

Exploring Dominants of Business Performance (BP) and The Mediating Role of Electronic Commerce Adoption (ECA) among Small Middle Enterprises (SMEs) from Information Technology Sector (ITS) in Guangzhou City of China

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Abstract. Purpose – This study explores the relationship between IVs [Top Management Support (TOP) and Competitive Pressure (CP)], MV: Electronic Commerce Adoption (ECA) and DV: Business Performance (BP), which is the focus in the context among Small and Medium-sized Enterprises (SEMs) from Information Technology Sectors in Guangzhou city of China. Moreover, this study also explores the factors of each variables' relationship by the collection of qualitative method based on the research framework that after it is tested followed by hypothesis question. Design/ methodology/ approach – 200 samples can be collected from Small and Medium-sized Enterprises (SEMs) in Guangzhou city of China by utilizing the convenience sampling method. And analyzing method in this study, the quantitative method can be selected by adopting IBMSPASS and PLS-SEM. Findings – Both Top Management Support (TOP) and Competitive Pressure (CP) have a significant positive impact on Business Performance (BP). Electronic Commerce Adoption (ECA) is an important factor to mediate the relationship between IVs [Top Management Support (TOP) and Competitive Pressure (CP)] and DV: Business Performance (BP). Research limitations/implications – The mediating role of Electronic Commerce Adoption (ECA) in the relationship between IVs (TOP, CP) and BP was studied using quantitative method for exploring and tested each variables' relationship but not enough for exploring Key Successful Factors (KSFs) for implementing Electronic Commerce Adoption (ECA). The research background and research data are limited to Small Middle-sizes Enterprises (SMEs) and employees from Information Technology sectors in Guangzhou City of China. Originality/value – By studying the relationship and factors between IVs (TOP and CP), MV: ECA, and DV: BP, this paper will help to better understand how TOP and CP affect BP, and how ECA mediate the relationship between IVs: (TOP and CP) and DV: BP. With the increasing market competition and rising labor costs in China, improving and utilizing ECA for enterprises may be an important means to cope with future competition.

Keywords: Top Management Support (TOP); Electronic Commerce Adoption (ECA); Business Performance (BP).

1. Introduction

In the 21st century, there is a growing trend among individuals and businesses to adopt contemporary digital technologies, such as the Internet of Things (IoT), block-chain, cloud computing, machine learning (ML), artificial intelligence (AI), Electronic Commerce (EC), and various internet-based services. These technologies are sought after due to their potential to streamline and facilitate various activities (L. Zhang, 2023).

By leveraging these technologies, companies in the Information Technology Sector (ITS) of Guangzhou city, China, can potentially achieve notable benefits. These advantages include improved operational efficiency, increased sales and revenue, and enhanced customer/supplier relationships. Additionally, incorporating such technologies can bolster the competitive position of these companies in the global markets, even when competing against larger organizations (Gao et al., 2023).

Amidst intense market competition, organizations are striving to enhance their Business Performance (BP) through the strategic integration of cutting-edge technologies with their marketing approaches

(Šaković Jovanović, Vujadinović, Mitreva, Fragassa, & Vujović, 2020). In the present landscape, numerous industries heavily rely on online platforms to showcase their products or advertisements, which effectively expands their customer base (Agrawal, Gans, & Goldfarb, 2019).

To keep up with the evolving market demands, many prominent companies have adopted Artificial Intelligence (AI) in their e-commerce operations, aiming to optimize their overall performance (C. Zhang, Bengio, Hardt, Recht, & Vinyals, 2021). Additionally, C. Zhang et al. (2021) elaborate that a significant number of businesses are projected to adopt AI of Electronic Commerce (EC) by 2030, further reinforcing the prevalence and importance of this technology in various industries.

Small and Medium-sized Enterprises (SMEs) within the Information Technology Sector (ITS) of Guangzhou, China, play a crucial role in supporting the domestic economy, particularly in developing countries (Y. S. Chen, Liu, & Song, 2023). However, many SMEs in developing nations show hesitancy in adopting e-commerce technology and capitalizing on its advantages, largely due to a lack of awareness about its potential benefits (Abed, 2020).

In contrast, Small and Medium-sized Enterprises (SMEs) in China make significant contributions, accounting for over 70% of the country's GDP (Y. S. Chen et al., 2023). This notable contribution can be attributed to the increased awareness and recognition of the benefits associated with e-commerce strategies in the country, leading to a higher adoption rate of e-commerce technology compared to other developing nations in the region (Y. S. Chen et al., 2023).

Moreover, the pervasive use of digital technology has had a profound effect on Business Performance (BP), emerging as a critical factor for maintaining a competitive edge in the market. Consequently, it becomes essential to investigate the influence of Electronic Commerce Adoption (ECA) on the Business Performance (BP) of Small and Medium-sized Enterprises (SMEs) within the Information Technology Sector (ITS) of Guangzhou, China. In this regard, the study aims to address the following objectives:

- (1) Identified the impacts of Competitive Pressure (CP) and Electronic Commerce Adoption (ECA) on the Business Performance (BP).
 - (2) Examined the mediating effect of Electronic Commerce Adoption (ECA) in the relationship between Top Management Support (TOP) and Business Performance (BP).
 - (3) Examined the mediating effect of Electronic Commerce Adoption (ECA) in the relationship between Competitive Pressure (CP) and Business Performance (BP)
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2. Organization of the Text

2.1. The Relationship between Top Management (TOP) and Business Performance (BP)

Greenhalgh and Rogers (2010) explained that the most important key role can be performed and operated by Top Management (TM) should be satisfaction in using or introducing a particular advanced technique proactively. All related studies, including Venkatraman, Henderson, and Oldach (1993), Powell and Dent-Micallef (1997), Srinivasan, Lilien, and Rangaswamy (2002), Wu, Mahajan, and Balasubramanian (2003) indicate that companies would be preferred to catch up with and capture the efficient and effective consequences in the adoption of new technology after idealistic leadership of articulating the demand for the process of being more innovation can be provided or supported from Top Management within the companies, here also can be viewed or described as Top Management Support (TOM).

Tiago and Veríssimo (2014), therefore, indicated that the technology of electronic marketing can be concluded in such functions, including obtaining market share, value increasing in the market,

specific information regarding their competitors, advanced product and service in development, cost effectiveness. Furthermore, the function of such electronic marketing can maintain the relationship between customers and companies in a long term. However, the most important factor should be the Top Management Support (TOM) discussed above. Finally, the hypothesis question should be provided in the below:

Hypothesis 1: Top Management Support (TOM) has a positive relationship with the Business Performance (BP).

2.2. The Mediating Role E-Commerce Adoption (ECA) in the Relationship between Top Management Support (TOP) and Business Performance (BP)

2.2.1. The Relationship between Top Management Support (TOP) and E-Commerce Adoption (ECA).

Claycomb, Iyer, and Germain (2005) & Alsaad, Mohamad, and Ismail (2017) all stated that Top Management Support (TOP) regard to their attitude that introducing and implementing B2B Electronic Commerce in a company could be viewed as the most important element in efficiency for attracting a new technology, which also can be viewed as a commitment to adoption of a new technology for a company. Additionally, Duan, Deng, and Corbitt (2012) & Liang, Saraf, Hu, and Xue (2007) emphasized that when an advanced technology has to be introduced and performed into a company successfully, managers who from Top Management of a company have to be faced two types inevitable conditional issues for introducing and implementing the new technology such as B2B Electronic Commerce. The evaluation of opportunities in strategic business, initially, should be performed and assessed by managers who from Top Management (TM) with accurately and sustainably method. Secondly, business activities and process must be melted with innovation based on the perspective of long-term way by Top Management (TM).

Finally, as the discussion on the relationship between Top Management Support (TOP) and Electronic Commerce (EC) from Zhu and Thatcher (2010) to know, once managers from a company can find out the interest and applications of internet technology that can be improve their company performance, other members from same company will enjoy same sense of using the technology that can improve their company performance by the influencing of the managers within the company, and then all members from the company will accept the technology proactively, at the same time, they are desired to make similarity decision that introducing and implementing the technology can be invested and obtained more resource from the company.

Hypothesis 2: Top Management Support (TOM) has a positive relationship with the E-Commerce Adoption (ECA).

2.2.2. The Relationship between E-Commerce Adoption (ECA) and Business Performance (BP)

Fonseka, Jaharadak, and Raman (2022) compared with previous researchers' studies such as Abebe (2014) and Hawusiwa, Wardani, and Ningtyas (2015) on the topic of the effect of Electronic Commerce (EC) on Business Performance (BP) to indicated that for effective and efficient Business Performance (BP), companies are suggested to be forced to introducing and implementing Electronic Commerce(EC), as variable also called Electronic Commerce Adoption (ECA). This means that satisfied profitable Business Performance (BP) can be impacted in a significant positive by Electronic Commerce Adoption (ECA) in companies. Furthermore, Ningtyas and Wibowo (2015) also indicated that there is a stronger positive relationship between Electronic Commerce (EC) and Business Performance (BP). Also additionally, Taleghani, Gilaninia, and Mousavian (2011) emphasized that the purpose of the quantity of marketing in companies should be the main mission that all members from the companies are desired to catch up with, in this case, the question how the company improve and force the marketing also should be problem and the answer or strategy of the company have to

introducing and implementing a new technology such as Electronic Commerce (EC) in the company for seeking satisfied profit by enhancing the quantity of marketing.

Silitonga, Fakhrorazi, and Ikhsan (2020) emphasized that when companies invest more related resources for marketing and then the share of the market in a particular field would be increased and improved, this means that the volume in selling can be kept in growth continuously, by which the consequence also would enhance Business Performance (BP). Mahliza (2019) also emphasized that transaction costs and satisfied profits within a company also can be viewed as another type of method to improve Business Performance (BP), in this case, the lower transaction costs and the higher satisfied profit will enhance and force Business Performance (BP) in a company. Therefore, the hypothesis questions for the relationship between E-Commerce Adoption (ECA) and Business Performance (BP); E-commerce Adoption (ECA) mediated the relationship between Top Management Support (TOP) and Business Performance (BP);

Hypothesis 3: E-Commerce Adoption has a positive relationship with the Business Performance.

Hypothesis 4: E-Commerce Adoption mediates the relationship between Top Management Support (TOP) and Business Performance (BP).

2.3. The Relationship between Competitive Pressure (CP) and Business Performance (BP)

Purnama and Subroto (2016) on the topic of the definition in Business Performance (BP) stated that a planned goal for obtaining better consequences in multiple fields in production, the level of financial investment, the quality of product and services, the efficient logistic for delivering product and services, the volume in selling product and services and profitable capability within a company should be assessed and tested in different level, including higher level or low level.

According to Johannessen (2013), any novel idea that adds value through practical application can be considered as an innovation. Operating in complex environments presents a challenge for business leaders to adapt to environmental changes (Anning-Dorson, 2016). Competition pressures manifest in various ways, and the intense nature of competition can pose significant challenges for companies. This is particularly evident when the business environment experiences uncertainty and an escalation in competition (Purnama & Subroto, 2016). In this case, based on the studies, this study can provide and develop the hypothesis question to test the relationship between Competitive Pressure (CP) and Business Performance (BP) as below:

Hypothesis 5: Competitive Pressure (CP) has a positive relationship with the Business Performance (BP).

2.4. The Mediating Role of E-Commerce Adoption (ECA) in the Relationship between Competitive Pressure (CP) and Business Performance (BP)

Ahmad, Abu Bakar, Faziharudean, and Mohamad Zaki (2015), Gono, Harindranath, and Özcan (2016) & Soewarno, Tjahjadi, and Permatanadia (2020) indicated that the adoption of technology by Small and Medium-sized Enterprises (SMEs) is significantly influenced by competitive pressure. The implementation of B2B e-commerce is particularly affected when Small and Medium-sized Enterprises (SMEs) recognize its potential to enhance their competitiveness and attain a competitive advantage. So, the hypothesis question between Competitive Pressure (CP) and E-Commerce Adoption (ECA) can be mentioned as below:

Hypothesis 6: Competitive Pressure (CP) has a positive relationship with the E-Commerce Adoption (ECA).

Andonov, Dimitrov, and Totev (2021) and Dahbi and Benmoussa (2019) both indicated that manufacturing companies cannot be obtained more beneficial results compared with companies from servicing industry by introducing and utilizing E-Commerce (EC). Additionally, Small Middle Enterprises (SMEs) from different backgrounds of industry also can be enhanced and forced to be improved in their Business Performance (BP) positively and significantly by introducing and

employing Electronic Commerce (EC). Business Performance (BP) within a company, furthermore, can be improved and developed by excellent performance in management, marketing strategy and financial planning. Small Middle Enterprises (SMEs) in perspective field of the performance of business activities can be impacted and affected by the action and strategy in profitability, productivity and marketing. Hence, the hypothesis question regards the mediating role of E-Commerce Adoption (ECA) in the relationship between Competitive Pressure (CP) and Business Performance (BP) as below:

Hypothesis 7: E-Commerce Adoption mediates the relationship between Competitive Pressure (CP) and Business Performance (BP).

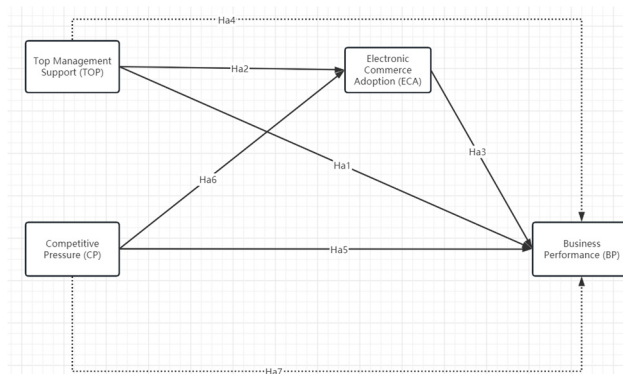


Figure 1. Research Framework

3. Research Design

This study would to explore the relationship between variable, specifically in different relationship between IVs [Top Management Support (TOP), Competitive Pressure (CP)] and DV [Business Performance (BP)]; Moreover, this study also would to explore the mediating role of E-Commerce Adoption (ECA) in the relationship between IVs [Top Management Support (TOP) and Competitive Pressure (CP)] and DV[Business Performance (BP)]. In this case, the method can utilize quantitative method for testing and identifying the level of relationship between variables, and the data collection can be performed by distributing questionnaires with primary data.

3.1. Sampling in the Process by Quantitative Method

The research was centered on the examination of ten companies from the Information Technology Sector (ITS) situated in Guangzhou city, China. The study specifically targeted companies that utilized Electronic Commerce (EC) as a core aspect of their operations. To be considered for participation in the study, companies had to meet two inclusion criteria:

1. The company's workforce should consist of a minimum of 100 employees.
2. The company must have implemented Electronic Commerce (EC) for a duration of at least three years, as determined during the process of selecting the sample size.

According to Strohmeier and Kabst (2014) as well as Galanaki, Lazazzara, and Parry (2019), the implementation and utilization of electronic systems such as E-HRM System (EHS) and Electronic Commerce System (ECS) are dependent on the specific demands of companies in terms of resources and market conditions. Additionally, Parry and Tyson (2011) along with Bondarouk and Ruël (2013) highlighted that the effective and satisfactory performance of systems like E-HRM System (EHS) and Electronic Commerce System (ECS) requires a minimum implementation period of three years within the companies.

The study targeted individuals within the companies who were actively utilizing the Electronic Commerce Systems (ECS). These individuals included Electronic Commerce System (ECS) professionals, line managers, and IT specialists. To select participants, a stratified convenience

sampling technique was employed, which involved dividing the population into distinct groups or strata and then selecting respondents from each stratum based on convenience. In this case, 200 respondents were drawn from the 10 companies operating in the Information Technology Sector (ITS). The choice of this sampling design was influenced by two main factors: first, the availability of potential participants within the companies, and second, the desire to achieve findings that could be generalized to larger samples beyond the selected 200 respondents.

According to Bhardwaj (2019), convenience sampling was selected for its affordability, ease of implementation, and the ready availability of respondents/participants. The data collection method utilized a structured questionnaire, with Likert-type scales being chosen to assess the participants' responses. Prior to the main data collection, the questionnaire underwent a pilot test involving 30 respondents from the HR, functional, and IT departments to ensure its effectiveness and validity. To administer the questionnaire, a drop and pick-up method was employed, allowing respondents to fill out the survey at their convenience before collecting it at a later time. The survey yielded a high response rate, with 400 valid responses received, representing a substantial 72% response rate (Mayer, 2015).

4. Demographic Statistic

Table 1. Demographic

	Percentage		Mean	Median	Mode	Std.D
Gender	Male	45.9%	1.54	2	2	0.499
	Female	54.1%				
Age	20-30	39.5%	1.81	2	1	0.757
	31-40	39.5%				
	41-60	21%				
Educational Level	Degree	43.9%	1.8	2	1	0.801
	Master	32.2%				
	PH.D	23.9%				
Length of Operation (years)	More than 3	42%	1.84	2	1	0.814
	More than 6	31.7%				
	More than 10	26.3%				
Number of Employees	more than 100	34.1%	2.01	2	3	0.834
	More than 200	30.7%				
	More than 300	35.1%				
Position in company	Manager	38.5%	1.91	2	1	0.824
	Staff	31.7%				
	Director	29.8%				

The researcher was able to collect data from lower, middle, and upper-level management staff because these individuals have accurate information regarding organizational policy and practices in the application of Electronic Commerce Adoption (ECA) in the company and internal management system such as Top Management Support (TMS) for improving Business Performance (BP) as well as the level of Competitive Pressure (CP) that surrounds the company. In addition to this, they are the primary individuals in their respective departments who are responsible for the dissemination of information and the implementation of organizational policy. The researcher was able to make use of

205 of the replies they obtained from the 500 questionnaires that were distributed. In terms of the gender of those who participated in the survey, the proportion of male respondents was found to be 45.9%, while the percentage of female respondents was found to be 54.1%. The detailed demographic statistics can be found in Table 1, which can be seen below. Both the link between Top Management Support (TMS), Electronic Commerce Adoption (ECA), and Business Performance (BP), as well as the relationship between Competitive Pressure (CP), Electronic Commerce Adoption (ECA), and Business Performance (BP) are broken down and described in the picture.

4.1. The Hypothesis Question Model Testing

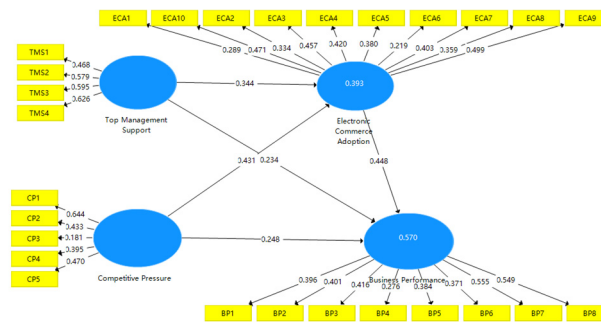


Figure 2. Structure Assessment

Both Top Management Support (TMS) ($\beta=0.344$, $p<0.01$) and Competitive Pressure (CP) ($\beta=0.431$, $p<0.01$) have a considerable beneficial influence on Electronic Commerce Adoption (ECA), as seen in the table below. At the same time, based on the path coefficient and the p value, it is possible to draw the conclusion that the adoption of electronic commerce (referred to as ECA) ($\beta=0.448$, $p<0.01$) has a substantial and favourable effect on business performance (referred to as BP). In addition, Top Management Support (TMS) ($\beta= 0.388$, $p<0.01$) and Competitive Pressure (CP) ($\beta= 0.441$, $p<0.01$) have a substantial and beneficial influence on Business Performance (BP). Based on the structure and the data, one can draw the conclusion that Top Management Support (TMS) is the most significant factor in determining Electronic Commerce Adoption (ECA) and Business Performance (BP), with Competitive Pressure (CP) coming in second place. In the same vein, the structural data suggests that the adoption of electronic commerce, abbreviated as ECA, is a significant determinant in determining business performance, abbreviated as BP (Hair, Risher, Sarstedt, & Ringle, 2019).

Table 2. Results

Relationship	O	M	STDEV	T	P	Result
Top Management Support -> Electronic Commerce Adoption	0.344	0.354	0.06	5.747	0	Supported
Top Management Support -> Business Performance	0.388	0.389	0.061	6.372	0	Supported
Electronic Commerce Adoption -> Business Performance	0.448	0.456	0.064	7.024	0	Supported
Competitive Pressure -> Electronic Commerce Adoption	0.431	0.433	0.049	8.705	0	Supported
Competitive Pressure -> Business Performance	0.441	0.443	0.056	7.813	0	Supported

As a result, we will proceed on the assumption that Ha1, Ha2, Ha3, Ha4, Ha5, Ha6, and Ha7 have all been established. In conclusion, in light of the significant positive effects that Top Management Support (TMS) and Competitive Pressure (CP) have on Electronic Commerce Adoption (ECA), as well as the significant positive effect that Electronic Commerce Adoption (ECA) has on Business Performance (BP), it is possible to draw the conclusion that Hypotheses 4 and 7 are true. The level of adoption of electronic commerce (also known as ECA) was incorporated into the model as an intermediate variable. According to the findings, the adoption of electronic commerce (denoted by

the acronym ECA) has a discernibly beneficial effect on Business Performance (BP) ($\beta = 0.4485$, $p < 0.01$, and R square being more than 0.7) (Hair et al., 2019).

5. Conclusion and Discussion

The use of Information technologies (IT) and its associated technologies for the purpose of managing information in an electronic format may provide significant benefits in terms of organizational efficiency, particularly with regards to the allocation of resources such as time and financial capital. Administrative procedures include a substantial number of operations, hence increasing the workload across several departments. Nevertheless, the use of digitization initiatives enables the reduction of burden for employees, enhances Business Performance (BP), and elevates the complexity of tasks that would otherwise be performed manually.

Top Management Support (TMS) is primarily a persuasive and promotive procedure in which change agents cultivate comprehension of a change event. The presence of Top Management Support (TOP) and Competitive Pressure (CP) during the implementation of Electronic Commerce (EC) is anticipated to contribute to the establishment of a well-defined vision about the desired outcomes and the rationale behind the strategic plan. This argument highlights the necessity of developing a strategic plan and ensuring its prompt execution. It emphasizes the importance of establishing extensive alliances, enabling individuals to effectively carry out the strategic plan, closely monitoring and effectively communicating the progress of implementation, and providing personalized support to those encountering difficulties in executing the strategic plan.

The results of the study also suggest that the adoption of Electronic Commerce (EC) serves as a mediator in the link between Top Management Support (TMS) and Business Performance (BP), as well as in the relationship between Competitive Pressure (CP) and Business Performance (BP). The function of Top Management Support (TOP) and Competitive Pressure (CP) pertains to the development and upgrading of current systems inside the organization. The examination of the advantages associated with the utilization of Information Technology (IT) and the influence of Top Management Support (TOP) and Competitive Pressure (CP) are of significant relevance and need additional investigation in future scholarly inquiries.

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References

- [1] Abebe, M. (2014). Electronic commerce adoption, entrepreneurial orientation and small-and medium-sized enterprise (SME) performance. *Journal of Small Business and Enterprise Development*, 21(1), 100-116.
- [2] Ahmad, S. Z., Abu Bakar, A. R., Faziharudean, T. M., & Mohamad Zaki, K. A. (2015). An empirical study of factors affecting e-commerce adoption among small-and medium-sized enterprises in a developing country: Evidence from Malaysia. *Information technology for Development*, 21(4), 555-572.
- [3] Alsaad, A., Mohamad, R., & Ismail, N. A. (2017). The moderating role of trust in business to business electronic commerce (B2B EC) adoption. *Computers in Human Behavior*, 68, 157-169.
- [4] Andonov, A., Dimitrov, G. P., & Totev, V. (2021). Impact of E-commerce on Business Performance. *TEM Journal*, 10(4), 1558.
- [5] Anning-Dorson, T. (2016). Organizational culture and leadership as mediators of service innovation and firm competitiveness: a study of an emerging economy. *International Journal of Innovation Management*, 20(07), 1650064.
- [6] Claycomb, C., Iyer, K., & Germain, R. (2005). Predicting the level of B2B e-commerce in industrial organizations. *Industrial Marketing Management*, 34(3), 221-234.
- [7] Dahbi, S., & Benmoussa, C. (2019). What hinder SMEs from adopting E-commerce? A multiple case analysis. *Procedia computer science*, 158, 811-818.

- [8] Duan, X., Deng, H., & Corbitt, B. (2012). Evaluating the critical determinants for adopting e-market in Australian small-and-medium sized enterprises. *Management Research Review*, 35(3/4), 289-308.
- [9] Fonseka, K., Jaharadak, A. A., & Raman, M. (2022). Impact of E-commerce adoption on business performance of SMEs in Sri Lanka; moderating role of artificial intelligence. *International Journal of Social Economics*, 49(10), 1518-1531.
- [10] Gono, S., Harindranath, G., & Özcan, G. B. (2016). The adoption and impact of ICT in South African SMEs. *Strategic Change*, 25(6), 717-734.
- [11] Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24.
- [12] Hawusiwa, E. S., Wardani, A. K., & Ningtyas, D. W. (2015). Pengaruh konsentrasi pasta singkong (*Manihot esculenta*) dan lama fermentasi pada proses pembuatan minuman wine singkong [In press Januari 2015]. *Jurnal Pangan dan Agroindustri*, 3(1), 147-155.
- [13] Johannessen, J.-A. (2013). Innovation: a systemic perspective—developing a systemic innovation theory. *Kybernetes*, 42(8), 1195-1217.
- [14] Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of enterprise systems: the effect of institutional pressures and the mediating role of top management. *MIS quarterly*, 59-87.
- [15] Mahliza, F. (2019). The influence of E-commerce adoption using social media towards business performance of micro enterprises. *International Journal of Business, Economics and Law*, 18(5), 290-299.
- [16] Ningtyas, D. W., & Wibowo, A. (2015). The influence of quality of measles vaccine to the incidence of measles in Pasuruan Regency. *Jurnal Berkala Epidemiologi*, 3(3), 315-326.
- [17] Purnama, C., & Subroto, W. T. (2016). Competition intensity, uncertainty environmental on the use of information technology and its impact on business performance small and medium enterprises. *International Review of Management and Marketing*, 6(4), 984-992.
- [18] Silitonga, K., Fakhrorazi, A., & Ikhsan, R. (2020). Drivers of buyer retention in e-commerce: The role of transaction characteristics and trust. *Management Science Letters*, 10(15), 3485-3494.
- [19] Soewarno, N., Tjahjadi, B., & Permatanadia, D. (2020). Competitive pressure and business performance in East Java Batik industry. *Journal of Asian Finance, Economics and Business*, 7(12), 329-336.
- [20] Taleghani, M., Gilaninia, S., & Mousavian, S. J. (2011). The role of relationship marketing in customer orientation process in the banking industry with focus on loyalty (Case study: Banking industry of Iran). *International journal of business and social science*, 2(19).
- [21] Zhu, L., & Thatcher, S. (2010). National information ecology: A new institutional economics perspective on global e-commerce adoption. *Journal of electronic commerce research*, 11(1).