Managing E-Tailing Service for Shopping Efficiency: A Case Study in Indonesia

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Abstract. This study analyzes the effect of product assortment and shopping assistance on shopping efficiency for e-tailing customers in Indonesia and examines the mediating role of order fulfillment in product assortment on shopping assistance. This study involved 204 respondents who were analyzed using the Structural Equation Modeling (SEM) technique. The results of this study indicate that shopping assistance has a positive and significant effect on shopping efficiency, order fulfillment has a positive and significant effect on shopping assistance, product assortment has a positive and significant effect on shopping assistance, shopping assistance has a positive and significant effect on shopping efficiency, and the relationship between product assortment and shopping assistance mediated by order fulfillment.

Keywords: Order fulfillment · product assortment · shopping assistance · shopping efficiency

1 Introduction

The digital era provides easy access to the internet, especially in information and communication technology. Technological developments provide retail business opportunities to obtain information efficiently and more broadly. The advancement of the World Wide Web creates retail transactions in a new form, namely electronic tailing (e-tailing) or shopping websites. There are similarities between online and offline-based retail, but they differ in the sales media, where online retailers sell products and services to customers through internet media [1].

Many companies, including small businesses, recognize the potential for selling their products via the internet. COVID-19 has accelerated the shift toward a digital world. This led to the expansion of e-commerce ranging from goods and services for daily necessities to luxury goods and services. More and more online users use digital and mobile technologies to search for products or services [2].

E-tailing has evolved through more standardized product offerings, a wider variety of products, quality fulfillment, preferred delivery time slots, order accuracy, free shipping, discounts, cash-on-delivery (COD) payment options, and stricter return and exchange policies easy. Logistics is often a differentiator and competitive advantage in e-tailing companies [3].

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In Indonesia, e-commerce is defined as social commerce and e-tailing. Social commerce involves online transactions via social media platforms where goods are listed for sale in a seller's private account, but payment and shipping are handled elsewhere. Meanwhile, e-tailing means that online transactions are carried out on a platform that facilitates all retail business needs, from product display to delivery [4].

88.1% of internet users in Indonesia have used e-commerce services to buy certain products in the last few months [5]. This percentage is the highest in the world according to the We Are Social survey results in April 2021. In 2021, the value of Indonesia's digital economy was recorded at US$70 billion, the highest in ASEAN. This amount is expected to grow almost five times by 2030, with a value of US$ 330 billion.

Meanwhile, e-commerce transactions make the largest contribution to Indonesia's digital economy, reaching US$53 billion in 2021. This amount is predicted to increase to US$104 billion in 2025, with a growth rate of 18% [6].

Several researchers have carried out research related to e-tailing. Research on 150 e-tailing customers in an online retailer in India shows that the order fulfillment variable has a negative and insignificant effect on shopping assistance, and the product assortment variable has a positive and significant effect on shopping assistance [7]. On the other hand, seven dimensions of e-fulfillment affect customers' shopping satisfaction and repurchase intention in e-tailing.

Research on online retail on 246 female students in the University of India who purchased clothes online concluded that, among other things, the order fulfillment and product assortment variables had a significant and positive effect on shopping assistance [8].

Research on online shopping customers in India found that the condition of the shipment is very important in the electronic logistics service quality (e-LSQ) dimension [3]. Besides that, factors such as payment options, gender, and returning experience also affect shopping satisfaction.

This research on e-tailing customers in Indonesia replicates research [8] which suggests replicating it in different countries. This study's results are expected to describe how e-LSQ, shopping satisfaction, and repurchase intention are in e-tailing in Indonesia.

2 Research Method

This study is basic research with a type of causal research [9] that aims to examine the causal relationship between e-tailing (which consists of product assortment, order fulfillment, and shopping assistance) and shopping efficiency in e-tailing services in Indonesia.

Interval-level data came from respondents through questionnaires distributed via Google Forms. Alternative answers were arranged based on a numerical scale. Statements were measured on a seven-level scale. The measuring indicators in this study come from research [8].

The target population in this study was everyone who had purchased products at online retail (e-tailing) in the past year. The characteristics of purposive sampling [10] were male or female, having a minimum education of high school/equivalent, conducting online transactions yourself through applications, and having returned products

purchased. The reason for selecting respondents with these characteristics was to ensure that respondents could provide accurate and reliable information.

Data processing in this study begins with validity and reliability testing using the SPSS program. Furthermore, the AMOS program version 26.0 was used to perform SEM data processing, namely conducting structural and measurement model tests and hypothesis testing.

3 Results and Discussion

3.1 Respondent Identity

There were 204 respondents, 47.06% males, and 52.94% females. Respondents were dominated by 17–30 years old at 97.55%, while the remaining 2.45% were over 30 years old. However, the largest percentage of respondents (47.57%) was aged 20–25. In terms of occupation, the largest percentage of respondents are students (35.78%), private employees (27.46%), and self-employed (23.5%).

3.2 Validity and Reliability Test

The validity test results show that all indicators of all research variables: product assortment, order fulfillment, shopping assistance, and shopping efficiency, have a significance value of ≤ 0.05 and a Pearson correlation value above 0.5, so they are declared valid. All variables also have Cronbach's alpha value ≥ 0.6. It can be concluded that all indicators used to measure the variables in this questionnaire are consistent and reliable so that they can be used.

3.3 Measurement Model Test

The Goodness of Fit Index (GoF) in the measurement model test is analyzed with standardized loading to determine the accuracy of each indicator, or you can also use AVE and CR. Table 1 shows that all of the goodness of fit index criteria is good fit, except for the third criterion, namely GFI (marginal fit).

Table 2 shows the results of standardized loading where all indicator items for each variable have a value of ≥ 0.5, so it can be concluded that no variable indicators are wasted.

Table 1. The Goodness of Fit Measurement Model

Index	Criteria	Results	Information
CMIN/DF	≤3.0	1.253	Good Fit
RMSEA	≤0.08	0.036	Good Fit
GFI	0.8 – 0.9	0.845	Marginal Fit
CFI	0.8 – 0.9	0.946	Good Fit
TLI	0.8 – 0.9	0.941	Good Fit

Table 2. Standardized Loading value

Variable	Indicator	*Std Loading*	AVE	CR	Information
Order Fulfillment	A1	0.538	0.323	0.860	Valid and Reliable
	A2	0.556			Valid and Reliable
	A3	0.599			Valid and Reliable
	T1	0.689			Valid and Reliable
	T2	0.524			Valid and Reliable
	T3	0.574			Valid and Reliable
	C1	0.606			Valid and Reliable
	C2	0.519			Valid and Reliable
	C3	0.614			Valid and Reliable
	BA1	0.513			Valid and Reliable
	BA2	0.523			Valid and Reliable
	ER1	0.544			Valid and Reliable
	ER2	0.559			Valid and Reliable
Product Assortment	V1	0.636	0.406	0.891	Valid and Reliable
	V2	0.623			Valid and Reliable
	V3	0.634			Valid and Reliable
	SO1	0.627			Valid and Reliable
	SO2	0.648			Valid and Reliable
	PA1	0.619			Valid and Reliable
	PA2	0.667			Valid and Reliable
	IR1	0.671			Valid and Reliable
	IR2	0.604			Valid and Reliable
	IR3	0.599			Valid and Reliable
	IR4	0.615			Valid and Reliable
	IR5	0.694			Valid and Reliable
Shopping Assistance	SA1	0.614	0.570	0.658	Valid and Reliable
	SA2	0.564			Valid and Reliable
	SA3	0.591			Valid and Reliable
	SA4	0.509			Valid and Reliable
Shopping Efficiency	SE1	0.638	0.648	0.743	Valid and Reliable
	SE2	0.654			Valid and Reliable
	SE3	0.698			Valid and Reliable
	SE4	0.601			Valid and Reliable

Table 3. The Goodness of Fit Structural Model

Index	Criteria	Results	Information
CMIN/DF	≤3.0	1,271	Good Fit
RMSEA	≤0.08	0.037	Good Fit
GFI	0.8 - 0.9	0.843	Marginal Fit
CFI	0.8 - 0.9	0.942	Good Fit
TLI	0.8 - 0.9	0.937	Good Fit

The next stage is the second stage of the validity and reliability test. The results of validity and reliability tests using standardized loading, AVE, and CR in each variable indicator are declared valid and reliable. The shopping assistance and efficiency variables have an AVE value ≥ 0.5, while the order fulfillment and product assortment variables have an AVE value ≤ 0.5. However, even though the AVE results on the OF and PA variables ≤ 0.5 are still said to be valid [11]. So, it can be concluded that all indicators are stated to be valid and reliable because the AVE and CR values in the OF, PA, SA, and SE variables have met the requirements.

3.4 Structural Model Test

Table 3 shows the results of the Goodness of Fit test from the structural model. The values of all indexes are a good fit because it meets the criteria, except GFI (marginal fit). Based on the test results, it can be concluded that the structural model test meets the criteria of goodness of fit.

3.5 Hypothesis Testing

Table 4 shows the results of hypothesis testing, it is known that the hypotheses H1, H2, H3a, H3b, and H3c are supported, where the results of the critical ratio and p-value are $\geq 1,645 \leq 0.1$. The following is the final research model (Fig. 1):

Table 5 shows the results of testing the product assortment and shopping assistance mediation variables. Testing mediation between these variables tested direct and indirect effects and obtained significant results where mediation was fully supported.

Table 4. Hypothesis Testing Results

Hypothesis	Path	Std Estimates	CR	P-values	Information
H1 (+)	SA → SE	0.730	6.517	***	Supported
H2 (+)	OF → SA	0.774	4.617	***	Supported
H3a (+)	PA → SA	0.498	2.178	0.029	Supported
H3b (+)	PA → OF	0.866	7.027	***	Supported
H3c (+)	PA → OF → SA		Supported Mediation		

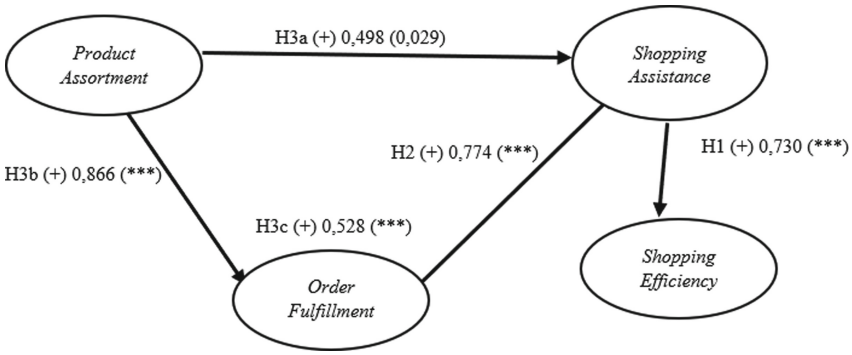

Fig. 1. Hypothesis Test Model

Table 5. Mediation Test Results

Direct Effects	Std Estimate	CR	P-values
PA → SA	1.010	8.157	***
Indirect Effects	Std Estimate	CR	P-values
PA → OF	0.866	7.067	***
OF → SA	0.557	3.453	***
PA → SA	0.528	3.453	***

The H1 test results show that shopping assistance, which is shopping assistance provided by e-tailing, such as various products with price comparisons, provides the convenience of service so that it is easier for customers to make decisions when making transactions without having to spend time like in offline stores. Customer activity becomes more efficient.

The H2 test results show that order fulfillment by e-tailing in the form of product availability, timely delivery, good condition of goods, the accuracy of payment, and ease of returning products affect customer satisfaction with e-tailing assistance services.

The H3a hypothesis test results show that product assortment in the form of product variations and prices, stock availability, ease of product access, and information relevance have an effect on shopping assistance. The ease with which customers obtain products will influence shopping assistance so that customers feel more satisfied shopping through e-tailing. The H3b hypothesis test results show that the ease with which customers obtain products (product assortment) will affect how e-tailing fulfills customer orders. The H3c test results show that the performance of e-tailing in fulfilling customer products will affect customer satisfaction with e-tailing service assistance if customer orders are adequately fulfilled.

4 Conclusions

The five research hypotheses are supported and in line with [8]. This shows that it is very important for e-tailing companies to pay attention to product availability. The availability of products that suit customer needs will satisfy customers if supported by the fulfillment of good products with various attractive offers to make making decisions easier. When a customer decides to make a transaction, the company must prepare a support service that will make the customer feel at ease. Customers who experience convenience in transactions will feel that their life is more efficient because not much time is wasted searching for and comparing one product with another.

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