

# Is there a mediating effect of organizational learning and e-business adoption in the relationship between market orientation and manufacturing industry performance?

<sup>1</sup>Meisam Karami (Ph.D.), <sup>2</sup>Hamid Bouraghi (Ph.D.)

<sup>1</sup>Faculty of Management, Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor, Malaysia

<sup>2</sup>Department of Health Information Technology, School of Paramedical Sciences, Hamadan University of Medical Sciences, Hamadan, Iran

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**Abstract:** The purpose of this study is to examine the relationship between market orientation and manufacturing industry performance, with organizational learning and e-business adoption serving as mediating factors, grounded in the Resource-Based View (RBV). The findings indicate that manufacturing industry performance is positively associated with market orientation, organizational learning, and e-business adoption. Furthermore, market orientation significantly influences organizational learning and e-business adoption, thereby enhancing manufacturing industry performance. This study contributes to the marketing literature by offering a parsimonious framework for understanding these relationships. The results, based on analyses of manufacturing industry sectors, provide a baseline perspective for marketing management professionals working within manufacturing firms.

**Keywords:** Organizational Learning, E-Business Adoption, Market Orientation, Manufacturing Industry Performance.

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## 1. INTRODUCTION

Nowadays, electronic business technologies which are known as E-Business are widely used in the service and manufacturing industries. Facilitating processes of business through electronic business technologies have been pointed out as a key challenge in manufacturing industries and all other organizations (Amit & Zott, 2000; Melville, Kraemer, & Gurbaxani, 2004). The main question is not whether organizations should adopt electronic business or not (Zhu & Kraemer, 2005) but, is how organizations should develop an electronic business to achieve competitive advantage (Phan, 2003). In the context of e-business adoption, the mediating effects of e-business adoption between organizational learning, market orientation, and performance have been discussed (Wu, Mahajan, & Balasubramanian, 2003). But, the relationship between organizational capabilities such as market orientation and organizational learning has received little attention and has been considered only about variables such as manufacturing industry performance (Srinivasan, Lilien, & Rangaswamy, 2002). Crucially, the complementarity between organizational capabilities on a mediator (such as e-business adoption and organizational learning) of the capability-manufacturing industry performance relationship has not been examined.

A central tenet of the Resource-Based View (RBV) is that organizational capabilities interact with each other. That is, the value of a capability relies on for support of other capabilities on account of resource uniqueness of the reconfiguration and integration of existing capabilities. Thus, it enlarges causal ambiguity and subsequently to sustainable competitive advantage (Dyer & Singh, 1998). However, managers are facing a critical situation to properly allocate resources and to build those capabilities that will deliver value to customers manifesting in superior manufacturing industry performance as measured by market-based such as customer satisfaction, market share, customer retention, financial-based outcomes, shareholder wealth and return on investment (Deshpandé & Farley, 2004; Kirca, Jayachandran, & Bearden, 2005; Matsuno, Mentzer, & Özsomer, 2002).

Besides, capabilities may complement each other and the interactions enlarge manufacturing industry performance more than the individual contribution of each capability (Saad et al., 2006). For instance, the new product development literature is because of an organization possessing product technological capabilities and product marketing and then, the resulting complementarity of these capabilities (Naidoo, 2010; Narver & Slater, 1990; Narver, Slater, & MacLachlan, 2004). Thus, when capabilities are a key, a capability can be difficult to improve, not because of its initial level but because of its relationship with other capabilities (Paulraj, 2011; Ray, Barney, & Muhanna, 2004; Saunila & Ukko, 2014; Yam, Lo, Tang, & Lau, 2011). Essentially, complementarity is critical to the organization because the interaction effects of capabilities enlarge both effectiveness and efficiency (Iddris, Awuah, & Gebrekidan, 2014; Maleki, Davoudi, & Moradi, 2011; Morgan, Vorhies, & Mason, 2009; Parmigiani, Klassen, & Russo, 2011), and makes imitation difficult because of causal ambiguity (Calantone, Cavusgil, & Zhao, 2002; Chen & Jaw, 2009; Day, 1994; Grewal & Tansuhaj, 2001). There is a previous study on the complementary impact of technological and marketing capabilities as they are arguably two of the most important determinants of manufacturing industry performance (Savytska, Zhehus, Polevych, Priadko, & Bubenets, 2024; Song, Droge, Hanvanich, & Calantone, 2005; Stuart & Podolny, 1996). Anyway, despite the central importance accorded to completing capabilities and resources in the internal and creative appropriation of economic rents, strategic theories of the manufacturing industry have been inclined to stress their crucial integrative role in interpreting competitive advantage (Helfat & Lieberman, 2002). Current methodologies concentrate on measuring separate capability sets (their main effects) and generally ignore the synergies among these complementary capabilities (their interaction effects) that may play a key role in the process of innovation and augment manufacturing industry performance (MacDuffie, 1995).

The current study applies the RBV to examine the complementarity impacts of market orientation and technological capabilities on a potential mediator (i.e., EBA and organizational learning) of the relationship between capabilities and manufacturing industry performance. Market orientation is of central interest as it is the core of marketing strategy, and there remains an existing argument about its role in innovation (Febrianty et al., 2025; Hurley, 2015). Therefore, the contribution this study makes is having two parts: (1) It contributes to the literature on RBV by examining organization capabilities have complementary impacts on a potential mediator such as e-business and organizational learning and the relationship between capabilities and manufacturing industry performance and; (2) It contributes to the literature of market orientation by providing a mediation analysis of the impacts of e-business adoption and organizational learning between market orientation and manufacturing industry performance.

### **Resource-Based View (RBV) theory Model**

The Resource-Based View (RBV) theory is an important basis for the competitive advantage of a firm (Coates & McDermott, 2002). According to the RBV theory of the organization, an organization's internal resources are competitive advantage sources. Additionally, Wright, Dunford, and Snell (2001) reported a firm that wants to achieve competitive advantage must make certain that firm resources are difficult, important, and unique to substitute. Therefore, this kind of resource facilitates the implementation of strategies that enlarge performance and neutralize impending threats. However, the emphasis of RBV theory is more focused on the capabilities of internal organizations in developing the functional options which can arrive at a competitive advantage. Intangible assets, such as market orientation, organizational learning, and E-business adoption, allow a firm to build abilities that improve competitive advantage which in turn can enlarge superior market performance (Phan, 2003).

According to Rapp, Schillewaert, and Hao (2008), E-business adoption as an innovation is considered a capability that enlarges manufacturing industry performance. According to Santos-Vijande, Sanzo-Perez, Alvarez-Gonzalez, and Vazquez-Casielles (2005) organizational learning as a valuable resource are more complicated to duplicate rather than other resources. Therefore, according to the previous research, this study considers E-business adoption, organizational learning, and market orientation as intangible organizational resources that enlarge manufacturing industry performance.

## **2. THEORETICAL FRAMEWORK**

### ***The Resource-Based View of the manufacturing industry***

The Resource-Based View (RBV) has become the dominant theoretical foundation in strategic management (Priem & Butler, 2001) and has been applied to strategic marketing (Ahmadimousaab, Bajuri, Jahanzeb, Karami, & Rehman, 2013; Aragon-Correa & Sharma, 2003; Fahy & Smithee, 1999; Paladino, Widing, & Whitwell, 2015; Wernerfelt, 2014; Wright et al., 2001). The uniqueness of the organization is based on how the organization bundles its resources and capabilities (Penrose, 1995). Essentially, the RBV attempts to answer the following question: What types of organizational capabilities lead to sustainable competitive advantage?

Scholars have used terms such as resources, capabilities, competencies, skills, and assets when investigating the RBV (Coates & McDermott, 2002; Fahy & Smithee, 1999; Paladino et al., 2015; Wright et al., 2001). In this paper, Makadok (2001) perspective will be adopted as the theoretical underpinning of the study. Essentially, capabilities alter resources by integrating and recombining them (Coates & McDermott, 2002). For a capability to yield a sustainable competitive advantage, it must be imperfectly imitable (Calantone et al., 2002).

A key mechanism that protects capabilities from imitation is that of causal ambiguity or the ambiguity concerning the connections between actions and results (Iddris et al., 2014). Furthermore, complementarity, which refers to the marginal return of an activity increasing when it is used with another activity, is a crucial concept in strategy, particularly regarding causal ambiguity (Makadok, 2001). Complementarity is essential for synergy to develop among complementary capabilities (Saunila & Ukko, 2014). Saunila and Ukko (2014) indicated that ignoring complementarities may lead to a decrease in manufacturing industry profitability, as the firm fails to realize its full potential due partly to organizational slack. It is arguably the case that the interaction between capabilities that are characterized by complexity, manufacturing industry specificity, and complementarity leads to causal ambiguity, and therefore, to higher manufacturing industry performance.

### **Research model and hypotheses development**

The research model for this study was developed by consolidating and synthesizing RBV literature, or more specifically, marketing strategy, management, and information systems literature. As shown in Figure. 1, the model proposes that there are three key areas upon which the process of establishing organizational performance can be understood i.e., strategic performance and operational performance. Within these three key areas, constructs such as market orientation, organizational learning, and e-business adoption, emerge. The following is a description of these constructs and a discussion of their interrelationships.

#### ***Market orientation and manufacturing industry performance***

In the marketing concept, market orientation is an appropriate subject for comprehending and studying organizational behaviour (K. Kumar, Subramanian, & Strandholm, 2011; Pulendran, Speed, & Widing II, 2015). Moreover, a study by Morgan et al. (2009) shows that market orientation involves a marketing concept implementation since it facilitates the ability of organizations to predict and capitalize on environmental changes. Therefore, this connection is leading to superior performance. Pulendran et al. (2015) emphasize the market orientation concept evolution therefore, in their studies they adopted two approaches.

First, they identify three main construct components such as (1) an organization-wide generation of market information about future and current customers' needs (2) dissemination of such information across individuals and departments within the market-oriented organization (3) an organization-wide responsiveness to the disseminated information. Human activities and organizations are connected to the propagation, creation, and reaction to market intelligence (Eppler & Mengis, 2004; Ezeoma et al.; Mobarakabadi & Karami, 2014).

Second, Narver and Slater (1990) asserted that a cultural viewpoint concentrates on organizational values and norms that support behaviours that are consistent with market orientation. This view shows market orientation as a construct has been developed from three main components including (1) competitor orientation, which analyses the market movement and opponent strategy (2) inter-functional coordination, which introduces cooperation between employees (3) and customer orientation, which is the organizations' concentrated upon customer needs. Therefore, market orientation approaches are complementary in explaining the organization's behaviour.

These results vary from non-significant to positive (Narver & Slater, 1990) or negative (Mavondo & Farrell, 2003). These studies found that MO construct is a new product antecedent project (Loe & Ferrell, 2015), manufacturing industry performance (Arnold, Javorcik, Lipscomb, & Mattoo, 2015), performance for the not-for-profit compared to profit organizations and service compared to the manufacturing sector (Seth & Tripathi, 2005), voluntary performance and non-profit organizations (Naidoo, 2010). Work by Boso, Cadogan, and Story (2012) indicated that there is meaningfully influenced by the economic and cultural characteristics of the host country. Therefore, Studies by Arnold et al. (2015); (Candraningrat, Handriana, & Saifuddin, 2025) represent that there is a relationship between MO and manufacturing industry performance.

Indeed, Arnold et al. (2015) have defined that market orientation has examined the impact of market orientation on manufacturing industry performance demonstrating its superiority as a strategic orientation. In the same manner, Narver and Slater (1990) are shown that market orientation and manufacturing industry performance are viewed as the organizational factors behaviour, and culture that implements customer orientation. Market orientation research is suggested by the conceptual framework of Narver and Slater (1990). Market orientation is the organizational culture that most

efficiently and effectively creates the necessary behaviours for the superior value of customers' creation and then continues superior performance for the business (Narver & Slater, 1990). Therefore,

Hypothesis 1: Market orientation is positively related to manufacturing industry performance.

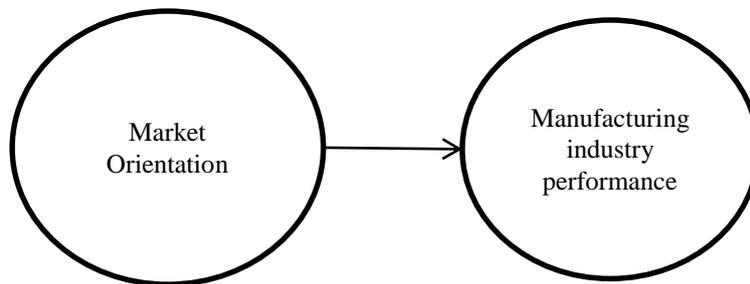


Figure 1. Market orientation and manufacturing industry performance

### *Market orientation and e-business adoption*

There is evidence that manufacturing industry capabilities influence innovation adoption (Keskin, 2006). There is also evidence that market orientation positively influences innovation adoption (Akman & Yilmaz, 2008). For example, Narver and Slater (1990) provide empirical evidence, for a positive relationship between innovation and market orientation. Given that the capability of market orientation is conceptualized in this paper as comprising responsive and proactive dimensions, it is argued that market orientation is related to innovation (Atuahene-Gima, 1996). This paper conceptualizes e-business adoption as an innovation and we adopt Wu et al. (2003) conceptualization and define it as the use of internet technologies that link customers, suppliers, business partners, and employees by adopting at least one of the following activities: (i) websites that offer sales transactions; (ii) customer service websites; (iii) intranets; (iv) extranets; and (v) IP electronic data interchange.

Prior studies have shown that customer orientation affects e-business adoption (Meisam Karami et al., 2014; Rapp et al., 2008). Importantly, market orientation emphasizes understanding the customers; an important component of a firm's customer orientation, competitor orientation, and inter-functional coordination is its ability to foresee the changes in the market and manufacturing industry (Borges, Hoppen, & Luce, 2009). Additionally, customer-oriented firms have a longer vision and better understanding of the latent needs of customers than do firms that are not customer-oriented (Roy et al., 2009). For example, customer-oriented firms are likely to communicate frequently with their customers to understand the needs of their customers and to provide superior value to their customers (Dangayach & Deshmukh, 2005). Furthermore, such manufacturing industries are willing to adopt innovations (e.g., online order-taking) that facilitate effective transactions with customers (Anish Sachdeva et al., 2015). On this basis, it is argued that market orientation leads to e-business adoption because e-business adoption allows the manufacturing industry to fulfill the expressed and latent needs of its customers by facilitating efficient communication, and by improving internal processes (e.g., gathering market intelligence). Therefore,

Hypothesis 2: Market orientation is positively related to e-business adoption.

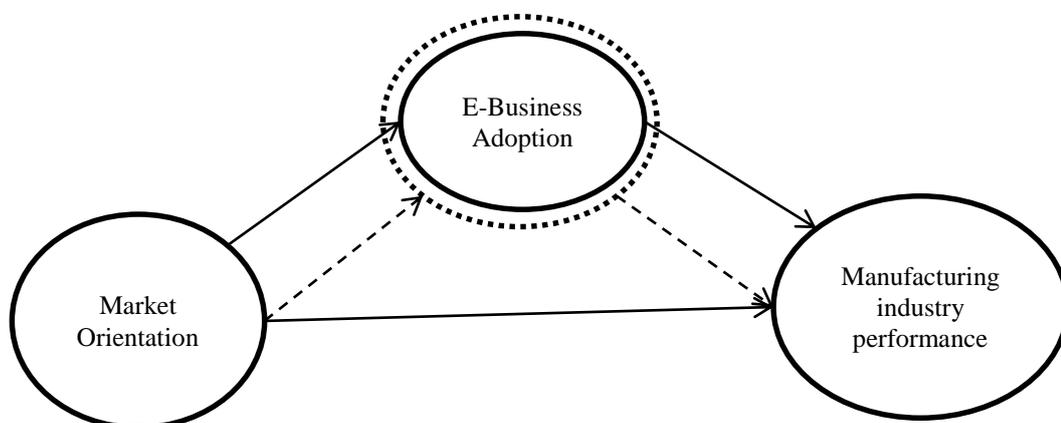
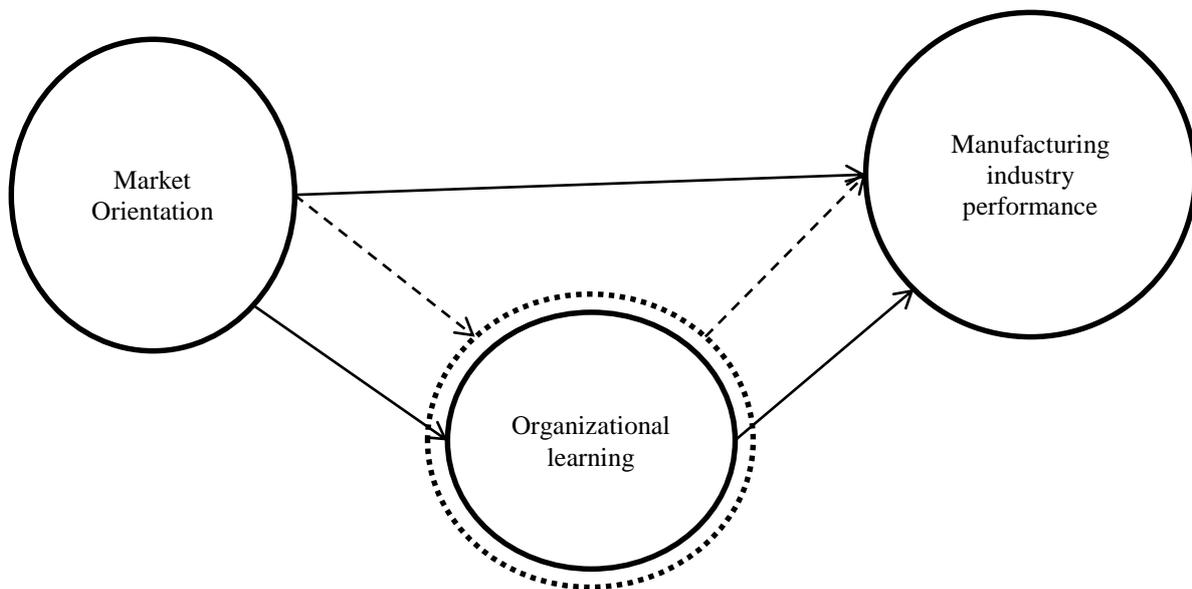


Figure 2. Market orientation and e-business adoption

**Market orientation and organizational learning**

Market orientation includes three dimensions competitor orientation, customer orientation, and inter-functional coordination (Jiménez-Jimenez, Sanz Valle, & Hernandez-Espallardo, 2008). Moreover, organizational learning as a dissemination of organizational information concentrates on inside organizations’ culture (Jiménez-Jimenez et al., 2008). Therefore, market orientation and organizational learning are incapable of being separated (Jiménez-Jimenez et al., 2008). Similarly, the relationship between market orientation and organizational learning is an organizational capability that learning is a cultural characteristic in firms who related to customer demands and marketing (Baker & Sinkula, 2007; Karami, Ghasemi, Khan, & Hamid, 2014). Also, market orientation and organizational learning have a strong relationship together (Santos-Vijande et al., 2005). Baker and Sinkula (2002) reported that the market orientation contribution within the manufacturing industry is measured as practicing organizational learning. Baker and Sinkula (2002) argued that market orientation drives an organization to achieve organizational learning from other manufacturing industries. Therefore,

Hypothesis 3: Market orientation is positively related to organizational learning.



**Figure 3. Market orientation and organizational learning**

**Organizational learning and organizational performance**

Organizations need new skills and techniques to meet the uncertainties of the new situation (Prahalad & Hamel, 2006) but, these new techniques necessarily are obtained through organizational learning. The capacity and knowledge to create it by learning is an important productive resource regarding contribution to strategic significance, competitive advantage, and value-added (Jiménez-Jimenez et al., 2008; Lin & Lee, 2005). Knowledge sharing among suppliers and distributors is about enlarging their performance regarding serving costs, activities coordination, and competitive advantage as well (Li, Ragu-Nathan, Ragu-Nathan, & Rao, 2006).

The organizational learning from their manufacturing performance’ association perspective develops their capacity to manage their roles more efficiently (MacDuffie, 1995). A combination of organizational learning and working better with suppliers enlarges information exchange that enlarges processes for saving cost and manufacturing industry performance benefits. The manufacturing knowledge performance in the market is predicted to be superior to the traditional organizations (Valmohammadi, 2011). Furthermore, inter-organizational learning enlarges a key mechanism that facilitates coordination and manufacturing industry performance (Seth & Tripathi, 2005). In other words, learning and knowledge sharing has a significant impact on the manufacturing industry’s performance (Hussein Zolait, Razak Ibrahim, Chandran, & Pandiyan Kaliani Sundram, 2010; Motamedzade, 2013). The researchers in past studies argued the relationship between organizational learning and manufacturing industry performance. Therefore,

Hypothesis 4: Organizational learning is positively related to manufacturing industry performance

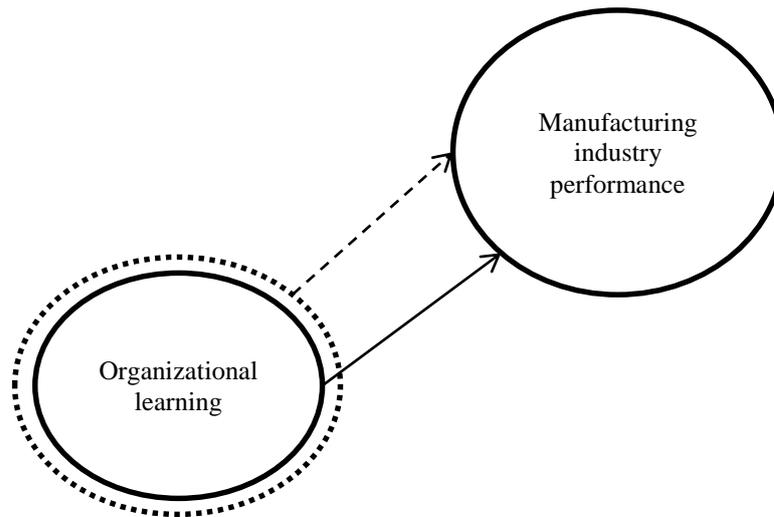


Figure 4. Organizational learning and organizational performance

*E-business adoption and manufacturing industry performance*

Several studies have reported a positive link between innovation adoption and manufacturing industry performance (Akman & Yilmaz, 2008; Amara & Landry, 2005; Anjum, Ali, Sadiq, Karami, & Khan, 2012; Mavondo & Farrell, 2003). In the specific e-business adoption context, there is considerable evidence that e-business adoption provides various strategic benefits (Wu et al., 2003). For instance, e-business adoption reduces distribution costs, creates new markets, increases supply-chain efficiency, and allows for closer customer relationships (Lin & Lee, 2005). There is also empirical evidence that e-business adoption is correlated positively with manufacturing industry performance (Arnold et al., 2015; MacDuffie, 1995). For example, Li et al. (2006) reported e-business adoption positively impacts competitive advantage, which is conceptualized as comprising differentiation, cost reduction, innovation, growth, and the formation of alliances whereas,

There is a positive link between e-business adoption and four measures of manufacturing industry performance: efficiency, sales performance, customer satisfaction, and relationship development (Wu et al., 2003). Furthermore, Rapp et al. (2008) reported e-business innovation influences customer relationship manufacturing industry performance and sales growth. In another word, e-business adoption and innovation can enlarge manufacturing industry performance. Therefore,

Hypothesis 5: E-business adoption is positively related to manufacturing industry performance.

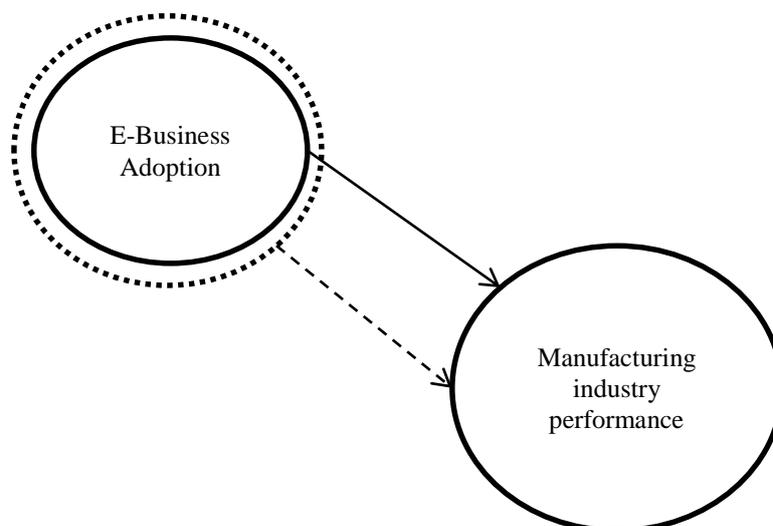


Figure 5. E-business adoption and manufacturing industry performance

*Mediating effects of e-business adoption*

In the information technology (IT) and the strategy literature, proponents of capability technology integration apply the RBV to question the value of adopting technology without regard for manufacturing industry capabilities (Melville et al., 2004; Rasli, Madjid, & Asmi, 2004; Subramani, 2004; Tseng & Liao, 2015; Zhu, Kraemer, & Dedrick, 2004). They argued that manufacturing industry capabilities play a critical role in the relationship between technologically based innovations and competitive advantage. Specifically, they suggest that the relationship between technology, such as e-business adoption, and manufacturing industry performance depends on the technology being driven by the processes, systems, and values that are embedded in capabilities such as market orientation. They argued that understanding the expressed and latent needs of customers allows manufacturing industries to adopt e-business technologies strategically (i.e., with a clear and planned purpose), which then results in a competitive advantage. Furthermore, competitive advantage is aided by the causally ambiguous nature of the multiple relationships between market orientation, e-business adoption, and manufacturing industry performance.

The marketing literature has demonstrated the importance of mediators such as innovation concerning the capability-manufacturing industry performance relationship (Chong, Chan, Ooi, & Sim, 2011; Prajogo & Sohal, 2003). For example, e-business mediates the effects of customer orientation on manufacturing industry performance (Wu et al., 2003). In the broader context of market orientation, mediating variables are key and cite market orientation as an example (Celuch & Kasouf, 2015; K. Kumar et al., 2011). Specifically, the established logic is that a market orientation provides the basis for devising a strategy that creates value for customers, and that such a strategy provides the foundation for a sustainable competitive advantage (V. Kumar, Jones, Venkatesan, & Leone, 2011).

Based on the prior discussion, it is arguably the case that capabilities such as market orientation create and shape a manufacturing industry’s e-business adoption strategy, which, in turn, influences manufacturing industry performance. This causal chain implies an indirect link between capabilities and manufacturing industry performance in that market orientation may improve manufacturing industry performance partly because it increases e-business adoption, which, in turn, increases organizational performance. However, market orientation may improve performance via means that do not involve e-business adoption. For instance, market orientation includes developing business objectives that are driven by customer satisfaction and loyalty, both of which may improve performance. It is expected that market orientation will have a direct effect on manufacturing industry performance, as well as an indirect effect on manufacturing industry performance via e-business adoption. This reasoning leads to the following hypothesis:

Hypothesis 6: Market Orientation indirectly affects manufacturing industry performance through E-Business Adoption

Hypothesis 7: Market Orientation indirectly affects manufacturing industry performance through organizational learning

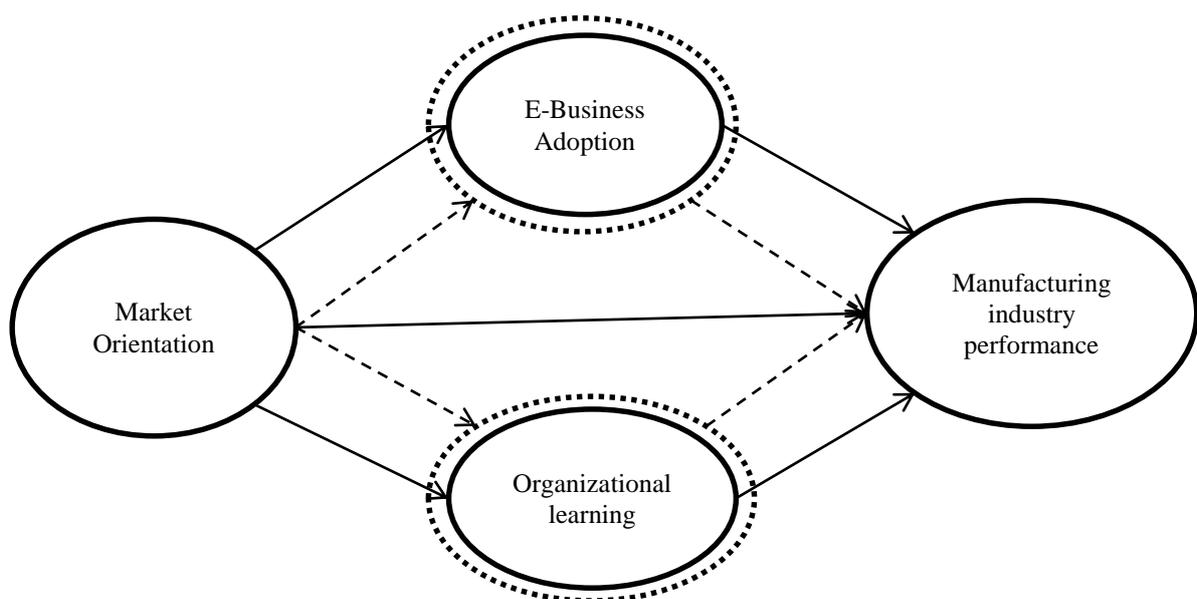


Figure 6. Research model

### **The Elements of Enhanced Manufacturing Industry Performance**

Prior studies have been done on the application of RBV to marketing phenomena (Paladino et al., 2015). The innovation adoption is a focus on marketing theory and a core challenge for marketing practitioners (Bagozzi, Yi, & Nassen, 1998). The current research applied the RBV to examine e-business adoption. However, the studies have concentrated on deterministic pressures as antecedents to the adoption of the innovation and emphasize a reactive approach to strategy, firm, and specific capabilities were treated in this paper as antecedents to the innovation adoption such as e-business adoption. Therefore, indicating a proactive approach to strategy such as based on an organization's internal capabilities as opposed to being reactive to competitor moves.

Besides, up to now scholars often do not consider the interaction between manufacturing industry capabilities, which is an important oversight for two reasons. First, the interaction between manufacturing industry capabilities is a key factor because it can be regarded as a significant source of causal ambiguity. Second, interactions are crucial as they impact issues of theory, metatheory, and practice. However, some researchers indicated that the interaction of marketing and technological capabilities is the key determinant of manufacturing industry performance (Akman & Yilmaz, 2008). There is a study that shows the effects of manufacturing industry capabilities such as market orientation and organizational learning on manufacturing industry performance are mediated by innovation (Wu et al., 2003). There is study shows that manufacturing industry capabilities have complementary effects on manufacturing industry performance (MacDuffie, 1995). Furthermore, the finding of this study indicates that the findings directly affect manufacturing industry performance and affect manufacturing industry performance via their complementary impacts on e-business adoption, which is arguably an important mediator in the relationship between the capabilities and manufacturing industry performance.

Besides, as organizations enlarge their market orientation, the necessity to comprehend their customers, competitors and motivates customers and competitors to develop their learning. Inter-functional coordination supplies an ambient situation for organizational learning while organizations learn to acquire new skills. Furthermore, inter-organizational learning improves an important system that assists forward coordination and manufacturing industry performance (Bell, Mengüç, & Widing II, 2010; Jiménez-Jimenez et al., 2008). In a related argument, knowledge sharing and learning have an impact on the manufacturing industry's performance (Jiménez-Jimenez et al., 2008). Other scholars (Baker & Sinkula, 2007; Bell et al., 2010; Hurley & Hult, 1998; Lin & Lee, 2005; Liuhto, 1998; Santos-Vijande et al., 2005) support the notion that organizational learning enlarges manufacturing industry performance.

Additionally, market orientation's impact on e-business adoption is valuable and also market orientation is a key antecedent to e-business adoption. Thus, the interaction between market orientation and organizational learning shows that the greater the extent to which organizational learning is embedded in the organizational culture, the greater its value as a facilitator of the relationship between market orientation and e-business adoption. Then, the complementarity between market orientation and organizational learning provides one explanation as to why some manufacturing industries can effectively adopt innovations and then improve manufacturing industry performance by bundling multiple capabilities rather than emphasizing individual capabilities.

However, the previous literature stressed market orientation directly or indirectly affects manufacturing industry performance (Homburg & Pflesser, 2000; Noble, Sinha, & Kumar, 2002; Tseng & Liao, 2015). The findings contribute to the literature on market orientation through supporting perspectives that market orientation was presented to have both direct and indirect impacts of e-business adoption and organizational learning on manufacturing industry performance. Also, the relationship between market orientation and manufacturing industry performance further enlarges the notion that market orientation is a manufacturing industry-specific capability that enhances manufacturing industry performance.

### **A Need for Additional Research**

In this study, the framework has been proposed as organizational learning and E-business adoption that mediate roles between market orientation and manufacturing industry performance. However, future researchers can use the current conceptual model to empirically test the mediator relationship and future researchers can test the relationship between market orientation and manufacturing industry performance. Also, future researchers can employ the current model to empirically affect the interrelationships among the dimensions of the variable in the current proposed conceptual model. For instance, perspectives of market orientation such as decision-making, market intelligence, culturally based behavioural, strategic and customer orientation. Therefore, through empirical studies that have been conducted according to the current framework, future researchers may fill gaps and contribution to the prior studies of the relationship between market orientation and manufacturing industry performance.

Organizational capabilities can impact the adoption of e-business. These involve technological orientation, entrepreneurial orientation, and organizational innovativeness (Wu et al., 2003). Thus, future research may involve these organization capabilities in an innovation adoption model. Also, it is the case that the product nature can render organizations marketing these kinds of products naturally inclined to adopt e-business. In addition, some organizations, particularly service-oriented industries, such as the software industry, are dependent on e-business technologies. Therefore, e-business adoption is not necessarily beneficial in all conditions for all organizations such as in markets where consumers cannot value, are not aware of e-business technologies, or may not access e-business technologies.

Finally, the current study does not focus on the differences in the product nature of the industry and under which specific industry or market conditions e-business adoption is beneficial. Therefore, future studies can focus on the impacts of characteristics of products and industry on the adoption of e-business technologies and elements that affect the benefits of adopting e-business. However, these limitations contribute to the market orientation and Resource-Based View theories (RBV), specifically on the complementarity of organization capabilities and its impacts on innovation adoption and manufacturing industry performance.

### REFERENCES

- [1] Ahmadimousaabad, A., Bajuri, N., Jahanzeb, A., Karami, M., & Rehman, S. (2013). Trade-off theory, pecking order theory and market timing theory: a comprehensive review of capital structure theories. *International Journal of Management and Commerce Innovations*, 1(1), 11-18.
- [2] Akman, G., & Yilmaz, C. (2008). Innovative capability, innovation strategy and market orientation: an empirical analysis in Turkish software industry. *International journal of innovation management*, 12(01), 69-111.
- [3] Amara, N., & Landry, R. (2005). Sources of information as determinants of novelty of innovation in manufacturing firms: evidence from the 1999 statistics Canada innovation survey. *Technovation*, 25(3), 245-259.
- [4] Amit, R., & Zott, C. (2000). Value creation in e-business: INSEAD.
- [5] Anish Sachdeva, D. V. S., Dr Rajeev Kumar Garg, D., Hussain, M., Ajmal, M. M., Khan, M., & Saber, H. (2015). Competitive priorities and knowledge management: An empirical investigation of manufacturing companies in UAE. *Journal of Manufacturing Technology Management*, 26(6), 791-806.
- [6] Anjum, M. J., Ali, S. M., Sadiq, M., Karami, M., & Khan, S. (2012). Exploring the Nexus: Management Practices, Innovation and Firm Performance. *World Applied Sciences Journal*, 19(6), 785-794.
- [7] Aragon-Correa, J. A., & Sharma, S. (2003). A contingent resource-based view of proactive corporate environmental strategy. *Academy of management review*, 28(1), 71-88.
- [8] Arnold, J. M., Javorcik, B., Lipscomb, M., & Mattoo, A. (2015). Services reform and manufacturing performance: Evidence from India. *The Economic Journal*.
- [9] Atuahene-Gima, K. (1996). Market orientation and innovation. *Journal of business research*, 35(2), 93-103.
- [10] Bagozzi, R. P., Yi, Y., & Nassen, K. D. (1998). Representation of measurement error in marketing variables: Review of approaches and extension to three-facet designs. *Journal of Econometrics*, 89(1), 393-421.
- [11] Baker, W. E., & Sinkula, J. M. (2002). Market orientation, learning orientation and product innovation: delving into the organization's black box. *Journal of market-focused management*, 5(1), 5-23.
- [12] Baker, W. E., & Sinkula, J. M. (2007). Does market orientation facilitate balanced innovation programs? An organizational learning perspective. *Journal of Product Innovation Management*, 24(4), 316-334.
- [13] Bell, S. J., Mengüç, B., & Widing II, R. E. (2010). Salesperson learning, organizational learning, and retail store performance. *Journal of the Academy of Marketing Science*, 38(2), 187-201.
- [14] Borges, M., Hoppen, N., & Luce, F. B. (2009). Information technology impact on market orientation in e-business. *Journal of business research*, 62(9), 883-890.
- [15] Boso, N., Cadogan, J. W., & Story, V. M. (2012). Entrepreneurial orientation and market orientation as drivers of product innovation success: A study of exporters from a developing economy. *International Small Business Journal*, 0266242611400469.

- [16] Calantone, R. J., Cavusgil, S. T., & Zhao, Y. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial marketing management*, 31(6), 515-524.
- [17] Candraningrat, C., Handriana, T., & Saifuddin, M. (2025). The Strategic Role of Digital Capabilities in Organizational Performance: A Systematic Literature Review. *International Journal of Information Science and Management (IJISM)*, 111-129.
- [18] Celuch, K., & Kasouf, C. J. (2015). An Exploration of Relationships Among Perceived Market Orientation, Strategic Flexibility, and Customer Value in the Supply Chain Under Different Conditions of Environmental Turbulence Assessing the Different Roles of Marketing Theory and Practice in the Jaws of Economic Uncertainty (pp. 315-315): Springer.
- [19] Chen, C.-L., & Jaw, Y.-L. (2009). Building global dynamic capabilities through innovation: A case study of Taiwan's cultural organizations. *Journal of Engineering and Technology Management*, 26(4), 247-263.
- [20] Chong, A. Y., Chan, F. T., Ooi, K.-B., & Sim, J.-J. (2011). Can Malaysian firms improve organizational/innovation performance via SCM? *Industrial Management & Data Systems*, 111(3), 410-431.
- [21] Coates, T. T., & McDermott, C. M. (2002). An exploratory analysis of new competencies: a resource based view perspective. *Journal of Operations Management*, 20(5), 435-450.
- [22] Dangayach, G., & Deshmukh, S. (2005). Advanced manufacturing technology implementation: evidence from Indian small and medium enterprises (SMEs). *Journal of Manufacturing Technology Management*, 16(5), 483-496.
- [23] Day, G. S. (1994). The capabilities of market-driven organizations. *The Journal of Marketing*, 37-52.
- [24] Deshpandé, R., & Farley, J. U. (2004). Organizational culture, market orientation, innovativeness, and firm performance: an international research odyssey. *International journal of research in marketing*, 21(1), 3-22.
- [25] Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of management review*, 23(4), 660-679.
- [26] Eppler, M. J., & Mengis, J. (2004). The concept of information overload: A review of literature from organization science, accounting, marketing, MIS, and related disciplines. *The information society*, 20(5), 325-344.
- [27] Ezeoma, C. P., Okoli, P. C., Nwobi, E. U., Igbokwe, L. I., Ofojebe, C. P., & Chinawa, F. C. The study of the relationship between personality dimension, unethical and lateness behaviour in the workplace. *International Journal of Management and Commerce Innovations*, 11(2), 427-436.
- [28] Fahy, J., & Smithee, A. (1999). Strategic marketing and the resource based view of the firm. *Academy of marketing science review*, 10(1), 1-21.
- [29] Febrianty, D., Ramdhani, J. N., Lusa, S., Sensuse, D. I., Elisabeth, D., & Safitri, N. (2025). Knowledge Management Foundations and Their Mediating Effects on Innovation and Performance: A Case Study of a Vocational Higher Education Institution in Indonesia. *Journal of Information Technology Management*, 17(2), 69-90.
- [30] Grewal, R., & Tansuhaj, P. (2001). Building organizational capabilities for managing economic crisis: The role of market orientation and strategic flexibility. *Journal of marketing*, 65(2), 67-80.
- [31] Helfat, C. E., & Lieberman, M. B. (2002). The birth of capabilities: market entry and the importance of pre-history. *Industrial and corporate change*, 11(4), 725-760.
- [32] Homburg, C., & Pflesser, C. (2000). A multiple-layer model of market-oriented organizational culture: Measurement issues and performance outcomes. *Journal of marketing research*, 37(4), 449-462.
- [33] Hurley, R. F. (2015). Market orientation, Learning and innovation. Paper presented at the Proceedings of the 1997 Academy of Marketing Science (AMS) Annual Conference.
- [34] Hurley, R. F., & Hult, G. T. M. (1998). Innovation, market orientation, and organizational learning: an integration and empirical examination. *The Journal of Marketing*, 42-54.

- [35] Hussein Zolait, A., Razak Ibrahim, A., Chandran, V., & Pandiyan Kaliani Sundram, V. (2010). Supply chain integration: an empirical study on manufacturing industry in Malaysia. *Journal of Systems and Information Technology*, 12(3), 210-221.
- [36] Iddris, F., Awuah, G. B., & Gebrekidan, D. A. (2014). The Role of Innovation Capability in Achieving Supply Chain Agility. *International Journal of Management and Computing Sciences (IJMCS)*, 4(2), 104-112.
- [37] Jiménez-Jimenez, D., Sanz Valle, R., & Hernandez-Espallardo, M. (2008). Fostering innovation: the role of market orientation and organizational learning. *European Journal of Innovation Management*, 11(3), 389-412.
- [38] Karami, M., Ghasemi, R., Khan, S., & Hamid, A. (2014). Market orientation and supply chain innovation relationship: Conceptual framework model. *Middle-East Journal of Scientific Research*, 21(9), 1526-1532.
- [39] Karami, M., Hozhabri, A. A., Asgharizadeh, E., Nor, K. M., Khan, S.-U.-R., & Gashti, M. A. H. (2014). Elements affect online repurchase intentions of Malaysia's online shoppers. Paper presented at the 8th International Conference on e-Commerce in Developing Countries: With Focus on e-Trust.
- [40] Keskin, H. (2006). Market orientation, learning orientation, and innovation capabilities in SMEs: An extended model. *European Journal of Innovation Management*, 9(4), 396-417.
- [41] Kirca, A. H., Jayachandran, S., & Bearden, W. O. (2005). Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance. *Journal of marketing*, 69(2), 24-41.
- [42] Kumar, K., Subramanian, R., & Strandholm, K. (2011). Market orientation and performance: Does organizational strategy matter? *Journal of Applied Business Research (JABR)*, 18(1).
- [43] Kumar, V., Jones, E., Venkatesan, R., & Leone, R. P. (2011). Is market orientation a source of sustainable competitive advantage or simply the cost of competing? *Journal of marketing*, 75(1), 16-30.
- [44] Li, S., Ragu-Nathan, B., Ragu-Nathan, T., & Rao, S. S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance. *Omega*, 34(2), 107-124.
- [45] Lin, H.-F., & Lee, G.-G. (2005). Impact of organizational learning and knowledge management factors on e-business adoption. *Management Decision*, 43(2), 171-188.
- [46] Liuhto, K. (1998). Organizational Learning and Organizational Performance. *VOPROSY ECONOMIKI*, 12.
- [47] Loe, T. W., & Ferrell, O. (2015). Ethical climate's relationship to trust, market orientation and commitment to quality: a single firm study. Paper presented at the Proceedings of the 1997 Academy of Marketing Science (AMS) Annual Conference.
- [48] MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial & labor relations review*, 48(2), 197-221.
- [49] Makadok, R. (2001). TOWARD A SYNTHESIS OF THE RESOURCE-BASED AND DYNAMIC-CAPABILITY VIEWS OF RENT. *Strategic Management Journal*, 22, 387-401.
- [50] Maleki, M., Davoudi, S. M. M., & Moradi, H. (2011). Information technology impact on supply chain capabilities and firm performance: A survey in Iran's manufacturing companies. *International Journal of Research in IT, Management and Engineering*, 1(3), 1-21.
- [51] Matsuno, K., Mentzer, J. T., & Özsomer, A. (2002). The effects of entrepreneurial proclivity and market orientation on business performance. *Journal of marketing*, 66(3), 18-32.
- [52] Mavondo, F., & Farrell, M. (2003). Cultural orientation: its relationship with market orientation, innovation and organisational performance. *Management Decision*, 41(3), 241-249.
- [53] Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Review: Information technology and organizational performance: An integrative model of IT business value. *Mis Quarterly*, 28(2), 283-322.
- [54] Mobarakabadi, H., & Karami, M. (2014). Investigation of relationship among the organizational culture and creativity. *Research Journal of Applied Sciences, Engineering and Technology*, 7(19), 4069-4071.

- [55] Morgan, N. A., Vorhies, D. W., & Mason, C. H. (2009). Market orientation, marketing capabilities, and firm performance. *Strategic Management Journal*, 30(8), 909-920.
- [56] Motamedzade, M. (2013). Ergonomics Intervention in an Iranian Tire Manufacturing Industry. *International Journal of Occupational Safety and Ergonomics*, 19(3), 475-484.
- [57] Naidoo, V. (2010). Firm survival through a crisis: The influence of market orientation, marketing innovation and business strategy. *Industrial marketing management*, 39(8), 1311-1320.
- [58] Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *The Journal of Marketing*, 20-35.
- [59] Narver, J. C., Slater, S. F., & MacLachlan, D. L. (2004). Responsive and Proactive Market Orientation and New-Product Success\*. *Journal of Product Innovation Management*, 21(5), 334-347.
- [60] Noble, C. H., Sinha, R. K., & Kumar, A. (2002). Market orientation and alternative strategic orientations: a longitudinal assessment of performance implications. *Journal of marketing*, 66(4), 25-39.
- [61] Paladino, A., Widing, R., & Whitwell, G. (2015). Internal and External Organisational Orientations: Comparing the Resource Based View and Market Orientation Global Perspectives in Marketing for the 21st Century (pp. 338-338): Springer.
- [62] Parmigiani, A., Klassen, R. D., & Russo, M. V. (2011). Efficiency meets accountability: Performance implications of supply chain configuration, control, and capabilities. *Journal of Operations Management*, 29(3), 212-223.
- [63] Paulraj, A. (2011). UNDERSTANDING THE RELATIONSHIPS BETWEEN INTERNAL RESOURCES AND CAPABILITIES, SUSTAINABLE SUPPLY MANAGEMENT AND ORGANIZATIONAL SUSTAINABILITY\*. *Journal of Supply Chain Management*, 47(1), 19-37.
- [64] Penrose, E. T. (1995). *The Theory of the Growth of the Firm*: Oxford university press.
- [65] Phan, D. D. (2003). E-business development for competitive advantages: a case study. *Information & Management*, 40(6), 581-590.
- [66] Prahalad, C. K., & Hamel, G. (2006). *The core competence of the corporation*: Springer.
- [67] Prajogo, D. I., & Sohal, A. S. (2003). The relationship between TQM practices, quality performance, and innovation performance: An empirical examination. *International journal of quality & reliability management*, 20(8), 901-918.
- [68] Priem, R. L., & Butler, J. E. (2001). Is the resource-based “view” a useful perspective for strategic management research? *Academy of management review*, 26(1), 22-40.
- [69] Pulendran, S., Speed, R., & Widing II, R. (2015). Marketing Planning, Market Orientation and Performance: An Empirical Study of Australian Organisations. Paper presented at the Proceedings of the 1998 Academy of Marketing Science (AMS) Annual Conference.
- [70] Rapp, A., Schillewaert, N., & Hao, A. W. (2008). The influence of market orientation on e-business innovation and performance: the role of the top management team. *Journal of Marketing Theory and Practice*, 16(1), 7-25.
- [71] Rasli, A., Madjid, M. A., & Asmi, A. (2004). Factors that influence implementation of knowledge management and information technology infrastructure to support project performance in the construction industry.
- [72] Ray, G., Barney, J. B., & Muhanna, W. A. (2004). Capabilities, business processes, and competitive advantage: choosing the dependent variable in empirical tests of the resource-based view. *Strategic Management Journal*, 25(1), 23-37.
- [73] Roy, R., Shehab, E., Tiwari, A., Baines, T., Lightfoot, H., Benedettini, O., & Kay, J. (2009). The servitization of manufacturing: A review of literature and reflection on future challenges. *Journal of Manufacturing Technology Management*, 20(5), 547-567.
- [74] Saad, S., Perera, T., Achanga, P., Shehab, E., Roy, R., & Nelder, G. (2006). Critical success factors for lean implementation within SMEs. *Journal of Manufacturing Technology Management*, 17(4), 460-471.

- [75] Santos-Vijande, M. L., Sanzo-Perez, M. J., Alvarez-Gonzalez, L. I., & Vazquez-Casielles, R. (2005). Organizational learning and market orientation: interface and effects on performance. *Industrial marketing management*, 34(3), 187-202.
- [76] Saunila, M., & Ukko, J. (2014). Intangible aspects of innovation capability in SMEs: Impacts of size and industry. *Journal of Engineering and Technology Management*, 33, 32-46.
- [77] Savytska, N., Zhehus, O., Polevych, K., Priadko, O., & Bubenets, I. (2024). Enterprise Resilience Behavioral Management in a Decision Support System. *Journal of Information Technology Management*, 16(4), 100-121.
- [78] Seth, D., & Tripathi, D. (2005). Relationship between TQM and TPM implementation factors and business performance of manufacturing industry in Indian context. *International journal of quality & reliability management*, 22(3), 256-277.
- [79] Song, M., Droge, C., Hanvanich, S., & Calantone, R. (2005). Marketing and technology resource complementarity: An analysis of their interaction effect in two environmental contexts. *Strategic Management Journal*, 26(3), 259-276.
- [80] Srinivasan, R., Lilien, G. L., & Rangaswamy, A. (2002). Technological opportunism and radical technology adoption: An application to e-business. *Journal of marketing*, 66(3), 47-60.
- [81] Stuart, T. E., & Podolny, J. M. (1996). Local search and the evolution of technological capabilities. *Strategic Management Journal*, 17(S1), 21-38.
- [82] Subramani, M. (2004). How do suppliers benefit from information technology use in supply chain relationships? *Mis Quarterly*, 45-73.
- [83] Tseng, P.-H., & Liao, C.-H. (2015). Supply chain integration, information technology, market orientation and firm performance in container shipping firms. *The International Journal of Logistics Management*, 26(1), 82-106.
- [84] Valmohammadi, C. (2011). The impact of TQM implementation on the organizational performance of Iranian manufacturing SMEs. *The TQM Journal*, 23(5), 496-509.
- [85] Wernerfelt, B. (2014). On the role of the RBV in marketing. *Journal of the Academy of Marketing Science*, 42(1), 22-23.
- [86] Wright, P. M., Dunford, B. B., & Snell, S. A. (2001). Human resources and the resource based view of the firm. *Journal of management*, 27(6), 701-721.
- [87] Wu, F., Mahajan, V., & Balasubramanian, S. (2003). An analysis of e-business adoption and its impact on business performance. *Journal of the Academy of Marketing Science*, 31(4), 425-447.
- [88] Yam, R. C., Lo, W., Tang, E. P., & Lau, A. K. (2011). Analysis of sources of innovation, technological innovation capabilities, and performance: An empirical study of Hong Kong manufacturing industries. *Research Policy*, 40(3), 391-402.
- [89] Zhu, K., & Kraemer, K. L. (2005). Post-adoption variations in usage and value of e-business by organizations: cross-country evidence from the retail industry. *Information Systems Research*, 16(1), 61-84.
- [90] Zhu, K., Kraemer, K. L., & Dedrick, J. (2004). Information technology payoff in e-business environments: An international perspective on value creation of e-business in the financial services industry. *Journal of management information systems*, 21(1), 17-54.