

-RESEARCH ARTICLE-

STRATEGIC CHOICE OF CONSUMER PACKAGED GOODS COMPANY TO MAXIMIZE E-BUSINESS FIRM PERFORMANCE: A ROLE OF E-COMMERCE ENABLER AS COLLABORATION

Danang Cahyono

Bina Nusantara Business School, Jl. K. H. Syahdan No. 9,
Kemanggisan, Palmerah, Jakarta, Indonesia, 11480
Email: danang.cahyono@binus.ac.id

Muhtosim Arief

Bina Nusantara Business School, Jl. K. H. Syahdan No. 9,
Kemanggisan, Palmerah, Jakarta, Indonesia, 11480
Email: marief@binus.edu

Asnan Furinto

Bina Nusantara Business School, Jl. K. H. Syahdan No. 9,
Kemanggisan, Palmerah, Jakarta, Indonesia, 11480
Email: afurinto@binus.edu

Viany Utami Tjhin

Bina Nusantara Business School, Jl. K. H. Syahdan No. 9,
Kemanggisan, Palmerah, Jakarta, Indonesia, 11480
Email: vtjhin@binus.edu

—Abstract—

A company's performance can result in high and long-term profits, offering employment possibilities and increasing individual income. According to several studies, the role of the e-commerce facilitator in maximizing the relationship's potential to improve business performance only requires a few criteria. Thus, this study aims to discover if there is a

Citation (APA): Cahyono, D., Arief, M., Furinto, A., Tjhin, V. U. (2022). Strategic Choice of Consumer Packaged Goods Company to Maximize E-Business Firm Performance: A Role of E-Commerce Enabler As Collaboration. *International Journal of eBusiness and eGovernment Studies*, 14 (2), 264-288. doi:10.34111/ijepeg.202214133

connection between business process agility, digital business adoption, innovation capabilities, and E-Business Firm Performance, as mediated by e-commerce enabler collaboration. The descriptive quantitative research design and census method were used to obtain data for this study. The general managers of 105 Consumer-Packaged Goods (CPG) companies based in Indonesia were sampled. Questionnaires were used to collect data, which was then analyzed using a structural Equation Model (PLS-SEM) technique. This study indicated that business process agility and innovation capability had a considerable favorable effect on the performance of E-Business firms. The outcomes of this study are crucial for businesses that must enhance their performance, such as optimizing the growth of the digital economy through e-commerce.

Keywords: Business Process Agility, Digital Business Adoption, Innovation Capability, E-commerce Enabler Collaboration, E-Business Firm Performance

1. INTRODUCTION

SMEs adopt various strategies and instruments to compensate for their inherent resource and size disadvantages and remain competitive. Electronic commerce (e-commerce) is a competitive tool (Haseeb et al., 2019). E-commerce offers new competition for conventional businesses, forcing their adaptation to the digital age. Numerous organizations are implementing e-business because we live in the modern day. This e-business allows the company to reach more customers. E-commerce is one of the e-business platforms that may be applied to acquire many more customers and maximize the e-business (Kwak et al., 2019). With e-commerce, businesses do not need to rent a physical location to offer their wares. Additionally, it can reach several consumers. With e-commerce, which is comparable to a seller-created online store, it is vital to package products and corporate branding effectively so that it is simpler for businesses to attract clients (Pogorelova et al., 2016).

Users of e-commerce can enhance the digital economy built on the usage and empowerment of digital information and communication technologies. Southeast Asia's digital economy and market potential rapidly expand (K. Li et al., 2020). Mobile internet, big data, the internet of things, automation of knowledge, and cloud technology are the five technologies that have the most potential to stimulate digital economic growth in Southeast Asia (Villegas-Ch et al., 2019). In Indonesia, the digital economy manifests itself in numerous industries, although this topic focuses on the digital economy. Internet usage in Indonesia is directly related to the growth of the digital economy. The emergence of new firms demonstrates this.

Aside from that, there are existing companies that assist in the use of e-commerce. These, namely e-commerce enablers, provide end-to-end e-commerce services to businesses that seek to sell their products on online platforms or marketplaces. Consequently, product sellers can utilize an e-commerce enabler to facilitate e-commerce (Svobodová et al., 2020). The provided services provide numerous benefits, ranging from price

management to promotion. Utilizing e-commerce enabling services can provide significantly advantageous convenience for business operations.

The digital cannot be maximized without the innovative capacity of enterprises. This innovative potential is founded on a comprehensive comprehension of customer wants, competition actions, and technological advancement, a comprehension made possible by an organization's dedication to learning. Companies lacking these characteristics are less likely to excel in company performance, although they may explore elsewhere for survival strategies. There has been researching undertaken on the approach for maximizing corporate performance. The first study is by [Dwidienawati et al. \(2020\)](#), who found that digital business adoption and organizational innovation positively affected SME performance. In addition, the [\(Kurniawan et al., 2021\)](#) study indicates that networking capability has a favorable and statistically significant effect on market orientation. However, networking capability does not directly affect the agility of business processes. The data also imply that market orientation does not directly affect firm performance, but business process agility mediates this relationship.

However, according to the research conducted, only a few variables are considered, and the role of the e-commerce facilitator in maximizing the potential relationship to improve firm performance is not considered. Moreover, the literature extensively documents the important role businesses, particularly Consumer-Packaged Goods (CPG) companies, play in the economy [\(Lamey et al., 2018; Suntornpithug et al., 2018\)](#). As the rate of economic globalization continues to accelerate, CPGs face increasingly intense competition from domestic and international rivals. To achieve this rank, CPG companies must improve their business performance. Thus, the purpose of the present study is to evaluate the effect of the Strategic Choice of CPG Company to Maximize the Digital Economy by Selling on an E-Commerce Marketplace Mediated by E-Commerce enablers on the e-business performance of a company.

2. THEORETICAL REVIEW

2.1 E-Business Firm Performance

E-Commerce is the implementation and management of essential company processes such as product design, raw material supply management, production, sales, order fulfillment, and service provision via computerized communication, computer, and data technology [\(Mkansi, 2021\)](#). E-Commerce employs information technology from the internet and other computer networks to conduct the essential business operations of buying and selling [\(Putra Hadi, 2020\)](#). The prefix "e" in "e-Business" stands for "electronic," which refers to activities or transactions that occur without the exchange of money or physical touch; transactions are handled electronically or digitally, made possible by the rapid development of digital communication [\(Labus et al., 2020\)](#).

E-Business is an extension of e-Commerce in which not only purchases and payments for goods and services are processed electronically, but also customer service and collaboration with business partners using electronic support as a transaction tool or organization; in its application, e-Business will utilize all eyes chain in its business processes, including electronic purchasing and supply chain management, electronic order processing, and electronic order fulfillment (business partners). E-Commerce does not require monetary transactions because it involves marketing, product design, and evaluation of client services (Bi et al., 2017).

Consequently, e-Business integrates electronic purchasing and selling, electronic procurement, electronic distribution and delivery of goods, online services for customers, electronic marketing, secure transactions, automated processes, and the electronic collaboration of all components. With the expansion of e-business, the company's performance will enhance, as it will become easier to connect with buyers and expand product IDs (Remeikienė et al., 2019). Indicators that can be used to gauge the firm's success are listed in Table 1.

Table 1. Firm Performance Indicator

Dimension	Indicator
Market Performance	<ol style="list-style-type: none"> 1. Market performances 2. Sales Growth 3. Market Development 4. Reputation and Image 5. Customer Satisfaction
Operational Performance	<ol style="list-style-type: none"> 1. Service Quality 2. Responsiveness 3. Flexibility 4. Cost Reduction 5. Technological Efficiency

Source: (Ukaj et al., 2020)

2.2 Business Process Agility

Agility is an approach that may be applied to business implementation processes, in which projects are scaled-down, and team members are engaged through frequent discussion and iteration. This method is iterative and incremental. Therefore it does not function sequentially and produces a result after the project (Y. Li et al., 2021).

All stakeholders must support the implementation of an agile process because a complete revamp of the process is possible. The first step in ensuring team acceptability is guaranteeing transparency at all levels (Kurniawan et al., 2019). The second step is to establish a two-way communication platform where management can discuss the "why" and "how" of the project and receive input from the team. This phase will assist the

organization in avoiding negative word-of-mouth that could harm the process. Third, and most important, is to ensure that the organization is going towards process and lean development, as agile is a continuous process, and the flatter the hierarchy, the more fluid the process (Karande et al., 2017). The benefits of business processes are that they provide an integrated understanding of the process flow; business process modeling specifies the procedures required to achieve a goal. This business process diagram will enhance how the business process operates (Karande et al., 2017). According to (K. Li et al., 2020), the following Table 2 indicators can be used to quantify business process agility.

Table 2. Business Process Agility Indicator

Variable	Dimension	Indicator
Business process agility (Y. Li et al., 2021),	Networking	1. Process Integration and Network Synchronization 2. Flourishing Network due to strong partners
	Resources	1. Resource Fluidity 2. Customer Knowledge 3. Competitors knowledge
	Ability	1. Selecting strategic goals 2. strategic sensitivity 3. Immediate identification of Changes

2.3 Digital Business Adoption

The incorporation of digital technology into everyday life is digitization. The exact definition of digitization reveals the evolution and accessibility of a world dependent on technology (Wong et al., 2020). From a marketing standpoint, Chaffey et al. (2017) defines it as the management and implementation of marketing employing electronic media such as the internet, e-mail, interactive television, IPTV, and wireless media with digital data connected with customer attributes and behavior. Business is a broad term for any activity or organization that produces goods or services for everyday use (Bican et al., 2020). According to Ruel et al. (2021), business refers to the absolute number of businesses engaged in the production and marketing of goods and services to consumers, including agriculture, manufacturing, construction, distribution, transportation, communication, service businesses, and government. Therefore, business can be seen as the behaviors of individuals and groups who generate value through producing goods and services to satisfy societal requirements and gain profits through transactions.

It is possible to understand digital business as a business in which digital adoption is regarded as a significant tool for improving sales made by businesspeople. Indicators that can be used to gauge the firm's performance are listed in Table 3.

Table 3. Digital Business Adoption Indicator

Variable	Dimension	Indicator
Digital business adoption (Hooi et al., 2005)	Relative advantage	1. Profitability 2. Cost-effectiveness 3. New business opportunities
	IT Knowledge	4. Basic knowledge of e-commerce 5. Awareness of e-commerce
	Competitive Pressure	6. The threat of substitute products 7. Bargaining power of customers 8. Bargaining power of suppliers
	Government support	9. The price of internet access 10. Producing information and advice
	Security	11. Security and privacy

2.4 Innovation Capability

Innovation is the capacity of a company to implement new ideas in its processes, products, and other areas. Organizational creativity is not always manifested in major discoveries or accomplishments but can also take the form of efforts to make tiny changes to improve procedures. Innovative concepts might take the shape of introductions to new products, techniques, or procedures that will benefit individuals and communities (Najafi-Tavani et al., 2018). The definition of innovation focuses primarily on two aspects, namely process innovation and product innovation, which are also the focus of the research. The main difference between the two breakthroughs is their impact on distinct economic and social elements. Product innovations implemented by businesses in introducing new items typically have a clear and positive effect on revenue growth. In contrast, process innovations enhance efficiency (cost-cutting) (Maldonado-Guzmán et al., 2020). Innovation capability is the ability to generate products or services that satisfy market demand by executing procedures quickly and efficiently in response to technological changes and unanticipated opportunities given by competitors. Implementing and growing innovation in a company demands the participation of all employees; it tries to make it easier for businesses to incorporate new ideas and more efficient processes. To begin growing innovation in the workplace, it is possible to begin by cultivating the creativity of each individual; the consequences of this individual creativity will generate new ideas and thoughts that individuals may implement in the workplace (Yeşil et al., 2019). Based on the preceding explanation, it can be stated that innovation capability is the attempt to incorporate new ideas into a process or product to help the business achieve its objectives (Yeşil et al., 2019). The interaction between innovation's initiators, implementers, and users can be utilized as a dynamic process by transferring value across innovation parts via feedforward and feedback. Here are several reasons why innovation is crucial.

- a) Rapid technological advancements have spurred rivals' development of new products, methods, and services. This will encourage businesses to continue adapting to the environment to remain competitive.
- b) Environmental changes shorten product life cycles, necessitating replacing outdated products and services with new ones. To make this a reality, companies require innovative, creative ideas.
- c) Consumers' constant desire for innovative, high-quality products. To be able to satisfy these consumer expectations and retain consumers as customers, inventive abilities are required.
- d) Rapid market and technological developments also facilitate the imitation of good concepts. To counteract this, businesses must adopt improved and accelerated methods for using their products, processes, and services on an ongoing basis.
- e) Innovation is capable of accelerating growth and expanding market sectors.

Indicators used to measure innovation capability are shown in [Table 4](#).

Table 4. Innovation Capability Indicator

Variable	Dimension	Indicator
Innovation capability (Lei et al., 2020)	Work Atmosphere	1. Work Climate & well-being 2. Participatory Leadership Culture 3. Regeneration 4. External Knowledge
	Self-Ability	1. Ideation & organizing structures 2. Know-how 3. Employee Activity

2.5 E-Commerce Enabler

E-Commerce is the electronic purchasing and selling of goods and services over computer networks or the internet. The practice of conducting business transactions using digital processing, information, and communication technologies to develop, change, and redefine new relationships between sellers and buyers is another definition of e-commerce ([Cristobal-Fransi et al., 2020](#)). An E-commerce enabler is a company that provides end-to-end e-commerce services to other companies that wish to sell their items on online platforms or marketplaces, such as Qoo10, Lazada, Shopee, Tokopedia, Bukalapak, Tmall, JD, or other online retail platforms. An E-commerce enabler can assist with e-commerce business registration for vendors. Users of e-commerce can utilize the facilities supplied by e-commerce enablers. According to [Pogorelova et al. \(2016\)](#) Pogorelova et al., the indications of the e-commerce enablement variable are shown in [Table 5](#).

Table 5. E-Commerce Enabler

Variable	Dimension	Indicator
E-commerce Empowerment (E-Commerce Enabler) (Pogorelova et al., 2016)	Internal	1. Security 2. Perceived Usefulness 3. Internet and Infrastructure
	External	1. E-Commerce Online Presence 2. Trust 3. Government E-Readiness

3. RESEARCH FRAMEWORK

Based on the above discussion, Figure 1 presented the proposed research framework and hypothesis of each relationship developed in the following section.

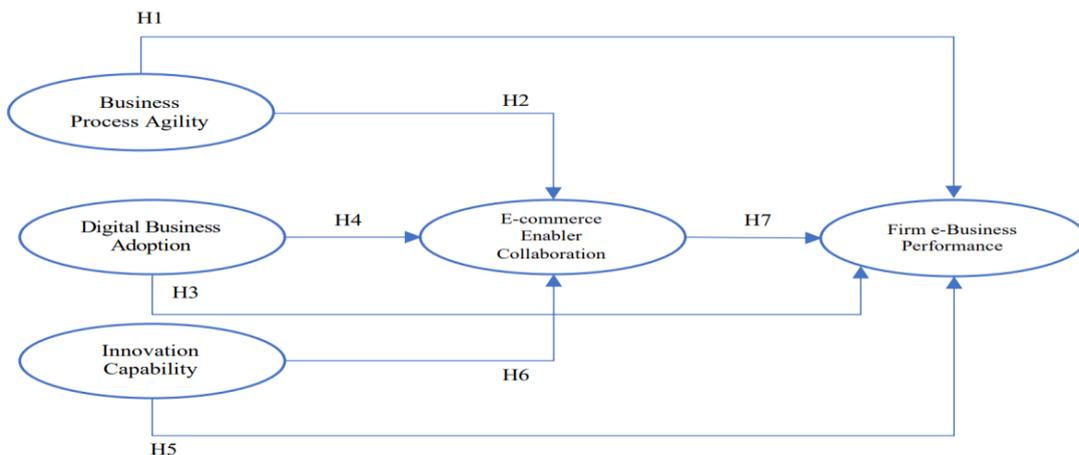


Figure 1. Research Framework

4. HYPOTHESIS DEVELOPMENT

4.1 Business Process Agility on Firm Performance

Business process agility is required for organizations to anticipate or adapt to changes quickly and easily. With the ability to quickly and effectively adapt to the market environment, agile business processes are intended to contribute to the organization attaining cost efficiencies and enable the organization to capitalize on chances for innovation and competitive action. This may be an effective method for enhancing a company's performance. Performance is optimal when consumer sensing and responding skills are aligned and high. Regarding independent effects, company performance is at its peak when customers respond, and sensing capabilities are at middle levels. This is consistent with the findings of Kurniawan et al. (2021), who found that business process agility can enhance a company's performance. Consequently, the initial hypothesis is:

H1: Business process agility has a positive and significant effect on firm performance

4.2 Business Process Agility on Firm Performance through E-Commerce Enabler Collaboration

E-commerce is the purchasing and selling of goods and services via the internet when buyers and sellers do not meet in person but instead connect via the internet. When e-commerce enablers collaborate to maximize e-commerce, corporate productivity can be increased. In addition, e-commerce, or the use of Web technology to comprehend client demands, market products, services, and product-market solutions, and accept customer orders, has developed as a vital imperative for firm performance. Thus, the built hypothesis is:

H2: Business process agility has a positive and significant effect on firm performance through e-commerce enabler collaboration

4.3 Digital Business Adoption on Firm Performance

Adoption is a widespread management phrase that pertains to multiple ideas. Frequently, it is an "iterative process" that begins with recognizing a new market opportunity for innovation and proceeds to its development, production, and marketing. These opportunities may include the creation of new products, methods of production, and sources of supply, the exploitation of new markets, new methods of corporate organization, processes for enhancing capabilities, and greater utility. This word might enhance the performance of a company. This is supported by research conducted by [Lin et al. \(2020\)](#), which found that digital adoption can improve a company's performance. Consequently, the hypothesis of this study is:

H3: Digital business adoption has a positive and significant effect on firm performance

4.4 Digital Business Adoption on Firm Performance through E-Commerce Enabler Collaboration

Electronic commerce (e-commerce) refers to the purchasing, selling, transferring, or exchanging goods, services, or data over computer networks, such as the internet. Some people believe that commerce (e-commerce) solely applies to transactions between business partners. When it is maximized, the enhancement of digital adoption to give superior business performance is attained. Thus, the hypothesis of this study is as follows:

H4: Digital business adoption has a positive and significant effect on firm performance through e-commerce enabler collaboration

4.5 Innovation Capability on Firm Performance

Consider innovation a dynamic capability that enables the organization to integrate, build, and reconfigure internal and external competencies to adapt to rapidly changing

environments. Innovation capability is the firm's potential to generate new and unique values by converting new ideas. In addition, innovation is a process that uses new or current information to generate new goods, knowledge, processes, or services. When the company stabilizes and implements this condition, its performance will increase. This study is supported by [Falahat et al. \(2020\)](#)'s findings that innovation competence boosts firm performance. Therefore, the built hypothesis is:

H5: Innovation capability has a positive and significant effect on firm performance

4.6 Innovation Capability on Firm Performance through E-Commerce Enabler Collaboration

Collaborative innovation refers to an innovative, socially or economically valuable solution produced from the inter-firm environment. Increased environmental unpredictability due to fluctuating client needs and rapid product obsolescence has prompted businesses to evaluate their capacity to produce innovation from an inter-firm collaborative context. Additionally, the e-commerce enabler partnership offers end-to-end e-commerce services to firms that wish to sell their products on online platforms or marketplaces. According to [Wang et al. \(2017\)](#) implementing e-commerce enabling cooperation can enhance the relationship between innovation capabilities and business performance. Therefore, the built hypothesis is:

H6: Innovation capability has a positive and significant effect on firm performance through e-commerce enabler collaboration

4.7 E-commerce Enabler Collaboration on Firm Performance

The process of e-commerce enabler collaboration can boost the company's stability and mobility because this aspect requires electronic collaboration between corporate partners. This collaboration between corporate partners along the supply chain occurs frequently. This circumstance positively improves businesses' ability to create their goods and services more efficiently. This is corroborated by the findings of [Yu et al. \(2021\)](#), who found that e-commerce facilitator impacts the increase in company performance. Therefore, the relationship's null hypothesis is as follows:

H7: E-commerce enabler has a positive and significant effect on firm performance

5. RESEARCH METHOD

5.1 Research Design

This study is categorized as survey research. The definition of survey research is the collection of data from a sample of persons through their responses to questions. This form of research permits using many approaches for participant recruitment, data collection, and instrumentation. General Managers of Consumer-Packaged Goods (CPG) Companies are the population of interest for this study. Consumer packaged

goods (CPGs) are an industry name for products that consumers frequently use and replace. The sampling approach utilized in this study is a census. Thus, this study collected information from 105 CPG general managers in Indonesia. Google form-distributed questionnaires serve as the technique for data collection. The Google form can facilitate survey data collection.

The concept of e-business performance was assessed using a nine-item scale (Ukaj et al., 2020). The concept of business process agility was quantified on a scale with eight items. Utilizing an 11-item scale, digital business adoption was measured (Hooi et al., 2005). Similarly, the constructs of e-commerce enablers cooperation (Pogorelova et al., 2016) and innovation capability (K. Li et al., 2020) were measured using seven items each. Data analysis used the Structural Equation Model (SEM) with intelligent PLS application support (Ravand et al., 2016). The investigation was conducted by evaluating the model's measurement and structure.

6. RESULTS

6.1 Measurement Model

6.1.1 Validity and Reliability Test

Validity and reliability tests are carried out to ensure that the measurement used is feasible to be used as a measurement (valid and reliable). Testing the validity and reliability can be assessed through various techniques. Such convergent validity is an indicator that is assessed based on the correlation between the item/component score with the construct score, seen from the standardized loading factor, which describes the magnitude of the correlation between each measurement item (indicator) and its construct. Individual reflexive measures are considered high if the correlation is > 0.7 . In addition, discriminant validity is a measurement model with reflexive indicators assessed based on the cross-loading of measurements with discriminant validity constructs to compare the value of the square root of average variance extracted (AVE). Moreover, composite reliability is an indicator to measure a construct seen in the view of latent variable coefficients. In this measurement, if the value achieved is > 0.70 , it can be said that the construct has high reliability. Finally, Cronbach Alpha is a reliability test conducted to strengthen the results of composite reliability. A variable can be declared reliable if it has a Cronbach Alpha value of > 0.7 .

The outer model analysis defines how each indicator relates to its latent variable. The outer loading test in this study is used to test the validity and reliability of the instrument items. The following are the outer loading and AVE values of each indicator on the research variables presented in [Table 7](#).

Table 7. Outer Loading and AVE Test Result

Variable	Instrument Code	AVE	Outer Loading	Results
business process agility	CPA.1	0.629	0.729	Valid
	CPA.2		0.779	Valid
	CPA.3		0.832	Valid
	CPA.4		0.823	Valid
	CPA.5		0.813	Valid
	CPA.6		0.816	Valid
	CPA.7		0.742	Valid
	CPA.8		0.804	Valid
digital business adoption	DBA.1	0.571	0.788	Valid
	DBA.10		0.775	Valid
	DBA.11		0.811	Valid
	DBA.2		0.751	Valid
	DBA.3		0.782	Valid
	DBA.4		0.712	Valid
	DBA.5		0.742	Valid
	DBA.6		0.750	Valid
	DBA.7		0.732	Valid
	DBA.8		0.718	Valid
	DBA.9		0.750	Valid
e-commerce collaboration	EEC.1	0.557	0.769	Valid
	EEC.2		0.723	Valid
	EEC.3		0.689	Valid
	EEC.4		0.745	Valid
	EEC.5		0.738	Valid
	EEC.6		0.776	Valid
	EEC.7		0.779	Valid

Table 7. Continued

E-business performance firm	FBP.1	0.562	0.688	Valid
	FBP.10		0.756	Valid
	FBP.2		0.733	Valid
	FBP.3		0.766	Valid
	FBP.4		0.757	Valid
	FBP.5		0.739	Valid
	FBP.6		0.781	Valid
	FBP.7		0.760	Valid
	FBP.8		0.757	Valid
innovation capability	FBP.9	0.594	0.759	Valid
	IC.1		0.745	Valid
	IC.2		0.771	Valid
	IC.3		0.794	Valid
	IC.4		0.785	Valid
	IC.5		0.773	Valid
	IC.6		0.764	Valid
IC.7	0.765	Valid		

Based on the data shown in [table 7](#), it is known that each indicator for a research variable has an outer loading value greater than 0.6 and an AVE score greater than 0.5. Therefore, all indicators are deemed practicable or valid for research usage and can be used for further investigation. There are two types of reliability tests in smart PLS: the Cronbach Alpha test and the Composite Reliability test. Cronbach Alpha measures the minimum level of reliability. The data is deemed acceptable if its Cronbach alpha value exceeds 0.60. Meanwhile, composite reliability evaluates the true value of a variable's reliability. The data is deemed highly reliable if its composite reliability score is more than or equal to 0.70. Based on the calculations performed and displayed in [table 8](#), it was determined that all instrument items were reliable, with all variables having Cronbach Alpha scores of > 0.60 and Composite Reliability scores of > 0.70 .

Table 8. Reliability Test Result

Variable	Cronbach Alpha	Composite Reliability
business process agility	0.915	0.931
digital business adoption	0.925	0.936
e-commerce collaboration	0.871	0.898
E-business performance firm	0.914	0.928
innovation capability	0.887	0.911

6.2 R-Square Test

Coefficient determination (R-Square) measures how much other variables influence the endogenous variable. Based on data processing that has been carried out using the smartPLS program, the R-Square values are presented in [Table 9](#) and [figure 2](#) as follows.

Table 9. R-Square Test Result

	R-Square	R Square Adjusted
E-Commerce Collaboration	0.632	0.620
E-Business Firm Performance	0.704	0.692

The score in the table describes that the e-business performance described by business process agility, digital business adoption, e-commerce collaboration, and innovation capability is 69.2%. Meanwhile, the change in e-commerce collaboration caused business process agility, digital business adoption, and innovation capability to be 62%.

7. STRUCTURAL MODEL

7.1 Hypothesis Test

The Inner Model Analysis, commonly called the Structural Model, is used to predict the causal relationship between the variables tested in the model. In testing the hypothesis, it can be seen from t-statistics and probability values. To test the hypothesis using

statistical values, for alpha 5%, the t-statistic value used is 1.96. So the criteria for acceptance/rejection of the hypothesis is that H_a is accepted when the t-statistic > 1.96 . To reject/accept the hypothesis using probability, H_a is accepted if the p-value < 0.05 . Table 10 below presents the results of hypothesis testing performed in SmartPLS.

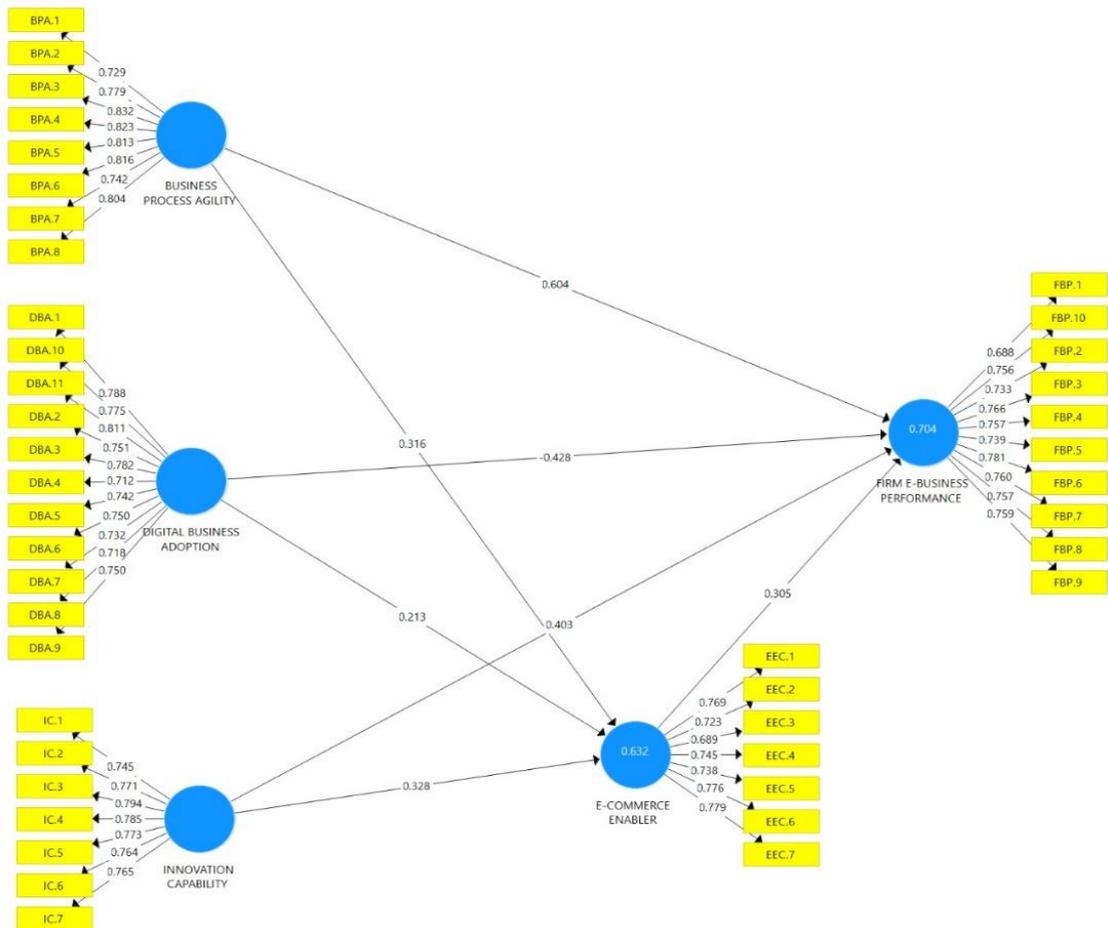


Figure 2. Outer Result

7.2 Business Process Agility toward E-Business Firm Performance

The results of the tests show that business process agility has a significant positive effect on E-Business Firm Performance. This is indicated by the p-values score of 0.000, which is smaller than 0.05. The t-statistic value is 6.340, greater than the t-table value of 1.960 and the beta score of 0.604. Thus, the explanation above proves that business process agility positively affects E-Business Firm Performance. The result follows the research by Al-Omouh (2022), which states that business process agility affects E-Business Firm Performance.

Table 10. Hypothesis Test Result

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Business Process Agility → E-Business Firm Performance	0.604	0.603	0.095	6,340	0.000
Digital Business Adoption → E-Business Firm Performance	-0.428	-0.432	0.155	2,767	0.006
E-Commerce Collaboration → E-Business Firm Performance	0.305	0.306	0.091	3,342	0.001
Innovation Capability → E-Business Firm Performance	0.403	0.409	0.147	2,749	0.006
Business Process Agility * E-Commerce Enabler → E-Business Firm Performance	0.096	0.099	0.046	2,090	0.037
Digital Business Adoption * E-Commerce Enabler → E-Business Firm Performance	0.065	0.064	0.061	1,067	0.287
Innovation Capability * E-Commerce Enabler → E-Business Firm Performance	0.100	0.101	0.063	1,596	0.111

7.3 Business Process Agility toward E-Business Firm Performance Mediated by E-Commerce Enabler

The conducted experiments indicate that business process agility has a strong positive effect on E-Business Firm Performance when mediated through e-commerce collaboration. The p-value score of 0.037 indicates this, as it is less than 0.05. The t-statistic value of 2.090 exceeds the t-table value of 1.960 and the beta score of 0.096. By facilitating e-commerce collaboration, the preceding explanation demonstrates that business process agility significantly benefits E-Business Firm Performance. According to the findings of [Yu et al. \(2021\)](#), the presence of e-commerce cooperation as a mediator makes the relationship between business process agility and E-Business Firm Performance more impactful.

7.4 Digital Business Adoption toward E-Business Firm Performance

The results of the conducted tests indicate that digital business adoption has a considerable negative impact on the performance of E-Business firms. The p-value score of 0.006 indicates this, as it is less than 0.05. The t-statistic value of 2.767 exceeds the t-table value of 1.960 and the beta score of -0.428. Therefore, the above explanation demonstrates that adopting digital business significantly negatively impacts E-Business firm performance. According to [Ilin et al. \(2017\)](#) findings, the effect of digital business adoption on E-Business Firm Performance is observed.

7.5 Digital Business Adoption toward E-Business Firm Performance Mediated by E-Commerce Enabler

The conducted tests indicate that digital business adoption of E-Business Firm Performance with e-commerce collaboration mediation has no effect. The p-values score of 0.287%, which is greater than 0.05, indicates this. The value of the t-statistic is 1.067, which is less than the t-table value of 1.960 and the beta score of 0.065. Thus, the above argument demonstrates that digital business adoption does not affect the performance of E-Business firms via mediating e-commerce collaboration. According to [Sokiyna et al. \(2020\)](#)'s research, the mediation of e-commerce collaboration has no impact on the relationship between digital business adoption and E-Business firm performance.

7.6 Innovation Capability toward E-Business Firm Performance

The outcome of the tests indicates that innovation capability has a considerable beneficial effect on the performance of E-Business firms. The p-value score of 0.006 indicates this, as it is less than 0.05. The t-statistic value exceeds the t-table value of 1.960 and the beta score of 0.403. Therefore, the above explanation demonstrates that innovation capability has a substantial beneficial effect on E-Business Firm Performance. According to the findings of [Migdadi et al. \(2017\)](#), innovation capability influences the performance of E-Business firms.

7.7 Innovation Capability toward E-Business Firm Performance Mediated by E-Commerce Enabler

The experiments indicate that innovation capability does not affect E-Business Firm Performance with collaborative e-commerce mediation. The p-values score of 0.111, which is greater than 0.05, indicates this. The value of the t-statistic is 1.596, which is less than the t-table value of 1.660 and the beta score of 0.100. Thus, the preceding argument demonstrates that innovation capability does not affect E-Business firm performance through the mediation of e-commerce collaboration. According to [Wang et al. \(2017\)](#), the association between innovation capability and E-Business Firm Performance is unaffected by e-commerce cooperation mediation.

7.8 E-Commerce Enabler toward E-Business Firm Performance

The conducted tests indicate that e-commerce collaboration has a substantial favorable effect on E-Business Firm Performance. This is demonstrated by the p-value of 0.001, which is less than 0.05. The t-statistic value of 3,342 exceeds the t-table value of 1,960 and the beta score of 0.305. Consequently, the above explanation demonstrates that e-commerce collaboration has a substantial favorable effect on E-Business Firm Performance. According to [Sokiyna et al. \(2020\)](#)'s research, e-commerce collaboration affects E-Business Firm Performance.

8. DISCUSSION

Firm performance is now the core focus of strategic management scholars, given the discipline's primary purpose is performance enhancement ([Ketchen Jr et al., 2020](#)). To maximize the firm's performance, particularly that of Consumer-Packaged Goods (CPG) Company, numerous aspects are highlighted based on the findings of this study. Business process agility comes first. Business agility enables organizations to adjust quickly and easily to market conditions. Consequently, business agility is one of the most important factors in attaining better organizational performance ([Liu, 2021](#)).

Because responding correctly to a constantly changing environment is vital to a company's existence, business process agility has recently emerged as one of the top research topics among academics and practitioners ([Miceli et al., 2021](#)). Growing attention has been paid to the notion of agility, which addresses the difficulty of a highly dynamic corporate environment by rapidly modifying the business. In a highly dynamic corporate environment, the ability to respond to change swiftly and effectively, become flexible and adaptive, and manage uncertainty are vital to an organization's existence. Business process agility is required for organizations to anticipate or adapt to changes quickly and easily. With the ability to quickly and effectively adapt to the market environment, an agile business process is expected to contribute to the organization achieving cost efficiencies and enable the organization to exploit opportunities for

innovation and competitive action, resulting in the enhancement of firm performance (Kurniawan et al., 2019).

In addition, the relationship between business process agility and firm performance will be enhanced when an e-commerce enabler is present. Because the adoption of ICTs such as e-commerce makes it less expensive and simpler for businesses to expand their markets, run their operations, and coordinate their value chains across borders. By reducing the costs of transactions and information, technology has reduced market friction and offered a considerable impetus to global market expansion. E-commerce promotes globalization by lowering transaction and coordination costs and expanding markets with economies of scale (Okeke et al., 2016).

The subsequent factor is digital business adoption. Digital business has a greater scope than electronic commerce. It is synonymous with E-business. E-Business is a broader definition of e-commerce, encompassing not only the purchase and sale of services and goods but also the conduct of all business activities online, such as serving clients, partnering with business partners, delivering e-learning, and conducting digital transactions within businesses (Hurasha et al., 2016). Up to an 80% increase in revenue is one of the benefits of implementing digital technology for CPGs in Indonesia. Inefficient online marketing, inadequate technology literacy, a lack of ideal access to the E-commerce system, and a lack of online expertise and skilled human resources are problems that CPGs in Indonesia face. Therefore, the adoption of E-commerce in the CPG industry in Indonesia is still between 9 and 15% (Purcărea et al., 2022). According to this study's findings, however, the position of e-commerce enablers cannot maximize the association between digital business adoption and firm success. This research is consistent with Sokiyna et al. (2020)'s findings that e-commerce cooperation mediation has no impact on the association between digital business adoption and E-Business firm performance.

Innovation capability is the third factor. Innovation capability is typically meant to add to the performance or profitability of the adopting enterprise (Kafetzopoulos et al., 2015). Innovative processes are a means through which firms can improve the performance of existing operations by delivering better manufacturing processes or products. The efficacy of businesses employing four distinct innovation techniques corresponds to the various product, system, and organizational innovation combinations. At the same time, they did not check for complementarity explicitly (Prajogo, 2016).

In addition, organizations with multiple types of innovation as part of their growth plans grew faster than those with a singular focus on innovation (Streimikiene et al., 2020). Long-term, there has been a substantial theoretical debate on the capacity of information technology to create significant breakthroughs in a company's business processes, products, and services, thereby enhancing its commercial performance. According to a separate study, innovation is a crucial value-adding activity for businesses, transferring

the benefits of formal strategy planning into higher firm performance (Kylahеiko et al., 2016). According to this study's findings, the position of an e-commerce facilitator cannot enhance the association between innovation capability and company success. The result is consistent with Wang et al. (2017) findings, which show that the relationship between innovation capability and e-business firm performance is unaffected by the mediation of e-commerce collaboration.

The final consideration is the e-commerce enabler itself. The separate examination of e-commerce enablers demonstrates that the two distinct types of adoption were associated with distinct performance characteristics. The e-commerce enabler led to enhancements in commerce-related performance. This adoption increased collaboration and decreased expenses. Overall, e-commerce enablers appeared to have greater fundamental effects on company performance, resulting in a wider array of enhancements (Aydinер et al., 2019).

9. CONCLUSION

According to the research, business process agility considerably positively impacts e-commerce collaboration. Meanwhile, digital business adoption and innovation capacity do not influence e-commerce collaboration. Moreover, it is recognized that business process agility and innovation capabilities have a substantial positive effect on E-Business Firm Performance, whereas digital business adoption has a significant negative effect. With e-commerce collaboration as collaborative mediation, process agility and digital business adoption substantially positively impact E-Business Firm Performance. With e-commerce collaboration as a mediator, innovation capability has little impact on E-Business firm performance. In addition, it is established that human capital competency and digital innovation explain 68.2% of corporate performance. Similarly, human capital competency and digital innovation account for 61.9% of the role of leadership variable.

10. RESEARCH IMPLICATIONS

This research's findings may contribute to the literature on the factors that affect e-business firm performance and the usage of E-commerce enablers as the variable that can strengthen the correlation between strategy and performance. To retain success, the consumer packaged products organization must employ strategies such as e-commerce collaboration, business process agility, and innovation capabilities. However, this study is limited in focusing solely on human capital competency, digital innovation, e-commerce collaboration, business process agility, innovation capability, and performance. In addition, only the consumer packaged products industry determines what aspects can improve its performance. Therefore, a future study using an additional variable is required.

REFERENCES

- Al-Omoush, K. S. (2022). Understanding the impact of intellectual capital on E-business entrepreneurial orientation and competitive agility: an empirical study. *Information Systems Frontiers*, 24(2), 549-562. doi: <https://doi.org/10.1007/s10796-020-10092-7>
- Aydiner, A. S., Tatoglu, E., Bayraktar, E., Zaim, S., & Delen, D. (2019). Business analytics and firm performance: The mediating role of business process performance. *Journal of Business Research*, 96, 228-237. doi: <https://doi.org/10.1016/j.jbusres.2018.11.028>
- Bi, R., Davison, R. M., & Smyrnios, K. X. (2017). E-business and fast growth SMEs. *Small Business Economics*, 48(3), 559-576. doi: <https://doi.org/10.1007/s11187-016-9788-8>
- Bican, P., & Brem, A. (2020). Digital Business Model. *Digital Transformation, Digital Entrepreneurship: Is There A Sustainable "Digital*. doi: <https://doi.org/10.3390/su12135239>
- Chaffey, D., & Smith, P. R. (2017). *Digital marketing excellence: planning, optimizing and integrating online marketing*: Routledge.
- Cristobal-Fransi, E., Montegut-Salla, Y., Ferrer-Rosell, B., & Daries, N. (2020). Rural cooperatives in the digital age: An analysis of the Internet presence and degree of maturity of agri-food cooperatives' e-commerce. *Journal of Rural Studies*, 74, 55-66. doi: <https://doi.org/10.1016/j.jrurstud.2019.11.011>
- Dwidienawati, D., Tjahjana, D., Abdinagoro, S. B., Gandasari, D., & Munawaroh. (2020). Customer review or influencer endorsement: which one influences purchase intention more? *Heliyon*, 6(11), e05543. doi: <https://doi.org/10.1016/j.heliyon.2020.e05543>
- Falihat, M., Ramayah, T., Soto-Acosta, P., & Lee, Y.-Y. (2020). SMEs internationalization: The role of product innovation, market intelligence, pricing and marketing communication capabilities as drivers of SMEs' international performance. *Technological Forecasting and Social Change*, 152, 119908. doi: <https://doi.org/10.1016/j.techfore.2020.119908>
- Haseeb, A., Xia, E., Saud, S., Ahmad, A., & Khurshid, H. (2019). Does information and communication technologies improve environmental quality in the era of globalization? An empirical analysis. *Environmental Science and Pollution Research*, 26(9), 8594-8608. doi: <https://doi.org/10.1007/s11356-019-04296-x>
- Hooi, L. S., Lim, T. O., Goh, A., et al. (2005). Economic evaluation of centre haemodialysis and continuous ambulatory peritoneal dialysis in Ministry of Health hospitals, Malaysia. *Nephrology*, 10(1), 25-32. doi: <https://doi.org/10.1111/j.1440-1797.2005.00360.x>
- Hurasha, C. I., & Chiremba, T. (2016). Influence of electronic commerce on business performance: Evidence from e-commerce organisations in Harare, Zimbabwe.

- Journal of Economics and Behavioral Studies*, 8(6 (J)), 146-152. doi: [https://doi.org/10.22610/jebs.v8i6\(J\).1488](https://doi.org/10.22610/jebs.v8i6(J).1488)
- Ilin, V., Ivetić, J., & Simić, D. (2017). Understanding the determinants of e-business adoption in ERP-enabled firms and non-ERP-enabled firms: A case study of the Western Balkan Peninsula. *Technological Forecasting and Social Change*, 125, 206-223. doi: <https://doi.org/10.1016/j.techfore.2017.07.025>
- Kafetzopoulos, D., & Psomas, E. (2015). The impact of innovation capability on the performance of manufacturing companies. *Journal of Manufacturing Technology Management*, 26(1), 104-130. doi: <https://doi.org/10.1108/JMTM-12-2012-0117>
- Karande, A. M., & Kalbande, D. (2017). *Solving enterprise solution complexity in SCM domain through business process agility*. Paper presented at the 2017 IEEE 7th International Advance Computing Conference (IACC): IEEE doi: <https://doi.org/10.1109/IACC.2017.0187>
- Ketchen Jr, D. J., & Craighead, C. W. (2020). Research at the intersection of entrepreneurship, supply chain management, and strategic management: Opportunities highlighted by COVID-19. *Journal of Management*, 46(8), 1330-1341. doi: <https://doi.org/10.1177/0149206320945028>
- Kurniawan, R., Budiastuti, D., Hamsal, M., & Kosasih, W. (2021). Networking capability and firm performance: the mediating role of market orientation and business process agility. *Journal of Business & Industrial Marketing*, 36(9), 1646-1664. doi: <https://doi.org/10.1108/JBIM-01-2020-0023>
- Kurniawan, R., & Hamsal, M. (2019). Shaping Business Process Agility in Telecommunication 4.0. *International Journal of Applied Science and Engineering*, 16(1), 15-23. doi: [https://doi.org/10.6703/IJASE.201906_16\(1\).015](https://doi.org/10.6703/IJASE.201906_16(1).015)
- Kwak, J., Zhang, Y., & Yu, J. (2019). Legitimacy building and e-commerce platform development in China: The experience of Alibaba. *Technological Forecasting and Social Change*, 139, 115-124. doi: <https://doi.org/10.1016/j.techfore.2018.06.038>
- Kylaheiko, K., Puumalainen, K., Sjögrén, H., Syrjä, P., & Feltnhofer, K. (2016). Strategic planning and firm performance: A comparison across countries and sectors. *IJEV*, 8(3), 280. doi: <https://doi.org/10.1504/ijev.2016.10000295>
- Labus, M., Despotović-Zrakić, M., Bogdanović, Z., Barać, D., & Popović, S. (2020). Adaptive e-business continuity management: Evidence from the financial sector. *Computer Science and Information Systems*, 17(2), 553-580. doi: <https://doi.org/10.2298/CSIS190202037L>
- Lamey, L., Deleersnyder, B., Steenkamp, J.-B. E. M., & Dekimpe, M. G. (2018). New product success in the consumer packaged goods industry: A shopper marketing approach. *International Journal of Research in Marketing*, 35(3), 432-452. doi: <https://doi.org/10.1016/j.ijresmar.2018.03.001>

- Lei, H., Leungkhamma, L., & Le, P. B. (2020). How transformational leadership facilitates innovation capability: the mediating role of employees' psychological capital. *Leadership & Organization Development Journal*, 41(4), 481-499. doi: <https://doi.org/10.1108/LODJ-06-2019-0245>
- Li, K., Kim, D. J., Lang, K. R., Kauffman, R. J., & Naldi, M. (2020). How should we understand the digital economy in Asia? Critical assessment and research agenda. *Electronic commerce research and applications*, 44, 101004. doi: <https://doi.org/10.1016/j.elerap.2020.101004>
- Li, Y., Wang, Q., Wang, Z., & Chen, L. (2021). Improving business processes or human resources? The performance implications and contingencies. *Industrial Management & Data Systems*, 121(7), 1577-1598. doi: <https://doi.org/10.1108/IMDS-08-2020-0476>
- Lin, W. L., Yip, N., Ho, J. A., & Sambasivan, M. (2020). The adoption of technological innovations in a B2B context and its impact on firm performance: An ethical leadership perspective. *Industrial Marketing Management*, 89, 61-71. doi: <https://doi.org/10.1016/j.indmarman.2019.12.009>
- Liu, H.-M. (2021). Effect of partnership quality on SMEs success: Mediating role of coordination capability and organisational agility. *Total Quality Management & Business Excellence*, 32(15-16), 1786-1802. doi: <https://doi.org/10.1080/14783363.2020.1773782>
- Maldonado-Guzmán, G., Garza-Reyes, J. A., Pinzón-Castro, S. Y., & Kumar, V. (2020). Innovation capabilities and performance: are they truly linked in SMEs? *International Journal of Innovation Science*, 11(1), 48-62. doi: <https://doi.org/10.1108/IJIS-12-2017-0139>
- Miceli, A., Hagen, B., Riccardi, M. P., Sotti, F., & Settembre-Blundo, D. (2021). Thriving, not just surviving in changing times: How sustainability, agility and digitalization intertwine with organizational resilience. *Sustainability*, 13(4), 2052. doi: <https://doi.org/10.3390/su13042052>
- Migdadi, M. M., Zaid, M. K. A., Yousif, M., Almestarihi, R. d., & Al-Hyari, K. (2017). An empirical examination of knowledge management processes and market orientation, innovation capability, and organisational performance: Insights from Jordan. *Journal of Information & Knowledge Management*, 16(01), 1750002. doi: <https://doi.org/10.1142/S0219649217500022>
- Mkansi, M. (2021). E-business adoption costs and strategies for retail micro businesses. *Electronic Commerce Research*, 1-41. doi: <https://doi.org/10.1007/s10660-020-09448-7>
- Najafi-Tavani, S., Najafi-Tavani, Z., Naudé, P., Oghazi, P., & Zeynaloo, E. (2018). How collaborative innovation networks affect new product performance: Product innovation capability, process innovation capability, and absorptive capacity. *Industrial marketing management*, 73, 193-205. doi: <https://doi.org/10.1016/j.indmarman.2018.02.009>

- Okeke, M., Oboreh, J., & Ezeaghaego, C. (2016). Effect of e-commerce and the growth of small scale enterprises in selected enterprises in Anambra State. *Singaporean Journal of Business, Economics and Management Studies*, 51(3523), 1-13. doi: <https://doi.org/10.12816/0028361>
- Pogorelova, E., Yakhneeva, I., Agafonova, A., & Prokubovskaya, A. (2016). Marketing Mix for E-commerce. *International journal of environmental & science education*, 11(14), 6744-6759. Retrieved from <https://ssrn.com/abstract=2848818>
- Prajogo, D. I. (2016). The strategic fit between innovation strategies and business environment in delivering business performance. *International journal of production Economics*, 171, 241-249. doi: <https://doi.org/10.1016/j.ijpe.2015.07.037>
- Purcărea, T., Ioan-Franc, V., Ionescu, Ș.-A., et al. (2022). Major Shifts in Sustainable Consumer Behavior in Romania and Retailers' Priorities in Agilely Adapting to It. *Sustainability*, 14(3), 1627. doi: <https://doi.org/10.3390/su14031627>
- Putra Hadi, P., Santoso, HB. (2020). 'Contextual factors and performance impact of e-business use in Indonesian small and medium enterprises (SMEs)', *Heliyon. Elsevier Ltd*, 6(3), e03568. doi: <https://doi.org/10.1016/j.heliyon.2020.e03568>
- Ravand, H., & Baghaei, P. (2016). Partial least squares structural equation modeling with R. *Practical Assessment, Research, and Evaluation*, 21(1), 11. doi: <https://doi.org/10.7275/d2fa-qv48>
- Remeikienė, R., Čepel, M., & Gasparėnienė, L. (2019). Evaluation of e-business micro and macro determinants by multiple indicators multiple causes model. *Inžinerinė ekonomika*, 591-600. doi: <https://doi.org/10.5755/j01.ee.30.5.19639>
- Ruel, H., Rowlands, H., & Njoku, E. (2021). Digital business strategizing: the role of leadership and organizational learning. *Competitiveness Review: An International Business Journal*, 31(1), 145-161. doi: <https://doi.org/10.1108/CR-11-2019-0109>
- Sokiyna, M., & Aqel, M. (2020). The role of e-business applications software in driving operational excellence: Impact of departments collaboration using sustainable software. *Sustainable Computing: Informatics and Systems*, 28, 100445. doi: <https://doi.org/10.1016/j.suscom.2020.100445>
- Streimikiene, D., & Korneeva, E. (2020). Economic impacts of innovations in tourism marketing. *Terra Economicus*, 18(3), 182-193. doi: <https://doi.org/10.18522/2073-6606-2020-18-3-182-193>
- Suntornpithug, N., & King, S. (2018). *Investigating perceptions of US millennial buyers versus non-buyers of green consumer packaged goods (CPG) across product categories*. Paper presented at the Proceedings of International Academic Conferences: International Institute of Social and Economic Sciences doi: <https://doi.org/10.20472/iac.2018.040.059>

- Svobodová, Z., & Rajchlová, J. (2020). Strategic behavior of e-commerce businesses in online industry of electronics from a customer perspective. *Administrative Sciences*, 10(4), 78. doi: <https://doi.org/10.3390/admsci10040078>
- Ukaj, F., Ramaj, V., & Livoreka, R. (2020). The Impact of E-Business on Activity Extension and Business Performance. *Journal of Distribution Science*, 18(8), 103-112. doi: <https://doi.org/10.15722/jds.18.8.202008.103>
- Villegas-Ch, W., Palacios-Pacheco, X., & Luján-Mora, S. (2019). Application of a smart city model to a traditional university campus with a big data architecture: A sustainable smart campus. *Sustainability*, 11(10), 2857. doi: <https://doi.org/10.3390/su11102857>
- Wang, F., Zhao, J., Chi, M., & Li, Y. (2017). Collaborative innovation capability in IT-enabled inter-firm collaboration. *Industrial Management & Data Systems*, 117(10), 2364-2380. doi: <https://doi.org/10.1108/IMDS-09-2016-0392>
- Wong, L.-W., Leong, L.-Y., Hew, J.-J., Tan, G. W.-H., & Ooi, K.-B. (2020). Time to seize the digital evolution: Adoption of blockchain in operations and supply chain management among Malaysian SMEs. *International Journal of Information Management*, 52, 101997. doi: <https://doi.org/10.1016/j.ijinfomgt.2019.08.005>
- Yeşil, S., & Doğan, I. F. (2019). Exploring the relationship between social capital, innovation capability and innovation. *Innovation*, 21(4), 506-532. doi: <https://doi.org/10.1080/14479338.2019.1585187>
- Yu, Y., Huo, B., & Zhang, Z. (2021). Impact of information technology on supply chain integration and company performance: evidence from cross-border e-commerce companies in China. *Journal of Enterprise Information Management*, 34(1), 460-489. doi: <https://doi.org/10.1108/JEIM-03-2020-0101>