

## Analysis of External Support and Organizational Capacity on Electronic Commerce Adoption Impact on Small Medium Business Performance

Aris Mardiyono<sup>1</sup>

[aris.05untagsmg@gmail.com](mailto:aris.05untagsmg@gmail.com)

Gita Sugiyarti<sup>2</sup>

[gitaavuaris@gmail.com](mailto:gitaavuaris@gmail.com)

<sup>1</sup>Program Studi Manajemen, Fakultas Ekonomika dan Bisnis  
Universitas 17 Agustus 1945 Semarang

<sup>2</sup>Program Studi Magister Manajemen, Fakultas Ekonomika dan Bisnis  
Universitas 17 Agustus 1945 Semarang

### Abstraksi

Penelitian ini memiliki tujuan untuk mengembangkan konsep dukungan eksternal, kompatibilitas dan kemampuan organisasi dalam meningkatkan adopsi *Electronic Commerce* dampaknya terhadap kinerja usaha kecil menengah. Sampel penelitian ini berjumlah 127 responden yang terdiri dari pemilik usaha kecil menengah kuliner di kota Semarang, Indonesia. Teknik analisis menggunakan *Structural Equation Modeling*- Program Amos versi 21. Adapun temuannya : ada pengaruh positif signifikan dukungan eksternal terhadap adopsi *electronic commerce*; kompatibilitas berpengaruh positif dan signifikan terhadap adopsi *electronic commerce* dan kemampuan organisasional berpengaruh positif signifikan terhadap adopsi *electronic commerce* serta adopsi *electronic commerce* memiliki pengaruh positif signifikan pada kinerja usaha kecil menengah.

**Kata kunci** : dukungan eksternal; kompatibilitas; kemampuan organisasional; adopsi *electronic commerce*; kinerja perusahaan

### Abstact

*This study aims to develop the concept of external support, compatibility and organizational capabilities in increasing the adoption of Electronic Commerce and its impact on the performance of small and medium enterprises. The sample of this research was 123 respondents consisting of small and medium culinary business owners in the city of Semarang, Indonesia. The analysis technique uses Structural Equation Modeling - Amos program version 21. The results show that adoption of electronic commerce is significantly positively influenced by external support, by compatibility, by organizational capability, and by organizational capability, in addition to being significantly positively influenced by adoption of electronic commerce and the performance of small and medium-sized businesses. You may swiftly and effectively rework and reword your material by using paraphraser to take your sentences and make modifications.*

*Key words: external support; compatibility; organizational capabilities; adoption of electronic commerce; company performance*

## 1. Introduction

Technology is growing and sophisticated. Developments either directly or indirectly affect the trading system, transactions and circulation of money in circulation. Previously, transactions were traditionally carried out directly from hand to hand, between buyers and sellers, agreements and agreements occurred.

The development of e-commerce activities must be anticipated properly and correctly so as not to lose opportunities to seize opportunities in the globalization era, especially in the economic field (Qi & Chu, 2022). Small and medium entrepreneurs in Indonesia are the main targets that must be fostered and encouraged in order to be able to take advantage of E-commerce, this is due to the key position of small and medium-sized firms (SMEs), which employ 20 million people and comprise 2.1 million business units dispersed across an archipelago. SMEs are Indonesia's biggest economic driver. SMEs are expected to be able

to boost the Indonesian economy with predictions that it will increase Indonesia's GDP by up to 10% if 8 million SMEs go online by 2020.

The challenge to remain successful in selling through online platforms is the willingness of MSMEs to continue to improve product quality, update information and data on their respective online stores. This challenge is also one of the reasons for jasa.com to work with the Semarang city government and Kominfo to educate MSMEs. The Semarang City Government itself has a very light credit program intended for MSMEs with the lowest interest currently available, namely only 3% per year. This light credit program is called the Rise to Champion Entrepreneurial Credit, which MSMEs can obtain by registering for a permit from the Office of Cooperatives and SMEs in the city of Semarang. The licensing process has been provided with online-based services.

<https://www.kominfo.go.id/index.php/content/detail/9933/ratus>

[an-umkm-kota-semarang-perluas-pasar-melalui-platform-online/0/berita\\_satker](an-umkm-kota-semarang-perluas-pasar-melalui-platform-online/0/berita_satker)).

The benefits of Ecommerce for SMEs are enormous, currently only a few SMEs have adopted Ecommerce. Thus, it is important to understand what incentives genuinely motivate SMEs to adopt e-commerce and whether doing so enhances business success. Sadly, studies on e-commerce have only been conducted so far on large-scale firms; little has been done to study how e-commerce is adopted by small and medium-sized organizations. Several studies have so far only been conducted in America, Canada and Europe, similar studies have also been conducted in Brunei but in Indonesia there are still very few.

The purpose of this study is to develop the concept of external support, compatibility and organizational capabilities in increasing the adoption of Electronic Commerce and its impact on the performance of small and medium enterprises in the city of Semarang, Indonesia.

## **2. Literature Review and Hypothesis Development**

### **1) Ecommerce Adoption**

All business or activity conducted online using internet-based information technology is considered adoption of e-commerce. The theory of the diffusion of innovation by Everett M. Rogers is one of the most frequently referenced works of literature (1962). Rogers defines diffusion as a process by which innovation is communicated to a social system (Ling, 2010). Innovation is described as an idea, behavior, or object that a person considers novel, i.e., one that is embraced by customers. In contrast, innovation in the B2B market is defined as new methods, procedures, tools, and manufacturing inputs that businesses or entrepreneurs embrace for their own purposes. According to Rogers' innovation diffusion theory, there are four critical factors that have a significant impact on adoption rates. Relative advantage, compatibility, complexity, ability to try, and ability to watch are some of these qualities.

### **2) External support and e-commerce adoption**

In the competitive environment surrounding the company, external support comes from a variety of sources, including competitive forces, industry pressures, and the influence of trading partners. One of the crucial external elements that businesses take into account when using information technology is competitors. Competitors are one of the most important external factors that firms consider while employing information technology.

Another thing to take into account is how IT may be utilized to assist business interactions with clients and suppliers. Regarding the government, in a number of nations, the government and its agencies frequently offer assistance to help businesses improve their operations, one of which is through the adoption of information technology.

Study (Arifin et al., 2016), This study suggests the following, explaining that external assistance is a decisive factor of technological adoption: H1: External support has a positive and significant influence on e-commerce adoption.

### **3) Compatibility and adopts E-commerce**

The degree to which an invention is seen consistent with current values, prior experiences, and the needs of future users is referred to as compatibility (Hubert et al., 2019). This shows the area of how strong individuals operating within a social structure are in determining the adoption process. But (Martin & Pranter, 1989) suggests that compatibility has two direct applications in enterprise networks. First, following the standard protocols and interfaces that have been adopted by the company. Second, the new product or service must be organizationally compatible. The new product or service must be compatible with the way in which the network is operated. Research (Dubey & Sahu, 2022) This study suggests that compatibility is a factor that substantially affects the adoption of new technology. H2: Compatibility has a significant positive effect on E-commerce adoption.

### **4) Organizational Capability and E-commerce Adoption**

Organizational capability means an ability to carry out activities as a whole in the diffusion of innovation (Haile & Tüzüner, 2022). The level of technological expertise within an organization is just one component of organizational capability, which also takes into account management's understanding of the use of IT and support for using it to achieve organizational goals. Organizational capability measures whether a company has enough IT experience and financial resources to adopt. Financial sources, meanwhile, show that organizational capital is available for IT investment.

When organizational resources or assets (such as time, cash, and technical skills) are positively supported throughout the initial implementation and motivating efforts, technology adoption is successful (Guesalaga et al., 2018). Adoption of e-commerce is determined by organizational capabilities (Lee et al., 2007). As a result, this study suggests the following: H3: Organizational capability has a positive and significant influence on e-commerce adoption.

### **5) Performance of small and medium enterprises and e-commerce adoption**

This study therefore recommends the following (Pascucci et al., 2022) is a metric used to assess an organization's performance in reaching preset objectives; a business is deemed to be successful in these areas if its current operations satisfy the needs of all constituents. Three factors can be used to gauge SME performance (Hutahayan, 2019), Namely, efficiency, coordination, and trade (market share and sales), when these three outcomes are anticipated to result from an organization's use of new information technology. Performance improvements (van Battum et al., 2022) reduced transaction costs and improved economic cooperation between company partners are two examples. The automation of online

transactions is expected to reduce coordination and transaction costs while also boosting productivity and efficiency.

Use of both B2B and B2C platforms boosts performance in the trading sector (Loro & Mangiaracina, 2022). Better coordination and lower costs result from B2B adoption, whereas greater productivity and sales come from B2C adoption. Generally, B2B adoption has a more significant impact on firm performance because it increases a wider variety of factors (market position, sales, coordination, and efficiency), but B2C adoption has a more restricted impact on these factors (sales, competitive position, and efficiency).

Sales to customers do not necessitate coordination operations like supply chain activities with business partners, which are eased by B2B E-commerce, hence B2C E-commerce has little to no impact on coordination between suppliers and customers (Sila & Dobni, 2012). Efficiency and B2C e-commerce are related because online service delivery can result in significant cost reductions, for instance by removing the requirement for technical employees and customer service personnel.

The following hypothesis can be made in light of the given description: H4: The use of e-commerce significantly and favorably affects the performance of small and medium-sized businesses.

## 6) Empirical Model Development

Moreover, as demonstrated in Figure 1 below, an empirical development model can be created.

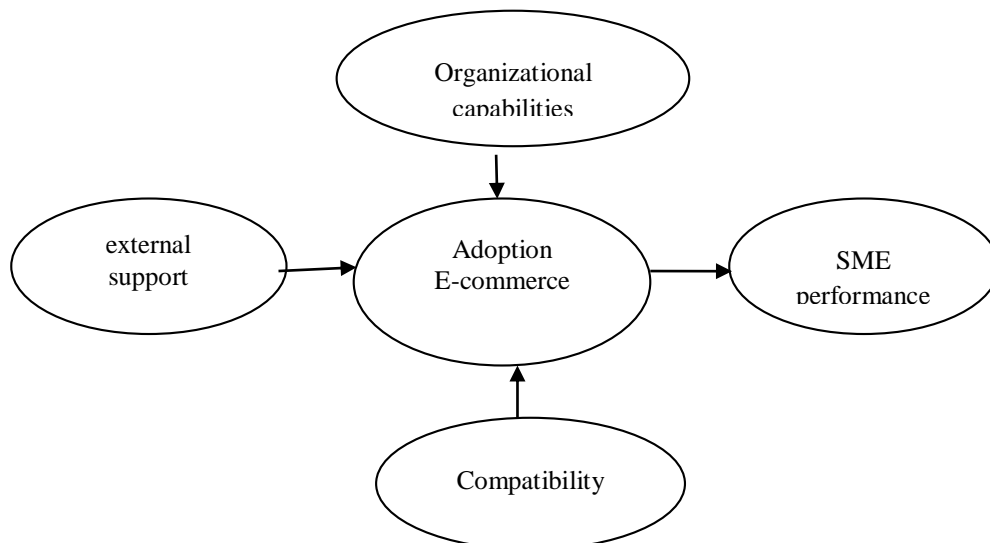


Figure 1. Development of an empirical model

## 3. Research Methods

This type of research is quantitative research. Hypotheses are useful for testing a phenomenon that occurs (Roopa & Rani, 2012). Primary methods of data collection entail asking people directly for information. The Semarang city's small and medium-sized businesses are the subject of the study, and 127 business owners or managers make up the sample. Following the normality test, it was discovered that 123 respondents were qualified to be processed.



**Table 1. Definitions of variables and indicators that are operational**

| Variable                  | Operational of variables   | Indicator   |
|---------------------------|--|---|
| SME performance           | UKM performance is a result achieved by UKM in a certain period  | <ol style="list-style-type: none"> <li>1. Efficiency</li> <li>2. Coordination</li> <li>3. Trade expansion</li> </ol>  |
| E-commerce adopts         | Adoption of e-commerce refers to all business or commercial activity conducted online using internet-based information technology.                                   | <ol style="list-style-type: none"> <li>1. General marketing activities</li> <li>2. Research the market</li> <li>3. Achieve international penetration</li> <li>4. Conduct b2b transactions</li> <li>5. Carry out b2c transactions</li> </ol>   |
| External support          | External support is support that comes from outside oneself which is temporary.  | <ol style="list-style-type: none"> <li>1. Competitive drive</li> <li>2. Government encouragement</li> <li>3. Dependence on business partners who have used e-commerce</li> <li>4. Industrial boost</li> </ol>   |
| Compatibility             | Compatibility is the extent to which a new idea is viewed as being compatible with established principles, prior knowledge, and the requirements of potential users. | <ol style="list-style-type: none"> <li>1. Consistent with business requirements</li> <li>2. Consistent with current company processes/operations</li> <li>3. Consistent with the culture</li> <li>4. Be consistent with the way suppliers and customers do business</li> <li>5. Consistent with company values</li> </ol> |
| Capability organizational | Organizational capability is the capacity to carry out overall activities including the diffusion of innovation  | <ol style="list-style-type: none"> <li>1. Financial resources</li> <li>2. Technology resources</li> <li>3. Level of management understanding</li> </ol>   |

Sources : Abstracted from other studies, 2023

AMOS's tools for the SEM (Structural Equation Model) data processing (Analysis of Moment Structure) (Hair Jr. et al., 2014), When applying the structural equation model, there are seven steps that must be followed (SEM), namely: (1) Creating model-based theories, (2) Creating flowcharts to demonstrate causality, (3) Conversion flowcharts for structural equation models and measurement specifications, (4) The developed model's choice of input matrices and estimation methods, (5) Identifying and evaluating problems, (6) Criteria for evaluating goodness-of-fit, and (7) Model interpretation and modification.

## 4. Results and Discussion

### 1) Results

To evaluate appropriateness and statistical tests, data processing at the entire model SEM stage was analyzed.

**Table 2. Results of Testing the Feasibility Model SEM evaluation**

| Goodness of Fit Index | Cut-off Value | Cut-off Value | Evaluation Model |
|-----------------------|---------------|---------------|------------------|
| Chi - Square          | <96,107 df 68 | 76,521        | Fit              |

| Goodness of Fit Index | Cut-off Value | Cut-off Value | Evaluation Model |
|-----------------------|---------------|---------------|------------------|
| Probability           | ≥ 0.05        | 0,630         | Fit              |
| RMSEA                 | ≤ 0:08        | 0,001         | Fit              |
| GFI                   | ≥ 0.90        | 0.910         | Fit              |
| AGFI                  | ≥ 0.90        | 0.884         | Fit              |
| CMIN / df             | ≤ 2.00        | 0.5           | Fit              |
| TLI                   | ≥ 0.95        | 1.023         | Fit              |
| CFI                   | ≥ 0.95        | 1.000         | Fit              |

Source: processed research data, 2023

The level of significance of each link between variables, as defined by the probability value (p) and Critical Ratio (CR) of each relationship between variables, is examined in the statistical test findings after SEM processing.

**Table 3. Weighted Standardized Regression**

| Variabel          |   | Estimasi                    | SE   | CR   | P     | Description |     |
|-------------------|---|-----------------------------|------|------|-------|-------------|-----|
| E-commerce adopts | ← | External support            | .344 | .141 | 3.511 | .005        | Sig |
| E-commerce adopts | ← | Compatibility               | .427 | .238 | 2.546 | .004        | Sig |
| E-commerce adopts | ← | Organizational capabilities | .242 | .099 | 2.457 | .013        | Sig |
| E-commerce adopts | ← | E-commerce adopts           | .364 | .129 | 2.794 | .001        | Sig |

Source: processed research data, 2023

1. According to research assessing the impact of external support on e-commerce adoption, external support has a favorable impact. With a CR value of 3.511 and a probability of 0.005, the estimation parameter used to examine the impact of outside assistance on e-commerce adoption is statistically significant. Both numbers obtained meet the requirements for H1 approval.
2. Compatibility testing on the uptake of e-commerce revealed that compatibility had a favorable impact on uptake. According to the estimation parameter used to examine how compatibility affects the uptake of e-commerce, the likelihood is 0.004 and the CR value is 2.546. Both values obtained meet the requirements for H2 approval.
3. Results of analyzing organizational e-commerce adoption. The estimation parameter investigating the effect of organizational capability on e-commerce adoption has a CR value and probability of 2.457 and 0.013, respectively. Both values obtained meet the requirements for H3 approval.
4. The results of evaluating the impact of e-commerce adoption on SME performance revealed that this impact is favorable. The estimate parameter used to investigate how e-commerce adoption affects SME performance has a CR value of 2.794 and a probability of 0.001. Both values obtained meet the requirements for H4 approval.

## 2) Discussion

External assistance has a strong favorable impact on the adoption of e-commerce, according to hypothesis 1 (first). In this study, empirical evidence was collected that the relationship between the two variables was established, allowing it to be concluded that the adoption of e-commerce would be better the higher the level of external support. The findings of this study are in line with previous research (Arifin et al., 2016) The study's

conclusions are consistent with earlier research. 1. SMEs must keep an eye on the business climate. This monitoring is meant to alert them of potential advantages, dangers, and disadvantages in the sector they are active in. SME's can access information about competitors and the industrial environment online or participate in national and international exhibits as part of their monitoring of the marketplace. 2. It's important to keep an eye on the tactics and actions used by rival businesses. Monitoring can reveal information about corporate growth and rivals' competitive strategy. Poor monitoring can cause a company to fall behind its rivals, especially when it comes to product quality. 3. Establishing productive working connections with business partners. Reliance on partners in business will make it simpler for SMEs to market their goods or acquire raw materials. Hence, it is essential to work together with business partners based on a relationship of mutual benefit.

Hypothesis 2 (second) claims that the acceptance of e-commerce is significantly influenced by compatibility. The study used actual evidence to demonstrate the relationship between the two variables, allowing researchers to draw the conclusion that e-commerce adoption would be more successful the higher the compatibility. The findings of this investigation are in line with previous findings (Dubey & Sahu, 2022), adoption of e-commerce is significantly influenced favorably by compatibility. 1. SMEs need to pay attention to business needs in expanding their business where this business need is related to business capital. Significant business development will require large capital so that the inability of SMEs to carry out business activities will result in financial difficulties and even bankruptcy. Therefore, it is necessary to evaluate business needs properly. 2. Paying attention to capacity and ability in production. Forcing oneself to meet market demand will result in suboptimal product quality, a non-conducive work climate and loss of buyer confidence. For this reason, SMEs need to know their abilities comprehensively. In overcoming the problem of business capacity, SMEs can carry out business intensification and extensification.

Hypothesis 3 (third) claims that organizational competence has a major favorable impact on the adoption of e-commerce. This study used empirical data to demonstrate the relationship between the two factors, allowing researchers to draw the conclusion that organizational capabilities have a direct impact on how widely e-commerce is adopted. The findings of this investigation are in line with previous findings. (Guesalaga et al., 2018), Organizational capability has a significant positive effect on e-commerce adoption. Companies need to make a budget for updating information technology on a regular basis. The available budget will make it easier for employees to update or improve their information technology without disturbing other activities. Employees need to be introduced to E-commerce through applicative training.

Hypothesis 4 (fourth) states that e-commerce adoption has a significant positive effect on SME performance. This study used empirical evidence to demonstrate the relationship between the two factors, allowing researchers to draw the conclusion that SMEs perform better the more successfully they use e-commerce. The findings of this investigation are in line with previous finding (Loro & Mangiaracina, 2022), e-commerce adoption has a significant positive effect on the performance of SMEs. The use of e-commerce is able to develop culinary SMEs, especially in sales, marketing which is increasingly broad with a market share outside the city and even abroad as well as efficient and effective service. E-commerce becomes an opportunity for UKM by focusing its strategy on the use of technology. All respondents in this study have used e-commerce as an effort to support business activities and have a direct impact on increasing sales, profits and customer satisfaction.



## 5. Conclusion

The research findings show that there is a significant positive effect between external support, compatibility and organizational capabilities on e-commerce adoption and a positive and significant influence between e-commerce adoption on SME performance.

## 6. Implications on management

The performance of small and medium-sized businesses is improved by the adoption of several policy implications, including:

The results of data analysis show that the variable that has the dominant influence on E-commerce adoption is compatibility with a standard loading of 0.427, while the one that has the weakest influence on E-commerce adoption is organizational capability with a standard loading of 0.242. Meanwhile, external support (0.344). The managerial implications in this study will be sorted based on the strength and weakness of the influence of each construct on E-commerce adoption. Managerial implications related to the performance of small and medium enterprises are as follows:

First, by looking at the current condition of Indonesia which is experiencing improvements in various indicators of e-commerce adoption, the performance of small and medium enterprises needs to be prepared and see this condition as an opportunity. In terms of e-commerce adoption indicators in terms of income and education levels as well as penetration of internet users, Indonesia shows various improvements.

Second, the role of the government and agencies responsible for SMEs is needed in developing UKM competencies, which are expected to focus more on efforts to increase the knowledge of UKM owners and provide training on technological compatibility such as the importance of the role of social media for SMEs in conducting online marketing so that businesses can survive along with changes. times and can convince SME owners to change their way of marketing from conventional to online.

## 7. Limitation of research

First, this study concentrates on a single UKM. Culinary SMEs are the responders of the study. The respondents chosen from various SMEs should be generalized. Second, the answers to the questionnaires distributed to the respondents experienced a few problems. There were several respondents who said that the answers would be given in the next 1 week, but when the surveyor team visited again, it turned out that the respondents had not answered the questionnaire that had been given.

Agenda for future research. First, pertaining to the quantity of samples. After data normalization, the data from as many as 123 respondents might have been processed for this study's research sample of 127, but in subsequent studies, this number should be increased to improve the generalizability of the study's findings. In order to improve the generalizability of the research findings, future studies should employ a sample that is thought to be more typical of the research population.

Second, future research can modify the research model by adding or replacing it with new variables that have been adapted to current conditions, such as government support variables. Government agencies can support MSMEs in understanding the importance of e-commerce and encourage and provide training in the use of e-commerce.

## References

- Arifin, Z., Firmanzah, Fontana, A., & Wijanto, S. H. (2016). The determinant factors of technology adoption for improving firm's performance: An empirical research of Indonesia's electricity company. *Gadjah Mada International Journal of Business*, 18(3), 237–261. <https://doi.org/10.22146/gamaijb.16898>
- Dubey, P., & Sahu, K. K. (2022). Investigating various factors that affect students' adoption intention to technology-enhanced learning. *Journal of Research in Innovative Teaching & Learning*, 15(1), 110–131. <https://doi.org/10.1108/jrit-07-2021-0049>
- Guesalaga, R., Gabrielsson, M., Rogers, B., Ryals, L., & Marcos Cuevas, J. (2018). Which resources and capabilities underpin strategic key account management? *Industrial Marketing Management*, 75(May 2015), 160–172. <https://doi.org/10.1016/j.indmarman.2018.05.006>
- Haile, E. A., & Tüzüner, V. L. (2022). Organizational learning capability and its impact on organizational innovation. *Asia Pacific Journal of Innovation and Entrepreneurship*, 16(1), 69–85. <https://doi.org/10.1108/apjie-03-2022-0015>
- Hair Jr., J. F., Gabriel, M. L. D. da S., & Patel, V. K. (2014). Modelagem de Equações Estruturais Baseada em Covariância (CB-SEM) com o AMOS: Orientações sobre a sua aplicação como uma Ferramenta de Pesquisa de Marketing. *Revista Brasileira de Marketing*, 13(2), 44–55. <https://doi.org/10.5585/remark.v13i2.2718>
- Hubert, M., Blut, M., Brock, C., Zhang, R. W., Koch, V., & Riedl, R. (2019). The influence of acceptance and adoption drivers on smart home usage. *European Journal of Marketing*, 53(6), 1073–1098. <https://doi.org/10.1108/EJM-12-2016-0794>
- Hutahayan, B. (2019). Factors affecting the performance of Indonesian special food SMEs in entrepreneurial orientation in East Java. *Asia Pacific Journal of Innovation and Entrepreneurship*, 13(2), 231–246. <https://doi.org/10.1108/apjie-09-2018-0053>
- Lee, C. P., Lee, G. G., & Lin, H. F. (2007). The role of organizational capabilities in successful e-business implementation. *Business Process Management Journal*, 13(5), 677–693. <https://doi.org/10.1108/14637150710823156>
- Loro, C., & Mangiaracina, R. (2022). The impact of e-marketplace on the B2b relationships. *Industrial Management and Data Systems*, 122(1), 37–54. <https://doi.org/10.1108/IMDS-11-2020-0651>
- Martin, C. L., & Pranter, C. A. (1989). COMPATIBILITY MANAGEMENT : SHIPS IN SERVICE ENVIRONMENTS Compatibility Management : Marketing Mandate For The. *Journal of Services Marketing*, 3(3), 5–15.
- Pascucci, F., Domenichelli, O., Peruffo, E., & Gregori, G. L. (2022). Family ownership and the export performance of SMEs: the moderating role of financial constraints and flexibility. *Journal of Small Business and Enterprise Development*, 29(4), 602–626. <https://doi.org/10.1108/JSBED-03-2021-0113>
- Qi, Y., & Chu, X. (2022). Development of the digital economy, transformation of the economic structure and leaping of the middle-income trap. *China Political Economy*,

5(1), 14–39. <https://doi.org/10.1108/cpe-09-2022-0012>

Roopa, S., & Rani, M. (2012). Questionnaire Designing for a Survey. *The Journal of Indian Orthodontic Society*, 46(December), 273–277. <https://doi.org/10.5005/jp-journals-10021-1104>

Sila, I., & Dobni, D. (2012). Patterns of B2B e-commerce usage in SMEs. *Industrial Management and Data Systems*, 112(8), 1255–1271. <https://doi.org/10.1108/02635571211264654>

van Battum, C. H. H., Wiegmans, B., Atasoy, B., van Wingerden, E., de Waal, A., & Tavasszy, L. A. (2022). Performance improvements in container terminals through the bottleneck mitigation cycle. *Maritime Economics and Logistics*, 0123456789. <https://doi.org/10.1057/s41278-022-00245-7>

(<https://www.kominfo.go.id/index.php/content/detail/9933> /ratus [an-umkm-kota-semarang-perluas-pasar-melalui-platform-online/0/berita\\_satker](https://www.kominfo.go.id/index.php/content/detail/9933)).