

OPERATIONALIZATION OF MARKETING CAPABILITIES IN THE CONTEXT OF ANALYTICS TECHNOLOGY ADOPTION

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ABSTRACT

The advent of analytics has been considered as a revolution in how firms treat data. However, the implementation of this technology is still an issue for researchers and practitioners. Many business leaders still reluctant to adopt this technology since it is still unclear how analytics adds value on firms. There are limited studies that incorporate analytics and capabilities, particularly in marketing. Moreover, there is also lack of empirical studies that cover the adaptive side of marketing capabilities. This study aims to close the gap by constructing a sound and holistic measurement of firms' marketing capabilities (MCs) to measure the impact of analytics-related adoption. Integrative literature review was carried out to synthesize previous MCs constructs. Then, analysis was conducted to develop a new construct of MCs measurement. The result of this study proposes a more detailed and comprehensive framework in understanding the impact of marketing analytics (MA) adoption on all dimensions of MCs, including adaptive side of MCs.

Keywords: Marketing analytics; static marketing capabilities; dynamic marketing capabilities; adaptive marketing capabilities

INTRODUCTION

The emergence of data analytics has changed how businesses use data. Adoption of analytics enables businesses to extract new valuable and interesting knowledge from existing data in order to support firms' decision making (Wedel & Kannan, 2016; Cao et al., 2019). One domain of data analytics used in business is marketing analytics (MA) (Holsapple et al., 2014).

With analytics, businesses are equipped with the greater ability to learn about their consumers, competitors, and environment (Cao et al., 2019), so they become more effective in deploying resources to provide better value to the customers (e.g., Mikalef et al., 2020; Cao et al., 2021). This means that the adoption of MA enhances business' marketing capabilities (MCs).

However, studies related to the mechanism of how MCs are improved by MA adoption is still limited (Cao et al., 2021). Authors found that numbers of past studies that incorporate MC indicators in measuring impacts of analytics are still incomprehensive. While static marketing capabilities (SMCs) and dynamic marketing capabilities (DMCs) have been incorporated in numbers of previous studies (e.g., Mikalef et al., 2020; Cao et al., 2021), adaptive side of MCs is still underanalyzed.

Studies related to adaptive marketing capabilities (AMCs) are still limited (Shen et al., 2020). The incorporation of AMCs ensures that the potential of analytics in a firm is optimally measured. AMCs reflect a firm's capability to proactively learn and experiment in the market, and the emergence of analytics technologies makes this capability more accessible (Day, 2011).

Data analytics do not only focus on learning the current state, but also forecasting the future state with acceptable accuracy (Olavsrud & Edwards, 2019). This implies that measuring the impact of data analytics on marketing capabilities is not limited to the static and dynamic dimension of MCs which focuses on the currently owned resources. Therefore, the authors argue that the boundaries between dynamic, static, and adaptive marketing capability is crucial in order to effectively measure the impact of investments in data analytics. Moreover, while research on the adaptive side of MCs is still insufficient, existing studies mostly focused on dynamic marketing capabilities, and do not differentiate their applicable conditions (Shen et al., 2020).

Above discussion has pointed out that: a) the study that employs measurement of MCs in the context of data analytics is still limited, b) There is a need for indicator clarity of marketing capabilities in the context of data analytics, in order to effectively measure the impact of MA adoption.

Based on these reasons, this study reviews previous studies that incorporate dimensions of MCs, then construct a more holistic measurement that fits the context of MA. The body of this study will begin to briefly revisit the theory of marketing capabilities and marketing analytics, construct the new measurements, and summarize a new construct of measurement of MCs.

LITERATURE REVIEW

Marketing Capabilities and its Dimensions

Morgan et al. (2018) summarized MCs as the ability of a company to utilize resources to carry marketing activities in order to meet marketing objectives. Morgan et al. (2018) also adds that MCs is the representation of processes used by companies to develop, communicate, and deliver values to their customers through integrating, transforming, and making use of their resources. Qureshi et al. (2017) highlighted that MCs are a way for a firm to obtain competitive advantage. Guo et al. (2018) reported that marketing capabilities consist of three broad groups.

First, inside-out capabilities, such as integrated logistics and technology development, which translates into static marketing capabilities (SMCs). SMCs relate directly to routine, basic marketing activities. This capability is a day-to-day, deeply embedded capability firms have. This MCs is manifested in basic marketing mix-related activities (Guo et al., 2018).

Second, the outside-in capabilities are the Adaptive marketing capabilities (AMCs). AMCs characterize a firm's ability to be proactive in acting in the market (Hunt & Madhavaram, 2020 in Reimann et al., 2021). This resembles the capability of a company to continuously learn the market and its consumers. AMCs are related to firms' ability to sense the consumer behavior signals about their changing needs (Day, 2011). AMCs enables firms to be more aware and perceptive to the market, to foresee opportunities, altering their strategy, proactively readjusting resources with potential development of the market, thus creates a performance greater than their competitors, and closing the gap between the firms' response and changes in the market (Reimann et al., 2021).

Third, capabilities that span both approaches, such as new product development capabilities and customer order fulfillment, which translates into dynamic marketing capabilities (DMCs). DMCs are the subset of dynamic capabilities which focus on customer value (Kachouie et al., 2018). Firms' DMCs reflect the ability of an organization to create, extend, and modify its resource base to match the change in market trends. Teece (2009) describes the functions of DMCs as sensing the changes that could be threats or opportunities, responding to the changes by combining and transforming available resources, and selecting the organizational configuration and business model for delivering value to customers.

Alnawas and Hemsley-Brown (2018) highlights that MCs deployment is based on Marketing orientation (MO) of the firm. Different types of MC are deployed based on the condition represented by MO. Thus, it is important to revisit this relationship to understand the need to separate three dimensions of MCs. Fang & Zuo (2009) and Morgan et al. (2012) have brought this issue, arguing that marketing capabilities are the behavioral representation of MO. Guo et al. (2018) mentions that there are two types of market orientation – responsive and proactive.

Responsive market orientation is manifested through firms' SMCs and DMCs, since both capabilities are related to a firm's ability to deploy internal resources in response to marketing goals or change in market, respectively. On the other hand, proactive market orientation is manifested through firms' outside-in capabilities which is the AMCs, which is the ability to proactively sense the market through digging market information and understanding what problems faced by the consumer.

Marketing Analytics

Marketing Analytics (MA) is composed of two main terminologies and independent concepts of “marketing” and “analytics”. Wilder and Ozgur (2015) stated that analytics refers to processes and techniques that convert data into insightful information that enhances decision making. Thus, based on the premise, MA is an application of analytics to enhance marketing activities and supports marketing decision-making (Wedel & Kannan, 2016; Dremel et al., 2020). Furthermore, Wadel and Kannan (2016) emphasized that MA aims to obtain insightful information to optimize the effectiveness of firms' marketing instruments.

From the orientation point of view, analytics applications have three types - descriptive analytics, predictive analytics, and prescriptive analytics (Holsapple et al., 2014; Khatri & Samuel, 2019). In MA, descriptive analytics focuses on knowing what is occurring in our consumers, market, and competitors. Sharda et al., (2013) states descriptive analytics also involves understanding trends and causes of the occurrences. In practice, descriptive analytics uses techniques such as advanced data visualization based on set of parameters, which provides

better understanding of the market and consumers (e.g., Sharda et al., 2013; Raja et al., 2018; Khan & Dillon, 2019)

Predictive analytics focuses on determining what is likely to occur in the future, based on datasets of past events. In practice, predictive analytics uses statistical techniques and other developed techniques to predict e.g., which customers are the most profitable, customers that are likely to respond to our marketing campaign, customers that are likely to switch to competitors, etc. (Sharda et al., 2013).

Prescriptive analytics aims to prescribe possible outcomes to provide decision-makers the ability to make better decisions. Differs with understanding (descriptive analytics) and predicting, prescriptive analytics shifted analytics focus into the actual problem decision faced by managers (Brandt et al., 2021). This analytics also provides insights on why and how the problem exists, recommends a number of alternatives, and provides multiple predictions baked upon specific action (Poornima & Pushpalatha, 2020).

How Marketing Capabilities are Enhanced by Marketing Analytics?

Previous studies (e.g., Cao et al., 2019; Wedel & Kannan, 2016; Günther et al., 2017) concluded that businesses could utilize MA to enhance their marketing processes and effectiveness.

The use of MA is the indication of a firm's market sensing capability. (Cao et al., 2019; Benoit et al., 2020). Alshanty and Emeagwali (2019) identifies market-sensing as a tool used by firms to develop themselves, through generation of market intelligence relating to current and future behavior of consumers. Likoum et al. (2018) confirms that a firm's capability to assess and utilize knowledge depends on previously obtained knowledge. This means the development of firms' ability to seize and transform resources are enhanced by their market sensing capability. Firm's ability to seize and transform resources to provide greater value for consumers refers to firm's marketing capabilities (Cao et al., 2021). Essentially, learning about customers, competitors, and broad market environment using MA helps the firm to better sense market threats and opportunities (Cao et al., 2021)

Moreover, each component of MCs uses information differently. While the static form of MCs depends on information to be able better in delivering value, the dynamic form relies on information/market sensing to be faster and more effective in response to market change. Adaptive form of market capabilities relies even more on market sensing ability to learn and predict the market - to be proactively searching for market opportunities better and faster.

RESEARCH METHOD

This study adopted integrative literature review. This type of literature review aims to synthesize previous related literature, utilizes qualitative approach in conducting analysis, and provides a framework as the output (Snyder, 2019).

The review process follows the steps of i.e., design-conduct-analyze-structure as proposed by Snyder (2019). After determining the research question, this study selects 20 articles that incorporate marketing capabilities as variables. The articles were conducted in the past ten years. Through careful reading, the researcher extracts and summarizes the construction of measurement of MCs in each study.

The information is synthesized into a new comprehensive framework of MCs. Analysis was conducted to tailor the dimensions and indicators to the context of MA. The contribution of this study is presented in a new operationalized construct of MCs.

RESULTS AND DISCUSSION

Table 1 below displays previous studies that incorporate MCs as variables. Although the previous studies measured MCs in an extensive manner (e.g., Morgan et al., 2012; Guo et al., 2018; Reimann et al., 2021), only few studies operationalize MCs in the context of data analytics (e.g., Cao et al., 2019; Cao et al., 2021).

Table 1. Previous studies that measure marketing capabilities

Dimension of MCs	Indicators (Items)
Architectural Marketing Capabilities (Morgan et al., 2012; Liang & Gao, 2020; Carson et al., 2020)	<p><i>Architectural Marketing Capabilities</i></p> <p>Marketing Planning</p> <ul style="list-style-type: none"> Ability to conduct marketing planning; to set clear marketing goals; to formulate creative marketing strategies. <p>Market information acquisition capabilities</p> <ul style="list-style-type: none"> Ability to quickly learn change in customer preference; to discover competitor strategies; to gain insights from distributors; to obtain multiple information sources to learn about customers and competitors. <p>Market information interpretation capabilities</p> <ul style="list-style-type: none"> Ability to integrate available information to gain insight; to combine new information with past research; to analyze market information; to identify emerging trends. <p>Market information dissemination capabilities</p> <ul style="list-style-type: none"> Ability to make information available to decision-makers; to share available information widely; to ensure effectivity of information distribution.
Specialized Marketing Capabilities (Morgan et al., 2012; Carson et al., 2020; Hendar et al., 2020)	<p><i>Specialized Marketing Capabilities</i></p> <p>Pricing</p> <ul style="list-style-type: none"> Ability to integrate available information to gain insight; to combine new information with past research; to analyze market information; to identify emerging trends. <p>Product Development</p> <ul style="list-style-type: none"> Ability to manage new products; to develop new products to exploit R&D investment; to successfully launch new products; to speedily develop and launch new products. <p>Channel management</p> <ul style="list-style-type: none"> Ability to attract and retain the best distributors; satisfy needs of distributors; to add value in distributor's business; closeness in working with distributors <p>Delivery management</p> <ul style="list-style-type: none"> Ability to quickly deliver products; to ship products on time; to make product return easy; to meet delivery promises. <p>Post-sale service</p> <ul style="list-style-type: none"> Ability to deliver high-quality after-sales; attracting, retaining, and training of personnel; to quickly respond to customers. <p>Marketing Communication</p> <ul style="list-style-type: none"> Ability to develop effective advertising and promotion programs; to conduct advertising and promotion creatively; to skillfully use marketing communications; to manage marketing communications programs effectively. <p>Selling</p> <ul style="list-style-type: none"> The level of selling skills of salespeople; ability to retain good export salespeople; to provide effective sales support to the salesforce and distributors; to skillfully manage sales.

Static Marketing Capabilities (Day, 2011; Guo et al., 2018; Hoque et al., 2020; Reimann et al., 2021)

Static Marketing Capability
 Pricing strategy and techniques; new product development capacity; channel management and control; marketing communication capability; sales management; management information system; marketing planning; converting strategy into concrete actions.

Dynamic Marketing Capabilities (Guo et al., 2018; Reimann et al., 2021)

Dynamic Marketing Capability
 The efficiency and responsiveness of cross-functional business process of:

- New product development
- Customer relationship management
- Supply chain management

Adaptive Marketing Capabilities (Guo et al., 2018; Reimann et al., 2021)

Adaptive Marketing Capability
 Vigilant market capability

- Ability to be sensitive to detect market signals accurately; to actively collect extensive marketing information; to forecast market trends based on past histories; to distribute new information in a timely manner.

Market experimentation capability

- Willingness to actively conduct market experiments; ability to explore future trends and develop potentially successful business models through trial-and-error; advantage-taking of emerging technologies to track market changes and learn from market experiments; ability to actively learn from a wider range of peer companies, market leaders and partners.

Open Marketing Capability

- Actively seeking strategic partnership with firms with complementary resources. Ability to achieve synergy in responding to market signals; to continuously innovate through the partnerships.

Operational Marketing Capabilities (Cao et al., 2021; Cao et al., 2019; Mikalef et al., 2020)

Operational Marketing Capabilities
 Marketing Planning Capability

- Marketing planning skills: Ability to effectively segment and target the market; the process and skills of marketing management; thoroughness of marketing planning process.

Marketing Implementation Capabilities

- Ability to allocate marketing resources directly; to deliver marketing program effectively; to translate marketing strategies into action; to execute marketing strategies quickly

Dynamic Marketing Capabilities (Cao et al., 2021; Cao et al., 2019; Hoque et al., 2020)

Dynamic Marketing Capabilities
 Brand Management Capability

- Routinely use customer insight to identify valuable brand positioning; consistently establish desired brand associations in consumers' minds; maintain a positive brand image relative to competitors; achieve high levels of brand awareness in the market on a regular basis; systematically leverage customer-based brand equity into preference channel positions.

Customer Relationship Management

- Routinely establish a "dialogue" with target customers; ability to get target customers to try our products/services on a consistent basis; to focus on meeting customers' long term needs to ensure repeat business; to systematically maintain loyalty among attractive customers; routinely enhance the quality of relationships with attractive customers.

Product Development Management

- Ability to develop new products/services; to commercialize ideas fast; to successfully launch new products/services; to achieve productivity gains from R&D investments; number of product/service innovations.
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Several studies also interpret MCs variables in different dimensions and indicators. Study of Morgan et al. (2012) differentiate MCs into Architectural MCs and Specialized MCs. However, most MCs-related studies are not using this type of construct. Several components of Architectural MCs (e.g., market information acquisition capabilities, market information dissemination capabilities) are included as indicators in Adaptive MCs in other studies, while dimensions like marketing planning are interpreted as a dimension in Static MCs.

Similar relationships also occur in specialized MCs dimensions, where all components are similar to those of Static MCs components. Thus, in this study, the researcher incorporates the indicators in architectural-specialized construct into the static-dynamic-adaptive MCs construct, to produce more comparable and sound measurements.

4.2. Operationalization of SMCs

SMCs could be generalized into two dimensions – marketing planning capability and marketing implementation capability (Morgan et al., 2012; Cao et al., 2021). Studies suggested that the implementation of MA enhances both components (Cao et al., 2021).

4.2.1 Marketing Planning Capability

Insights produced by MA impacts both planning effectivity and efficiency and the output quality of marketing planning itself. Deep and broad insight related to customers and competitors enhances how companies obtain information during market research phase, how they identify marketing goals, how they choose particular strategies, how they conduct the process quickly, and develop a sound marketing plan as a final result.

MA implementation enhances firms' marketing research process. Watson and Wixon (2007) stated that through the adoption of data analytics, firms may benefit with more and better information. This means that MA provides deeper and broader information gained from internal (e.g., customer database) and external data (e.g., data from social media and external websites). This enables firms to gain new and rich insights related to their customers and competitors.

Implementation of MA also improves firms' segmenting and targeting process in the marketing plan. MA techniques enable firms to discover meaningful and interesting patterns within consumer data. MA techniques also able to conduct a more advanced visualization of the data, so it is easier to identify segments for the marketers to target on (e.g., Ezenkewu et al., 2015; Roy, Jaiswal & Sinha, 2018; Aziz, 2017)

Implementation of MA makes the whole planning process efficient. Tunowski (2015) stated that use of analytics can significantly reduce data collection time. Furthermore, Bara and Knezevic (2013) states that the use of business analytics reduces analysis latency, meaning that the delay between data availability and information delivering is reduced. This means that the planning process may be shortened, and the time can be spent more on strategy formulation.

Insights from MA also enable marketers to develop a thorough and clear marketing plan. Large and quality information gained through the use of MA enables to develop a more precise, sound, clearly defined and data-backed marketing plan.

4.2.2 Marketing Implementing Capability

MA also enables Firms to be more direct and quicker in implementing planned strategy. Bara & Knezevic (2013) and Tunowski (2015) stated that adoption of analytics decreases the

delay in decision making or called as decision latency. This is caused by two things – 1) The conciseness of planned marketing strategy allows it to be ready to be acted upon by decision makers, and 2) The use of advanced visualization techniques makes information more intuitive and understandable by decision makers. Thus, the combination of these two factors helps decision makers to clearly understand strategy, what resources are needed, how to effectively execute, to monitor the strategy and understanding what results to expect.

4.3 Operationalization of DMCs

The implementation of MA enhances a firm's DMCs since it enables firms to react quicker to market changes by redeploying their resources in a more effective and efficient way. DMCs are divided into three types – Customer Relationship Management (CRM) capability, Brand Management capability, and New Product Development (NPD) capability (Morgan et al., 2012; Cao et al., 2021; Guo et al., 2018).

4.3.1 CRM Capability

Research suggests that a firm gaining higher levels of marketing knowledge from data analytics will be more likely to maximize the benefits of CRM, the firm's ability to build relationships with potential customers and ability to leverage the established relationship with customers thereby acquiring new customers and retaining existing customers. Since the focus of CRM is to build relationships with customers, adoption of MA will enhance how firms understand customer needs. MA is also capable of accurately predicting customers' future needs. Thus, adoption of MA enables firms to obtain deep insight about their customer and develop long-term relationships.

Firms that employ MA will be able to engage with customers more effectively. Since firms could understand their customer, they may establish dialogue with customers and offer new products that may fit their characteristics. MA is also able to constantly profile the customers and inform the firm so they may know the most attractive ones, thus a continuously improving relationship with those customers may be achieved.

4.3.1 Brand Management Capability

Adoption of MA affects firms' brand management capability, since firms are able to gain insight related to consumer attitude toward their brand. Insight produced by MA may identify what customers think toward their brand and the competing brands. By understanding what people think about their brand (and competitor's brand), firms could act quickly and compete more effectively (Wu et al., 2016).

Furthermore, by implementing MA, firms may routinely know what consumers are thinking about their brand. The social media mining technique is one example to understand what people are saying in social media about particular brands (e.g., Fan & Gordon, 2014; Wu et al., 2016). Through deep and continuous insight about the structure of consumer conversation, a firm's marketer may develop brand strategies to enhance desired brand association, brand image, and brand equity.

4.3.2 NPD Capability

New Product development (NPD) capability could also be more successful when data analytics is leveraged to gain customer insights to transform new product development in dynamic marketplaces. The use of data analytics enables companies to shorten their innovation process and to bring more new products quickly.

Data analytics enables customer involvement in providing valuable input insights for the firm to develop new products (Zhan et al., 2016). This capability allows firms to gather

feedback in near real time to track changes in customer behavior faster and leads to a more cost-efficient NPD (Balaji et al., 2018; Jagtap & Duong, 2019). For instance, with input from customers businesses may quickly identify what features that customer will pay a premium for and enhance those features. On the other hand, features that are not wanted by customers may be eliminated (Tan & Zhan, 2017). The consumer insight generated by MA also ensures that new products are distributed through effective channels. Thus, it can be concluded that rapid and rich feedback of consumer behavior insight leads to better capability to quickly understand consumers and quickly to develop products that meet customer needs.

4.4 Operationalization of AMCs

4.4.1 Vigilant market capability

Day (2011) mentions that deep customer insights should be developed with early warning systems and be amplified with emerging technologies for seeking patterns in micro data and sharing insights quickly (Rephrase). Day (2011) explains that vigilant market capability is manifested in firm's the capability to learn about the customer behavior (sensing the market) proactively and extensively. This capability is enhanced through adaptation of MA, since advanced analytics techniques may boost marketers in finding a new pattern (e.g., descriptive analytics with clustering). This capability is also indicated by firms' ability to detect signals of behavior change in the market. Presence of MA technologies and techniques in the learning process enables firms to detect market change signals. For example, exploratory and predictive analytics techniques provide the ability for marketers to detect more specific patterns and predict changes in consumer behavior (Chang et al., 2012; Khade, 2016; Taghikhah et al., 2021).

4.4.2 Market experimentation capability

This capability is manifested through the firm's constant learning from market experiments (Guo et al., 2021). This capability requires firms' willingness to invest in experiments and learn from trial-and-error to generate new insights. Day (2011) mentions that a qualified team needs to exist in the firm to analyze and interpret the insights gained from experiments.

Day (2011) implies that data-related tools may be utilized by users in supporting them through the experiment process. For instance, predictive analytics techniques support the experimentation process since it may predict customer needs with acceptable accuracy, based on their preference and characteristics (Aldayel et al., 2021). This may assist marketers to develop new products and features. Analytics techniques may also help provide feedback during the experimentation, since firms may conduct experimentation to understand how consumers react to certain offerings (Provost & Fawcett, 2013).

4.4.3 Open marketing capability

This capability is indicated by the willingness of firms to create and keep relationships with partners that provide insights related to market behavior. The partners may range from new media to social networking sites (Guo et al., 2018). This 'extension' of marketing effort displays openness of firms to gain resources beyond their own boundaries.

Day (2011) states that this openness may be enhanced by imagination and necessity. This urgency to analyze and gain more insights from the market leads to greater data collection efforts, which appear in partnership with social media sites or websites to obtain their user behavior data. In order to run effectively, MA needs resource readiness, which means raw data needs to be available and collected as implied by Earley (2015). This urgency may create the

motivation for firms to open their marketing efforts through partnering with other parties that may provide more data about the market.

Table 2. Operationalization of Marketing Capabilities in the context of MA Adoption

Variable (First-Order)	Dimension (Second-Order)	Items (Third-Order)	Explanation
Static Marketing Capabilities (SMC)	Marketing Planning Capability	Ability to obtain new insights from market research.	MA techniques enables firm to gain new insights from internal (e.g., customer database) and external data (e.g., data from social media and external websites)
		Ability to effectively segment and target the market.	MA techniques enable firms to effectively segment and identify more segments in the market.
		Ability to clearly set marketing goals.	Deep and broad insight provided by MA enhances the ability to set clear marketing goal metrics.
		Ability to efficiently conduct marketing plan processes.	Insights from MA makes managers easier to choose marketing goals and techniques, thus the planning will be less time and energy consuming
		Ability to develop a thorough marketing plan.	Insights produced by MA enables to develop a more precise, sound, clearly defined and data-backed marketing plan.
	Marketing Implementation Capability	Ability to translate plans into action.	A detailed and sound marketing plan (developed with the support of MA), is more ready to implement, since the steps and metrics used in the plan are clearly defined.
		Ability to allocate marketing resources directly.	A detailed and sound marketing plan enables managers to allocate resources more directly, since the type and number of resources needed are clearly defined.
		Ability to deliver marketing programs effectively.	A detailed and sound marketing plan makes marketing programs effectively executed, since the programs chosen are data-backed and the metrics of success are clear.
		Ability to execute strategies quickly.	A detailed and sound marketing plan makes it quickly executed, since what resources and steps needed are clearly defined.
		Dynamic Marketing Capabilities (DMC)	Customer Relationship Management (CRM) Capability
Ability to get target customers to try our products/services on a consistent basis.	MA techniques (e.g., predictive analysis, similarity analysis) enable firms to accurately forecast future needs of targeted customers.		

	Ability to focus on meeting customers' long term needs to ensure repeat business.	MA techniques enable firms to explore and understand what is important for customers to keep them long-term.
	Ability to maintain loyalty among attractive customers.	MA capability allows firms to discover the attractiveness level of customers based on certain characteristics, thus maintaining loyalty for those customers through data-backed choice of strategies.
	Routinely enhance the quality of relationships with attractive customers.	Insights produced by MA enables firms to continuously learn the important variables for attractive customers, so the relationship quality with them will be routinely enhanced.
Brand Management Capability	Routinely use customer insight to identify valuable brand positioning.	Insights from MA allows firms to understand what customers are thinking about their brand (how customers position their brand).
	Ability to consistently establish desired brand associations in consumers' minds.	Insights from MA allows firms to continuously learn deeper about customer attitude toward their brand. This enables firms to consistently implement effective branding association strategy to establish desired results.
	Maintain a positive brand image relative to competitors.	Insights from MA allows firms to comprehend broadly about consumer attitude toward their brand and their competitor's. This enables firms to deploy effective PR strategies to manage their brand image.
	Ability to achieve high levels of brand awareness in the market on a regular basis.	MA techniques enable firms to consistently explore the levels of awareness toward their brand. Firms utilize this information to regularly implement effective brand awareness strategies.
	Ability to systematically leverage customer-based brand equity.	MA techniques enable firms to explore the customer attitude toward their brand. Firms then use the insights to deploy strategies to systematically enhance their brand equity.
	Product Development Capability	Ability to develop new products/services.
Ability to commercialize ideas fast.		Insights generated by MA enables firms to understand how consumers will use/buy their new product, thus their ideas are quickly monetized.
Ability to successfully launch new products/services.		Insights from MA enables firms to understand how consumers will access/purchase their new product. Thus, the launching of new products will be more effective.

		Number of product/service innovations.	Insights from MA enables firms to gain ideas by constantly understanding the behavior of their customer/user (e.g., problems, patterns of use). This enables firms to continuously innovate through both developing new products/services and improving products/services.
Adaptive Marketing Capabilities (AMC)	Vigilant Market Learning Capability	Ability to quickly learn change in customer preference.	MA capabilities enable firms to both discover consumer characteristics and patterns and to detect market's behavior change.
		Ability to integrate available information to gain insight.	MA capabilities enables firm to integrate available information to produce new insights (e.g., using the capability to mix and assimilate available information into more valuable ones).
		Ability to analyze market information.	Quality and organized information generated by MA capabilities helps firms in conducting market analysis.
		Ability to identify emerging trends.	MA capabilities enable firms to continuously identify and monitor emerging trends.
Market Experimentation Capability		Ability to develop business models through trial-and-error.	MA enables firms to experiment through developing new products/services/business models or even prototypes, since MA may provide insight about future trends.
		Ability to learn from market experiments.	MA enables firms to generate insights from their market experiments, to be further used for marketing decision making.
		Willingness to conduct market experiments.	MA impacts firms' willingness to experiment since insights related to consumer future needs are obtained.
Open Market Capability		Willingness to seek strategic partners to exchange resources with.	Need for MA resource readiness affects firm's urgency to search partners (e.g., Social Media companies, Commercial websites, etc.) to exchange resources with.
		Ability to collaborate with partners.	Ability to achieve synergy with partners. MA enables parties to derive new, useful insights through integrated resources. Parties may quickly detect and act on market signals.
		Ability to innovate continuously through the resource integration.	Ability to constantly improving products and process is affected by the collaboration of MA and the integrated resources.

CONCLUSION

This study developed first order, second order and third order constructs of MCs that allows researchers to measure MCs more comprehensively in the context of MA adoption. The construct developed is based on the Static-Dynamic-Adaptive marketing capabilities model.

This result may help future research that incorporates MCs and MA. Authors developed a construct that may help future researchers to have comprehensive references in measuring MCs. This construct may also help researchers in measuring SMCs, DMCs, and AMCs separately according to the focus of the study.

Previous research did not break down the items and the relationship between MA and MCs dimensions. So, by using this new construct as a reference point, researchers may better comprehend how exactly MA may impact MCs, and thus create more effective questionnaire items. This construct also supports analytics research efforts to better explain the mechanism how this technology adoption may bring value to firms.

Further research may first focus on conducting validity and reliability tests for all orders of the construct. Secondly, researchers may also examine the impact of MA towards each dimension of marketing capabilities, especially the AMCs using the result of this study as a framework, since related studies are still limited.

Lastly, this construct may be further incorporated into other theories to develop a more complex model. For instance, this construct may be further tested as mediation to measure impact of analytics towards firm performance, innovation performance, competitive performance, etc

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