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The effect of customer trust and commitment on customer sustainable purchasing in e-marketplace, the antecedents of customer learning value and customer purchasing value

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The e-marketplace is a platform used by vendors to conduct transactions and shopping. The success of implementing an e-marketplace depends on customers' sustainable purchasing. This study integrates customer learning (formative construct) and purchasing (reflective construct) values to measure the level of customer trust and commitment in the e-marketplace to examine their effects on sustainable customer purchases. A total of 428 valid respondents were processed using SmartPLS 3. The results show that the six proposed hypotheses have positive values and significant effects. Customer learning and purchasing values have positive values and significant effects on customer trust and loyalty and have indirect positive values and significant effects on sustainable customer purchases. In other words, customer trust and loyalty have positive values and significant effects on sustainable customer purchases. Thus, the findings of this study have implications for other researchers and practitioners conducting studies on e-marketplaces.

KEYWORDS

e-marketplace, customer learning value, customer purchasing value, customer sustainable purchasing, customer trust, customer commitment

1 Introduction

The recent increase in Internet needs has influenced many activities, including online shopping transactions. It does not occur in only one region but also globally. Interest in e-business transactions affects the scope of studies. This correlates with the perspective of customer purchasing value (Huré et al., 2017). Having knowledge and experience makes it possible for customers to trust products or services that can be used effectively. It provides

an opportunity for sustainable customer purchases in digital transactions (Huang and Benyoucef, 2013). The growth of digital transactions in e-commerce affects customer perspectives on digital business knowledge. Hence, e-commerce vendors and marketplaces should be more competitive in keeping their customers loyal (Abhishek et al., 2016).

Previous studies have confirmed that two perspectives, customer satisfaction and customer commitment, have a significant impact on sustainable customer purchasing. It gives value to product quality from a customer perspective, particularly in e-commerce transactions (Shin et al., 2013). For customers, satisfaction is the most important part of the continuity of product use, particularly in mobile application services (Zhou et al., 2012). Hence, customer shopping value will be positive for customer commitment and sustainable customer purchases (Zhou et al., 2012). Furthermore, hedonic customers have become one of the reasons that customers are willing to buy a product or service (Bui and Kemp, 2013). Another aspect is that strong customer commitment affects the positive value to the continuity of customer purchases (Zhou et al., 2012). In retail marketing studies, variables of commitment are classified based on three factors: commitment based on measurement, normative commitment, and affective commitment (Beatty et al., 2012). Nevertheless, in another study on social media e-commerce and online hotel reservation, commitments were reduced into two categories: commitment based on measurement and commitment based on affective aspects (Beatty et al., 2012; Bilgihan and Bujisic, 2015; Bui and Kemp, 2013; Zhou et al., 2012). Studies on organizational behavior classify commitment into three parts: commitment based on measurement, normative commitment, and affective commitment (Meyer et al., 2002; Bhati and Verma, 2020). This study confirmed that affective commitment is more dominant in affecting the behavior and performance of an organization. The other two studies that involve customer behavior in e-commerce transactions have confirmed that the variables of trust and commitment from the customer can provide value and benefit for customers and vendors (Wang et al., 2016; Cui et al., 2020).

The dynamic exploration of the variables of trust and commitment becomes an opportunity for research in other fields of study, particularly in customer digital experiences, regarding the antecedent factors. It also provides opportunities for researchers to assess customer behavior and intention in the digital market. In the case of mobile applications that involve the variables of trust and commitment, antecedents such as social distance, customer satisfaction, and opportunistic behavior are required. Moreover, studies on mobile commerce have confirmed that high customer trust and strong customer commitment have a significant effect on sustainable customer intention (Cui et al., 2020); however, it does not explain the effect of mediator variables.

This study adopts several previous studies to determine the factors and variables that correspond to the transaction concept

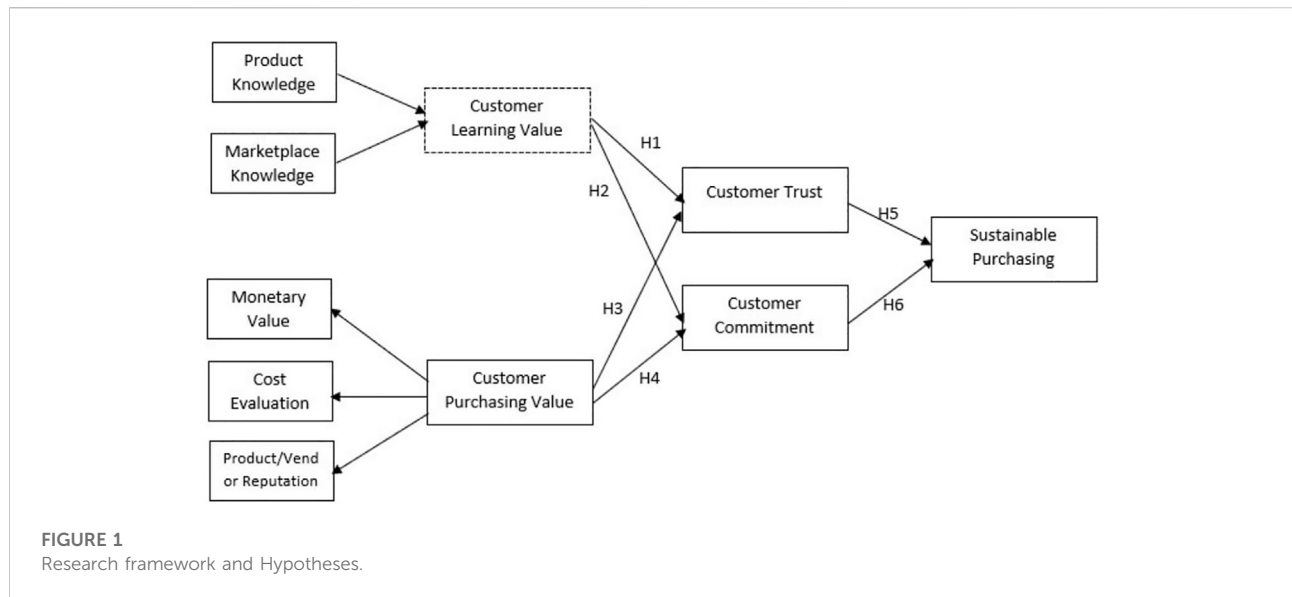
and activity of the e-marketplace to identify the behavior of customer purchasing (Cui et al., 2020). This study also elaborates on new variables. Trust and commitment variables were built and integrated as factors that support sustainable customer purchases. The other two variables, customer learning (formative construct) and purchasing values (reflective construct), become antecedents of the trust and commitment variables. This study proposes that customer learning value has two basic elements: product and marketplace knowledge. Besides, the customer purchasing value variable has three elements: monetary value, cost evaluation, and product/vendor reputation. Overall, this study focused on two aspects.

- 1) How does the variable of customer learning value affect sustainable customer purchases with the mediator variable of customer trust and commitment in e-commerce online transactions?
 - 2) How does the variable of customer purchasing value affect sustainable customer purchases with the mediator variable of customer trust and commitment in marketplace online transactions?
- This study measures the direct effect of customer learning and purchasing values on the variables of customer trust and commitment. It also assesses the direct effect of customer trust and commitment on sustainable customer purchases.

The contribution of this study is the integration of customer learning value as the formative construct and customer purchasing value as the reflective construct, as well as the variable of customer trust and commitment on online transactions in the marketplace to a model. The variable of customer learning value is built based on product and marketplace knowledge. The variable of customer purchasing value is built based on monetary value, cost evaluation, and product/vendor reputation. These variables have been examined systematically to provide information and knowledge in the field of digital transactions, particularly e-commerce (Wang et al., 2016; Cui et al., 2020). Furthermore, this study integrates and assesses the variables of customer trust and commitment to provide the best perspectives and mechanisms to vendors and customers to increase sustainable customer purchases.

2 Literature review

The framework developed in this study is an elaboration of the variables used in previous studies. The result of the elaboration is customer learning value as a formative construct and customer purchasing value as a reflective construct. It also provides variables for customer trust, commitment, and sustainable customer purchases. It is assumed that customer trust and commitment are directly affected by customer learning and purchasing values. It is also assumed that customer learning and purchasing values can affect



sustainable customer purchases, which are mediated by customer trust and commitment. Another assumption is that customer trust and commitment have a direct effect on sustainable customer purchases. Furthermore, it is proposed that customer purchasing value as a reflective construct is based on two elements: product and marketplace knowledge, whereas customer purchasing value as a reflective construct is based on three elements: monetary value, cost evaluation, and product/vendor reputation. The concrete framework of this study and the proposed hypotheses are presented in [Figure 1](#).

2.1 Institutional trust: commitment mechanism

Previous studies have confirmed that building a good relationship between customers and vendors requires strong trust and commitment to maintain the continuity of the relationship ([Wei et al., 2019](#)). Individual behavior relates to psychology, so that behavior makes an unforgettable sense and experience. This implies commitment ([Cui et al., 2020](#)). A strong commitment of customers affects good relationships and benefits vendors ([Akrouf and Nagy, 2018](#)). Another study confirmed that the commitment variable is more strongly related to the customer's sustainable intention than the trust variable ([Wang et al., 2016](#)).

Trust is part of an individual or group's beliefs in certain attributes, such as integrity, reliability, and skill ([Noor, 2013](#); [Akrouf and Nagy, 2018](#)). Studies on online activities have proven that trust becomes a factor that drives customer satisfaction ([Dimoka, 2010](#); [McKnight et al., 2017](#); [Punyatoya, 2019](#)). Strong trust in customers stimulates them to be loyal to a product or service, so that they will continually use the service

or purchase the product. Commitment can be defined as the customer perception that relates to customer needs; however, it has long-term implications for the vendor relationship ([Wang et al., 2016](#)). Customer commitment can be defined as the way of viewing or assessing a product or service so that a strong relationship is built between them ([Meyer et al., 2002](#); [Bui and Kemp, 2013](#)). Furthermore, previous studies have confirmed that there are eight factors that become customer standards to strengthen their belief in building commitment and trust in a product or service. In other words, customer satisfaction can strengthen customer trust and commitment ([Cui et al., 2020](#)). This study refers to [Zhou et al. \(2012\)](#) and [Cui et al. \(2020\)](#) who confirmed that customer trust and commitment are two mediator variables that can be used to determine a customer's sustainable purchasing. The antecedents of these two variables are customer learning and purchasing values. The context is online transactions in an e-marketplace. Furthermore, this study integrates product and marketplace knowledge as elements that make customer learning value a part of the formative construct, while monetary value, cost evaluation, and product/vendor reputation are used as elements of customer purchasing value to be part of the reflective construct.

This study implements the variables of customer trust and commitment as the main instruments to correlate with sustainable customer purchases. Customer learning and purchasing values are two instruments used as antecedents to correlate with customer trust and commitment in the context of research on online transactions in the e-marketplace. Trust and commitment variables are real activities conducted by customers during transactions in the e-marketplace. Generally, customers require strong protection during a transaction for a product or service delivery. Unfortunately, they did not have access to protection. Thus, the vendor and the marketplace become parties that

guarantee transaction safety. This can build strong customer product knowledge, trust, and commitment. In customer learning value, there are two factors that build customer motivation and marketplace knowledge, whereas monetary value, cost evaluation, and product/vendor reputation are the three factors that build customer purchasing value.

2.2 Customer learning value

This study relates to customer learning value and refers to the traditional concept that learning value is regarded as a part of human genetic patterns (Chen et al., 2017). Customers tend to focus on the information about the product or service displayed in the marketplace, so it needs some supporting features to ease transactions (Shin et al., 2013; Benn et al., 2015). This process has been confirmed by a previous researcher, and it has been proven to affect customer purchasing behavior. This process is known as learning value (Shin et al., 2013).

Based on e-commerce, customers tend to be careful in obtaining information about a product or service in a marketplace. This affects customer learning value (Wang and Yu, 2017). The process of learning value during transactions possibly allows customers to share their information and experience by reviewing chat columns in the marketplace (Yoon et al., 2013; Chen et al., 2017).

The variable of customer learning value (formative construct) is an antecedent of product and marketplace knowledge. Both are the results of previous studies and have been confirmed (Yoon et al., 2013). Product and marketplace knowledge are crucial elements for customers to know more about the product or service, particularly in terms of price and quality. In addition, the variable of marketplace knowledge becomes an element that is required by the customer to understand the information on the platform used to perform digital transactions, such as the ease of using features, transaction security, information, and interaction between customers and providers, as well as the review of other customers. Previous studies have confirmed that variables that involve product knowledge indirectly impact sustainable customer purchases (Yoon et al., 2013). However, customer perception of the marketplace or marketplace knowledge has a significant impact on sustainable customer purchases (Yoon et al., 2013; Chen et al., 2017).

The result of previous studies builds a variable of customer learning value (formative construct) based on product and marketplace knowledge. Customer learning value is assumed to be positive for customer trust and commitment in marketplace transactions. The price of a product or service offered in the marketplace correlates with customer trust and commitment. The variables of product and marketplace knowledge on customer learning value indirectly affect customers' sustainable purchasing. Therefore, the proposed hypotheses are as follows:

Hypothesis 1. (H1): Customer learning value is positive and significantly affects customer trust. (H1a) Customer learning value is positive and significantly affects sustainable customer purchases, which is mediated by customer trust.

Hypothesis 2. (H2): Customer learning value is positive and significantly affects sustainable customer purchases, which is mediated by customer commitment.

2.3 Customer purchasing value

Hedonic or consumptive customers are the support agents of customer purchasing value in e-commerce transactions (Kim et al., 2012). Customer purchasing value impacts other variables such as fun and pleasure. It has a significant impact on customer convenience, trust, and commitment (Sarkar, 2011). Another study confirmed that customer purchasing value can be supported by other variables, such as customer satisfaction, entertainment, and social status, so that it has a positive value and significant effect on customer trust, loyalty, and repurchasing (Atulkar and Kesari, 2017). Previous studies have confirmed that the variable of customer purchasing value has a positive value, significantly impacts customer satisfaction and trust, and indirectly impacts sustainable customer purchases (Sarkar, 2011; Kim et al., 2012; Albayrak et al., 2020). Another study confirmed that the value of a product or service depends on customer perception, which is known as monetary value (Gupta and Kim, 2010). Monetary value can be defined as customer benefit, which is the cost evaluation, and product reputation belongs to an integrated part of customer assessment (Chang et al., 2020). In another study, product reputation is seen as the result of positive value or positive customer reviews, so that the customer can make a decision on sustainable purchase (Kim et al., 2016; Chang et al., 2020). Customer purchasing value determines a customer's sustainable intention (Kim et al., 2016). Based on previous studies, customer purchasing value have different dimensions (Gupta and Kim, 2010; Kim et al., 2012; Sullivan and Kim, 2018).

This study builds three basic variables to support customer purchasing value (reflective construct): monetary value, cost evaluation, and product/vendor reputation. To deliver results that relate to existing facts, an empirical approach was applied (Kim et al., 2012; Huré et al., 2017; Chang et al., 2020). Previous studies have been observed and reviewed. It is concluded that the high performance of customer purchasing value is positive and directly affects customer trust and commitment. This indirectly affects the performance of sustainable customer purchases. Hence, this study assumes that monetary value is a part of customers' viewpoints of products or services offered by the e-marketplace. The perception can be about the waiting time in transactions, price of the product or service, and value or function of the product. Furthermore, cost value is customer

viewpoints to the value of a product based on the cost of a product or service. Whereas, product or vendor reputation is the causality effect of a vendor's product or service performance. In other words, product reputation is a positive impression on customers.

One study showed that reputation is a part of the long-term marketing strategy of a product, and reputation can affect customer behavior in determining sustainable purchases (Sengupta et al., 2018). Furthermore, another study stated that a good reputation can affect customer commitment to using a service (Lai, 2019). Meanwhile, positive information about a product or service obtained by the customer can build a good reputation and vice versa (Wang and Yang, 2010). This study describes reputation as the perception of customer experience after using a product or service. Perception relates to cost value or benefit, product or service image, and lifestyle. Customers not only consider the benefit of choosing or using a certain product or service but also consider their desire and lifestyle. Customer social status can be used to define a customer's reputation. Customers' desire to use a product or service results from customer trust, satisfaction, and strong commitment.

In this study, the customer purchasing value consists of three variables. These are monetary value, cost evaluation, and product/vendor reputation. This study assumes that customer purchasing value is correlated with customer trust and commitment, particularly in e-marketplace transactions. However, customer purchasing value is indirectly correlated with sustainable customer purchases. Hence, the proposed hypotheses are as follows:

Hypothesis 3. (H3): Customer purchasing value is positive and affects customer trust. (H3a) Customer purchasing value is positive and indirectly affects sustainable customer purchases, which is mediated by customer trust.

Hypothesis 4. (H4): Customer purchasing value is positive and significantly affects customer commitment. (H4a) Customer purchasing value is positive and significantly affects sustainable customer purchases, which is mediated by customer commitment.

2.4 Customer sustainable purchasing

Customer trust and commitment have been confirmed by previous studies to have a significant effect and positive value on customer behavior intention/purchase, particularly in e-commerce (Zhou et al., 2012). Studies on the concepts of web quality, service quality, and information quality have confirmed that a variable of trust is used as an element to build customer intention to purchase (Punyatoya, 2019). Loyalty can be defined as a customer's intention to use a product or service in the context of traditional transactions

(Sirdeshmukh et al., 2018). The present study constructs the variables of customer trust and commitment as the elements that affect sustainable customer purchases. This is consistent with the results of previous studies. This supports and confirms that both variables are the principal factors affecting sustainable customer purchases or use in the perception of information system adoption (Zhang et al., 2011; Zhou et al., 2012).

This study proposes that sustainable customer purchase is determined by the strength of customer trust and commitment. This means that the available product or service in the marketplace should be able to ensure that they correspond to customers' expectations. Customer reviews are also important for strengthening the trust of other customers in ensuring the quality of a product or service. Repeated customer experience can convince the customer, and then a strong commitment is built. Therefore, we propose the following hypotheses:

Hypothesis 5. (H5). Customer trust affects the sustainable purchasing of a product or service in the marketplace.

Hypothesis 6. (H6). Customer commitment affects the sustainable purchasing of a product or service in the marketplace.

3 Research methodology

3.1 Model development and measurement

The object of this research is e-commerce platforms, such as Shopee, Tokopedia, Lazada, and Blibli. These platforms are believed to be trustworthy by customers and are famous in Indonesia. These platforms also improve the quality of service to vendors and customers. Improving the number of customers means improving customer trust in the vendor and platform (Hoffman et al., 1999; Pennington et al., 2003). The e-commerce platform used in this study is trustworthy and easy to access. The features provided are personally understandable. Furthermore, this study uses a 7-point Likert-type scale, ranging from 1 (strongly disagrees) to 7 (strongly agree). Each variable has

TABLE 1 Demographics of the study population.

Demographic sample (N = 428)	Frequency	Percentage	(%)
Customer sex	Female	308	72
	Male	120	28
Customer age	20–25 years old	94	22
	26–35 years old	180	42
	36–45 years old	154	36
Customer experience	<1 year	43	10
	1–3 years	150	35
	>3 years	235	55

TABLE 2 Items construct.

Monetary value (MV) please add the details as required Chang et al. (2020); Kim et al. (2016)

MV1	I think the product offered is valuable and has an appropriate price
MV2	I think the price of the product corresponds to its quality and value
MV3	I think the product offered has a good quality

Cost evaluation (CE) Chang et al. (2020); Götz et al. (2010); Kim et al. (2016)

CE1	I can easily make a decision to buy the offered product
CE2	I can easily convince myself to choose the product that suits me
CE3	I think the price of the product is still affordable and makes sense

Product/vendor reputation (PR) Keh and Xie, (2009); Lai, (2019); Sengupta et al. (2015)

PR1	I think the product has high value and good
PR2	I think the product and service has a good image
PR3	I think e-marketplace has recently become a part of lifestyle

Customer trust (CST) Cui et al. (2020); Sirdeshmukh et al. (2018); Wang et al. (2016)

CST1	I believe that providers and e-marketplace can provide service and need to the customer
CST2	I think the providers are trusty to every transaction that I make in e-marketplace
CST3	I think the vendors in the e-marketplace have integrity

Customer commitment (CSC) Bilgihan and Bujisic, (2015); Cui et al. (2020); Wang et al. (2016); Zhou et al. (2012)

CSC1	Shopping in e-marketplace currently becomes a lifestyle
CSC2	I cannot stop shopping in e-marketplace
CSC3	E-marketplace can make shopping easier and more convenient for me

Sustainable purchasing (STP) Baron and Kenny, (1986); Cui et al. (2020)

STP1	I think I will shop every month in the e-marketplace
STP2	If it is accumulated, I buy a product more than once in every 3 months
STP3	I will shop in an e-marketplace soon

Product knowledge (PK) Yoon et al. (2013); Zhang et al. (2018)

PK1	Product information displayed on e-marketplace is detailed and helpful to learn about the product
PK2	Information in a product is detailed so that it is beneficial for me as a customer
PK3	Information of a product and service is detailed and informative and provides review from other customers, and it is helpful for me

Marketplace knowledge (MK) Yoon et al. (2013); Zhang et al. (2018)

MK1	I can easily find the product because of its detailed information and complete features
MK2	I use e-marketplace almost every day
MK3	I have used e-marketplace for many times to do online shopping

TABLE 3 Construct reliability and validity of the model AVE, average variance extracted.

Variable/Construct	Factor loading/weight	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Customer learning value (CLV)				
PK	0.518 (Weight)	n/a (Formative construct)	n/a (Formative construct)	n/a (Formative construct)
MK	0.562 (Weight)			
Product knowledge (PK)				
PK1	0.843	0.801	0.883	0.715
PK2	0.855			
PK3	0.838			
Marketplace knowledge (MK)				
MK1	0.865	0.815	0.890	0.730
MK2	0.842			
MK3	0.856			
Monetary value (MV)				
MV1	0.883	0.801	0.884	0.718
MV2	0.759			
MV3	0.893			
Cost evaluation (CE)				
CE1	0.913	0.870	0.921	0.794
CE2	0.879			
CE3	0.881			
Product/vendor reputation (PR)				
PR1	0.766	0.798	0.882	0.714
PR2	0.897			
PR3	0.867			
Customer trust (CST)				
CST1	0.775	0.803	0.884	0.718
CST2	0.886			
CST3	0.877			
Customer commitment (CSC)				
CSC1	0.876	0.900	0.937	0.833
CSC2	0.927			
CSC3	0.935			
Sustainable purchasing (STP)				
STP1	0.817	0.786	0.870	0.691
STP2	0.819			
STP3	0.857			

other variable elements, which have been referred to in previous studies. Customer learning value (formative construct) has two basic variables: product (four-item variables) (Yoon et al., 2013; Zhang et al., 2018) and marketplace knowledge (four-item variables) (Zhang et al., 2018). The customer purchasing value (reflective construct) has three elements: monetary value (three-item variables) (Kim et al., 2016), cost evaluation (three-item variables), and product/vendor reputation (three-item variables) (Götz et al., 2010; Kim et al., 2016; Chang et al., 2020).

For variables of customer trust and commitment, this study uses four-item variables for each, which is based on previous

studies (Wang et al., 2016; Zhang et al., 2018; Punyatoya, 2019; Cui et al., 2020). In addition, four-item variables are used to measure the value of sustainable customer purchases (Cui et al., 2020).

3.2 Data collection

An online survey using Google Forms was administered to the targeted respondents. Data collection was conducted from January 2022 to April 2022. It is then distributed via email, social media, group-group online, WhatsApp, and online. Respondents

TABLE 4 Discriminant validity.

Items construct	CE	CSC	CST	MK	MV	PK	PR	STP
CE1	0.913	0.503	0.609	0.852	0.712	0.680	0.611	0.674
CE2	0.879	0.512	0.635	0.861	0.735	0.632	0.642	0.707
CE3	0.881	0.429	0.542	0.691	0.696	0.819	0.545	0.658
CSC1	0.404	0.876	0.717	0.350	0.364	0.390	0.718	0.616
CSC2	0.501	0.927	0.757	0.489	0.524	0.372	0.751	0.768
CSC3	0.559	0.935	0.782	0.532	0.547	0.469	0.788	0.842
CST1	0.523	0.601	0.775	0.576	0.458	0.420	0.772	0.608
CST2	0.660	0.742	0.886	0.583	0.623	0.562	0.789	0.747
CST3	0.511	0.744	0.877	0.467	0.560	0.455	0.766	0.717
MK1	0.792	0.442	0.533	0.865	0.643	0.647	0.537	0.613
MK2	0.661	0.347	0.455	0.842	0.553	0.573	0.462	0.484
MK3	0.853	0.511	0.640	0.856	0.722	0.604	0.646	0.697
MV1	0.757	0.515	0.598	0.740	0.883	0.614	0.598	0.751
MV2	0.559	0.423	0.490	0.465	0.759	0.398	0.491	0.675
MV3	0.706	0.413	0.560	0.674	0.893	0.572	0.564	0.741
PK1	0.557	0.362	0.455	0.584	0.427	0.843	0.458	0.427
PK2	0.553	0.349	0.448	0.510	0.436	0.855	0.450	0.430
PK3	0.780	0.428	0.533	0.699	0.716	0.838	0.537	0.664
PR1	0.517	0.600	0.765	0.572	0.447	0.422	0.766	0.587
PR2	0.662	0.751	0.895	0.585	0.626	0.563	0.897	0.767
PR3	0.519	0.733	0.860	0.478	0.568	0.457	0.867	0.702
STP1	0.691	0.524	0.615	0.599	0.606	0.539	0.614	0.817
STP2	0.726	0.469	0.596	0.694	0.692	0.570	0.597	0.819
STP3	0.547	0.629	0.783	0.510	0.539	0.446	0.778	0.857

MV, Monetary value; CE, Cost evaluation; PR, Product/vendor reputation; CST, Customer trust; CSC, Customer commitment; STP, Sustainable purchasing; PK, Product knowledge; MK, Marketplace knowledge.

are users of e-marketplaces from any platform, such as Shopee, Tokopedia, Lazada, and Blibli. There were 512 distributed Google Forms; however, only 442 data were successfully collected. Data were sorted to check their completeness. Of the 442 data points, 13 were removed because of their incompleteness. Thus, valid data were obtained from 428 respondents (n=428). Table 1 presents the respondents' demographic characteristics. The variables used in this study are presented in Table 2. Descriptive statistics were used to assess each variable.

3.3 Data measurement techniques

To sort the collected data from respondents, we used Microsoft Excel software. The demographic results are presented in Table 1. The data were analyzed using SmartPLS 3. The structural equation model partial least squares (SEM-PLS) was used to measure the reliability, validity, and hypotheses. Overall, there are two mechanisms for data measurement. The first measured the path coefficient, average

TABLE 5 Inner VIF result.

Construct	VIF value
CLV → CSC	4.045
CLV → CST	4.045
CPV → CSC	4.045
CPV → CST	4.045
CSC → STP	3.126
CST → STP	3.126

Customer trust (CST); Customer commitment (CSC); Sustainable purchasing (STP); Customer learning value (CLV).

variance extracted (AVE), Cronbach's alpha, and R2 values. The second was to test the hypothesis using a bootstrapping algorithm with a sample size of 1,000. The Sobel test was used to assess the mediating effect (Ringle et al., 2015).

Based on the data classification, 72.1% of the respondents were women, with 32% having ages ranging from 20 to 25 years, 42% from 26 to 35 years, and 36% from 36 to 45 years. Based on the experience of respondents using the e-marketplace platform, 10% of them had used the platform for less than a year, 35% for one to 3 years, and 55% for more than 3 years.

4 Results

4.1 Reliability and validity

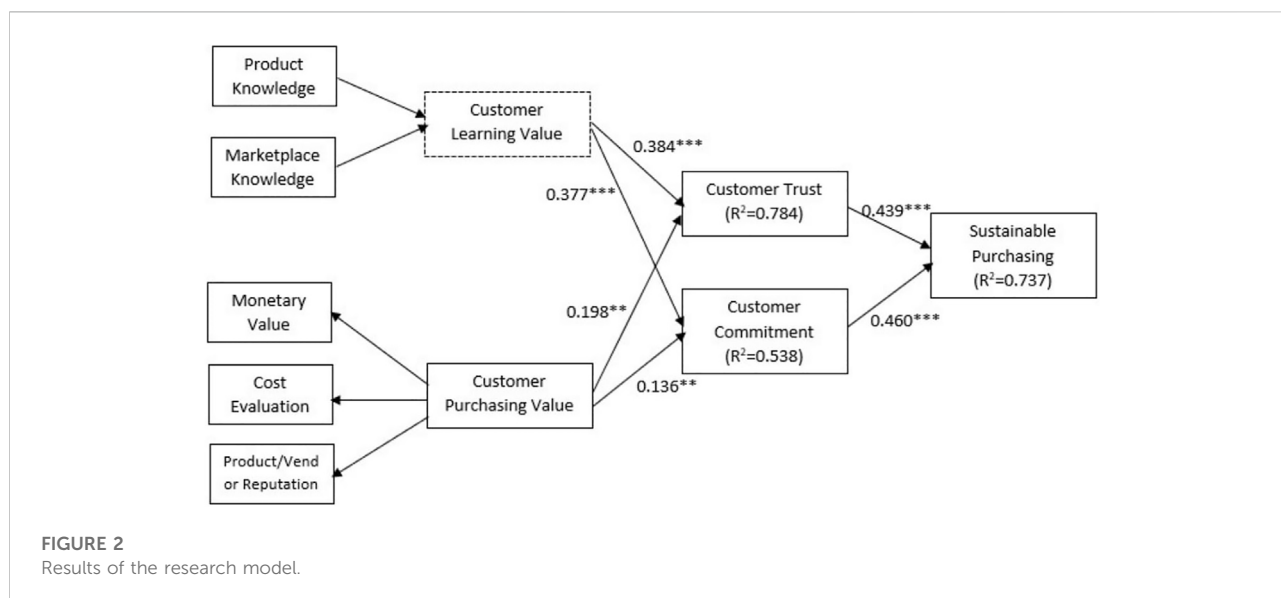
First, we assess reliability and discriminant validity. It is standardized using Cronbach's alpha, composite reliability, and the AVE value (Hair et al., 2017). Cronbach's alpha should have a value greater than 0.6; composite reliability, greater than 0.7; and AVE, at least or greater than 0.55 (Götz et al., 2010; Hair et al., 2017). Another benchmark comes from the value of the loading factor, and the value of each item in the loading factors should be at least or greater than 0.5 (Hair et al., 2017). From the computation results using SmartPLS 3, Cronbach's alpha is 0.7–0.9; composite reliability, 0.8–0.9; AVE, 0.6–0.8; and loading factor, 0.7–0.9. Discriminant validity was assessed by comparing the value of the measurement item construct to latent variance. If the value of the latent variance is greater than that of the measurement item construct, it meets the criteria of good discriminant validity. Table 3 and Table 4 present the results of reliability and discriminant validity measurements.

This study used VIF analysis to assess the multicollinearity of a construct or variable. The computation was conducted using SmartPLS 3, with the value of VIF for each variable less than 5.0 (Kline, 1998; Hair et al., 2016; Dospinescu et al., 2019). Based on the results of the computation, the value of the inner VIF in this research was 3.1–4.0 (Table 5). Therefore, it can be concluded that there was no multicollinearity for the latent construct or variable in this study (Insert Table 5 here).

TABLE 6 Summary of hypothesis testing.

Hypothesis	Construct relationship	Path coefficient	t-value	Result
H1	CLV → CST	0.384***	4.575	Supported
H2	CLV → CSC	0.377***	3.301	Supported
H3	CPV → CST	0.198**	18.687	Supported
H4	CPV → CSC	0.136**	10.498	Supported
H5	CST → STP	0.439***	5.249	Supported
H6	CSC → STP	0.460***	5.625	Supported

CST, Customer trust; CSC, Customer commitment; STP, Sustainable purchasing; CLV, Customer learning value.
 p*-value < 0.01; *p*-value < 0.001.



4.2 Structural model

In a structural model (SmartPLS refers to it as an inner model), the assessment is applied to path coefficients and hypotheses. Two construct models, the formative (customer learning value) and reflective constructs (customer purchasing value), are used simultaneously. Table 6 shows the results of the hypotheses, including the path coefficient and t-values. The results of the computation using bootstrapping show that the ix hypotheses have met the standard. This is acceptable and has a positive value and significant effect.

Figure 2 shows the research model of the study.

Customer learning value is positive and has a significant effect on customer trust and commitment. This corresponds to Hypotheses 1 and 2: H1 (CLV → CST: $\beta = 0.198$, t-value = 4.575, $p < 0.001$) and H2 (CLV → CSC: $\beta = 0.377$, t-value = 3.301, $p < 0.001$).

Customer purchasing value is positive and significantly affects customer trust and commitment. This corresponds to Hypotheses 3 and 4: H3 (CPV → CST: $\beta = 0.384$, t-value = 18.687, $p < 0.01$) and H4 (CPV → CSC: $\beta = 0.136$, t-value = 10.498, $p < 0.01$).

Customer trust is positive and has a significant effect on sustainable customer purchases. This corresponds to Hypothesis 5: H5 (CST → STP: $\beta = 0.439$, t-value = 5.249, $p < 0.001$).

Customer commitment is positive and significantly affects sustainable customer purchases. This corresponds to Hypothesis 6: H6 (CSC → STP: $\beta = 0.460$, t-value = 5.625, $p < 0.001$).

The endogenous variable in this study was also assessed using R^2 . The R^2 value of customer trust was 0.784. This means that customer learning and purchasing values are variants of customer trust. The R^2 for customer commitment was 0.538. This means that customer learning and purchasing values are variants of customer commitment. The R^2 for sustainable customer purchase was 0.737. This means that customer trust and commitment are variants of sustainable customer purchase.

4.3 Mediating effects

The value of the path analysis and Sobel test become the benchmark to determine the mediator variables that possibly

TABLE 7 Mediation test result.

Construct	Construct relationship	t-value	z-value	p-value
CLV → CST → STP	CLV → CST	4.575	3.448	0.000
	CST → STP	5.249		
CLV → CSC → STP	CLV → CSC	3.301	2.846	0.004
	CSC → STP	5.625		
CPV → CST → STP	CPV → CST	18.687	5.053	0.000
	CST → STP	5.249		
CPV → CSC → STP	CPV → CSC	10.498	4.958	0.000
	CSC → STP	5.625		

CST, Customer trust; CSC, Customer commitment; STP, Sustainable purchasing; CLV, Customer learning value.

have a significant impact. If the Z value in the Sobel test is greater than 1.96, the mediator variable is accepted (Sobel, 1982). In this study, four hypotheses had a mediator. These are H1a, H2a, H3a, and H4a. The results of the mediation effects are presented in Table 7.

(Insert Table 7 here)The analysis using the Sobel test shows that customer learning value is positive and has a significant impact on sustainable customer purchases, which is mediated by customer trust. This means that Hypothesis 1a is accepted: H1a (CLV → CST → STP: $\beta = 0.384$; 0.439 , z -value = 3.448 , $p < 0.000$). Similarly, customer learning value is positive and has a significant impact on sustainable customer purchases, which is mediated by customer commitment. Thus, Hypothesis 2a is accepted: H2a (CLV → CSC → STP: $\beta = 0.377$; 0.460 , z -value = 2.846 , $p < 0.004$).

In addition, the Sobel test proves that customer purchasing value is positive and has a significant impact on sustainable purchasing, which is mediated by customer trust. This means that Hypothesis 3a is accepted: H3a (CPV → CST → STP: $\beta = 0.198$; 0.439 , z -value = 5.053 , $p < 0.000$). Customer purchasing value is positive and has a significant impact on sustainable customer purchases, which is mediated by customer commitment. This means that Hypothesis 4a is accepted: H4a (CPV → CSC → STP: $\beta = 0.136$; 0.460 , z -value = 4.958 , $p < 0.000$).

5 Research implications and conclusion

5.1 Theoretical implications

The results of this study provide several findings and implications that can serve as a reference for future research. First, from the viewpoint of theoretical issues, this study becomes a discourse of research in e-business, particularly in e-commerce transactions. This study provides a complete description of the integration of one variable and other variables to contribute to achieving sustainable customer purchases in transactions in the e-marketplace. This study

has become a part of customer life. The use of two variables—customer trust and commitment—to achieve sustainable customer purchases has been used several times to prove that transactions in e-business run well when they are supported by trust and commitment, as confirmed by previous studies (Zhou et al., 2012). By assessing these two variables, this study confirms the findings of previous studies with a similar understanding (Cui et al., 2020).

Second, it was found that customer purchasing value is positive and significant for customer trust and commitment. In addition, it has an indirect positive value and significant impact on the strength of sustainable customer purchases. It builds a pattern of relationships between customers and vendors in product or service transactions in the e-marketplace. This study considers the customer purchasing value as a variable of a second-order reflective construct that is supported by monetary value, cost evaluation, and product/vendor reputation. Previous studies have confirmed that utilitarian and hedonic values support customer purchasing value. Both factors can be positive or negative for customer satisfaction and purchase intention in e-commerce transactions (Zhou et al., 2012). Another study explained that customer purchasing value has supporting factors that can build relationships with customer loyalty, trust, and purchasing intention (Atulkar and Kesari, 2017).

The third finding reveals that customer learning value is positive and has a direct significant impact on the other two variables: customer trust and commitment. Meanwhile, sustainable customer purchase is positive and has an indirect significant effect. Customer learning value is a second-order formative construct with two supporting variables: product and marketplace knowledge. This shows that the present study differs from the previous (Zhou et al., 2012; Yoon et al., 2013; Zhang et al., 2018). Product and marketplace knowledge become part of customer learning value (second-order formative construct).

This study strongly proves that customer learning value is an antecedent of customer trust and commitment in e-marketplace

transactions. This is contrary to previous studies, which state that customer learning value does not have a significant effect on customer commitment but has a significant effect on sustainable customer purchases (Cui et al., 2020).

Finally, customer demography provides knowledge from a strategic viewpoint. Customer sex demography is dominated by women (72%) in conducting e-marketplace transactions, with ages ranging from 20 to 35 years (66%). This means that young women are the targeted consumers with more than 3 years of experience (55%). This suggests that vendors prepare strategies for organizing their customers, and the marketplace can provide tools that are helpful and user-friendly to the users of the e-marketplace.

5.2 Practical implications

The study contains practical value and implications for the decision-making of vendors or e-marketplaces. It also provides value to customer learning, purchasing, trust, and commitment, which affect sustainable customer purchases.

To strengthen the endurance and sustainability of e-marketplace vendors, they should also strengthen customer trust and commitment. Both variables are basic elements of the antecedent, such as customer learning and purchasing values, similar to the variable of sustainable customer purchases. This means that H1, H2, H3, and H4 directly provide positive values and have a significant impact. H1a, H1b, H2a, and H2b had positive values and indirect significant impact on the consequent variables. This means that vendors and marketplaces should improve and strengthen their quality of customer trust and the role of customers in their commitment. Vendors must be concerned with the quality of their services and products. For example, vendors provide customers the opportunity to choose delivery services. In terms of payment, vendors should provide various methods of payment and convince them that the payment is safe. If there is a technical error, the vendor should make a refund within a short time. It must be supported by the features provided in the e-marketplace to guarantee customer security and convenience.

Vendors and e-marketplaces should make an effort to improve and maintain sustainable customer purchases by evaluating the following aspects:

Based on the evaluation of customer purchasing value, the elements that should be focused on are the offered price and features for skipping advertisements. These features should function interactively and provide detailed information based on the customer's desire. Algorithms in the e-marketplace should function well. In terms of cost evaluation, the assessment focuses on minimizing risk. A gallery that provides product information and price and corresponds to quality provides a positive value from the customer to the

vendor. The consistency of the offered price is important to customers because it helps them understand and review the product. In terms of product and vendor reputation, the function of two-way communication between customers and vendors should run well. One way is to activate the features of product reviews and direct chatting. Not all visitors engage in the transaction at all times. Some are only a part of the community and are observers of a product. Vendors should pay attention to the quality of their products and services, while e-marketplaces should guarantee and provide features that enable them to operate smoothly.

Another aspect that should be considered is customer learning value. The elements are the product and marketplace knowledge. Both are helpful for improving the productivity and performance of customers in e-marketplace transactions. E-marketplace providers play the dominant role in this process. These features should correspond to customer needs that are easy to use, safe, and validated in every transaction—fast process, shopping history, and checkout. All these features should be understandable and easy to learn.

The final focus is on customer trust and commitment. Both should be strengthened by improving and convincing customers about the security of using e-marketplaces, accessible features, and non-stop services. Therefore, these two factors can guarantee that customers improve their desire for sustainable purchases.

5.3 Limitations and future study

This study integrates customer learning and purchasing values with customer trust and commitment to assess sustainable customer purchases. However, it lacks several aspects. First, the respondent demographics used in this study were young individuals. Future studies could involve respondents of various ages. Second, this study uses an e-marketplace platform that is used in Indonesia; therefore, the range of the respondents is limited. In the future, researchers could choose an e-marketplace with a wider range of customers. Finally, this study uses a small sample size. This could be increased in future studies.

6 Conclusion

This study contributes to the literature on academic and professional e-marketplace transactions. Customer trust and commitment play crucial roles in the performance of e-marketplace platforms. After conducting a holistic assessment, it was confirmed that this study has different findings compared to those of previous studies (Zhou et al., 2012). It was found that customer trust and commitment have a strong effect on sustainable customer purchases. It was also

confirmed that customer trust and commitment antecedents have a significant impact on sustainable customer purchases. Furthermore, this supports the findings of previous studies (Cui et al., 2020).

This is an integration of variables from several studies. They were elaborated upon and adapted to the needs of constructing a framework. Customer trust and commitment are the elements used to analyze the effects based on the antecedent and consequent. These variables are concepts and are regarded as part of customer viewpoints on products and services. This is brought into the customer's real life. Trust is a factor that gives customers a feeling of security, and commitment is the strength of customers to express their satisfaction in e-marketplace transactions. The antecedents of customer trust and commitment consist of two variables: customer learning value as a formative construct and customer purchasing value as a reflective construct. This study classifies customer learning value into two variables: product and marketplace knowledge, while customer purchasing value consists of three variables: monetary value, cost evaluation, and product/vendor reputation.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

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Author contributions

THa and THo conceived and designed the research, provided guidance throughout the entire research process, and wrote the main part of the manuscript. KMA collected the data and wrote the methods section. THa and OTA wrote the hypothesis development and methodology sections and offered modification suggestions. THo and KMA participated in the online survey and helped analyze the data. All authors listed have made a substantial, direct, and intellectual contribution to the work, and approved it for publication.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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