IJSER
ISSN: 2149-5939

International Journal of Social Sciences and Education Research
Online, https://dergipark.org.tr/tr/pub/ijsser
Volume: 11(1), 2025

The impact of AI-supported marketing capabilities and analytics on SMEs' customer agility and marketing performance

Fatma Demirağ[1]

[1] *Corresponding author, Kütahya Dumlupınar University, Electronic Commerce and Management, Kütahya, Türkiye, Email: fatma.demirag@dpu.edu.tr, ORCID: https://orcid.org/0000-0001-7520-6706*

Article Info

Research Article

Received: 14 December 2024
Revised: 10 February 2025
Accepted: 9 March 2025

Keywords:
AI-supported marketing capabilities,
Marketing analytics,
Customer agility,
Marketing performance

Abstract

This research examines the impact of marketing analytics and artificial intelligence applications on customer agility and marketing performance in businesses that adopt e-commerce. In this quantitative study, data were collected through a questionnaire. Data collected from 227 managers online were analyzed using the Smart PLS method. The study concluded that marketing analytics and AI-supported marketing capabilities affect customer agility and marketing performance. It is also concluded that customer agility has an impact on marketing performance. In addition, the results show that customer agility is a mediator of the effects of AI-supported marketing capabilities and analytics on marketing performance. It offers concrete suggestions for businesses, facilitating decision-making processes, and demonstrates how digital marketing strategies can be employed more effectively. The study also makes an academic contribution by analyzing the relationship between digital transformation and marketing capabilities, thus guiding future research.

1. Introduction

Businesses focus on data to optimize performance and make informed decisions. Because data is driving the economy by providing meaningful insights into today's business world (Hossain et al., 2022: 239), businesses are increasingly turning to big data to gain a deeper understanding of their customers, competitors, and markets to achieve success (Lin & Eng, 2024: 418). SMEs, which are small and medium-sized enterprises, are businesses that need to grow further and gradually expand their activities in the markets. The success of SMEs depends on effective coordination and communication that can be improved through advanced solutions such as CRM systems, data analytics, and digital platforms (Baabdullah et al., 2021: 254).

SMEs often use various technologies to analyze marketing data and gain market insights. For practitioners, digital technologies can be used to make informed decisions about the most efficient use of marketing resources, identify and retain customers who are likely to be profitable and coordinate demand and supply (Rizvanovi´c et al., 2023: 2). Factors such as the development of AI-powered marketing capabilities and the collection, maintenance, analysis and application of data through marketing analytics, an innovative culture, are methods used in the contemporary digital environment (Agag et al., 2024: 2). Marketing analytics and AI-supported capabilities development is a vital tool for SMEs seeking to reach new heights (Hossain et al., 2022:239). These factors affect the efficiency of SMEs' marketing strategies and e-commerce adoption.

E-commerce refers to a firm's ability to interact with its customers and business partners and conduct business over the Internet (Madanchian, 2024: 2). It allows firms to share information, increase effective communication, strengthen supply chain integration, and accelerate decision-making, thus increasing agility and gaining competitive advantage (Lin et al., 2020:1267). E-commerce organization SMEs are considered as capability. The conceptual framework is based on a resource-based view (RBV) and dynamic capability (DC) theory. Utilizing VRIO (valuable, rare, inimitable, and organized) resource theories. Dynamic capability theory provides an appropriate framework to analyze the impact of e-commerce capabilities on agility and performance gains. The theoretical

** The study received approval from the Kütahya Dumlupınar University's Social and Human Sciences Scientific Research and Publication Ethics Committee under protocol number* 290130*, dated 27.05.2024. It adhered to the guidelines outlined in the Declaration of Helsinki for human subjects research. All responsibility belongs to the author.*

To cite this article: Demirağ, F. (2025). The impact of AI-supported marketing capabilities and analytics on SMEs' customer agility and marketing performance. *International Journal of Social Sciences and Education Research*, 11 (1), 1-14. DOI: https://doi.org/10.24289/ijsser.1601570

framework of dynamic capabilities theory provides a foundation for our study, which aims to identify strategies organizations can use to develop dynamic capabilities and improve their performance through marketing initiatives (Lin et al., 2020 :1267). The Resource-Based View (RBV) is widely used to understand a firm's operational, supply chain, and marketing analytics capabilities and their impact on performance.

Dynamic capability (DC) theory. Dynamic capability (DC) theory, although introduced mainly in strategic management, also plays a vital role in different business contexts such as marketing, operations, innovation and international business. Dynamic capabilities aim to increase a firm's agility and gain competitive advantage, and it does so by focusing on the most significant change in the existing resource base (Hossain et al., 2022:239; Akter et al., 2022:1473). The theory shows the ability and skills of businesses to respond and adapt to constantly changing environments and processes due to macro and micro environmental conditions (Agag et al., 2024:4). It shows how the capabilities and skills of businesses adapt to the changing and evolving environment through dynamic capabilities (Hossain et al., 2022: 239; Wahab & Radmehr, 2024: 3). Dynamic capabilities also promote transformation through a proactive approach that differentiates and determines a firm's decision-making process from regular operational-level decisions (Ali et al., 2024: 27). This allows the firm to quickly and effectively adapt to changing conditions and gain a competitive advantage (Hossain et al., 2022: 239).

Resource-based view (RBV) The resource-based view (RBV) is considered a theory often used to analyze the performance of a business. Achieving a sustainable competitive advantage depends on the uniqueness of the firm's products, services, and brand equity. The combination of tradable and non-specific firm assets and resources requires the development of capabilities. Businesses achieve superior performance by acquiring and utilizing valuable, rare, inimitable, and irreplaceable resources. The resource-based view (RBV) explains how a company can use its resources best to achieve a sustainable competitive advantage (Khan et al., 2022: 3).

RBV is the heterogeneity of resources that enables a business to differentiate itself over time and offer distinctive products or services through practical use. Companies may face many uncertainties in gaining and sustaining competitive advantage in a highly competitive business environment. To achieve long-term competitive advantage, companies may need to create new resources and capabilities to differentiate themselves from their competitors (Weng et al., 2024: 3). Businesses' marketing analytics capability can also be important in achieving sustainable competitive advantage. Businesses can expand and differentiate themselves by using transferable internal capabilities such as marketing analytics. In this process, they can increase the chances of sustaining competitive advantage by flexibly adapting their decision-making processes and seizing new opportunities (Hossain et al., 2022:239).

Utilizing VRIO (valuable, rare, inimitable, and organized) resources differs from RBV in that valuable, rare, inimitable, and irreplaceable firm-specific resources focus on the processes by which firms integrate, build, and reconfigure internal and external capabilities to solve rapidly changing problems. Using valuable, rare, inimitable, and organized resources enables a firm to offer its buyers a unique product or service and thus gain a competitive advantage. Versatile resources are significant because they limit opportunities for the appropriate use of valuable, rare, inimitable, and organized resources (Wamba, 2022:3).

The theories discussed explain how firms can use their resources and capabilities more effectively to succeed in competitive environments. In particular, it emphasizes how analytical capability is essential based on firms' access to big data and artificial intelligence. In today's dynamic digital environment, analytical and technological capabilities such as big data and artificial intelligence and related capabilities such as marketing analytics are essential. It is stated that it is difficult for companies that do not have these capabilities to approach the market effectively. Especially in the digital market, data and AI capabilities provide unexplored opportunities by offering valuable decision-making insights. This can help firms gain a competitive advantage (Hossain et al., 2022:239; Zahoor & Lew, 2022: 1262).

This study assumes that marketing analytics capability is a firm's dynamic capability that can be further strengthened by adopting artificial intelligence and that it is a valuable, rare, inimitable, and organized resource. It enables businesses to identify, leverage, and adapt their processes to gain competitive advantage. When the studies in the literature are examined, Uğurlu et al., (2019) strategic agility, firm performance, Lin et al., 2020 e-commerce capabilities, business agility and performance, Hadjielias et al., (2022) customer value of digitalization, Tseng et al., (2022) data analysis tools agility and new product success, Chen et al., (2022) firm performance of digital technologies, Hossain et al., (2022) Marketing analytics and artificial intelligence adaptation to sustainable competitive advantage, Khan, et al, (2022) business analytics capabilities, firm agility and firm performance, Wamba (2022) artificial intelligence simulations on customer agility, performance, Çetinbaş (2023) knowledge

sharing, performance, agility, Zahoor and Lew (2023) adaptation to digital capabilities, international marketing capabilities, export performance, Liv et al, (2023) performance of artificial intelligence, Cetinbas (2023) agility in the impact of knowledge sharing on performance, Agag et al. (2024) marketing analytics, customer agility and customer satisfaction, Weng et al, (2024) IT capabilities on innovation and firm performance, Salah and Ayyash (2024) e-commerce adoption by SMEs and marketing performance, Zhan et al., (2024) IT marketing capabilities on Shareholder Reaction, Peretz-Andersson et al, (2024) AI application in manufacturing SMEs, Lin and Eng (2024) marketing analytics on business performance and new product innovation, Baabdullah et al. (2024) AI application in SMEs on performance, Wahab and Radmehr (2024) AI simulations on customer agility and business performance, Masialeti et al, (2024) agility and performance in business processes, Shukla et al., (2024) IT capabilities of enterprises, business capacity and operational performance and innovation, Özdemir et al., (2024) Customer analytics and new product performance, Arslan et al., (2024) marketing agility in entrepreneurship, Alghamdi and Agag (2024) marketing agility in competitive advantage.

In addition, Lin et al. (2020) state that new organizational capabilities should be examined by adding new organizational capabilities to businesses adopting e-commerce, Hossain et al. (2022) state that future studies should also define marketing analytics capability and artificial intelligence performance measures in different B2B sector contexts. Çalıl and Çallı (2021) the effects of digital maturity, Khan, et al., (2022) the study should be replicated in different countries Weng et al., (2024) the study should be applied to SMEs in different sectors such as service sector businesses, finance or professional services that use different technologies to develop and expand, Salah et al. (2024) how it can change or influence the link between other factors in the adoption of e-commerce, Zhan et al. (2024) the need to examine different variables that can affect performance, Zahoor and Lew (2023) the need to explore other concepts related to the study that can be effective, Chen et al, (2022) the necessity of studies on the impact on firm performance, Lin and Eng (2024); Masialeti et al. (2024) the need for more comprehensive studies on marketing analytics on marketing performance, Baabdullah et al, (2024) there is a need for studies in different areas of the application of artificial intelligence in SMEs towards performance, Wamba (2022) better understanding of the real impact of performance and its application in developed and less developed countries, Wahab and Radmehr (2024); Agag et al, (2024) Due to cultural and technological differences between countries, the study should be applied to different countries and developing economies, Shukla et al. (2024) suggest that other digital criteria should be adopted and primary data should be collected in different cultures, Arslan et al. (2024) indicate that the relationship between marketing agility performance in entrepreneurship should be examined.

Bawack et al. (2022), Fonseka et al. (2022), Kumar et al. (2023), Zhong (2023), and Barata at al. (2024) stated that there is a dearth of research on the adoption of AI in e-commerce for SMEs. They stated that more data on e-commerce and digitalization should be collected and analyzed to meet the needs and provide support to SMEs. Aljarboa (2024) noted that the limited understanding of how SMEs can use AI tools in e-commerce significantly affects their development and ability to gain a competitive advantage. He stated that more in-depth studies are needed to address the challenges, evaluate the opportunities, and provide recommendations through AI tools. Hokmabadi et al. (2024) highlight the lack of research on the role of digital transformation, especially for SMEs. Therefore, there appears to be a theoretical and practical gap in how analytical capability can be accelerated using AI to sense, capture, and reconfigure the market, especially for SMEs. Based on the research gaps, the research aims to determine the impact of AI-supported marketing capabilities and analytics on customer agility and the marketing performance of SMEs adopting e-commerce.

This research will contribute extensively to both theory and practice. The research contributes to the relationships between marketing analytics capabilities and AI. In addition to the work done in the literature, this study will show the impact of AI adoption. Furthermore, the study reveals ways the business can move toward e-commerce. In practice, managers of firms will learn from the research findings the key mechanisms of marketing analytics capability and AI adoption. They will be able to see the impact of marketing analytics strategies and AI on marketing performance to predict AI and sustainable competitive advantage.

To address these complex dynamics, this study aims to answer the following research questions:

- How AI-powered marketing capabilities impact customer agility in e-commerce adopters

- How does marketing analytics impact customer agility in e-commerce adopters?

- How does customer agility affect marketing performance in e-commerce adopters?

- Is there a mediating effect of customer analytics on the impact of AI-supported marketing capabilities and marketing analytics on marketing performance in e-commerce adopters?

2. Literature review

AI-Supported Marketing Capabilities: Businesses need marketing capabilities to increase their performance. Companies with strong marketing capabilities are better equipped to direct their marketing activities flexibly and effectively to adapt to evolving market needs. A firm with strong marketing capabilities can effectively utilize digital applications and transform its resources and insights into products with the most appropriate resources (Shukla et al., 2024: 125). AI technologies facilitate controlled and dynamic learning, enabling firms to adapt and thrive in competitive business environments (Drydakis, 2022: 1225). The adoption of AI can help businesses mitigate challenges and improve overall firm performance (Dwivedi et al., 2023: 2). AI capabilities are defined as the ability of a business to accurately interpret external data and achieve specific goals and tasks through learning and flexible adaptation (Baabdullah et al., 2021: 256).

It can strengthen marketing capabilities by facilitating the use of other resources through artificial intelligence operations. It is stated that AI can enable, facilitate or enhance high-level capabilities by combining with marketing capabilities (Manis and Madhavaram, 2023: 7). Businesses are investing in developing various capabilities, including artificial intelligence, to optimize their operations and maximize return on investment. By investing in AI and developing robust IT capabilities, firms can improve their performance, gain competitive advantage and achieve operational excellence (Peretz-Andersson et al., 2024: 11). The integration of AI into business strategies is not only a trend but also a necessity for firms aiming to succeed in a modern, data-rich business environment (Hossain et al., 2022:239).

These capabilities are critical enablers of firm agility by facilitating rapid response to changes in highly competitive environments. They play an essential role in developing the competence required for organizational agility, which is the ability to perceive and seize operational opportunities and respond to urgent internal and external changes (Wamba, 2022:4). The role of AI in e-commerce marketing capabilities is diverse. First, it plays a key role in processing data accurately and efficiently. Second, it increases website satisfaction by helping customers meet their needs and preferences. Third, it supports various aspects of e-commerce, including product marketing, payments, and shipping. Finally, it benefits the marketplace, customer behavior, and business performance by enabling seamless and effortless transactions. Therefore, the e-commerce space can benefit from AI in many ways. These include increased sales, sales forecasting, enhanced security, fraud prevention, business management, and essential services. As a result, it helps SMEs improve their capabilities and achieve optimum value and competitive advantage (Aljarboa, 2024:3).

Marketing Analytics requires new methodologies and applications to analyze large and complex datasets that are difficult to process with traditional techniques (Khan et al., 2022: 6). Within business analytics, marketing analytics enables businesses to collect, manage, and analyze the data necessary to make effective marketing decisions. This process supports gaining competitive advantage by using the information obtained from customer and market data (Agag et al., 2024: 3). Marketing analytics enables businesses to make data-driven decisions by using model-supported methods to improve marketing decision-making (Ashrafi et al., 2019:2). This technology helps companies to improve decision-making processes and increase business performance by organizing and managing marketing-oriented data from a data-rich environment. Marketing analytics provides businesses with enhanced visibility and decision-making capabilities by developing appropriate metrics and analytical methods (Akter et al., 2019: 86; Hossain et al., 2022:239).

Marketing analytics provides information about market changes and insights into market data. It emphasizes that businesses should strengthen data-driven decision-making processes (Khan et al., 2022: 6). These skills can be gained through various means or tacit knowledge from real-life experiences. Marketing models and statistical applications are essential in developing marketing analytics skills. By determining a data-driven approach, businesses can gain a competitive advantage by interpreting the data obtained through marketing analytics and making the right decisions (Lin & Eng, 2024: 421).

Customer agility: The ability of a system to meet customer needs quickly, efficiently, and consistently is a critical factor in maintaining competitive advantage (Agag et al., 2024: 3). Agility is the organization's ability to handle and respond to unexpected changes quickly and efficiently (Uğurlu et al., 2019: 94; Bozkurt, 2022: 102). The concept was first addressed as processes adopted in production in the 1990s (Dinç & Kazan, 2023: 765). Customer agility is defined as the ability to recognize the ever-changing demands of customers, respond to them quickly and effectively, and meet these demands effectively (Ashrafi et al., 2019:3). It is also defined as an organization's ability to perceive and respond quickly to customer-oriented opportunities (Khan et al., 2022: 5). Customer agility also allows organizations to gain valuable market insights and analyze competitive opportunities. By

leveraging customer feedback, businesses can better understand customer needs and tailor their products and services accordingly. This makes businesses' survival and growth easier (Wahab & Radmehr, 2024: 4).

Hokmabadi et al. (2024) express the trending topics of recent times as the acceptance of agility as the basic strategic response to market uncertainties. This capability supports businesses' innovation and competitive actions because companies need to quickly understand customer expectations and adapt to changing market conditions (Khan, 2020:2). Customer agility stands out as the ability of companies to quickly identify customer preferences and behaviors by analyzing customer interactions and make quick decisions based on this information (Akter et al., 2022: 87-88). Organizations can increase customer experience, ensure customer satisfaction, and gain a competitive advantage (Wamba 2022: 4).

Marketing Performance: Marketing performance is critical due to its scope. It is seen as the driving force of today's businesses' productivity, returns, future sales, and thus profit growth. Marketing performance and its determinants, which are also seen as an essential criterion in the general evaluation of business performance, are critical (Clark, 1999: 712). Marketing performance is the marketing activity that affects variables such as revenue growth, profitability, customer loyalty, interaction, and communication. Examining the variables that affect these concepts is essential for businesses (Schramm-Klein & Morschett, 2006: 280).

3. Conceptual framework and hypotheses development

3.1. AI-supported marketing capabilities and marketing analytics on customer agility

Customer agility is crucial for firms aiming to increase competitiveness and drive innovation. By leveraging customer insights and maintaining a flexible and responsive approach to market opportunities, firms can achieve sustained success and resilience in a dynamic business environment. Organizations increasingly rely on information technologies to perceive and respond effectively to customer opportunities and threats (Giacosa et al., 2022:2). To effectively implement customer agility, companies must invest in technology. They must leverage advanced analytics, big data, and artificial intelligence to collect and analyze customer data in real time (Wamba, 2022: 5).

When the studies in the literature on artificial intelligence, marketing analytics, and customer agility are examined, some researchers highlight the following: the relationship between the use of artificial intelligence in marketing and consumer acceptance (Kamran, 2021), the effect of marketing analytics and artificial intelligence adaptation on sus-tainable competitive advantage (Hossain et al., 2022), the impact of digital technologies on firm performance (Chen et al., 2022), the effect of artificial intelligence on performance (Liv et al., 2023), the impact of market analytics on knowledge and innovation (Cadden et al., 2023), the business value of marketing analytics success (Akter et al., 2023), the impact of marketing analytics on new product development (Cheng & Shiu, 2023), the mediating effect of adaptation to digital capabilities on the impact of strategic comfort on international marketing capabilities and export performance (Zahoor & Lew, 2023), the impact of new product innovation (NPI) for the effects of marketing analytics on business performance (Lin & Eng, 2024), the impact of IT capabilities on innovation and firm performance (Weng et al, 2024), the impact of IT capabilities on adaptation and marketing performance in e-commerce adoption by SMEs (Salah & Ayyash 2024), the impact of IT marketing capabili-ties on Shareholder Reaction (Zhan et al., 2024), the impact of artificial intelligence practice in SMEs on performance (Baabdullah et al., 2024), the impact of customer analytics capacity on business performance (Mehrabi et al., 2024), the impact of IT capabilities of enterprises on business capacity and operational performance and innovation (Shukla et al., 2024), the relationship between customer analytics and new product performance (Özdemir et al., 2024).

Based on the studies conducted in the literature, H1 and H2 hypotheses were established.

H1A: AI-supported marketing capabilities affect customer agility

H1B: AI-supported marketing capabilities affect marketing performance

H1C: AI-supported marketing capabilities affect customer agility and marketing performance

H2A: Marketing analytics affects customer agility

H2B: Marketing analytics affects marketing performance

H2C: Marketing analytics affects customer agility and marketing performance

3.2. Customer agility on marketing performance

Customer agility is a critical organizational capability that significantly affects firm performance. By leveraging artificial intelligence and other advanced technologies, firms can increase their agility, better meet customer demands and achieve superior business results (Akter et al., 2022: 88). Customer agility enables firms to continuously adapt to customer-driven opportunities by responding proactively and launching new promotions and services/products to increase profitability, industry position and competitive advantage (Hadjielias et al., 2022:2). Previous research has also shown that customer agility can predict the success of new products and accelerate the way and speed at which organizations identify and exploit innovative opportunities to create a new product/service that improves organizational performance (Wahab & Radmehr, 2024: 5).

When the studies in the literature are examined; Lin et al., (2020) the effect of e-commerce capabilities on business agility and performance, Khan (2020) the relationship between marketing agility and firm performance, Çalıl and Çallı (2021) the effect of business agility on firm performance, Khan, et al, (2022) the impact of business analytics capabilities on firm agility and firm performance, Hadjielias et al., (2022) the mediating role of agility in customer value creation of digitalization, Liang et al., (2022) the impact of market analytics on market agility and business performance, Tseng et al, (2022) the use of data analysis tools agility and new product success, Wamba (2022) the impact of artificial intelligence simulations on business and customer agility and the impact of agility on performance, Alghamdi and Agag (2024) the relationship between marketing agility and competitive advantage, Masialeti et al, (2024) the impact of artificial intelligence applications on business processes agility and performance, Wahab and Radmehr (2024) the effect of artificial intelligence simulations on customer agility and business performance, Arslan et al. (2024) marketing agility in entrepreneurship, Tarn and Wang (2023) the relationship between data analysis, marketing knowledge and marketing agility. Based on the studies conducted in the literature, hypothesis H3 was constructed.

H3: Customer agility affects marketing performance.

4. Methodology

The study received approval from the Kütahya Dumlupınar University's Social and Human Sciences Scientific Research and Publication Ethics Committee under protocol number 290130, dated 27.05.2024. It adhered to the guidelines outlined in the Declaration of Helsinki for human subjects research.

Figure 1 below depicts the research model showing the hypotheses.

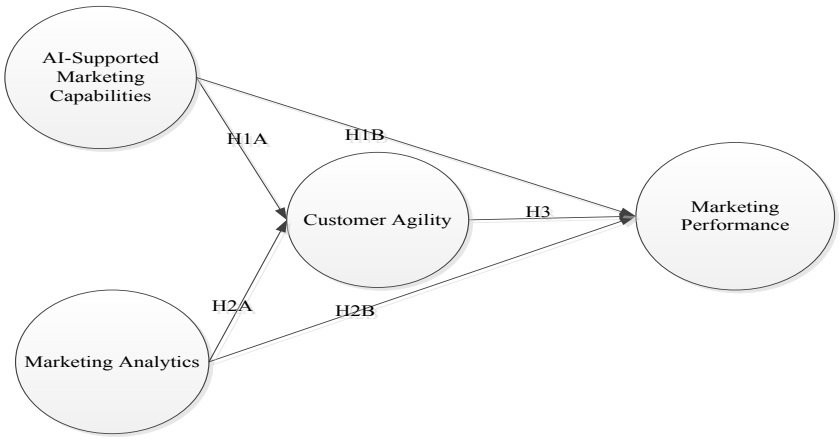

Figure 1. Research model

4.1. Research design, sampling, and data collection

The study was designed using a quantitative research method. To determine the universe of the study, e-commerce sites registered in the ETBIS system in Turkey were taken as a basis. It is seen that 37,546 businesses registered in the ETBIS system at the beginning of 2024 when the data was collected (www.eticaret.gov.tr/). Small and medium-sized enterprises were taken into account in the study. SMEs are considered the backbone of economies due to their ability to adapt to cyclical changes, innovative frameworks, and contributions to local markets. Research shows that SMEs in Turkey significantly contribute to the economy, making up 99.8% of total businesses,

72% of employment, 49.4% of total turnover, 42.7% of production value, and 41.3% of added value (Yılmaz & Uçkun, 2025: 25). In the study, convenience sampling sampling was used as a data collection method. SMEs were reached by querying the site registered in the Etbis system without restrictions on the province, district, sector, or geographical borders.

A survey was chosen as the data collection tool. The survey mainly targets marketing department managers or business managers who are thought to know the concepts discussed in the study. The respondents' positions in the organization are business owners, business partners, sales managers, and senior managers. The questionnaires were sent to the respondents online. The online survey was e-mailed to approximately 1000 participants registered in the Etbis system. The ten-fold rule for each statement used to measure the construct is a method applied to a specific latent construct in the model (Hair et al., 2011). In terms of sample size requirements, it is seen that a total of 180 participants is sufficient. In the study, SmartPLS 4.0 software was used to analyze the data using the PLS-SEM method.

4.2. Measures

A literature review examined the impact of marketing analytics and artificial intelligence applications on customer agility and marketing performance in e-commerce adopters. A questionnaire was used to obtain the data, divided into two sections. The first section includes the demographic characteristics of the participants, and the second section consists of the statements of the selected variables. The items were measured using a five-point Likert scale. The measurement questions were adapted through an extensive literature review. The items were slightly modified to fit the context. The scale was constructed by taking four statements from Salah and Ayyash (2024), four statements from marketing analytics Hossain et al., (2022), five statements from Agag et al., (2024), four statements from customer agility Khan et al., (2022), Agag et al., (2024), five statements from marketing performance Khan et al., (2022); Salah and Ayyash, 2024). Three statements from marketing performance, two from AI-supported marketing capabilities, and three from marketing analytics were excluded from the analysis due to very low factor structures.

4.3. Data analysis and results

4.3.1. Descriptive statistics

Table 1 shows the demographic values of the participants. It is seen that 30% of the participants are female and 70% are male. In the distribution of the participants by age, 34.4% were between 30 and 40 years old. The distribution of the participants in terms of their level of education shows that 42.3% of the participants have a bachelor's degree. Regarding the number of employees in the enterprises of the participants, it was seen that 51.1% were between 1 and 51 people. Participants operate in the service sector at a rate of 35.7%. 54.7% of the participants continue their activities on a national scale.

Table 1. Participant information

		Frequency	Percent
Gender of the participant	Woman	68	30
	Male	159	70
Age of the participant	Under 30 years old	77	34
	30-40 years old	78	34,4
	40 years and over	72	31,7
Training of the Participant	High School	80	35,3
	Licence	96	42,3
	Postgraduate	51	22,5
Number of employees of the enterprise	1-50 people	116	51,1
	51-250	39	17,2
	250 and more	72	31,7
Sector in which the business operates	Service	81	35,7
	Production	75	33
	Service and production	71	31,3
Market structure of the business	National	124	54,7
	International	47	20,7
	National and international	56	24,7
Total		227	100

4.3.2. Assessment of the measurement model

Values that meet the construct, convergent, and discriminant validity criteria were examined for the measurement model. Cronbach's alpha and composite reliability (CR) values are considered to evaluate construct validity and are expected to be 0.70 and above (Hair et al., 2012). Among the results, only the marketing analytics value was 0.602. Cronbach's alpha values are 0.800, 0.805, and 0.932. CR values are between 0.768 and 0.952, higher than the recommended value of 0.70. Therefore, as shown in Table 2, it can be said that the measurement model meets the internal reliability criterion.

Examining the AVE and item loading values is recommended to evaluate the convergent validity of the structures. AVE values are expected to be 0.50 and above, and item loading values are expected to be 0.70 and above (Fornell & Larcker, 1981). When Table 2 is examined, it is seen that AVE>0.50. The loading values of the variables were determined to be 0.598 for an expression containing marketing analytics. The fact that the other expressions were >0.7 indicates that all the items showed reliability (Fornell & Larcker, 1981).

Table 2. Measurement scale's psychometric properties

Items/ Factor	Loadings	Cronbach's alpha	rho_a	rho_c	AVE
VAR00010 <- AI- Supported _Marketing Capabilities	0,891	0,800	0,829	0,908	0,832
VAR00012 <- AI- Supported _Marketing Capabilities	0,932				
VAR00014 <- Marketing Analytics	0,981	0,602	1,577	0,786	0,660
VAR00015 <- Marketing Analytics	0,598				
VAR00022 <- Customer Agility	0,839	0,932	0,938	0,952	0,833
VAR00024 <- Customer Agility	0,942				
VAR00025 <- Customer Agility	0,927				
VAR00026 <- Customer Agility	0,939				
VAR00030 <- Marketing Performance	0,907	0,805	0,810	0,911	0,837
VAR00031 <- Marketing Performance	0,923				

The HTMT criterion was used to assess discriminant validity. As shown in Table 3, all HTMT values are below the threshold value of 0.85, indicating discriminant validity (Henseler et al., 2016).

Table 3. Heterotrait-monotrait ratio (HTMT) – Matrix

	AI-supported marketing capabilities	Customer agility	Marketing analytics	Marketing performance
AI- supported marketing capabilities				
Customer agility	0,567			
Marketing analytics	0,385	0,396		
Marketing performance	0,614	0,589	0,653	

Furthermore, in Table 4, the Fornell-Larcker criterion is used to test the discriminant validity of the measurement model. For a good discriminant validity of the measurement model, we consider the square root of the AVE for each variable and the corresponding correlation coefficients with other variables (Fornell & Larcker, 1981).

Table 4. Fornell-Larcker criterion

	AI-supported marketing capabilities	Customer agility	Marketing analytics	Marketing performance
AI- supported marketing capabilities	0,912			
Customer agility	0,501	0,913		
Marketing analytics	0,113	0,288	0,812	
Marketing performance	0,494	0,520	0,620	0,915

4.3.3. Assessment of the structural model

The beta (β), R^2, and corresponding t-values of the structural model should be evaluated using a bootstrapping procedure with 5,000 samples. It is also recommended to interpret the values of effect sizes (f^2) and VIF ratio (Hair et al., 2017). Table 5 shows the structural model evaluation. Hypothesis H1A is supported. AI-supported marketing capabilities affect customer agility (β = 0.474 t = 11,343). The data also supported hypothesis H1B. AI-supported marketing capabilities affect marketing performance (β = 0.343, t = 12.575). Similarly, the data supported hypothesis H3. Customer agility impacts marketing performance (β = 0.202, t = 2.925). The analysis results also supported hypothesis H2A, that marketing analytics impacts customer agility (β = 0.234, t = 4,053). Finally, the data also supported hypothesis H2B. Marketing analytics impacts marketing performance (β = 0.524, t = 16,310).

Table 5. Hypotheses testing and structural model results

	B	f2	VIF	LLCI	ULCI	T	P	Result
H1A:AI Supported marketing capabilities -> Customer agility	0,474	1,013	0,319	0,388	0,553	11,343	0,000	Supported
H1B: AI Supported marketing capabilities -> Marketing performance	0,334	1,336	0,206	0,358	0,492	12,575	0,000	Supported
H3: Customer Agility -> Marketing performance	0,202	1,438	0,070	0,063	0,332	2,925	0,003	Supported
H2A:Marketing Analytics -> Customer agility	0,234	1,013	0,078	0,117	0,343	4,053	0,000	Supported
H2B: Marketing analytics -> Marketing performance	0,524	1,092	0,622	0,504	0,641	16,310	0,000	Supported

In addition, when the R-square ratios are analyzed, the ratio of customer agility is 0.305, and the ratio of marketing performance is 0.595.

In addition to testing the direct effects in the proposed research model, various mediation effects were also tested in the study. The mediation test used multiple techniques (Baron & Kenny, 1986). The study analyzed indirect effects first, followed by direct effects. Table 6 shows that two specific indirect effects and the direct impact are significant. When Table 6 is examined, it is seen that hypothesis H1C is confirmed. It is seen that AI-supported marketing capabilities affect customer agility and marketing performance. (β = 0.096 t = 2,919). The data also supports the H2C hypothesis. Marketing analytics impacts customer agility and marketing performance (β = 0.047 t = 2,592).

Table 6. Mediating effects

		β	LLCI	ULCI	SD	T	P	Result
H1C	AI- Supported _Marketing Capabilities -> Customer Agility -> Marketing Performance	0,096	0,030	0,160	0,033	2,919	0,004	Supported
H2C	Marketing Analytics -> Customer Agility -> Marketing Performance	0,047	0,014	0,085	0,018	2,592	0,010	Supported

5. Discussions and conclusions

This study examines the impact of AI-supported marketing technologies and marketing analytics on customer agility and marketing performance. The results obtained support all hypotheses. According to the research results, AI-supported marketing capabilities affect customer agility and marketing performance. This result is similar to other research results in the literature. In the studies conducted in the literature, Liv d., (2023), artificial intelligence has an impact on performance, Salah and Ayyash (2024) IT capabilities affect adaptation and marketing performance in the adoption of e-commerce by SMEs, Baabdullah et al., (2024) Artificial intelligence practice in SMEs has an impact on performance, Zhan et al., (2024) concluded that IT marketing capabilities have Shareholder Reaction effect, Kamran (2021) *concluded that* the use of artificial intelligence in marketing has a relationship with consumer acceptance, Zahoor and Lew (2023) concluded that strategic comfort has a mediating effect of adaptation to digital capabilities in the impact of international marketing capabilities and export performance. The findings show how AI-supported marketing capabilities affect business performance and customer agility. In light

of these conclusions, e-commerce businesses will be able to capture the consumer's imagination more easily by monitoring consumer behavior through artificial intelligence applications. In addition, with the artificial intelligence-supported applications used, they will be able to benefit by transferring the information about the product and the value it provides to their consumers more quickly. For practitioners, AI-powered marketing applications can also be used to monitor and manage the inventory of an online retailer. Practitioners will also be able to improve their marketing performance when they manage the processes correctly.

According to the research results, marketing analytics affect customer agility and marketing performance. This result is similar to other research results in the literature. In the studies conducted in the literature, Hossain et al. (2022) found that marketing analytics and artificial intelligence adaptation have an impact on sustainable competitive advantage, Cheng and Shiu (2023) found that marketing analytics has an effect on new product development, Akter et al. (2023) found that marketing analytics success has an impact on business value, Lin and Eng (2024) found that marketing analytics has an impact on new product innovation for its effects on business performance, Cadden et al, (2023) that market analytics has an effect on knowledge and innovation, Tarn and Wang (2023) that data analysis has a relationship with marketing knowledge and marketing agility, *Chen et al. (2022) that digital technologies have an impact on firm performance,* Tseng et al. (2022) that the use of data analysis tools has an impact on agility and new product success, Özdemir et al. (2024) that customer analytics and new product performance are related, Mehrabi et al. (2024) that customer analytics capacity has an impact on business performance. In today's digital age, marketing analytics performed by e-commerce businesses can help the manager make the right decision at the right time. It can help to predict the appropriate actions to be taken for the betterment of the business. Marketing analytics is also essential in realizing all the advantages of the business. Therefore, the positive impact of data-driven cultures on businesses' customer agility and marketing performance should be considered necessary for all businesses.

According to the research results, customer agility affects marketing performance. This result is similar to other research results in the literature. In the studies conducted in the literature, Lin et al. (2020) concluded that e-commerce capabilities have an impact on business agility and performance, Wamba (2022) concluded that artificial intelligence simulations affect business and customer agility and agility has an effect on performance, Hadjielias et al. (2022) concluded that agility has a mediating role in digitalization in creating customer value, Alghamdi and Agag (2024) concluded that marketing agility is related to competitive advantage. The study defined customer agility as a determinant of marketing performance. It also shows that customer agility is a partial mediator of marketing performance. Through marketing analytics and AI-powered marketing applications, businesses can quickly discover additional needs of our customers that they are unaware of. Customer agility is critical in processes such as continuously anticipating customers' needs without them realizing it, predicting key trends to gain insight into what users in the current market will need in the future, and developing new ways of looking at customers and their needs. These processes increase business performance.

According to the results of the study, customer agility has a mediating effect on AI-supported marketing capabilities and marketing analytics in affecting marketing performance. The results obtained from the survey are similar to those of the literature. In the studies conducted in the literature, Liang et al., (2022) market analytics have an impact on market agility and business performance, Khan et al., (2022) business analytics capabilities have an effect on firm agility and firm performance, Shukla et al., (2024) IT capabilities of businesses have an impact on business capacity and operational performance and innovation, Weng et al., (2024) concluded that IT capabilities affect innovation and firm performance, Wahab and Radmehr (2024) concluded that artificial intelligence simulations affect customer agility and business performance, Masialeti et al., 2024 concluded that artificial intelligence applications have an impact on agility and performance on business processes.

The study shows that businesses' AI-supported applications and marketing analyses mediate agility processes such as sensing our customers' needs before they realize it, responding quickly when something important happens to them, and increasing marketing performance. Dynamic capabilities address the ability of businesses to adapt to changing environmental conditions, capture opportunities, and gain competitive advantage (Demir & Demir, 2023). As the dynamic capabilities theory expresses, companies can achieve tremendous marketing success when AI and analytical systems are combined with customer agility. This relationship has significant strategic implications, especially for companies in the digital transformation process. According to the RBV perspective, customer agility is a critical resource that provides companies with a competitive advantage. However, customer agility is also an intermediary mechanism that increases the impact of AI-supported marketing capabilities and analytics on marketing performance. AI and analytics alone do not bring high marketing performance; companies that can quickly implement the insights provided by these technologies benefit more. Therefore, businesses should view

customer agility as a strategic resource from the RBV perspective and achieve a competitive advantage using AI and marketing analytics technologies. As a result, with the support of the theories discussed in this study, It is thought that businesses can benefit from developing the necessary capabilities, strategies, and collaboration mechanisms to anticipate, adapt, and develop when faced with disruptions due to the rapid pace of technological change, evolving customer expectations and changing market conditions. This study can respond to the need for a comprehensive understanding of the challenges and solutions SMEs or newly established companies face.

5.1. Theory, practice, economic and social implications

The research results have theoretical, practical, economic, and societal implications. Theoretically, this study contributes to the Resource-Based View (RBV), Dynamic Capability (DC) Theory literature. VRIO (valuable, rare, inimitable, and organized) resource theories contribute to the literature on marketing analytics and AI-enabled marketing capabilities. The study better explains how customer agility integrates with technology-based marketing approaches. It has been revealed that customer agility plays a transformative role in data-driven marketing and AI. Based on the theories, the explanatory power and generalizability of the model have been further improved. The study is considered to help identify different research topics for future AI and marketing analytics studies and develop effective research.

Practically, the study provides insights into the importance of using AI-enabled marketing applications and marketing analytics for businesses adopting e-commerce. It includes information on using AI marketing applications and customer analytics for real-time monitoring and analysis of customer data and provides information to identify and respond to market changes and customer needs quickly. It emphasizes the importance of AI-powered marketing capabilities and marketing analytics in increasing business customer agility. Practitioners should focus on the resources required for effective AI assimilation to improve their capabilities. Practitioners should prioritize creating and developing AI assimilation capabilities to enhance customer agility. It will enable practitioners to benefit from customer agility and achieve more excellent value for themselves and their customers. This will also facilitate the improvement of marketing performance.

When the study results are considered from an economic perspective, It will encourage the spread of customer-centric business models with data analytics and AI-powered solutions. Digital transformation investments will contribute to sustainable growth by increasing the economic efficiency of companies. As a result, the results obtained from the study regarding the increase in growth and profitability rates of businesses can help businesses increase their revenues and reduce their costs. More effective market forecasting and demand management can reduce inventory costs and marketing waste. In addition, adopting new marketing technologies will create new job opportunities for data analysts, AI experts, and digital marketers. Finally, when the study results are evaluated from a social perspective, customer agility and AI-based analytics enable faster, more personalized, and more efficient service to consumers. Better customer experiences can increase customer loyalty and facilitate long-term customer relationships. AI-enabled marketing can help small businesses compete with larger companies, further balancing economic opportunities.

5.2. Limitations of the study and future research opportunities

This study has some limitations that should be considered in future studies. First of all, while the use of convenience sampling in the study allowed the research to be conducted quickly and cost-effectively, it created limitations such as sector limitations, narrow geographical scope, digitalization differences, and limited company size in generalizability. The sample size should be increased in future studies using different sampling and data collection methods (Surveys, in-depth interviews, case studies, etc.). Statistically, significant results should be obtained by working with more businesses. Second, the sample is limited to enterprises in a specific geographical region. Research findings may vary depending on geographic, regional, and cultural contexts. Regarding geographic scope, firms' investment levels in AI-supported marketing capabilities and marketing analytics, as well as the usage rates of technologies, will create differences in research results. The concepts covered in the study may gain importance in different ways in different regions. For example, in markets with intense competition, customer agility may be a critical factor for marketing performance. However, in less competitive markets, the impact of customer agility may be lower. Culturally, dimensions such as cultural differences in consumer behavior, cultural effects on data privacy and AI use, individualism or collectivism orientations, and uncertainty avoidance behavior create differences. Therefore, to generalize the research results, they must be examined in different geographic, regional, or cultural contexts. Third, a further longitudinal study could be conducted to provide more insights into the causal relationship between AI-supported marketing capabilities, market analytics and customer agility.

Fourth, this study reveals that e-commerce adoption can directly impact marketing performance by increasing customer agility. Therefore, further research on the effects of variables such as industry, process, time, or relevant technology is recommended for businesses that adopt e-commerce or want to incorporate it into their processes. To generalize the effect of the variables discussed in the study on marketing performance, SMEs in different sectors (service, manufacturing, retail information, etc.) should be examined. Since each industry will have different dynamics, the effect of the variables discussed in each can be studied comparatively. Fifth, this study proposes to address concepts such as the impact on customer agility or business performance by including different capabilities of businesses other than AI-supported marketing capabilities and marketing analytics. In future studies, comparisons can be made by selecting a certain number of SMEs per sector, by including businesses of different sizes (micro, small, and medium-sized enterprises), or by analyzing firms adopting different marketing technologies (firms with high and low use of artificial intelligence).

References

Agag, G., Shehawy, Y. M., Almoraish, A., Eid, R., Lababdi, H. C., Labben, T. G., & Abdo, S. S. (2024). Understanding the relationship between marketing analytics, customer agility, and customer satisfaction: A longitudinal perspective. *Journal of Retailing and Consumer Services,* 77, 1-13.

Akter, S., Hani, U., Dwivedi, Y. K., & Sharma, A. (2022). The future of marketing analytics in the sharing economy. *Industrial Marketing Management,* 104, 85-100.

Akter, S., Bandara, R. J., & Sajib, S. (2021). How to empower analytics capability to tackle emergency situations?. *International Journal of Operations & Production Management,* 41(9), 1469-1494.

Akter, S., Bandara, R., Hani, U., Wamba, S. F., Foropon, C., & Papadopoulos, T. (2019). Analytics-based decision-making for service systems: A qualitative study and agenda for future research. *Int. Journal of Information Management*, 48, 85-95.

Akter, S., Hossain, M. A., Tarba, S. Y., & Leonidou, E. (2023). How does quality-dominant logic ensure marketing analytics success and tackle business failure in industrial markets?. *Industrial Marketing Management,* 109, 44-57.

Alghamdi, O., & Agag, G. (2024). Competitive advantage: A longitudinal analysis of the roles of data-driven innovation capabilities, marketing agility, and market turbulence. *Journal of Retailing and Consumer Services*, 76, 1-17.

Ali, S., Tian, H., Wu, W., Ali, S., Kumail, T., & Saif, N. (2024). Marketing capabilities, market ambidexterity and product innovation outcomes: A yin-yang of inside-out and outside-in. *Industrial Marketing Management,* 118, 27-43.

Arslan, A., Kamara, S., Tian, A. Y., Rodgers, P., & Kontkanen, M. (2024). Marketing agility in underdog entrepreneurship: A qualitative assessment in post-conflict Sub-Saharan African context. *Journal of Business Research,* 173, 1-18.

Ashrafi, A., Ravasan, A. Z., Trkman, P., & Afshari, S. (2019). The role of business analytics capabilities in bolstering firms' agility and performance. *International Journal of Information Management*, 47, 1-15.

Baabdullah, A. M., Alalwan, A. A., Slade, E. L., Raman, R., & Khatatneh, K. F. (2021). SMEs and artificial intelligence (AI): Antecedents and consequences of AI-based B2B practices. *Industrial Marketing Management,* 98, 255-270.

Barata, S. F., Ferreira, F. A., Carayannis, E. G., & Ferreira, J. J. (2024). Determinants of E-commerce, artificial intelligence, and agile methods in small-and medium-sized enterprises. *IEEE Transactions on Engineering Management*. 1-12.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.

Bawack, R. E., Wamba, S. F., Carillo, K. D. A., & Akter, S. (2022). Artificial intelligence in E-Commerce: a bibliometric study and literature review. *Electronic markets*, *32*(1), 297-338.

Bozkurt, S. (2022). The Effect of Perceived Social Media Agility on Customer Engagement Behavior: The Regulatory Role of Social Media Usage Intensity. *Social Inventor Academic Review*, 3(1), 96-122.

Cadden, T., Weerawardena, J., Cao, G., Duan, Y., & McIvor, R. (2023). Examining the role of big data and marketing analytics in SMEs innovation and competitive advantage: A knowledge integration perspective. *Journal of Business Research*, 168, 1-15.

Çallı, B. A., & Çallı, L. (2021). Relationships between digital maturity, organizational agility, and firm performance: an empirical investigation on SMEs. *Business & Management Studies: An International Journa*l, 9(2), 486-502.

Cetindas, A. (2023). Information Sharing, Agility and Customer Performance in Supply Chains: A Mediation Model. *Turkish Journal of Social Sciences Research,* 8(2), 134-145.

Chen, D., Esperança, J. P., & Wang, S. (2022). The impact of artificial intelligence on firm performance: an application of the resource-based view to e-commerce firms. *Frontiers in Psychology*, 13, 1-10.

Cheng, C. C., & Shiu, E. C. (2023). The relative values of big data analytics versus traditional marketing analytics to firm innovation: An empirical study. *Information & Management*, 60(7), 1-9.

Clark, B. H. (1999). Marketing performance measures: History and interrelationships. *Journal of marketing management,* 15(8), 711-732.

Demir, Ş. Ş., & Demir, M. (2023). Professionals' perspectives on ChatGPT in the tourism industry: Does it inspire awe or concern?. *Journal of Tourism Theory and Research,* 9(2), 61-77.

Dinç, E. A., & Kazan, H. (2023). Adaptation of Marketing Agility Scale to Turkish (Validity and Reliability Study). *International Journal of Management Economics and Business*, 19(4), 763-782.

Drydakis, N. (2022). Artificial Intelligence and reduced SMEs' business risks. A dynamic capabilities analysis during the COVID-19 pandemic. *Information Systems Frontiers,* 24(4), 1223-1247.

Dwivedi, Y. K., Sharma, A., Rana, N. P., Giannakis, M., Goel, P., & Dutot, V. (2023). Evolution of artificial intelligence research in Technological Forecasting and Social Change: Research topics, trends, and future directions. *Technological Forecasting and Social Change*, 192, 1-9.

Fonseka, K., Jaharadak, A. A., & Raman, M. (2022). Impact of E-commerce adoption on business performance of SMEs in Sri Lanka; moderating role of artificial intelligence. *International Journal of Social Economics*, *49*(10), 1518-1531.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of marketing research, 18(1), 39-50.

Giacosa, E., Culasso, F., & Crocco, E. (2022). Customer agility in the modern automotive sector: how lead management shapes agile digital companies. *Technological Forecasting and Social Change,* 175, 1-12.

Hadjielias, E., Christofi, M., Christou, P., & Drotarova, M. H. (2022). Digitalization, agility, and customer value in tourism. *Technological Forecasting and Social Change*, 175, 1-14.

Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107-123.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2012). Partial least squares: the better approach to structural equation modeling?. *Long range planning*, 45(5-6), 312-319.

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial management & data systems,* 116(1), 2-20.

Hokmabadi, H., Rezvani, S. M., & de Matos, C. A. (2024). Business Resilience for Small and Medium Enterprises and Startups by Digital Transformation and the Role of Marketing Capabilities—A Systematic Review. Systems, 12(6), 220.

Hossain, M. A., Agnihotri, R., Rushan, M. R. I., Rahman, M. S., & Sumi, S. F. (2022). Marketing analytics capability, artificial intelligence adoption, and firms' competitive advantage: Evidence from the manufacturing industry. *Industrial Marketing Management*, 106, 240-255.

Kamran, H. (2021). The use of artificial intelligence in marketing: A research on consumer acceptance of artificial intelligence marketing tools (Master's thesis, Bursa Uludag University (Turkey)).

Khan, A., Talukder, M. S., Islam, Q. T., & Islam, A. N. (2022). The impact of business analytics capabilities on innovation, information quality, agility and firm performance: the moderating role of industry dynamism. *VINE Journal of Information and Knowledge Management Systems.*1-13.

Khan, H. (2020). Is marketing agility important for emerging market firms in advanced markets?. *International Business Review*, 29(5), 1-13.

Kumar, A., Pandey, A., Pujari, P., & Arora, M. (2023). Adoption of AI and e-commerce improving marketing performance of SMEs. *Academy of Marketing Studies Journal*, *27*(5). 1-15.

Li, L., Lin, J., Luo, W., & Luo, X. R. (2023). Investigating the effect of artificial intelligence on customer relationship management performance in e-commerce enterprises. *Journal of Electronic Commerce Research,* 24(1), 68-83.

Li, L., Lin, J., Turel, O., Liu, P., & Luo, X. (2020). The impact of e-commerce capabilities on agricultural firms' performance gains: the mediating role of organizational agility. *Industrial Management & Data Systems*, 120(7), 1265-1286.

Liang, X., Li, G., Zhang, H., Nolan, E., & Chen, F. (2022). Firm performance and marketing analytics in the Chinese context: A contingency model. *Journal of Business Research,* 141, 589-599.

Lin, F., & Eng, T. Y. (2024). Entrepreneurial performance and marketing analytics: the role of new product innovation. *Journal of Small Business and Enterprise Development.* 1-16.

Madanchian, M. (2024). The Impact of Artificial Intelligence Marketing on E-Commerce Sales. *Systems,* 12(10), 429-441.

Manis, K. T., & Madhavaram, S. (2023). AI-Supported marketing capabilities and the hierarchy of capabilities: Conceptualization, proposition development, and research avenues. *Journal of Business Research*, 157, 1-15.

Mariani, M. M., Machado, I., & Nambisan, S. (2023). Types of innovation and artificial intelligence: A systematic quantitative literature review and research agenda. *Journal of Business Research,* 155, 1-14.

Masialeti, M., Talaei-Khoei, A., & Yang, A. T. (2024). Revealing the role of explainable AI: How does updating AI applications generate agility-driven performance?. *International Journal of Information Management*, 77, 1-19.

Mehrabi, H., Chen, Y. K., & Keramati, A. (2024). Developing customer analytics capability in firms of different ages: Examining the complementarity of outside-in and inside-out resources. *Industrial Marketing Management,* 119, 108-121.

Ozdemir, S., Wang, Y., Gupta, S., Sena, V., Zhang, S., & Zhang, M. (2024). Customer analytics and new product performance: The role of contingencies. *Technological Forecasting and Social Change*, 201, 1-15.

Peretz-Andersson, E., Tabares, S., Mikalef, P., & Parida, V. (2024). Artificial intelligence implementation in manufacturing SMEs: A resource orchestration approach. *International Journal of Information Management*, 77, 1-11.

Rizvanović, B., Zutshi, A., Grilo, A., & Nodehi, T. (2023). Linking the potentials of extended digital marketing impact and start-up growth: Developing a macro-dynamic framework of start-up growth drivers supported by digital marketing. *Technological Forecasting and Social Change,* 186, 1-18.

Rossi, S., Rossi, M., Mukkamala, R. R., Thatcher, J. B., & Dwivedi, Y. K. (2024). Augmenting research methods with foundation models and generative AI. *International Journal of Information Management,* 1-9.

Salah, O. H., & Ayyash, M. M. (2024). E-commerce adoption by SMEs and its effect on marketing performance: An extended of TOE framework with ai integration, innovation culture, and customer tech-savviness. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 1-13.

Schramm-Klein, H., & Morschett, D. (2006). The relationship between marketing performance, logistics performance and company performance for retail companies. *International Review of Retail, Distribution and Consumer Research,* 16(02), 277-296.

Shukla, A., Varshney, J., & Raj, A. (2024). Examining the linkage between managerial ties and firm performance: The mediating role of marketing capabilities and moderation role of industry-A meta-analytic approach. *Industrial Marketing Management*, 119, 122-134.

Tarn, D. D., & Wang, J. (2023). Can data analytics raise marketing agility?-A sense-and-respond perspective. Information & Management, 60(2), 1-13.

Tseng, H. T., Aghaali, N., & Hajli, N. (2022). Customer agility and big data analytics in new product context. *Technological Forecasting and Social Change*, 180, 1-10.

Uğurlu, Ö. Y., Çolakoğlu, E., & Öztosun, E. (2019). The effect of strategic agility on firm performance: A research in manufacturing enterprises. *Journal of Business and Human,* 6(1), 93-106.

Wahab, M. D. A., & Radmehr, M. (2024). The impact of AI assimilation on firm performance in small and medium-sized enterprises: A moderated multi-mediation model. Heliyon, 10(8). 1-14.

Wamba, S. F. (2022). Impact of artificial intelligence assimilation on firm performance: The mediating effects of organizational agility and customer agility. *International Journal of Information Management*, 67, 1-14.

Weng, Q., Wang, D., De Lurgio II, S., & Schuetz, S. (2024). How do small-to-medium-sized e-commerce businesses stay competitive? Evidence on the critical roles of IT capability, innovation and multihoming. *Internet Research.* 1-15.

Wu, Q., Yan, D., & Umair, M. (2023). Assessing the role of competitive intelligence and practices of dynamic capabilities in business accommodation of SMEs. *Economic Analysis and Policy*, 77, 1103-1114.

Yaman, T. T., & Bilgiç, E. (2021). The Role of Business Analytics in Strategic Competitiveness of Businesses. Researchgate.

Zahoor, N., & Lew, Y. K. (2023). Enhancing international marketing capability and export performance of emerging market SMEs in crises: strategic flexibility and digital technologies. *International Marketing Review*, 40(5), 1158-1187.

Zhan, Y., Xiong, Y., Han, R., Lam, H. K., & Blome, C. (2024). The impact of artificial intelligence adoption for business-to-business marketing on shareholder reaction: A social actor perspective. *International Journal of Information Management,* 1-18.

Zhong, Y. (2023). E-commerce utilization analysis and growth strategy for smes using an artificial intelligence. *Journal of Intelligent & Fuzzy Systems*, (Preprint), 1-11.

Author contribution statements

The author self-conducted the research design and implementation, analysis, and article writing without using AI applications.

Disclosure statement

The author reported no potential competing interest.

Ethical committee approval

The study received approval from the Kütahya Dumlupınar University's Social and Human Sciences Scientific Research and Publication Ethics Committee under protocol number 2024/05, dated 27.05.2024. It adhered to the guidelines outlined in the Declaration of Helsinki for human subjects research. All responsibility belongs to the author.