

The role of pro-comparative advantage absorptive capacity in improving marketing performance using a resource advantage theory of competition perspective

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Abstract

This study aims to explain the importance of superior pro-comparative advantage absorptive capacity as a bridging concept to resolve inconsistent results regarding the role of digital marketing in improving marketing performance. The study procedures were carried out using a quantitative method with data from 290 respondents comprising owners and managers of Business-to-Business (B2B) small and medium enterprises (SMEs) in the food and beverage industry in Semarang, Indonesia. The data was obtained and analysed using structural equation model (SEM), Analysis of Moment Structure (AMOS) software. The results show that digital marketing positively affects capacity and management knowledge. Absorptive capacity positively affects both marketing performance and value co-creation, while management knowledge enhances value co-creation. Finally, value co-creation significantly contributes to marketing performance. These findings highlight the strategic importance of digital marketing and knowledge processes in driving performance outcomes. This study advances the resource advantage theory by identifying absorptive capacity as a key link between digital marketing and marketing performance. It introduces a serial mediation model involving marketing knowledge and value co-creation, offering a deeper understanding of digital strategy effectiveness.

Keywords:

digital marketing; marketing management knowledge; marketing performance; pro-comparative advantage absorptive capacity; value co-creation.

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Introduction

Digital marketing plays an important role in developing marketing strategies, particularly for small and medium enterprises (SMEs), to achieve a competitive advantage. However, SMEs have limited resources for developing their business (Kolagar et al., 2021). To develop business activities, digitalisation has the potential to optimise superior resources, specifically in identifying customers in various domains such as B2B transactions, e-commerce platforms, social media channels, and location-based services (Ullah et al., 2023). Several studies have shown that digital marketing is widely recognised as a strategic asset for several reasons. These include keeping companies competitive (Conti et al., 2023), increasing the ability to quickly, and responsively identify customers' needs (Radicic & Petković, 2023).

According to previous studies, digital marketing is a determinant of various aspects, particularly marketing performance (Krisnanto et al., 2023; Mulyana et al., 2023; Ullah et al., 2023; Wu et al., 2024). For example, Mulyana et al. (2023) revealed that digital marketing had a direct impact on marketing performance. In addition, Wu et al. (2024) stated that digital marketing was a means for companies to continuously interact with customers and strengthen their position in the market. Companies that adopt digital marketing can easily personalise their marketing messages (Krisnanto et al., 2023). A study by Ullah et al. (2023) showed the real impact of digitalisation usage, which was more efficient and easier to adopt, leading to positive growth for SMEs.

Contrary to previous studies, certain studies showed digital marketing did not significantly improve marketing performance (Halik et al., 2023; Liu et al., 2023; Safitri et al., 2022; Zahara et al., 2023), and was caused by several factors. First, digital-based marketing is not the only way to improve performance, with other factors being significant (Halik et al., 2023). Second, the digital capability of companies cannot significantly reform business performance, considering that digital tools are still complex to operate (Liu et al., 2023). Third, implementing digitalisation in business sectors requires substantial reform costs and a mature structure (Safitri et al., 2022). Finally, digital marketing application still depends on certain industries with a larger customer base (Zahara et al., 2023).

Due to the inconsistency and gaps among prior studies, this study aims to understand digital marketing can leverage marketing performance, particularly in Business-to-Business (B2B) food and beverage industry, by introducing pro-comparative advantage absorptive capacity as the main mediation concept is required. In this study, the resource advantage theory of competition (RAToC) method was adopted to address the issue for several reasons. First, RAToC has the basic principle that superior performance can be attributed to companies' comparative resource advantage (Hunt & Morgan, 1996). Second, the management team's role comprises setting strategies that emphasise competitive advantage, which is obtained from comparative resources (Hiong et al., 2020).

Literature review

Resource advantage theory of competition

The Resource-Advantage Theory of Competition (RAToC), introduced by Shelby D. Hunt in the mid-1990s, offers a dynamic view of competition by emphasising the strategic role of heterogeneous and imperfectly mobile resources in achieving superior performance (Hunt & Morgan, 1995, 1996). Unlike classical models rooted in perfect competition, RAToC views firms as competing to gain comparative advantages through resource development and innovation. Over time, the theory has evolved to integrate perspectives from the resource-based view and dynamic capabilities, providing a robust framework for understanding how firms leverage internal resources for sustained market advantage (Hunt, 2000).

RAToC has been widely applied in various contexts, including strategic marketing, innovation, and SME competitiveness. Cao and Weerawardena (2023) applied the theory to explore how knowledge-based capabilities to analyse how SMEs build dynamic capabilities to remain competitive under resource constraints. In the present study, RAToC serves as the theoretical foundation for integrating digital marketing, pro-comparative advantage absorptive capacity, and knowledge-based constructs to explain marketing performance among B2B SMEs in the food and beverage sector.

RAToC in this study was used to integrate several concepts into the conceptual model, including digital marketing (DM), pro-comparative advantage absorptive capacity (PCAAC), marketing performance (MP), marketing management knowledge (MMK), and value co-creation (VCC). RAToC was used as the basis of thinking and explores how the application of digital marketing can leverage marketing performance. This model was then tested on the B2B food and beverage industry because SMEs had limited resources and were required to keep competing (Cao & Weerawardena, 2023), specifically in Semarang City.

Digital marketing

Resource advantage theory of competition has important implications for understanding digital marketing as a company's comparative resource advantage. (Hunt & Arnett, 2003). First, digital marketing as a resource can be programmed and integrated with technology to communicate strategic marketing activities (Wu et al., 2024). Second, digital marketing as a strategic asset has a highly competitive advantage in expanding business networks (Ullah et al., 2023). Third, digital marketing allows companies to reach customers without physical boundaries and can be connected anytime and anywhere (Wang & Esperança, 2023).

The essence of the digital marketing concept consists of three important elements (AlMulhim, 2021; Liu et al., 2023; Rajala & Hautala-Kankaanpää, 2023). First, content marketing involves developing valuable, relevant, and engaging data to captivate and target the right audience (Rajala & Hautala-

Kankaanpää, 2023). Second, marketing automation focuses on automatically campaigning information, capturing information in real-time using massive technology (Liu et al., 2023). Third, communicating and coordinating information focuses on various digital channels (AlMulhim, 2021), comprising intensive interaction using social media. Essentially, digital marketing provides companies with opportunities to develop their resource into superior tools and an efficient way to strengthen relationships with customers (Ranjan, 2023). When applied actively, it allows companies to quickly capture information about customers' needs compared to competitors (Radicić & Petković, 2023).

Pro-comparative advantage absorptive capacity

Pro-comparative advantage absorptive capacity fundamentally relies on the resource advantage theory of competition (Hunt & Morgan, 1996). In addition, RAToC explains that comparative resources play a crucial role in generating competitive advantage. Intensive resource management allows companies to maximise their advantages (Arnett et al., 2021). Especially, companies are required to continuously compete with their competitors (Hiong et al., 2020; Hunt & Morgan, 1996).

Therefore, this study focuses on using existing resources where these resource advantages align with companies' needs, known as pro-comparative advantage absorptive capacity. The superior absorption provides accuracy in managing information to strengthen comparative advantage (Hunt & Morgan, 1996). First, pro-comparative advantage absorptive capacity has the ability to effectively and efficiently manage and acquire knowledge, which can be applied massively to strengthen long-term competitive positions (Alshahrani & Salam, 2023). Second, it has a fast response in integrating the role by prioritising faster information absorption than competitors (Cho et al., 2022). Third, pro-comparative advantage absorptive capacity reflects the ability to manage information more accurate, and acquire it into structured knowledge to develop relevant business ideas (Ding et al., 2023).

According to previous studies, pro-comparative advantage absorptive capacity is based on 3 elements (Alshahrani & Salam, 2023; Fayad & El Ebrashi, 2022; Rauniar et al., 2023). First, knowledge acquisition focuses on the ability to collect new knowledge from various sources where the basis of information lies in the authenticity of the information (Alshahrani & Salam, 2023). Second, open concept priority relates to collaboration priorities that provide a more actual absorption concept stimulus (Rauniar et al., 2023). Third, value-oriented connection ability relates to identifying values performed by companies (Fayad & El Ebrashi, 2022), focusing on evaluating customers' needs to accelerate the offered products and services. Value-oriented connection ability plays a role in assimilating external knowledge (Qian et al., 2022). Strong connections generate opportunities for strategic activity development and strengthen companies'

position in the market competition (Ding et al., 2023). Therefore, continuously revealing appropriate communication channels becomes an essential tool in formulating value-based connectivity (Yaseen et al., 2023).

Digital marketing on pro-comparative advantage absorptive capacity

This study adopts the role of digital marketing's strength as a tool to gather accurate and fast market information, which becomes an important part used as management knowledge to form a better absorptive capacity than competitors (Cho et al., 2022). The level of competition and capability were observed as the basis for strategy formulation. The accurate information sees market demand and reviews potential demand generated through the accurate implementation of digital marketing methods, creating a strong trigger in absorptive capacity development (Deb et al., 2022; Espino-Rodríguez & Gebril Taha, 2023). In this context, companies with adequate infrastructure to gather and utilise the information in supporting their business processes can be said to have built absorptive capacity with a comparative advantage (Gerdoçi et al., 2023). Based on these results, the following hypothesis was proposed.

H1: Digital marketing positively influences pro-comparative advantage absorptive capacity.

Marketing performance

In competitive markets, companies' advantage emerges from their ability to manage resources, which in turn forms superior performance (Arnett et al., 2021; Hiong et al., 2020). The essence of the three elements of marketing performance comprises the process of optimising existing resources (AlMulhim, 2021; Conti et al., 2023; Rajala & Hautala-Kankaanpää, 2023). First, the change in market share refers to the variation in the percentage of market ownership held by a company over a specific period (Rajala & Hautala-Kankaanpää, 2023). Second, sales growth refers to the increase in the volume or value of product or service sales over a given period (AlMulhim, 2021). Third, acquiring new customers refers to the strategic efforts aimed at attracting and converting potential customers into actual buyers (Conti et al., 2023). These elements are part of a series of strategies that show the improvement in marketing performance in the competitive process (Rajala & Hautala-Kankaanpää, 2023).

Pro-comparative advantage absorptive capacity on marketing performance

Intensive absorption generates useful information for companies, allowing them to set more adaptive business strategies (Alshahrani & Salam, 2023). The ability to absorb, manage, and apply new knowledge effectively provides opportunities to achieve profitability (Ali et al., 2020; Cohen & Levinthal, 2000), triggering strong and highly competitive performance. Absorptive activities integrated with gradual knowledge development reflect adaptive resources (Ding et al., 2023), where companies can easily absorb opportunities in the market that

have not been reviewed. To stay competitive, companies must optimise their resources effectively (Elidjen et al., 2022). Optimising absorptive capacity allows companies to excel in the competition. Finally, companies can utilise market opportunities quickly and respond to changes (Espino-Rodríguez & Gebril Taha, 2023), where superior absorptive capacity reflects unique infrastructure by prioritising operational agility. Companies winning the competition can be based on identifying unique resources they own (Fayad & El Ebrashi, 2022); flexible absorptive capacity can be integrated into business activities, allowing companies to easily adapt to market trends. Based on these results, the following second hypothesis is proposed.

H2: Pro-comparative advantage absorptive capacity positively influences marketing performance.

Marketing management knowledge

Marketing management knowledge as a resource focuses on planning, organising, and directing strategic activities to generate competitive advantage (Crespo et al., 2022). Marketing management knowledge describes a specific planning process that helps companies generate directed strategies, and enabling high adaptation ability in the long term (Garousi Mokhtarzadedeh et al., 2022). Knowledge formed by companies through their resource can produce a resilient structure in competing, ultimately facilitating the understanding of market trends (Al-Dmour et al., 2020). The essence of marketing management knowledge lies in three important elements (Arnett et al., 2021; Sahibzada & Mumtaz, 2023). First, knowledge-sharing refers to sharing information and knowledge built through two-way communication between companies and customers (Arnett et al., 2021). Second, interactive dialogue is the process of two-way communication between companies and customers involving message delivery and actively responding to customers' feedback to generate new ideas (Arnett et al., 2021). Third, experience sharing focuses on the intensive exchange of experience information between customers and companies to review market changes (Sahibzada & Mumtaz, 2023). This allows companies to remain relevant in integrating their competitive activities more effectively in managing competitive strategies (Arnett et al., 2021).

Digital marketing on marketing management knowledge

The use of technology-based resources has become an integral part of modern businesses competing in competitive markets (AlKoliby et al., 2024). Digital marketing is a tool to reach a broader audience in an effective and efficient way (Conti et al., 2023), providing specific insights for marketers. With digital marketing, companies can reach audiences at a lower cost (Miao et al., 2023), allowing small companies to compete. Digital platforms provide various facilities to help marketers continuously update their knowledge of the latest trends and

techniques ([Rapaccini et al., 2023](#)), enabling companies to easily achieve effective development. Therefore, the following third hypothesis was proposed.

H3: Digital marketing positively influences marketing management knowledge.

Value co-creation

Value co-creation has a strategy focused on generating value intensively. This value results from close collaboration between providers and active users to generate competitive selling value ([Cheng et al., 2023](#); [Vargo et al., 2008](#)). Active interactions carried out by companies allow them to easily identify customers' needs ([Jyoti & Efpraxia, 2023](#)). When companies involve customers in product development, product failure risks become smaller ([Sohaib & Han, 2023](#)). The essence of value co-creation lies in three important elements ([Cheng et al., 2023](#); [Zhang et al., 2022](#); [Zhang, 2023](#)). First, integrated transformation refers to the alignment of marketing message strategies with technology to deliver consistent, coordinated, and seamless customer experiences ([Zhang, 2023](#)). This focuses on the ability to create integrated communication channels with customers ([Geldres-Weiss et al., 2023](#)), allowing for more intensive interaction. Second, collaboration to create service refers to marketers' approach to collaborating with customers, actively involving them in designing solutions that meet their needs and preferences ([Cheng et al., 2023](#)). This focuses on the ability to produce relevant and accurate services with use-value ([Yen et al., 2020](#)). Third, product development involvement refers to engaging customers or other parties in the product development process ([Zhang et al., 2022](#)). Especially, the value needed by customers arises from the active collaboration process between providers and users ([Zhang, 2023](#)).

Marketing management on value co-creation

Complex and structured knowledge reflects resource superiority in facing heterogeneous markets ([Arnett et al., 2021](#)). Intensively managed marketing knowledge can foster strong professionalism between companies and customers ([Sahibzada & Mumtaz, 2023](#)), thereby enhancing collaboration and enabling the co-creation of valuable products or services. The ability to continuously seek customers' desires drives managed knowledge to become accurate ([Vieira et al., 2023](#)). Broad knowledge generates flexibility in implementing business activities ([Yusr et al., 2021](#)), allowing activities to run more systematically. Competitive knowledge and skills make companies stand out among competitors, prioritising collaboration with customers ([Zia et al., 2023](#)), making customers more interested in working together. Consequently, companies can easily create value together with customers to enhance their competitive advantage ([Papa et al., 2021](#)). Based on these results, the following fourth hypothesis was proposed.

H4: Marketing management knowledge positively influences value co-creation.

Pro-comparative advantage absorptive capacity on value co-creation

Companies with strong absorptive capacity can effectively absorb more information from the market (Ali et al., 2020), allowing companies to easily identify customers' needs and new preferences. Superior absorptive capacity generates a deeper understanding of customers (Espino-Rodríguez & Gebril Taha, 2023), making it easier for companies to communicate the desired collaboration. Superior absorptive capacity generates more authentic information about customers (Kennett et al., 2020), enabling long-term collaboration. Superior absorptive capacity enables companies to identify innovation opportunities from co-creation (Ding et al., 2023). This process enables the development of more up-to-date solutions that align with customers' evolving needs. With superior absorptive capacity, companies can effectively monitor market trends, identify competitors and customer preferences, and strengthen their competitive advantage (Fulgence et al., 2022). Therefore, the following fifth hypothesis was proposed.

H5: Pro-comparative advantage absorptive capacity positively influences value co-creation.

Value co-creation on marketing performance

Companies actively creating value together allow for closer relationships with customers (Geldres-Weiss et al., 2023). Active value co-creation allows companies to collaborate with customers more intensively (Re & Magnani, 2023). Involving customers tends to result in unique products and services that meet preferences (Nadeem & Salo, 2023). Intensive collaboration processes allow companies to build stronger relationships (Sashi, 2021), and engaged customers can provide effective feedback to companies. Insights generated from digital collaboration between customers and companies provide opportunities for more efficient strategy implementation (Behl et al., 2023). Therefore, the following sixth hypothesis was proposed.

H6: Value co-creation positively influences marketing performance.

Pro-comparative advantage absorptive capacity, marketing management knowledge, value co-creation on digital marketing toward marketing performance

Pro-comparative advantage absorptive capacity is anchored in RAToC, which thinks that business strength depends on superior absorptive capacity (Hunt & Morgan, 1996). This study utilises digital marketing as a means to obtain more information. Therefore, companies can intensively develop the knowledge and information obtained, providing an opportunity to absorb better than their competitors (Lim & Ok, 2023). Digital marketing enables companies to capture many channels that can be utilised to absorb information (Conti et al., 2023). Digital marketing allows companies to stay connected and interact with customers in a wide market (Deb et al., 2022), enabling the collection of authentic

information. In addition, it facilitates companies in predicting trends and developing more relevant ideas (Wu et al., 2024). Understanding customers' preferences enables the development of more accurate digital market segmentation (Lima et al., 2024). Customers' information can be intensively reviewed from digital platforms (Ullah et al., 2023), allowing companies to easily convey more personal and relevant marketing messages. Digital technology enables companies to capture information in real-time (Wang & Esperança, 2023) and continuously absorb actual market knowledge. Therefore, the following seventh hypothesis was proposed.

H7: Digital marketing positively influences marketing performance through pro-comparative advantage absorptive capacity.

Superior absorptive capacity enables companies to develop their products faster than their competitors (Ding et al., 2023). This process, when driven simultaneously with value co-creation, will have strong complexity for business growth in the competition. This results in interactions built with customers, providing business incentives to process customers' needs more quickly; customers' needs become an essential asset for businesses to keep growing (Garrido-Moreno et al., 2020). Value co-creation as a business resource provides relevant personalisation of customers' experiences (Geldres-Weiss et al., 2023). Routine interactions through digital channels provide opportunities for existing resources to compete in a highly competitive market (Gul, 2020). Therefore, the following eighth hypothesis was proposed.

H8: Digital marketing positively influences marketing performance through pro-comparative advantage absorptive capacity and value co-creation.

Marketing management knowledge provides a deep understanding of customers' preferences and needs (Al-Dmour et al., 2020). This understanding can become a superior component in designing companies' competitive strategy. Resource utilisation uses data obtained from customers' interactions through digital marketing (Krisnanto et al., 2023). This data analysis is used to develop companies' activities strategically (Kolagar et al., 2021). With acquired knowledge, companies can more easily develop insight-based strategies (Scuotto et al., 2021), this implementation provides opportunities for companies to be responsive to market needs. On the other hand, value co-creation together allows companies to continuously collaborate with customers in developing their products (Sakaya, 2022), this collaboration provides opportunities to mitigate product failure risks and accelerate the value of the product to be easily accepted (Ferdinand & Zuhroh, 2021). Therefore, the following ninth hypothesis was proposed.

H9: Digital marketing positively influences marketing performance through marketing management knowledge and value co-creation.

and [Fayad and El Ebrashi \(2022\)](#). This included knowledge acquisition focus, open concept priority, and value-oriented connection ability. Third, the marketing performance indicators were adapted from [AlMulhim \(2021\)](#), [Rajala and Hautala-Kankaanpää \(2023\)](#), and [Conti et al. \(2023\)](#). These indicators included market share change, sales growth, and acquiring new customers. Fourth, marketing management knowledge indicators were adapted from [Arnett et al. \(2021\)](#) and [Sahibzada and Mumtaz \(2023\)](#); these included knowledge-sharing, interactive dialogue, and experience-sharing. Lastly, value co-creation with indicators adapted from [Cheng et al. \(2023\)](#), [Zhang et al. \(2022\)](#), and [Zhang \(2023\)](#); these indicators included integrated transformation, collaboration to create service, and product development involvement.

A numerical scale was applied in this measurement, such as 0 indicating strongly disagree and 10 denoting strongly agree ([Ferdinand, 2014](#)). Data analysis was performed using CB-SEM with AMOS (Analysis of Moment Structure) software. This is due to several reasons. First, CB-SEM has the advantage of testing mediation hypotheses simultaneously ([Tabachnick & Fidel, 2013](#)). Second, CB-SEM allows researchers to answer a series of interrelated questions in a complex and systematic analysis by modelling the relationships between independent and dependent theoretical variables ([Ferdinand & Zuhroh, 2021](#)). Finally, as emphasised by [Hair et al. \(2019\)](#), CB-SEM allows confirmation of the theory by estimating a new covariance matrix that does not differ significantly from the original covariance matrix observed with covariance-based structural modelling.

Results

Confirmatory factor analysis (CFA)

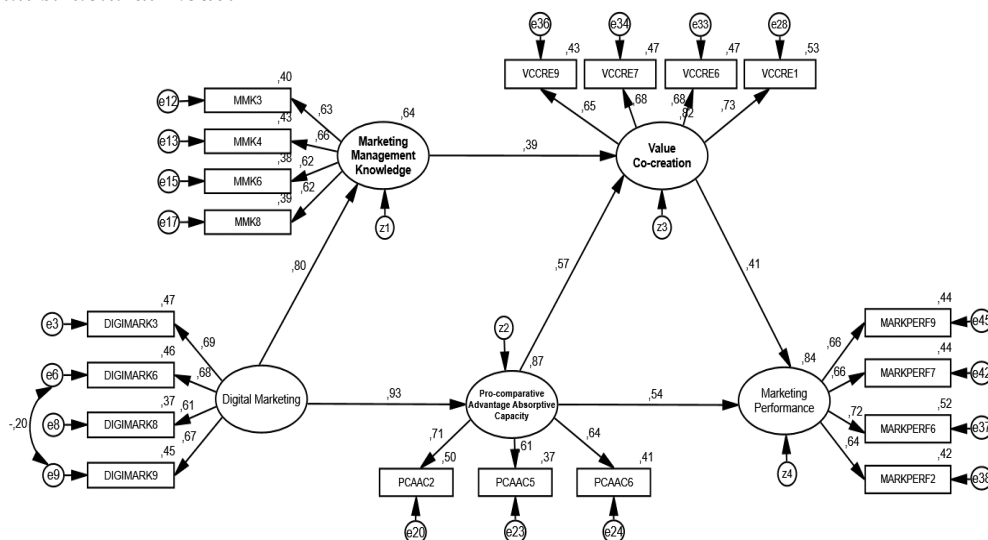
Confirmatory factor analysis (CFA) method was applied to evaluate validity and reliability. The analysed data showed that the distribution exceeded the normality criteria. Therefore, data transformation formulation was applied in this study to handle non-normal data. [Tabachnick and Fidel \(2013\)](#) referred to using the moderate negative skewness solution such as $X_n = \lg_{10}(k-X)$. This solution generated normally distributed data that had been normalised ([Ferdinand & Zuhroh, 2021](#)). Average variance extracted (AVE) measurement was referred to by [Arbuckle \(2016\)](#) and [Tabachnick and Fidel \(2013\)](#), according to the convergent validity to evaluate the validity level of the items applied in the construct. The obtained AVE, digital marketing, pro-comparative advantage absorptive capacity, marketing management knowledge, value co-creation, and marketing performance were at the threshold of 0.50, 0.566, 0.555, 0.522, 0.603, and 0.579, respectively. All items had standardised factorial weights above 0.60 ([Bagozzi & Yi, 1988](#)). The construct reliability measure adopted the construct evaluation index from [Arbuckle \(2016\)](#) with a threshold value of 0.70. Digital marketing, pro-comparative advantage absorptive capacity, marketing management

knowledge, value co-creation, and marketing performance were 0.839, 0.780, 0.814, 0.859, and 0.846, respectively, as presented in Appendix 1.

Confirmatory factor analysis results met the proposed value of 0.50 for each construct with a minimum significance ratio of 1.96. Therefore, the modelling could be accepted. All model constructs had acceptable convergent validity measured through AVE with a minimum value of 0.50. The CFA model indicated that all had reached the assumed threshold. This construct reliability index (CRI) had also reached the threshold value of 0.70. The validity and reliability of all constructs met the minimum requirements. Consequently, the data were accurate for modelling conclusions. The next stage was the full SEM procedure to assess the proposed hypotheses.

Since the CFA model had been fulfilled, the next step was to test the model fit. First, (Arbuckle, 2016) and (Tabachnick & Fidel, 2013) guidelines were adopted for model fit statistics and evaluated with chi-square criteria relative to $\leq 2.00 - \leq 3.00$, CFI, TLI, IFI, and NFI of ≥ 0.95 with $RMSEA \leq 0.05 - \leq 0.08$. The result obtained was $\chi^2 = 183.905$ with a significance level of 0.016. This result had an accuracy exceeding the minimum level of 0.05, as required for statistical significance. Since the chi-square significance was sensitive to sample size, non-statistical goodness-of-fit testing could be applied to small samples (Arbuckle, 2016; Tabachnick & Fidel, 2013). The results showed that the goodness-of-fit criteria were appropriately met. Relative chi-square 1.268, TLI 0.977, CFI 0.981, IFI 0.981, RMSEA 0.030. Since the model fit has been met, a hypothesis regression test was conducted.

Figure 2.
Full structural model



Model Test: Chi-square =183,905; DF =145; Significance Level =,016; Relative Chi-square =1,268; TLI =,977; CFI =,981; IFI =,981; NFI =,916; RMSEA =,030

Source: Author's work (2024)

As shown in Figure 2, the hypothesis of regression effects and simple mediation, as well as serial mediation hypotheses with SEM-AMOS procedures were assessed. Table 1 shows the results of standardised structural path coefficients.

Table 1.

Hypothesis testing

Hypothesis	Std. Estimate	Std. Error	C.R	P	Conclusion
H1: Digital marketing → pro-comparative advantage absorptive capacity	0.931	0.092	9.997	0.000	Accepted
H2: Pro-comparative advantage absorptive capacity → marketing performance	0.540	0.149	3.385	0.000	Accepted
H3: Digital marketing → marketing management knowledge	0.801	0.090	8.245	0.000	Accepted
H4: Marketing management knowledge → value co-creation	0.395	0.133	3.510	0.000	Accepted
H5: Pro-comparative advantage absorptive capacity → value co-creation	0.569	0.124	5.031	0.000	Accepted
H6: Value co-creation → marketing performance	0.411	0.132	2.657	0.008	Accepted

Source: Author's work (2024)

Structural equation model testing

A total of 8 hypotheses were proposed in this study, as shown in the hypothesis development. One simple mediation and two serial mediations were developed. Furthermore, the [Baron and Kenny \(1986\)](#) procedure was applied to see the mediation effects tested in this study. First, simple mediation H7, pro-comparative advantage absorptive capacity mediated the influence of digital marketing on marketing performance. Second, serial mediation H8, pro-comparative advantage absorptive capacity and value co-creation mediated the effect of digital marketing on marketing performance. Third, serial mediation H9, marketing management knowledge and value co-creation mediated the impact of digital marketing on marketing performance. Furthermore, the syntax formula was used in AMOS software to test these three mediation hypotheses ([Collier, 2020](#)). Table 2 describes the results of the process conducted.

The hypothesis testing stage started with direct construct testing. All hypotheses tested directly had results that could be accepted. Firstly, digital marketing was proven to be a substantial driver of increasing marketing performance ($\beta = 0.931$ with $p = 0.000$). Second, good pro-comparative advantage absorptive capacity could drive marketing performance better ($\beta = 0.540$ with $p = 0.000$). Third, good digital marketing could improve marketing management knowledge ($\beta = 0.801$ with $p = 0.000$). Marketing management knowledge effectively propelled value co-creation ($\beta = 0.395$ with $p = 0.000$). Moreover, good pro-comparative advantage absorptive capacity could manage value co-creation

better ($\beta = 0.569$ with $p = 0.000$). Good value co-creation effectively stimulated marketing performance appropriately ($\beta = 0.411$ with $p = 0.008$).

The simple and serial mediation hypotheses were tested to observe the mediation effect applied in this study, as shown in Table 2. The rejection of hypothesis 1 ($\beta = -0.422$ with $p = 0.437$) provided meaning. This analysis was accepted due to the rejection of the direct effect, which indicated full simple and serial mediation in the modelling (Baron & Kenny, 1986; Collier, 2020). Consequently, pro-comparative advantage absorptive capacity was concluded as a good lever for stimulating the role of digital marketing on marketing performance. This was revealed through the estimation value and probability of H7 ($\beta = 0.844$ $p = 0.011$). Furthermore, this suggested that the unique resource from applying existing resources ultimately propelled stronger marketing performance when digital marketing was well applied in the B2B food and beverage industry.

Sequential mediation, such as pro-comparative advantage absorptive capacity and value co-creation, played a crucial role in increasing marketing performance in the B2B food and beverage industry, as revealed in the H8 estimation value ($\beta = 0.119$ $p = 0.025$). This articulated that available resources with good management propelled marketing performance when digital marketing was well applied. Similarly, marketing management knowledge and value co-creation effectively played a substantial intermediary role in improving the influence of good digital marketing on marketing performance, as observed in H9 ($\beta = 0.210$ $p = 0.014$). This showed that good marketing management knowledge and value co-creation applied simultaneously could substantially mediate the improvement of digital marketing impact on marketing performance to be better. Therefore, these results through the intermediary concept of pro-comparative advantage absorptive capacity, marketing management knowledge, and good value co-creation led to the conclusion that full mediation occurred in both simple and serial mediation applications.

Discussion

This study aimed to address the inconsistencies in the results of the literature regarding the impact of digital marketing on marketing performance. The importance of applying pro-comparative advantage absorptive capacity, marketing management knowledge, and value co-creation as strategic assets for companies to improve marketing performance was concluded in this study. Pro-comparative advantage absorptive capacity was a valuable company asset in reducing market sporadic and intense competition in existing competition, leading to superior marketing performance in business competition. Furthermore, marketing management knowledge and value co-creation, which were companies' intellectual and relational assets, were business resources in responding and intensively collaborating with customers in a heterogeneous market (Scuotto et

al., 2021). This ultimately formed competitive business resources to accelerate marketing performance and the actualisation of business activities according to evolving trends. Further results were presented based on the regression coefficient estimation generated in this study.

Table 2.
Simple and serial mediation test

Test mediation	Direct effect	Indirect effect				Conclusion
		Confidence interval				
		Estimate	Lower	Upper	P	
H7: Pro-comparative advantage absorptive capacity mediates the influence of digital marketing on marketing performance.		0.844	0.185	5.880	0.011	
H8: Digital marketing → pro-comparative advantage absorptive capacity → value co-creation → marketing performance.	-0.422 (C. R= -0.778; <i>p</i> = 0.437) ^{ns}	0.119	0.014	0.300	0.025	Full mediation
H9: Digital marketing → marketing management knowledge → value co-creation → marketing performance.		0.210	0.052	0.578	0.014	

Source: Author's work (2024)

First, as found in previous studies, digital marketing did not always improve marketing performance. This was logically acceptable because, without specific, unique, and company-derived resources, it was difficult for companies to provide a business advantage in competing. Digital marketing could become irrelevant to improving marketing performance and make it difficult to outperform competitors (Halik et al., 2023; Safitri et al., 2022; Zahara et al., 2023). Second, the resource management concept in RAToC showed that available resources provided companies with a potential advantage in winning competition in heterogeneous markets, potentially generating beneficial value for customers when these resources are well managed (Hunt & Morgan, 1996). When good management is applied, these resources form strong competitive business bases to improve marketing performance in the food and beverage industry (Hiong et al., 2020; Situmorang et al., 2024).

This study contributed to RAToC with several theoretical implications. First, this study deduced the concept of RAToC terminology (Hunt & Morgan, 1996), into pro-comparative advantage absorptive capacity, which was an innovation. This concept, according to companies' existing resource, articulated answering intense business competition from the business resource advantage. Pro-comparative advantage absorptive capacity provided new insights into RAToC terminology that the intense resource management capability could

present an advantage (Hunt & Morgan, 1996). Second, the intellectual and relational assets represented in marketing management knowledge and value co-creation rooted in RAToC provided strong mechanisms for applying this theory in B2B food and beverage business context. In addition, the actualisation of these 2 assets was a determinant of companies in intense competition, proven in this study that marketing management knowledge and value co-creation were superior determinants to improve marketing performance.

The study results proposed several managerial implications for managing available resource in B2B food and beverage industry in enhancing marketing performance. First, by focusing on resource management, digital marketing can be a source of competitive advantage through the utilization of available digital assets. In the context of B2B food and beverage SMEs, businesses can implement simple but effective strategies, such as leveraging Google features to display customer locations and reviews, and using WhatsApp Business to manage communication with customers neatly through the label and quick reply features. In addition, optimizing Instagram and Facebook Pages to visually introduce products and upload testimonials of trading partners, so that the products offered will have the opportunity to be easily found by a wide audience. When the product reaches the customer's mind and customers start interacting with the product offered, this will make it easier for business people to absorb market information from direct interactions. This has the opportunity for businesses to respond quickly to market needs and increase marketing effectiveness without the burden of large costs.

Second, despite having limited resources, B2B SMEs in the food and beverage industry can still optimize existing resources through pro-comparative advantage absorptive capacity which is postulated as a superior business resource to absorb, understand and utilize market information effectively. Practically, business actors can establish a consistent routine of collecting information from customers and partners, for example through order records collected in one database or informal feedback. This can be maximized by offering product bundling to potential customers, setting up scheduled seasonal promotions and educational content about the product and its use on social media. In addition, collaboration with business partners such as distributors, resellers or even raw material suppliers can be part of the strategy, because this network will provide added value for business resilience in the face of uncertain market pressures. Therefore, by prioritizing pro-comparative advantage absorptive capacity as an existing resource, businesses can design flexible strategies according to market needs.

Third, when the company can optimize strong intellectual and relational assets, the company will be able to respond to market trends more relevantly than its competitors. This can begin with the use of customer data that is managed optimally to measure the effectiveness of the marketing strategy that has been

implemented. When this is optimized, companies will be able to easily adjust their product offerings to be on target. In addition, companies need to facilitate active dialogue with customers and provide space for them to share experiences, this can be done by intensively empowering partners and maximizing the use of social media such as Instagram, Facebook by striving for two-way communication between the company and customers. This can be done by initiating Q&A sessions, conducting polls on new products, and leveraging the comment feature for quick responses. These actions can help increase customer participation, foster a sustainable two-way relationship, and ultimately provide the company with superior and more relevant information than its competitors.

Conclusion, limitation, and future research

This study reveals that digital marketing plays a foundational role in fostering both absorptive capacity and marketing management knowledge, which in turn contribute to value co-creation and improved marketing outcomes. Furthermore, the study confirms multiple indirect pathways, demonstrating that digital marketing enhances marketing performance through the mediating roles of absorptive capacity, marketing management knowledge, and value co-creation. These results highlight the strategic importance of optimising internal knowledge resources and collaborative practices to sustain a competitive edge in digitally transforming markets. Despite its contributions, this study has several limitations. First, the constructs employed were measured using only three dimensions with three indicators each, which may reduce the robustness of the measurement model. Future research should consider expanding the number of items per construct to improve validity and reliability. Second, a high intercorrelation between the initially proposed independent variables led to the need for reclassification during the analysis, suggesting that future studies should clearly distinguish conceptual boundaries between variables to avoid multicollinearity. Third, although the study targeted the B2B food and beverage sector, the inclusion of firms that also operate in B2C contexts may have limited the precision of insights specific to B2B dynamics. Future research should focus solely on firms operating exclusively within B2B settings to enhance the generalisability of findings. Lastly, the geographical scope of the study was limited to Semarang, Central Java. To increase external validity, future studies should broaden data collection to include diverse regions across Indonesia and other countries, enabling a more comprehensive understanding of the B2B food and beverage industry's digital transformation landscape.

Author contribution

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Declaration of interest

The authors declare that they have no known competing financial interests
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Appendix 1.

Variable and indicator measurement

Variable and indicators	Scales item	Reference	Std. Loading	C.R ≥ 1.96
<i>Digital marketing</i> (CV-AVE=0.566; CRI=0.839)		(AlMulhim, 2021; Liu et al., 2023; Rajala &		
DIGIMARK3	We always analyse content performance.		0.685	10.456

Variable and indicators	Scales item	Reference	Std. Loading	C.R ≥ 1.96
DIGIMARK6	Automatic way part of our marketing strategy	Hautala-Kankaanpää, 2023)	0.680	10.139
DIGIMARK8	We consistently evaluate communication strategy.		0.612	9.357
DIGIMARK9	Communication helps us improve our competitive advantage.		0.673	10.050
Pro-comparative advantage absorptive capacity (CV-AVE=0.555; CRI=0.789)				
PCAAC2	We consistently collect information.	(Alshahrani & Salam, 2023; Fayad & El Ebrashi, 2022; Rauniar et al., 2023)	0.709	10.014
PCAAC5	We encourage marketing teams to use new tactics.		0.612	9.534
PCAAC6	Working with business partners is part of our strategic advantage.		0.644	10.000
Marketing management knowledge (CV-AVE=0.522; CRI=0.814)				
MMK3	We use data to measure marketing strategy.	(Arnett et al., 2021; Sahibzada & Mumtaz, 2023)	0.632	10.132
MMK4	We promote active dialogue.		0.658	8.765
MMK6	Our interactions with customers enhance ours.		0.619	8.382
MMK8	Customer opportunities to share experiences are part of our strategy.		0.623	8.427
Value co-creation (CV-AVE=0.603; CRI=0.859)				
VCCRE1	We focus on creating customer experiences.	(Cheng et al., 2023; Zhang et al., 2022; Zhang, 2023)	0.731	9.868
VCCRE6	We prioritise renewable service collaboration.		0.685	10.939
VCCRE7	We develop customer engagement processes.		0.683	10.905
VCCRE9	Customer feedback improves product and service quality.		0.653	10.435
Marketing performance (CV-AVE=0.579; CRI=0.846)				
MARKPERF2	We conduct market research to understand customer needs.	(AlMulhim, 2021; Conti et al., 2023; Rajala & Hautala-Kankaanpää, 2023)	0.645	10.605
MARKPERF6	Regularly increasing profitability is part of our sales efforts		0.719	10.079
MARKPERF7	We acquire new customers by offering innovative products and services		0.662	9.448
MARKPERF9	We use digitalisation aspects to disseminate product and service information, such as email delivery, advertising features, scheduling social media posts		0.660	9.420

Source: Author's work (2024)