



The mediating role of marketing capabilities in the impact of artificial intelligence competencies on insurance companies' market performance

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Abstract

We are living in an era that is referred to as the digital age. The digital age is an era in which the use of digital technologies has become significantly more prevalent and widespread. Digital technology has revolutionized the way we communicate, work, shop, entertain, and even live. These technologies have enabled easy and fast access to information and have led to improved efficiency and increased productivity in various industries. The deployment of artificial intelligence has accelerated in several areas in the past few years, with much focus on its potential in marketing. Early reports highlight promising benefits of artificial intelligence in marketing, such as providing important insights into customer behaviors, identifying important market insights, and streamlining operational inefficiencies. Drawing on the AI competencies and marketing literature, this study develops a conceptual research model that examines the impact of AI competencies on marketing capabilities and, in turn, on market performance in insurance companies. The research method used in this study is descriptive correlational and a standard questionnaire was used to measure the research variables. The statistical population of this study is all senior managers of insurance companies, whose number is 300 people, and the sample size is estimated to be 169 people using the Cochran formula. The validity of the research tool has been confirmed in terms of content and its reliability using Cronbach's alpha. To answer the questions and examine the research hypotheses, the structural equation method and path analysis using the partial least squares (PLS) method were used with Smart-PLS software. The results showed that artificial intelligence competencies affect marketing capabilities (information management capabilities, planning and implementation) in insurance companies. The results also indicate that marketing capabilities (information management capabilities, planning and implementation) have a positive effect on the market performance of insurance companies. The results also showed that the effect of artificial intelligence competencies on the market performance of insurance companies is partially mediated through the three aforementioned capabilities.

Keywords

AI competencies, marketing capabilities, market performance, insurance companies.

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1- Introduction

The flood of data, coupled with the availability of processing power and storage in digital devices, has created a renewed interest in artificial intelligence (AI) in various fields in recent years. Intense competition among organizations around the world has also accelerated the need to deploy AI to gain an edge over competitors (Enholm et al., 2021). AI is not perceived by most managers as a core competency that organizations need to strengthen to remain competitive in the long term. One of the key areas of AI use in organizational operations has been marketing (Mikalef et al., 2021). Intelligent solutions are essential to enhance marketing capabilities in a complex business environment, as marketing operations often deal with extensive information complexity and the need for rapid decision-making. In this regard, AI has the potential to transform how conventional activities are conducted due to its ability to process increasing volumes of data, and provide rich insights about key business partners and customers (Bag et al., 2021). Additionally, AI applications have been proposed to enable the automation of many manual processes, which can help reduce bottlenecks and increase operational efficiency in marketing operations. In fact, a recent survey of business executives conducted by Garner found that the majority believe that AI is likely to be a key advancement in their business in the coming years (Paschen et al., 2020). Despite the promise of AI in enhancing marketing activities, a large portion of organizations are still struggling to leverage their AI investments in a way that adds value (Fountaine et al., 2019). A growing consensus in the literature argues that this is due to the fact that AI investments need to be leveraged and developed carefully in alignment with organizational operations. In other words, it is important that AI is viewed as a core competency within organizational boundaries, and that key operations are either enabled or enhanced by appropriate AI applications. While previous literature has examined the challenges associated with AI adoption (Micallef et al., 2021), to date there is limited understanding of how organizations should plan to develop AI into a strategic asset that can be used to gain competitive advantage. This is particularly prominent in the marketing domain, where we still know very little about the impact of AI and the potential mechanisms for generating value from such technologies (Huang et al., 2019). Clarifying the value of AI in marketing in context and how to achieve it is important in order to reduce the number of failed initiatives in organizations as well as accelerate the deployment of AI in these types of operations. Similarly, recent surveys of experts suggest that there are still some significant bottlenecks hindering the adoption and use of AI in organizations that go beyond technical challenges. Furthermore, for many managers, the value of AI adoption is still unclear, further hindering deployment in key organizational operations (Bhalerao et al., 2022). A recent study by McKinsey found that the most popular use cases for AI in organizations are related to optimizing services and marketing processes. However, there are still several challenges associated with realizing such value from AI investments, and in particular, building an AI competency that can consistently support business requirements (McKinsey, 2022).

To address this gap, this study builds on the core competency theory (Prahalad, 1993) and develops a concept of AI deployment across organizational boundaries by following the key tenets of this theory. Specifically, the concept of AI competency as a core competency of organizations is proposed, highlighting the need for innovative and coordinated deployment of AI. Organizations that are able to develop AI competency are those that can gain

competitive advantage over their competitors. This is due to the fact that AI deployment is specific in nature and requires a comprehensive effort from various organizational entities to produce inimitable and value-creating AI applications. However, there is a lack of understanding on how organizations should structure their AI competencies for marketing, and how these ultimately impact organizational performance. Therefore, this research seeks to investigate the issue of what impact artificial intelligence competencies, with the mediating role of marketing capabilities, have on the market performance of insurance companies.

2- Research literature

2-1. Marketing capabilities

Marketing capabilities (MCs) are defined as organizational capabilities to perform a set of tasks using available organizational resources to achieve a desired performance outcome. According to Guo et al. (2018), marketing capabilities enhance an organization's ability to effectively configure and deploy resources to create sustainable competitive advantage. Therefore, marketing capabilities are a complex combination of organizational capabilities and resources, unique to an organization, and very difficult to imitate by competitors (Herhausen et al., 2020).

Previous research has divided marketing capabilities into three categories: inside-out, outside-in, and pervasive. Inside-out capabilities originate from within the organization and correspond to different functional activities, while extrinsic capabilities originate from the market and help organizations understand their customers and competitors. Finally, pervasive processes integrate an organization's internal and external processes through market knowledge and the firm's internal performance. Therefore, pervasive marketing capabilities combine both inside-out and outside-in capabilities. Santos-Vijande et al. (2012) point out that "if [a company] confirms that it has pervasive capabilities, it can be assumed that they have already developed both inside-out and outside-in capabilities." These capabilities include the development and implementation of market strategies, policies, and programs (Chahal & Kaur, 2014). The adoption and use of AI-based marketing is driven by both internal and external processes. Therefore, we conceptualize marketing capabilities using pervasive capabilities in this study. Specifically, the scope capabilities selected for this study are marketing information management, marketing planning, and marketing execution. Marketing information management is the organizational ability to obtain and analyze relevant information about various stakeholders to develop effective marketing programs (Cavazos-Arroyo & Puente-Diaz, 2019). The ability to plan marketing is about anticipating and strategically responding to changes in the market environment, further contributing to the achievement of organizational goals. Finally, the ability to implement marketing is about executing, controlling, and evaluating marketing strategies (Chahal & Kaur, 2014).

Over the past few years, there has been a growing debate about how AI is transforming organizations' marketing activities. According to an emerging stream of research, AI is rapidly becoming an integral part of organizations that engage in marketing operations, but it is also automating or augmenting key processes. This stream of research, as well as prominent examples from industry, show that AI can improve customer insight generation, personalization and greater planning accuracy, and also improve the customer experience (Dwivedi & Wang, 2022). As such, there are widespread anecdotal claims about the potential

applications of AI for marketing activities that rely on a diverse set of technologies. To this end, it is emphasized that it is important for organizations to develop AI competencies to be able to adapt such diverse applications of AI. In addition to the above, experts claim that the use of AI in marketing can also enable organizations to reach a wider set of customers through targeted applications, which not only improves the performance of existing operations, but also opens up new ways to conduct operations (Raghupathi et al., 2023).

2-2. AI Competencies

Artificial intelligence is a long-standing subfield of computer science. While historically AI has been confined to a largely theoretical realm, recent advances in data generation and computing have allowed AI to move from theory to practice. Technologies that embody the concept of AI have been described in various ways, primarily as tools for solving complex and time-consuming problems and secondarily as a system that mimics human intelligence and cognitive processes, or in other words, computational agents that act intelligently. One of the main pillars of AI technologies is that they are designed and developed to operate based on predefined requirements based on available data and information (Paschen et al., 2020). This requirement emphasizes the ability of AI technologies to learn from previous experiences and draw conclusions through data analysis. A specific, and perhaps most prominent, subfield of AI is machine learning (Ongsulee, 2017). AI technologies that are based on machine learning can modify their processing based on newly acquired information. Thus, a key difference from other previous technologies for decision-making or assistance is that such algorithms are inherently adaptive, as they dynamically change based on new input. However, while AI technologies have evolved significantly over the past few years, many organizations are struggling to use them in a way that creates value for them. A growing body of research has focused on this challenge, suggesting that many of the challenges associated with effectively harnessing the potential of AI arise from the organizational context (Chernov and Chernova, 2019). Taken together, several notable examples of organizations have been successful in using AI in operations and finding ways in which such technologies can be a source of business value (Makarius et al., 2020). Such cases have shown how AI orchestration can become a core competency of an organization and bring significant organizational value. The concept of AI competency therefore extends conventional thinking related to the development of AI technologies and incorporates their design and deployment in an organizational environment in a way that facilitates value creation. Hence, an AI competency follows a long history of academic research that distinguishes between core technologies (AI technologies) and core competencies (AI competencies). Therefore, an AI competency is not simply the technology used to support it or the technical ability to use it effectively, but rather the creative combination of such technologies, organizational knowledge, and institutions as a coordinated whole (Prahalad, 1993).

Recent surveys and studies among leading organizations on the use of AI suggest that their ability to derive value from such technologies stems precisely from such an ability to creatively incorporate AI into new or modified processes (Fountain et al., 2019). Consequently, the creative coordination and integration of AI technologies in a way that adds business value requires the presence of AI competency. Building on previous literature in the field of information systems (IS), we define the concept of AI competency in accordance with previous studies in this field (Ravichandran, 2018). In line with the conceptualization of

competencies by Prahalad (1993) in his seminal work, an AI competency should include three key characteristics. First, it should address the technical ability to effectively organize technology in an effective manner and have the potential for competitive differentiation. Second, it should go beyond a single business unit and cover a wide range of operations and processes. Third, it should be difficult for competitors to imitate, which requires a focus on continuous experimentation and being proactive. Together, these three aspects facilitate the creation of an AI competency.

2-3. The impact of AI competencies on marketing capabilities

The effectiveness of marketing activities depends heavily on how market research is conducted by the organization. The organization should consider industry trends, customers, competitors, and other relevant stakeholders when conducting market research. Data can be collected from various sources (such as internal and external reports, social media, etc.) to conduct market research. Analyzing this diverse data and identifying intelligence from such data requires AI competencies. Using AI techniques for market research and marketing decision support can help organizations make better decisions (Pietronudo et al., 2022). For example, AI technologies such as natural language processing (NLP) allow marketers to understand the personality and behavior of customers by analyzing texts. This allows marketers to target customers with personalized content. It also helps in understanding customer needs and designing products and services that meet customer needs. In this study, it is suggested that AI competencies can influence marketing information management capabilities. For example, organizations can use their AI competencies to analyze different types of market data and create visualizations to help managers make decisions (Sharma et al., 2022). As a result, the following hypothesis is proposed.

Hypothesis 1: There is a positive relationship between AI competencies and information management capabilities in insurance companies.

Planning activities should address broad organizational goals rather than isolated business issues. Therefore, interdisciplinary collaboration within the organization is a prerequisite. Organizations with a high level of AI competencies naturally involve business, operational, and marketing people to work with analytics experts, thus transforming simulated work practices into an interdisciplinary collaboration to drive organizational success. AI-based systems can generate and analyze hundreds of millions of options and their possible impacts, and then rank a few optimal options or solutions for marketing decision makers (Fountain et al., 2019). As a result, the following hypothesis is proposed.

Hypothesis 2: There is a positive relationship between AI competencies and planning capabilities in insurance companies.

When AI-based systems rank different marketing solution strategies, marketing people can use their expertise to make their final decision, which is supported by AI-based decisions, without the need to receive input from their leaders (Fountain et al., 2019). This greatly increases the organization's execution capabilities. Wamba-Tcombe et al. (2020) point out that "the greater the capacity and ability to extract the information effects of AI and its technologies, the higher the quality and effectiveness of decision-making an organization can make." Several previous studies have also indicated that organizations that use AI systems to

gain customer, user, and market knowledge can triple their marketing efficiency (Singh, 2022). Consequently, the following hypothesis is proposed.

Hypothesis 3: There is a positive relationship between AI competencies and implementation capabilities in insurance companies.

2-4. The impact of marketing capabilities on market performance

Marketing information management can be considered as the ability of an organization to obtain and analyze relevant information about various stakeholders to develop effective marketing strategies. Therefore, improving marketing information management can provide managers with faster access to information when needed. It can also help managers understand and serve customers better, which may lead to increased customer satisfaction, company revenue, and profitability. When an organization integrates AI-based marketing information management tools, it can help them make decisions, thus leading to higher productivity and better overall performance. Furthermore, the knowledge created using AI technologies can provide new ideas, and hence the organization may discover new business opportunities and develop new offerings for the markets faster than its competitors (Cavazos-Arroyo & Puente-Diaz, 2019). Consequently, the following hypothesis is proposed.

Hypothesis 4: There is a positive relationship between information management capabilities and market performance in insurance companies.

Marketing planning is the ability to anticipate and respond strategically to changes in the market environment that further contribute to achieving organizational goals. Improved marketing planning allows an organization to integrate its diverse resources and formulate marketing strategies to create success. Anticipating and responding strategically to the changing market is crucial in today's competitive environment. If an organization cannot take the necessary actions at the right time, it cannot succeed in today's uncertain market. An AI-based marketing plan may consider historical data related to markets, competitors, stakeholders, and industry trends, among others, to provide different courses of action. Innovative companies test and study different courses of action to stay competitive in the market and create business success (Ravichandran, 2018). Consequently, the following hypothesis is proposed.

Hypothesis 5: There is a positive relationship between planning capabilities and market performance in insurance companies.

Marketing implementation capability is about executing, controlling, and evaluating marketing strategies (Chahal and Kaur, 2014). While marketing planning is about preparing for an ever-changing market, marketing implementation is about executing action and allocating resources (Cavazos-Arroyo and Puente-Diaz, 2019). Competence in evaluating and implementing different marketing strategies is required for continuous adaptation to the market and achieving business success. Implementing actions when necessary can enhance operational, financial, and market performance. With the help of AI technologies, an organization can effectively and quickly make quality decisions relative to its competitors, which in turn can positively impact organizational performance (Wamba-Taguimdje et al., 2020). Furthermore, companies with higher implementation capabilities can mobilize resources to implement new marketing strategies that align with their business models or even revise their existing business models based on the feedback received from marketing activities. Consequently, the following hypothesis is proposed. Hypothesis 6: There is a

positive relationship between implementation capabilities and market performance in insurance companies.

2-5. Research model

Based on the above discussion and theoretical basis, we argue that AI competencies are important for insurance companies in realizing market performance gains. The three essential pillars that jointly comprise AI competencies include organizational infrastructure, business scope capability, and proactive stance. The combination of these enhances marketing capabilities that are important in realizing market performance gains. Therefore, it is argued that the impact of AI competencies on market performance in insurance companies is an indirect effect. In Figure 1, the conceptual model of the research and the relationship between the variables is presented:

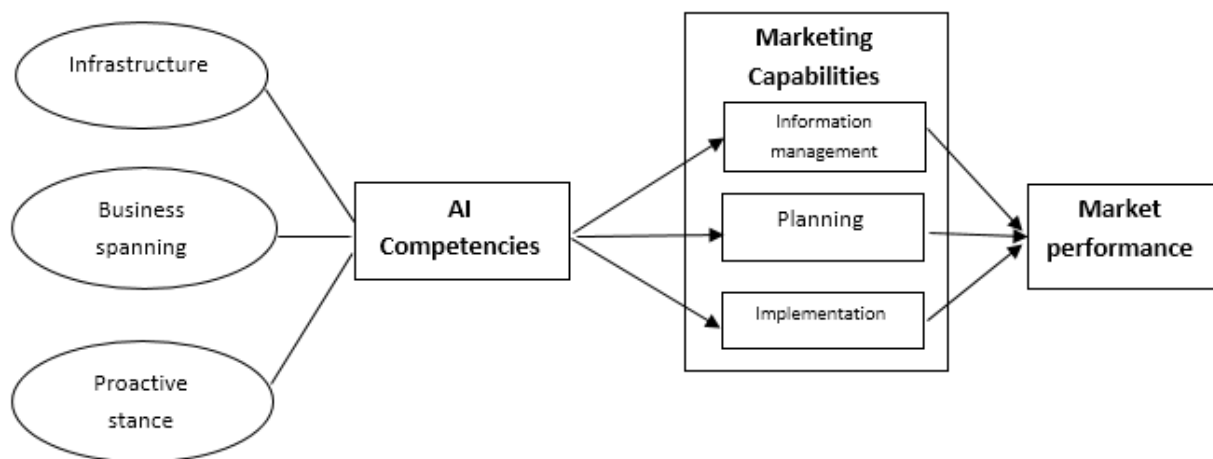


Figure 1: Conceptual research model

3- Research Methodology

In terms of methodology, this research is a correlational research. The present research is classified as descriptive research based on how the required data was obtained and in terms of classifying the research according to their purpose. This research is applied in terms of type and descriptive-survey method.

This study examined four variables, all of which were adapted from the literature. A total of 30 managers of small and medium-sized companies in Bushehr province were asked to participate in the pre-test. In this research, library resources including documents, books and existing scientific articles were used to compile the foundations, definitions and theoretical concepts. Also, a standard questionnaire was used to collect the data required to test the research hypotheses. The Artificial Intelligence Competencies Questionnaire written by Lee and Ramamurphy (2011), the Marketing Capabilities Questionnaire written by Micallef et al. (2023) and the Market Performance Questionnaire written by Cherry et al. (2014) were used in this research.

The questionnaire of this study was subjected to the judgment of several experts and professors of business management and marketing working in universities for content validity. After making some corrections and obtaining approval from those professors for

higher confidence and acceptability of its face validity, about 30 questionnaires were distributed to the statistical population. At first, it was not possible for the respondents to understand a number of questions. After several fluent translations of the text and the deletion of a number of questions, the questionnaire had sufficient face validity and finally the agreed questionnaire was used as a data collection tool.

In this study, the target population is all senior managers of insurance companies, which number is about 300 people. Given that the size of the statistical population is limited and equal to 300 people, the Cochran formula was used to select the sample size. Therefore, the number of samples examined in this study is equal to 169 people.

4- Research findings

In order to analyze the data using PLS software, the two-stage method of Holland (1999) for modeling by partial least squares is used. The first stage involves determining the measurement model through reliability and validity, and the second stage involves determining the structural model through the analysis of fit indices, coefficients of determination, and path analysis. In the first stage, validity and reliability estimation are used to examine the measurement model, which are confirmatory methods that examine the consistency of the data with a given factor structure. In fact, confirmatory factor analysis examines the appropriateness of the items that have been selected to introduce the variables. In the second stage, path analysis of the model fit indices and the coefficient of determination is used to examine the structural model. According to researchers, structural equation modeling using the partial least squares method, unlike the covariance-based method (LISREL, AMOS software), lacks chi-square-based model fit indices to examine the extent to which the theoretical model matches the collected data.

4-1. Measurement Model Fit

Before testing the hypotheses, the fit of the measurement models is first examined using the reliability criteria of Cronbach's alpha coefficients, composite reliability (CR), and convergent validity. First, the factor loading of the questions or items was examined. The results showed that the factor loading of all questions was greater than 0.4, which indicates the suitability of this criterion. Other results related to Cronbach's alpha coefficients, composite reliability, and convergent validity are presented in Table 1:

Table 1: Results of the average variance extracted from the research constructs

Variable	Cronbach's alpha	Composite reliability	AVE
AI Competencies	0/823	0/854	0/736
Information Management	0/835	0/850	0/755
Planning	0/898	0/903	0/831
Implementation	0/970	0/975	0/813
Market Performance	0/879	0/895	0/805

4-2. Examining divergent validity

In the divergent validity section, the amount of difference between the indicators of a construct and the indicators of other constructs in the model is compared. This is calculated by comparing the AVE square root of each construct with the values of the correlation coefficients between the constructs. For this, a matrix must be formed in which the values of the main diameter are the matrix of the AVE square root of each construct and the lower

values of the main diameter are the correlation coefficients between each construct and other constructs. This matrix is shown in Table (2). As is clear from Table (2), the AVE square root of each construct is greater than the correlation coefficients of that construct with other constructs, which indicates that the divergent validity of the constructs is acceptable.

Table 2: Comparison matrix of AVE root with correlation coefficients of constructs (divergent validity)

Variable	AI Competencies	Information Management	Planning	Implementation	Market Performance
AI Competencies	0/858				
Information Management	0/364	0/869			
Planning	0/452	0/621	0/912		
Implementation	0/387	0/470	0/412	0/902	
Market Performance	0/520	0/438	0/369	0/441	0/897

4-3. Reviewing the conceptual model of the research and testing the hypotheses

After preparing the data in SmartPLS software and drawing the model, it is time to fit the model and estimate the parameters and path coefficients. Note the following figure, the numbers shown are the path coefficients of the exogenous variables (rows) on the endogenous variables (columns):

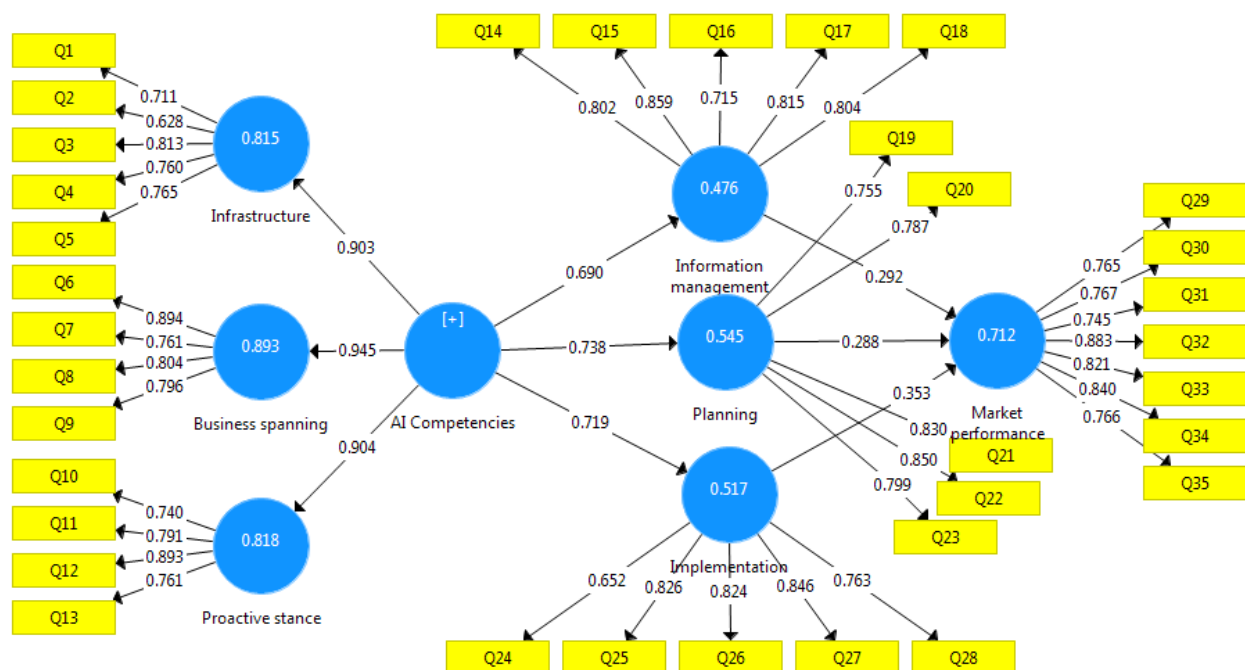


Figure 2: Software output - tested research model (path coefficients and factor loadings).

Several issues should be considered as follows.

1- Factor loadings: The first factor that should be considered in evaluating reflective models is the unidimensionality of the indicators. This means that each indicator in the set of indicators should be loaded with a large factor loading value to only one dimension or latent variable. If this value is equal to or greater than 0.4, it confirms that the variance between the construct and its indicators is greater than the variance of the measurement error of that construct and the reliability of that measurement model is acceptable. According to the test,

all coefficients are significant at the 95% confidence level. Therefore, the results obtained from factor loadings confirm the high validity of the model.

2- Standard regression coefficient: The standard regression coefficient indicates the extent of the effect of the independent variable on the dependent variable and is in the range of -1 to +1.

3- Coefficient of Determination (R squared): The ratio of the defined changes (variables) to the total changes (variables). This measurement allows us to determine how confident we can be in the model's predictions.

One of the important outputs in partial least squares software is the t-statistic in pls. The t-statistic, sometimes known in reports as the t-value, is one of the indicators of the structural model's fit. An acceptable indicator for maintaining and significant factor loadings and the significance of a causal hypothesis between two independent and dependent variables is a value above 1.96 at a 95 percent confidence level or a 0.05 percent error level.

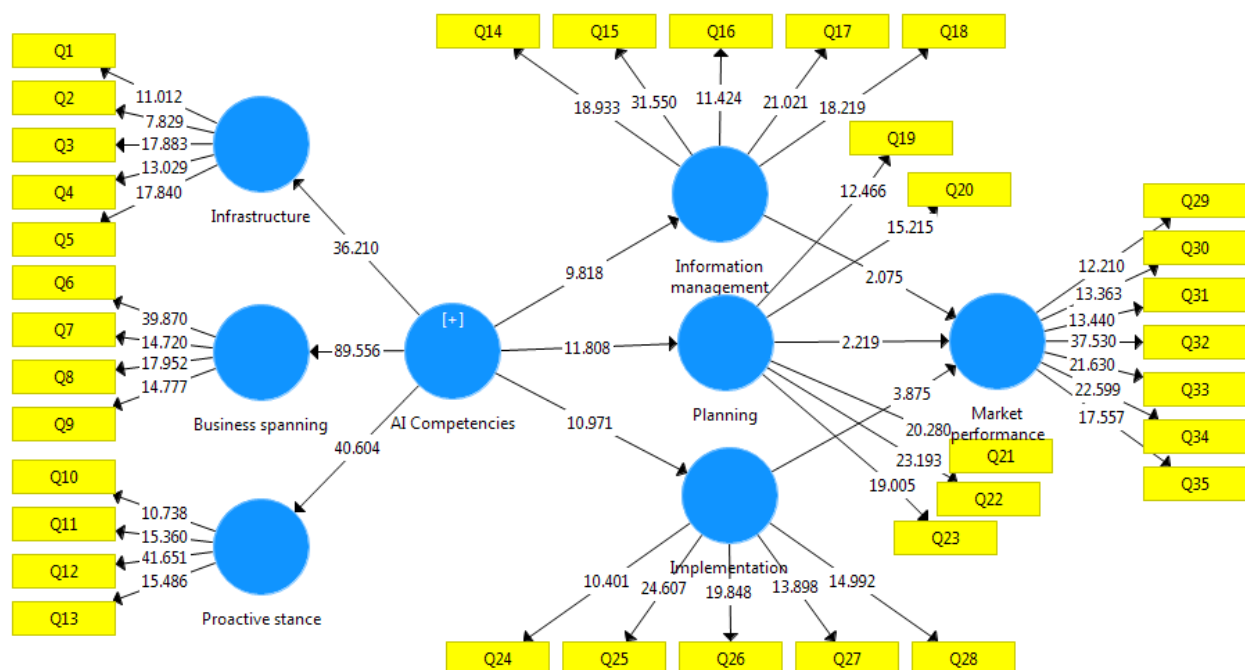


Figure 3: Software Output - t-Coefficients

4-4. Overall model fit

The GOF index in the PLS model is a solution for examining the overall model fit and is between zero and one, and values close to it are an indicator of the appropriate quality of the model. This index examines the overall predictive ability of the model and whether the tested model has been successful in predicting endogenous latent variables. To examine the overall model fit, the GOF criterion is used, where $GOF = 0.1$ is a low value, $GOF = 0.25$ is a medium value, and $GOF = 0.36$ is a large value. It is used to measure the validity of PLS models.

The results of the overall model fit are presented in Table 4. This criterion is calculated using the following formula:

$$GOF = \sqrt{\text{average}(\text{Communalities}) * R^2}$$

According to the value obtained for GOF of 0.372, a very good fit of the overall model is confirmed. In addition, according to the table above, the R^2 coefficients are considered a

criterion for examining the structural model fit. The coefficients of R^2 are related to the endogenous latent variables (dependent) of the model, and according to the results obtained, the values of R^2 are desirable.

Table 3: General indicators of model fit

Variable	Communalities	R^2
AI Competencies	0/412	-
Information Management	0/369	0/476
Planning	0/459	0/545
Implementation	0/514	0/517
Market Performance	0/445	0/714
Average	0/439	0/562
GOF		0/372

The results of structural equation modeling using Smart PLS software at a 95% confidence level are given in the table below. As the results show, AI competencies affect marketing capabilities (information management, planning, and implementation capabilities) in insurance companies. The results also indicate that marketing capabilities (information management, planning, and implementation capabilities) have a positive effect on market performance in insurance companies. The results also showed that the effect of AI competencies on market performance in insurance companies is partially mediated through the three aforementioned capabilities.

Table 4: Direct effects, t-statistic and the result of the research hypotheses

Hypotheses	Standardized path coefficient β	t-statistic	Meaningfulness	Accept or reject the hypothesis
AI Competencies → Information management capabilities	0/690	9/818	Sig<0.05	Accept
AI Competencies → Planning capabilities	0/738	11/808	Sig<0.05	Accept
AI Competencies → Implementation capabilities	0/719	10/971	Sig<0.05	Accept
Information management capabilities → Market performance	0/292	2/075	Sig<0.05	Accept
Planning capabilities → Market performance	0/288	2/219	Sig<0.05	Accept
Implementation capabilities → Market performance	0/353	3/875	Sig<0.05	Accept

5- Conclusion and Recommendations

This study sought to understand whether AI can enable insurance companies to achieve performance gains in marketing activities, and if so, through what means. Specifically, it drew on the theory of core competencies to develop a conceptualization of AI competencies that goes beyond the technical aspects of AI. Through this conceptualization, it was argued that insurance companies that are able to cultivate AI competencies will achieve organizational performance gains through their marketing operations. Specifically, it was argued that AI competencies allow insurance companies to develop three channels of marketing capabilities, information management, planning, and execution.

AI competencies are considered from the perspective of a key organizational capability that has the potential to create competitive advantage for organizations. Therefore, AI competencies are not understood solely from a technical point of view, but rather include the ability of management to creatively envision applications that add value to the organization and include the ability to test and experiment with new ways of using AI. Based on this approach, AI competency is considered a core competency that insurance companies should strive to strengthen, rather than merely an auxiliary class of capabilities that can support specific operations. The implications of conceptualizing AI competencies in this way are that it emphasizes specific ways of developing and maintaining such AI competencies in insurance companies. The implications of such an approach are that each insurance company must find its own unique way of building such AI competencies based on several different aspects such as the industry in which it operates, organizational history, organizational cultural elements, as well as the context in which the companies operate.

The second important finding of this study concerns the nature through which AI competencies add value to insurance companies. The results show that by enhancing marketing capabilities, they indirectly affect the market performance of insurance companies. This finding highlights the fact that AI competencies are flexible and can be directed towards a variety of organizational operations that can be enabled or enhanced through the use of various AI methods. In this study, the value that can be realized in marketing activities, which form a significant part of organizational operations, is specifically demonstrated. By enhancing such processes through the targeted use of AI applications, organizations can gain an edge over their competitors. Marketing activities provide abundant opportunities for the use of AI, as they involve high complexity and rapidly changing conditions in which AI can quickly analyze data and provide relevant insights. Furthermore, many tasks related to marketing activities can be automated through the use of AI or augmented through human-AI collaboration. However, an interesting finding from the empirical analysis is that the impact of AI competencies on different types of marketing capabilities is not equal. Therefore, there is a greater level of complexity in introducing AI into some operations, which although can provide a competitive advantage for insurance companies.

The results also highlight this, as insurance companies that can foster strong marketing implementation capabilities also deliver higher levels of market performance. This finding confirms the key tenets of the core competency theory, which argues that insurance companies that are able to develop a distinctive and hard-to-imitate capability will be able to achieve a competitive advantage. Furthermore, the results show that although AI can deliver value through the three aforementioned marketing capabilities, these are not the only channels of value creation. Since the impact of AI competencies on insurance companies' market performance is mediated to some extent through the three aforementioned capabilities, this implies that there are alternative forms of value creation from AI that are not included in this study. Nevertheless, the extent to which marketing capabilities influence market performance outcomes is quite significant, indicating the importance of these activities for future research. While this study highlights the magnitude and mechanisms of AI through which it can drive changes in marketing capabilities, it also encourages further research into the various ways in which these impacts are translated into practical applications. Therefore, while this study is an important step in identifying the way AI should

be organized in insurance companies and the mechanisms for generating value, further research needs to be conducted into the specific types of AI applications and the challenges involved in their deployment.

References

- Abrokwah-Larbi, K., (2023). The role of generative artificial intelligence (GAI) in customer personalisation (CP) development in SMEs: a theoretical framework and research propositions. *Industrial Artificial Intelligence* 1 (1), 11–21.
- Bhalerao, K., Kumar, A., Kumar, A., & Pujari, P. (2022). A Study of Barriers and Benefits of Artificial Intelligence Adoption in Small and Medium Enterprise. *Academy of Marketing Studies Journal*, 26, 1–6.
- Cavazos-Arroyo, J., & Puente-Diaz, R. (2019). The influence of marketing capability in Mexican social enterprises. *Sustainability*, 11(17), 4668.
- Chahal, H., & Kaur, J. (2014). Development of marketing capabilities scale in banking sector. *Measuring Business Excellence*.
- Dwivedi, Y. K., & Wang, Y. (2022). Guest editorial: Artificial intelligence for B2B marketing: Challenges and opportunities. In *In* (Vol. 105, pp. 109–113). Elsevier.
- Enholm, I. M., Papagiannidis, E., Mikalef, P., & Krogstie, J. (2021). Artificial intelligence and business value: A literature review. *Information Systems Frontiers*, 1–26.
- Fountain, T., McCarthy, B., & Saleh, T. (2019). Building the AI-powered organization. *Harvard Business Review*, 63–73.
- Fountain, T., McCarthy, B., & Saleh, T. (2019). Building the AI-powered organization. *Harvard Business Review*, 63–73.
- Herhausen, D., Miočević, D., Morgan, R. E., & Kleijnen, M. H. (2020). The digital marketing capabilities gap. *Industrial Marketing Management*, 90, 276–290.
- Huang, M.-H., Rust, R., & Maksimovic, V. (2019). The feeling economy: Managing in the next generation of artificial intelligence (AI). *California Management Review*, 61(4), 43–65.
- Makarius, E. E., Mukherjee, D., Fox, J. D., & Fox, A. K. (2020). Rising with the machines: A sociotechnical framework for bringing artificial intelligence into the organization. *Journal of Business Research*, 120, 262–273.
- McKinsey. (2022). The state of AI in 2022—and a half decade in review. <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-in-2022-and-a-half-decade-in-review>.
- Mikalef, P., & Gupta, M. (2021). Artificial Intelligence Capability: Conceptualization, measurement calibration, and empirical study on its impact on organizational creativity and firm performance. *Information & Management*, Online. <https://doi.org/10.1016/j.im.2021.103434>
- Mikalef, P., Conboy, K., & Krogstie, J. (2021). Artificial intelligence as an enabler of B2B marketing: A dynamic capabilities micro-foundations approach. *Industrial marketing management*, 98, 80–92.
- Ongsulee, P. (2017). Artificial intelligence, machine learning and deep learning. 2017 15th international conference on ICT and knowledge engineering (ICT&KE).

- Paschen, J., Kietzmann, J., & Kietzmann, T. C. (2019). Artificial intelligence (AI) and its implications for market knowledge in B2B marketing. *Journal of Business & Industrial Marketing*.
- Paschen, J., Wilson, M., & Ferreira, J. J. (2020). Collaborative intelligence: How human and artificial intelligence create value along the B2B sales funnel. *Business Horizons*, 63(3), 403–414.
- Pietronudo, M. C., Croidieu, G., & Schiavone, F. (2022). A solution looking for problems? A systematic literature review of the rationalizing influence of artificial intelligence on decision-making in innovation management. *Technological Forecasting and Social Change*, 182, Article 121828
- Prahalad, C. K. (1993). The role of core competencies in the corporation. *Research Technology Management*, 36(6), 40–47.
- Raghupathi, H., Choudhury, D., & Sfeir, C. J. (2023). Application of Artificial Intelligence in Market Knowledge and B2B Marketing Co-creation. In *Machine Learning for Business Analytics* (pp. 107–115). Productivity Press.
- Ravichandran, T. (2018). Exploring the relationships between IT competence, innovation capacity and organizational agility. *The Journal of Strategic Information Systems*, 27 (1), 22–42.
- Ravichandran, T. (2018). Exploring the relationships between IT competence, innovation capacity and organizational agility. *The Journal of Strategic Information Systems*, 27 (1), 22–42.
- Sharma, S., Islam, N., Singh, G., & Dhir, A. (2022). Why Do Retail Customers Adopt Artificial Intelligence (AI) Based Autonomous Decision-Making Systems? *IEEE Transactions on Engineering Management*.
- Wamba-Taguimdje, S.-L., Wamba, S. F., Kamdjoug, J. R. K., & Wanko, C. E. T. (2020). Influence of artificial intelligence (AI) on firm performance: The business value of AI-based transformation projects. *Business Process Management Journal*, 26(7), 1893–1924. West, B., Hillenbrand.