The Influence of Organizational Readiness on e-Commerce Adoption and Its Impact on Micro-enterprises Performance

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Abstract. The purpose of this study is to investigate and analyze the influence of technological readiness, organizational readiness, and the environment on e-commerce adoption and its impact on MSMEs performance empirically. This research used samples from MSMEs in the Food and Beverage Sector in Magelang City using a convenience sampling method, obtaining a sample of 115 samples. Based on the results of data analysis, this research revealed that Organizational Readiness has a positive effect on e-commerce adoption. Meanwhile, Technology Readiness, External Environment, and Mobile Environment have no effect on E-Commerce Adoption. Furthermore, E-Commerce Adoption has a positive effect on MSMEs Performance.

1 Introduction

The development of Micro, Small and Medium Enterprises (MSMEs) has experienced a significant increase, especially since the start of the COVID-19 pandemic. This pandemic forces people to stay at home and spend more time indoors. In this context, e-commerce services have become very crucial. During 2021, food and beverage products dominate the e-commerce sector by 41.5% [1]. Based on data from the Deputy of Bank Indonesia, e-commerce transactions throughout October 2023 reached IDR 42.2 trillion or grew by 10.69% when compared to September 2023 [2]. As we know, MSMEs play an key role in economic growth in Indonesia, especially in providing employment opportunities. Therefore, e-commerce has become an effective tool for MSMEs to develop their business and support economic growth and overall community welfare.

MSMEs in the culinary sector (food and beverages) are growing rapidly and are becoming the main industry in Magelang City. The presence of various kinds of contemporary culinary specialties, culinary tourism, and culinary trends as a people's lifestyle is proof that this sector is growing rapidly. In order to capitalize on opportunities within the digital economy era, MSMEs operating in the food and beverage industry need to embrace e-commerce, thereby expanding their market presence and ensuring business sustainability. However, not all MSMEs in the food and beverage sector in Magelang City have utilized e-commerce in their
business. Based on data from the Disperindag secretariat, most MSME owners are aged 50 years and over. The age range of the majority of culinary MSME actors in Magelang (> 50 years) is considered to be an obstacle to advancing MSMEs in the context of application and integration with technology due to the lack of knowledge of using technology when compared to the younger age range (17-30 years). Previous studies [3], [4] have discovered empirical proof indicating that the age range stands out as a crucial determinant in the utilization of e-commerce.

Performance serves as a gauge to indicate a company's success in attaining its goals. The evaluation of MSMEs' performance encompasses factors such as efficiency, market position, and sales. These outcomes are anticipated through the integration of new information technology by businesses. The implementation of e-commerce within the culinary sector of MSMEs has been demonstrated to streamline transactions and boost sales turnover [5]. The Technology, Organization, and Environment (TOE) theory endorse the utilization of e-commerce and can forecast the readiness of MSMEs' organization, technology, and environment to support the integration of e-commerce in their operations. This theory delineates the incorporation of business innovation, specifically the implementation of e-commerce adoption, into the performance of MSMEs as part of a novel business innovation strategy [6]. Prior studies ([7], [8], [9], [10], [11], [12]) has examined the factors that influence the adoption of e-commerce for MSMEs and its impact on performance. However, there are few studies that focus on micro-enterprises operating in the F&B sector at an early stage in technology adoption. This study employs the TOE framework to examine the technological, organizational, and environmental aspects influencing the adoption of e-commerce and its impact on the performance of micro-enterprises, particularly in the food and beverage sector.

2 Research method

This study employs owner or manager of the food and beverage micro-enterprises that have utilized e-commerce as respondent. This research is quantitative research using a survey method by giving questionnaires to respondents. The sampling technique used was convenience sampling. Convenience sampling is a method in non-probability sampling employed by researchers to gather data from a readily accessible and conveniently available participants [13]. The Data Analysis technique is assisted by the SPSS application with descriptive statistical tests, data quality tests (validity & reliability), Multiple Linear Regression Analysis, and Hypothesis Testing. Variable measurement adopted instruments from prior research which were measured using a 5 point Likert scale; MSME performance (14, 15, 3 items), e-commerce adoption (4 items), technology readiness (4 items), organizational readiness (5 items) and external environment (3 items) adopted from [11], and mobile environment (16, 2 items).

3 Result and discussion

Questionnaires were distributed directly to owners/managers of MSMEs in the food and beverage sector operating in Magelang City. Based on convenience sampling techniques, 115 respondents were obtained in this study. The respondent profile shows that most micro-business actors in the food and beverage sector in Magelang City are over 50 years old (36.52%). The female gender type dominates (60.87%). The majority of respondents have a high school education (84.35%). Most of them are business owners (73.91%). Most businesses are 1-5 years old (73.04%). The majority have less than 5 employees (98.26%). The majority of monthly turnover is in the range of IDR 1,000,000 - IDR 5,000,000 (51.30%).
3.1 Validity and reliability testing results

Confirmatory Factor Analysis (CFA) was employed to assess the validity, revealing that four statement items are considered invalid due to their cross-loading values being less than 0.50, namely the MSME performance variable (KUKM4=0.499), e-commerce adoption (ECOM4=0.476), organizational readiness (ORG5=0.499) and external environment (LE3=0.482). Then a second validity test was carried out by removing invalid indicators and the results were that all indicators in the variables met the validity test. The outcomes of the reliability assessment indicate that every research variable possesses a Cronbach's Alpha value exceeding 0.7. These findings affirm the reliability of all variables utilized in this study.

3.2 Multiple linear regression analysis

Multiple linear regression analysis is used to determine the relationship between the independent variables and the dependent variable [17]. The results of multiple regression analysis using SPSS 25.0 statistical tools obtained regression coefficient values which are presented in Table 1.

Table 1. Multiple Linear Regression Analysis Test

<table>
<thead>
<tr>
<th>Unstandardized Coefficients (B)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.396</td>
<td></td>
</tr>
<tr>
<td>TechReadiness -0.070</td>
<td>3.883</td>
<td>0.000</td>
</tr>
<tr>
<td>OrgReadiness 0.343</td>
<td>-0.573</td>
<td>0.568</td>
</tr>
<tr>
<td>ExtEnviron 0.162</td>
<td>2.543</td>
<td>0.012</td>
</tr>
<tr>
<td>MobileEnv -0.038</td>
<td>1.649</td>
<td>0.102</td>
</tr>
</tbody>
</table>

Model 2 (Dependent Variable: MSMEs performances)

| (Constant)                        | 2.573 |      |      |
| E-Commerce 0.393                  | 4.736 | 0.000 |      |

3.3 Determination coefficient test (Adjusted R²)

The purpose of the coefficient of determination test is to ascertain the extent to which the independent variable can account for variations in the dependent variable. The findings from the coefficient of determination test are presented in Table 2.

Table 2. Determination Coefficient Test

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
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</table>

Based on the Table 2, the Adjusted R² value in model 1 is 0.053 and model 2 is 0.158. This result indicated that in model 1, technology readiness, organizational readiness, external environment, and mobile environment are able to explain 5.3% of e-commerce adoption. Furthermore, in model 2, this means that the e-commerce adoption variable can explain 15.8%, of MSMEs performance, while the remaining 84.2% is explained by other factors outside this research model.
3.4 Goodness of fit model (The F test)

The F test is employed to assess the precision of the sample regression function in predicting actual values. According to the outcomes of the F test, the F value for model 1 is 2,589, and for model 2, it is 22,425, both with a significance level of 0.000, which is less than 0.05. This indicates that the research model utilized in this study is feasible or fit.

3.5 Hypothesis testing results

The objective of the t-statistical test is to assess the extent to which the independent variable influences the dependent variable and ascertain the presence or absence of such influence for each dependent variable. The testing was conducted with a significant level set at 0.05 (a=5%), see Table 3.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>t-value</th>
<th>t-table</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tech Readiness → E-commerce adoption</td>
<td>0.573</td>
<td>1.98157</td>
<td>0.568</td>
</tr>
<tr>
<td>Org Readiness</td>
<td>2.543</td>
<td>1.98157</td>
<td>0.012</td>
</tr>
<tr>
<td>External Env</td>
<td>1.649</td>
<td>1.98157</td>
<td>0.102</td>
</tr>
<tr>
<td>Mobile Env</td>
<td>0.599</td>
<td>1.98157</td>
<td>0.551</td>
</tr>
<tr>
<td>E-commerce adoption → Performance</td>
<td>4.736</td>
<td>1.98099</td>
<td>0.000</td>
</tr>
</tbody>
</table>

This study delves into the factors influencing the adoption of e-commerce and how they impact the performance of Micro, Small, and Medium Enterprises (MSMEs). Initially, it was observed that technological readiness did not significantly affect the adoption of e-commerce among MSMEs operating in the food and beverage sector. This suggests that despite advancements in technology, the level of technological readiness alone is insufficient to drive e-commerce adoption among MSMEs. Moreover, the majority of respondents in the study were individuals over the age of 50, who typically possess limited knowledge and skills in information technology [18]. This demographic trend may be attributed to prevalent challenges faced by MSMEs, including limited knowledge and lack of expertise in IT resources.

Furthermore, it was noted that organizational readiness positively influences the adoption of e-commerce. Organizations displaying a higher readiness to embrace technology exhibit a greater inclination towards adopting e-commerce practices. Notably, active support from top management plays a crucial role in encouraging employees to embrace technology, alongside consistent training and educational initiatives within the organization.

Interestingly, the study found that the external environment, including factors such as pressure from customers/suppliers and encouragement from external parties, did not significantly impact e-commerce adoption among MSMEs in Magelang City. Similarly, the mobile environment was found to have no significant effect on e-commerce adoption, indicating that mobile platforms do not play a central role in facilitating business activities among MSMEs in the region.

Nevertheless, the adoption of e-commerce was found to positively influence MSME performance. MSMEs perceive e-commerce adoption as a means to enhance their performance by improving service quality, increasing speed, and facilitating access to necessary information. There is a prevailing belief among MSMEs that transitioning to online platforms offers greater benefits compared to traditional trading methods.
4 Conclusions

This study examines the impact of technological readiness, organizational readiness, and the external environment on the adoption of e-commerce and its subsequent effects on the performance of micro, small, and medium enterprises (MSMEs) in Magelang City. The research focuses on a sample of 115 respondents from the food and beverage (F&B) sector who utilize e-commerce platforms. The findings suggest that technological readiness, external environment, and mobile environment do not significantly influence the adoption of e-commerce, indicating that e-commerce accessibility is not hindered by technological barriers. Conversely, organizational readiness positively affects e-commerce adoption, implying that better-prepared organizations are more likely to adopt e-commerce. Furthermore, the adoption of e-commerce positively impacts the performance of micro businesses, leading to increased productivity, market share, and product innovation. These findings underscore the importance of e-commerce in sustaining customer loyalty amid the evolving landscape of globalization.

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