especially transformational ones, because such ideas are often difficult to evaluate without prior knowledge (Vakratsas & Wang, 2020). Hence, humans are needed to either enable advertising executives to evaluate the fitness of creative concepts or pretest them on a sample of consumers (Vakratsas & Wang, 2020). Narrow AI can handle repetitive tasks only, so skilled workers are needed to focus on the human aspects of their jobs, which require more advanced cognitive skills as well as social and emotional skills (Su et al., 2021). Machine-learning methods lack interpretability and clear relationships between variables that are based on correlational rather than causal capacity; they also lack the ability to capture heterogeneity and dynamics at the individual consumer level (Ma & Sun, 2020).

5.4.4.2 | General AI

General AI describes a generally intelligent system that can act and think much like humans, but at the speed of the fastest computer systems (Grossman, 2020). It can be applied to different contexts, can solve problems autonomously in other contexts, has memory and is equal to or outperforms humans in several areas (Kaplan & Haenlein, 2019). A subset of general AI is human-level machine intelligence, which is idealized as performing as effectively as an extremely gifted human at many intellectual tasks. General AI is close to becoming a reality in the form of bio-humanoid robotics, such as life-like robots, and some experts claim that we are already seeing an early example of an artificial general intelligence system in the Generative Pre-trained Transformer 3 (GPT-3) natural language processing neural network (Grossman, 2020). To solve problems creatively, general AI technology may develop competencies including imagination, visualization, and abstraction; however, human creative skills still enhance the solving of algorithmic problems and the creation of computational artifacts and knowledge (Alves et al., 2021).

General AI involves implementing a full set of cognitive abilities that is not limited by context; the aim is to make machines capable of applying human-level intelligence to most tasks with human-like cognitive abilities (Agnihotri, 2021). These machines can offer some of the key skills required for creativity in marketing; for example, problem solving, reasoning, planning and decision making (IBM Cloud Education, 2020). General AI maps on to intuitive and empathetic intelligences (Escott, 2017). General AI is defined as a machine with consciousness and mind, which has intelligence in more than one specific area (Siau & Yang, 2017). Machines classed as strong AI would be indistinguishable from the human mind. However, the AI machine would have to learn through input and experiences, constantly progressing and advancing its abilities over time (IBM Cloud Education, 2020).

5.4.4.3 | Super AI

Super AI is a hypothetical type of AI that becomes self-aware and surpasses the capacity of human intelligence and ability (Escott, 2017). This AI could be applied to any area, could solve

problems in various areas instantaneously, and would outperform humans in all areas (Kaplan & Haenlein, 2019). With super AI, a machine would have a mind of its own; rather than simply replicating the human mind, it would be more capable than a human in every way (Rajput, 2020).

Super AI is expected to handle the key cognitive and emotional skills required for creativity in marketing, surpassing human capability. It would have a better memory and could process and analyze data and stimuli faster than humans (Escott, 2017; Rajput, 2020). Consequently, the decision-making and problem-solving capabilities of super-intelligent beings would be far superior to those of humans (Escott, 2017). Emotional and social intelligence are related to specific emotional and social skills, which individuals can learn and AI systems can mimic. Humanized AI would show characteristics of all competencies: cognitive, emotional, and social intelligence. Therefore, would be able to develop self-consciousness and self-awareness (Kaplan & Haenlein, 2019). Super AI would recognize human emotions, consider them in their decision making, and use them to persuade others and generate ideas. It would be able to learn and adapt empathetically on the basis of experience, emotion recognition, affective computing, and communication-style learning (Huang & Rust, 2018). The empathetic super AI describes a machine that can feel, or at least behave as though it has feeling (Huang & Rust, 2018).

6 | METHODOLOGICAL APPROACHES

The methodological approaches adopted in our sample articles comprised quantitative and qualitative methods. Of the research included in this review, 70 studies were conceptual and the other 86 were empirical. In this section, we outline the data collection and data analysis techniques adopted in the 86 empirical studies in our review (summarized in Figures 5 and 6).

With regard to data collection, the survey method (53 studies) was most common (e.g., Frare & Beuren, 2021; Vitrano et al., 2021). Of the studies that used surveys, most (30) adopted an offline survey. In addition, experiments were used in 20 studies (e.g. Baliotti & Riedl, 2021; Guenther et al., 2021). Interviews were used in 3 studies (Fearon et al., 2021; Jou et al., 2010; Ravina-Ripoll et al., 2019). A few studies (8) used secondary data (e.g. Gouvea & Vora, 2018; Li & Duan, 2018).

In terms of data analysis, the most extensively applied techniques were structural equation modeling (SEM) and partial least squares structural equation modeling (PLS-SEM) (16 studies; e.g., Frare and Beuren (2021) and Ogbeibu et al. (2021)). In 15 studies, regression analysis, quantile regression or multiple linear regression were used (e.g., Desmet et al., 2021). In 13 studies, analysis of variance, multivariate analysis of variance, or multivariate analysis of covariance were used (e.g., Guenther et al., 2021; Hoffmann et al., 2020; Leon et al., 2019).

Other techniques used included the t test (10 studies; e.g., Baliotti & Riedl, 2021), correlation analysis (7 studies; e.g., Im

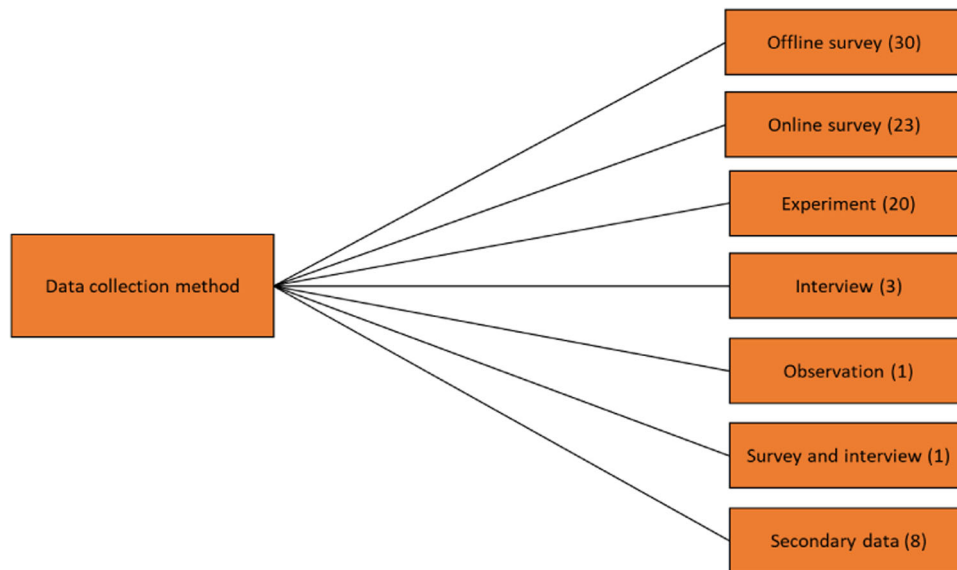


FIGURE 5 Data collection methods

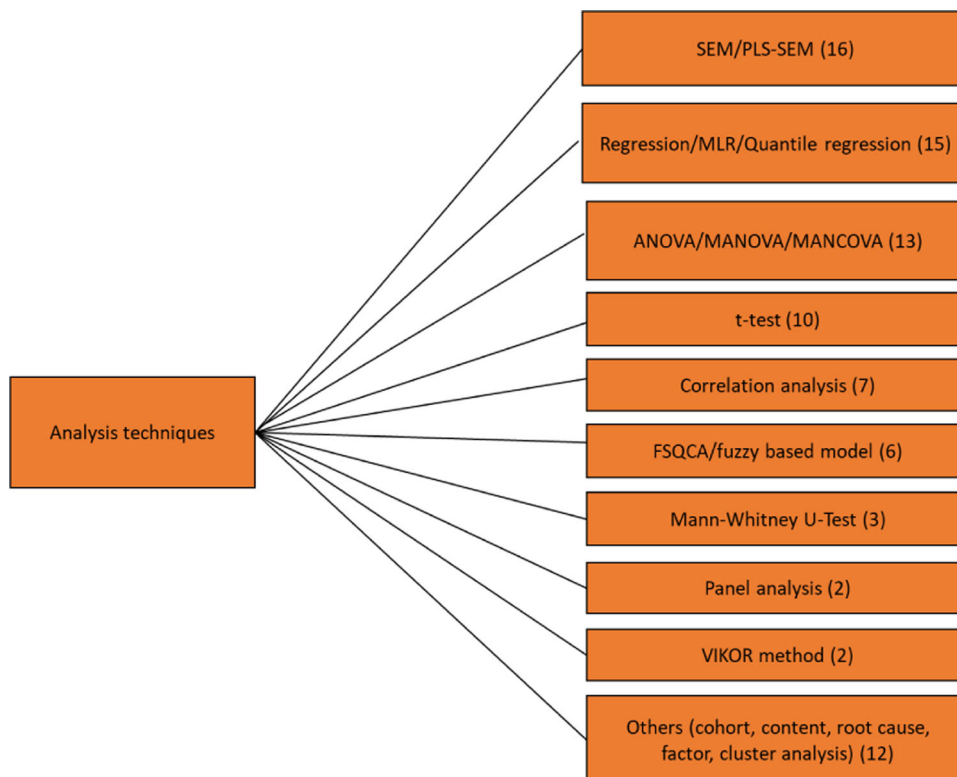


FIGURE 6 Data analysis techniques

et al., 2013), and fuzzy-set qualitative comparative analysis (6 studies; e.g., Fischer et al., 2019). Techniques used less frequently included the Mann-Whitney *U* test (e.g., Şahin, 2014), panel analysis (e.g., Möller & Tubadji, 2009), and the VlseKriterijumska Optimizacija, Kompromisno Resenje method (e.g., Gouvea & Vora, 2018), among others (Figure 6).

7 | DISCUSSION AND DIRECTIONS FOR FUTURE RESEARCH

The main aim of our research was to advance theories on creativity in marketing and AI by conducting a comprehensive review of the literature. We found that although AI faces challenges that prevent it

from handling creativity in marketing autonomously, it is still a useful tool that can support marketers with various aspects of creativity. We expect human creativity in marketing to undergo changes that will require attention from academics in future research and the development of new theoretical and topical directions. In the following sections, we answer our research questions by addressing: (1) theory development, contexts, characteristics, and methods; and (2) areas in which theories on creativity in marketing need further development. In doing so, we propose an organizing framework to guide researchers in developing theories in this context in the future, identify the gaps in the existing research, and suggest avenues for future research on the impact of AI on creativity in marketing.

7.1 | Theory development

Our findings show that despite some efforts to study the effects of AI on creativity in marketing, there is a need for more interdisciplinary and multidisciplinary research that develops and extends the theories on this topic. The existing theories on creativity in marketing do not account for the role and impact of different types of AI. This opens up new avenues for future research in this area. We encourage researchers to explore and reconceptualize the existing theories on creativity in marketing to account for the changes caused by integrating AI into creativity in marketing.

Future studies can explore the impact of deep learning and neural networks on creativity in terms of idea generation, novelty, and understanding behavior patterns (Runco, 2007). Theories including the componential theory of creativity (Amabile, 1983) focus on the components of the creative process. Hence, future studies can examine the impact of new factors related to creativity through machine learning and deep artificial neural networks on the various components of the creative process. In addition, creative cognition originates from an optimal balance between spontaneous and controlled processes. Hence, the notion of creative cognition can be conceptualized within an evolutionary framework that categorizes the various types of AI and their capabilities.

We encourage researchers to explore the changes in employees' personality traits that proved to have a significant relationship with creativity when AI is integrated. For example, future studies can explore the impact of AI capabilities, such as imagination, visualization, and abstraction (Alves et al., 2021), on the big five personality traits, such as openness to experience, extroversion, conscientiousness, and agreeableness (Kwang & Rodrigues, 2002).

In addition, future studies can explore how leaders' encouragement of creativity, as found in the empowerment theory (Amabile & Pratt, 2016), requires a focus on aspects related to AI in various contexts. For example, researchers can investigate how leaders' encouragement of creativity may bring fruitful results when employees work with robots, when some services are automated through AI-enabled chatbots, or when AI and big data analytics are used to make initial observations. Given the significant impact that AI can have on job specifications and employees, future studies can also explore

whether leaders' encouragement of creativity should be redefined when AI capability is integrated with human capability. In addition, there is a need to explore how the constant and rapid advancement of AI is affecting the relationship between leader and employees, which may impact employees' creativity. Furthermore, future research should explore how the different types of AI used by organizations to enhance creativity in marketing are affecting employees' intrinsic motivation.

Given that creativity has been attributed to collective intelligence and team collaborations, as found in the collective intelligence theory (Peters & Reveley, 2015), there is also a need for future studies to explore the impact of various types of AI on how teams collaborate and work collectively in specific areas, such as product or service design, logo design, and advertising.

7.2 | Contexts

Our findings show that most of the existing research on creativity in marketing and AI was conducted in developed countries. There is a corresponding lack of research in the context of developing countries, where AI is also increasingly used in marketing but the impact of culture on creativity may be different. Thus, future studies could involve cross-national and cross-cultural research to identify any similarities and differences in the skills required for creativity in marketing augmentation. Such studies could reveal the true impact of culture on the human creative skills required in marketing and how AI can best be utilized in developing countries' or 'and how AI can be utilized to take account of cultural contexts. In addition, we recommend collecting data from consumers in developed and developing countries to identify the parts of the customer journey where creativity can have a particularly significant positive impact.

7.3 | Characteristics

In a logical review, an organizing framework is essential for providing an integrated, synthesized overview of existing research (Hulland & Houston, 2020). Based on our review of the literature, we propose an organizing framework that integrates the antecedents, mediating and moderating variables, and outcomes of the existing research on creativity in marketing and AI (Figure 7). Our framework presents these variables in relevant groups to show what has been covered in the literature so far.

Based on our categorization of factors in the framework, we found that the literature has investigated and analyzed the antecedents related to the individual employee, organization, and environment and those related to products and services. With the growing role of AI in creativity in marketing, we encourage researchers to revisit some of the factors related to individuals in our framework that might have changed or increased in importance due to the presence of AI; for example, employees' innovative behavior and creative performance (Khalili, 2016), innovativeness

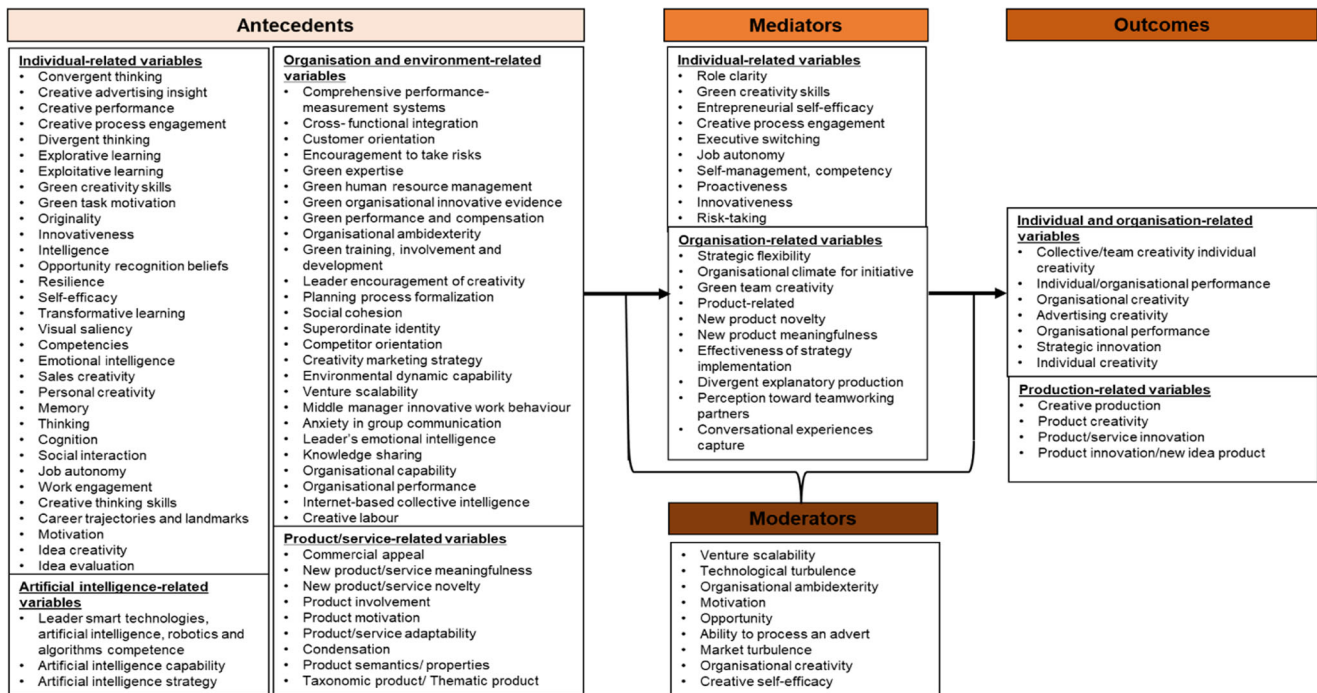


FIGURE 7 An organizing framework for creativity in marketing and AI. AI, artificial intelligence

(Ummar & Saleem, 2020), self-efficacy (Fearon et al., 2021) and resilience (Hernández et al., 2015). In addition, the significance of some factors might have decreased due to the presence of AI; for example, collective intelligence (Lee & Chang, 2010; Peters & Reveley, 2015), explorative learning and exploitative learning (Valaei et al., 2017), and intelligence (Desmet et al., 2021; Fischer et al., 2019; Squalli & Wilson, 2014; Vitrano et al., 2021).

There is scarce research on integrating factors related to AI as a tool to improve creativity in marketing. Research on combining human capabilities and AI capabilities in creativity in marketing needs a fuller conceptualization of the contribution made by AI outside the narrow realm of AI intelligence, strategy, and capability (Figure 7). For example, future studies can explore how human decision making related to creativity changes with the prediction, extraction, estimation, and optimization that are made possible through algorithms and as AI is used to generate creative ideas. Furthermore, future studies can explore how employee skills related to creativity can enhance the solving of algorithmic problems. Future studies can also explore how the presence of AI competencies (such as imagination, visualization, and abstraction) affect how individuals and organizations perform in terms of creativity in marketing. Furthermore, longitudinal research can be conducted to compare AI and human performance at different stages of the creative process: idea initiation, idea execution, and final product/service. Recent research has explored the moderating effects of technology-related factors (e.g., technological turbulence) on creativity (Ogbeibu et al., 2020). To build on this, future studies can explore the roles of mediating and moderating factors related to integrating AI, such as the moderating effects of employee expertise in AI technologies and AI-powered aspects of creativity.

Future research can also use outcome variables that go beyond the organization and production (Figure 7); for example, researchers can explore the impact of integrating AI-powered tools and media-rich content (such as text, imagery, or video) on individuals' creativity and the possibility of developing and maintaining skills related to creativity (such as curiosity and open-mindedness). Furthermore, there is a growing body of literature on AI-enabled chatbots as a way of automating customer service (e.g., Ameen, Tarhini, et al., 2021; Borau et al., 2021; Moriuchi, 2020), given that they significantly reduce marketers' interactions with customers. This interaction has been found as a source of inspiration in terms of creativity and idea generation (Madjar, 2008). However, there is a lack of research on the impact of customer service automation on employee creativity over time, so future studies can focus on this area. Furthermore, research is needed to develop new theories and adapt existing ones on employee psychology—in areas such as emotions—when using AI in marketing functions that require a high level of creativity. To improve the understanding of creativity in marketing and AI, future studies can develop unified theories by combining the factors in our organizing framework with the factors identified in section five.

7.3.1 | Topics

So far, limited attempts have been made to explore the potential of AI for aiding creativity in the field of marketing (e.g., Botega & da Silva, 2020; Vakratsas & Wang, 2020). There is thus a need for future research to explore the potential of AI for aiding creativity in areas such as brand management, promotion, retailing, content marketing,

and social media marketing. Although some scholars have attempted to find ways to develop AI-based systems capable of generating new and novel ideas and evaluating their value (e.g., Nguyen, Mai, et al., 2020; Su et al., 2021; Vakratsas & Wang, 2020), we recommend that future research focuses on finding new ways in which these systems can enhance human/individual creativity. In addition, future studies can empirically test the validity of our proposed typology (Figure 4) by interviewing AI experts and marketing experts, comparing and contrasting the various views.

Future research should focus on a balanced *augmentation* (combining human and AI capabilities) instead of on *automation*. This would help individuals to remain confident in and further improve their own creativity. Future research should also focus on how firms can shift their organizational culture to promote creativity among their marketing employees on the basis of augmentation, considering its impact on employee psychology.

We also recommend revisiting applications of human creativity that may require a shift in, or a new set of, creativity skills and the associated psychological aspects. For example, if individuals working in those areas of marketing that use AI are to be effectively creative, they need to develop a sufficient level of understanding of how AI technology works and the issues that customers encounter when interacting with this technology (in particular, the narrow AI that firms use), such as its lack of empathy, emotions, emotional intelligence, and problem-solving skills, and its inability to handle unique situations (e.g., service recovery). These skills could be just as important as the core elements of creativity: novelty, originality, and appropriateness (Hoffmann et al., 2020; Ummar & Saleem, 2020). Therefore, we encourage researchers to combine the findings in the literature with future assessments of AI capabilities and the new skills required by employees for creativity.

Finally, future research should focus on developing a system that is suitable for measuring creativity in marketing that combines human and AI capabilities. In brief, it should be possible to develop a system that encompasses the new areas of AI-assisted digital marketing, such as digital assistants, chatbot services, social media content, and social listening.

7.4 | Methods

Our findings show that the existing research has adopted quantitative and qualitative. Future studies should use in-depth qualitative methods to collect data from employees in creative marketing roles and using AI. This will improve understanding of how they perceive the shifts in creativity in marketing brought about by the emergence of AI, and how these shifts have affected the way they do their job. In addition, we envisage a need for multi-study and multi-source research to provide a comprehensive understanding of how AI is applied in marketing and how it impacts individual creativity. Furthermore, we recommend collaborations between academics and firms in the industry to yield the best results that emerge from real-life situations and settings. Future work could also involve

longitudinal research relying on panel data analysis to study the changes in creativity in marketing over time in the various areas of marketing in which AI is applied. We recommend using big data analytics methods to identify those points in the digital customer journey where higher levels of creativity are required or where creativity can make significant improvements to the entire journey. Finally, future research can use quantitative methods to analyze the impact of the factors in our proposed framework and other AI-related factors.

8 | CONTRIBUTIONS AND CONCLUSION

Despite an existing body of literature that is rich in studies on creativity in marketing, research on creativity in marketing and AI is still in the early stages. To the best of our knowledge, the present systematic literature review is the first of its kind to provide an in-depth review of the literature on creativity in marketing and AI. Our research advances theory on creativity in marketing and AI by providing a state-of-the-art review of the existing theories, constructs, methodologies, and contexts. Regarding the theoretical implications, while there are systematic literature review articles on the role of AI in marketing (e.g., Chintalapati & Pandey, 2022; Mariani et al., 2022; Mustak et al., 2021; Schiessl et al., 2021; Verma & Kenji et al., 2021; Vlačić et al., 2021), our research provides an in-depth review of the role that AI plays in the creative aspects of marketing.

Another theoretical implication is our identification of the factors that have been explored in the context of creativity in marketing. We proposed an organizing framework (Figure 7) to guide researchers who work on this area in future. We suggest that the factors identified in our framework should be assessed again in future to understand how AI capabilities have led to changes in their significance. In addition, we suggest that researchers consider adopting a multi-theory perspective. Such an approach may give a much clearer picture of the potential and capabilities of AI in the context of creativity in marketing.

In addition, our review shows the need for qualitative and quantitative research in the area. For example, our proposed typology (Figure 4) of how the types of AI capability impact the various skills required for creativity in marketing can be tested empirically in future; for example, by conducting interviews with experts in marketing and experts in AI. In addition, researchers can conduct further quantitative research by integrating factors related to AI with the relevant factors in our proposed framework. Finally, our findings reveal a lack of cross-national and cross-cultural studies on creativity in marketing and AI. We recommend conducting such research, because it is likely to provide more accurate results for comparison.

Our research has several managerial implications. Our findings show that although firms are investing in using AI in different areas of marketing, many lessons still need to be learned if AI is to become a more broadly useful tool for marketers. Firms should focus on balanced augmentation—instead of automation—in which the capabilities of humans and AI can be combined to obtain the best results.

Our proposed typology of AI capabilities and the skills required for creativity in marketing can assist practitioners and firms to understand the areas where AI can excel as a tool for use in creativity and marketing.

As the marketing landscape continues to change rapidly due to advanced digital technologies, firms should carefully consider how and where creativity should be applied, recognizing that this may well extend beyond the contexts of advertising or product and service design. More specifically, firms should identify the areas (touchpoints) in the customer journey that most require creativity. For example, areas such as content marketing, social listening, chatbots, and digital assistant conversational content would greatly benefit from a balanced augmentation of creativity. The type and level of creativity needed in these areas may be very different from those pertaining to traditional methods of marketing. Hence, the new skills required for creativity among employees may also be different. For example, given the current capabilities of AI, companies should focus on using AI-assisted creativity to augment employees' empathy, verbal communication, emotional intelligence skills, and ability to handle new and complex situations: areas in which AI does not currently excel. This is expected to change as the technology advances further.

Furthermore, adopting AI in business will require firms to maintain a good standard of resources: both the latest technology and skilled employees. Training and hiring creative individuals who are knowledgeable about this technology (AI, machine learning, and deep learning) would represent a great leap forward for the corporate world. In addition, firms need to ensure that their potential employees have the willingness and curiosity needed to go beyond the current limits as human intuitive reasoning is combined with the accuracy and precision of machines. AI technology can assist with developing more effective marketing strategies, enhancing the customer journey, and transforming how firms attract, nurture, and convert prospects.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article, as no data sets were generated or analyzed.

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How to cite this article: Ameen, N., Sharma, G. D., Tarba, S., Rao, A., & Chopra, R. (2022). Toward advancing theory on creativity in marketing and artificial intelligence. *Psychology & Marketing*, 39, 1802–1825.

<https://doi.org/10.1002/mar.21699>