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ABSTRACT

This research aims to discover how perceived value and technology adoption influence customer satisfaction in e-marketplace B2B in Indonesia, how perceived value and technology adoption influence customer satisfaction moderated by level of value orientation in e-marketplace B2B in Indonesia, and how customer satisfaction influence buyer engagement in e-marketplace B2B in Indonesia. This research adopts a descriptive and verificative approach. Research methods used are descriptive survey and explanatory survey with the analysis units being emarketplace B2B company providing service. The sampling technique utilizes proportional random samples, with a sample total of 245. The statistic and data analysis method uses the Structural Equation Modelling (SEM) with Partial Least Square (PLS). This research has found that 3 hypotheses of acceptance and 2 hypotheses of rejection. The acceptance hypothesis shows that perceived value has a positive influence upon customer satisfaction (Hypothesis 1), technology adoption has a positive influence upon customer satisfaction (Hypothesis 3), and customer satisfaction has a positive influence upon buyer engagement (Hypothesis 5). While Hypothesis 2 and 4 show that the level of value orientation cannot moderate perceived value and technology adoption towards customer satisfaction. This research has contributed theoretically and practically, especially regarding companies who provide e-marketplace B2B service in Indonesia, to comprehend how to elevate customer satisfaction. This research's limitation is the general sample and not specific to one type of B2B business. Future research is expected to carry out several developments, including the issue of sample and methodology.

INTRODUCTION

Indonesia is predicted to hold the 4th position of the world's economic power by 2050, rising from the previous position of 8th in 2016 (1). According to (2), in a dynamic competitive environment, service companies can maximize internet usage to support business operational processes. Based on Asosiasi Penyelenggara Jasa Internet Indonesia (APJII) report, more than 50 percent or about 143 million people are connected to the internet throughout 2017 (3).

The business sector's development with the Business to Business (B2B) method that utilizes the internet is growing fairly fast in Indonesia. Pricewaterhouse Coopers (PwC) reported that B2B segment in Indonesia would exceed global growth along with the escalation of economic expansion and household consumption (4). The said growth is supported by high public buying power (5), especially by conventional transactions (in shops or markets), which later shifted to online internet-based shopping (6).

As of now, China still reigns and is predicted to stay as number 1 in the emerging market (7). However, in the future, Indonesia can be in the top 4 position of the emerging market due to the penetration of internet users, which impacts the development of e-commerce in Indonesia. This has been demonstrated in recent years **Keywords:** Perceived value, technology adoption, level of value orientation, customer satisfaction, buyer engagement, B2B marketplace

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that more and more business actors, both large and small companies, are switching or developing their businesses towards digital (8). According to (9) in B2B E-commerce context, many practicians predict B2B trading to have massive growth, and organizations must consider being involved in B2B trading. O'Reily dan Finnegan (2007) stated in e-marketplace B2B: an e-marketing framework for B2B commerce, B2B transactions using the internet as a vehicle for transactions including; financial transfers, online exchanges, auctions, product delivery, and services. Three main elements in e-marketplace B2B are seller, B2B company, and buyer, with main tasks as procurement, automatic purchasing, processing to make it easier for sellers and buyers to conduct business transactions.

B2B business processes include manufacturing companies with wholesalers (agents), farmers and agricultural companies, and pharmaceutical companies with hospitals and doctors (10). (11) stated that e-marketplace B2B refers to exchanging information, product, service, and payment through the internet between buyer and seller. Emarketplace B2Bs are generally defined as IS between organizations where many buyers and sellers interact electronically to identify potential trading partners and then choose them and proceed with the transaction (12). (13) proposed that e-marketplace B2B could eliminate several traditional business function inefficiencies and

enables partners to streamline their marketing activities by sharing information instantly.

Until 2017 the amount of e-marketplace B2B in Indonesia has begun to grow and emerge. Indonesia's large population makes e-marketplace the most promising platform for increasing the supply chain's efficiency for buyers and sellers (14). Based on (15)(15) data, it is noted that several companies in Indonesia engaged in emarketplace B2B, such as Ralali.com, Bizzy, IndoTrading dan Indonetwork. However, the growth must be monitored as there are several problems. (16) reported that not a single e-marketplace B2B was in the top 10 in terms of web visits, the number of app downloads, even the number of followers on social media accounts throughout 2017. This shows that the public has not yet known e-marketplace B2B. So far, consumers seem to only focus on sellers directly connected to consumers such as Lazada, Tokopedia, or Buka Lapak.

Another factor presumed to be the problem in ecommerce is the risk of supply chain happening inside. Several risks in e-commerce supply chain management include supply interruptions caused by local or global outages (17,18), planning of demand and supply and integration risks (17,19), regulation and adjustment risks (17), private information and security risks (17,19), contract compliance and legal risks (17), fraud and third party risks (17,19), demand fluctuations (17,20), and logistic returns (17,21).

One of the most popular B2B company is Ralali.com. Ralali offers diverse products needed by household consumers, with a wide range of variety and satisfactory service. Even so, Ralali.com is still unable to compete with B2C companies such as Lazada and Toko Bagus as previously elaborated. One of the reasons for the lack of recognition of e-marketplace B2B is low buyer engagement (22). This phenomenon is reinforced by the results of a survey of 2000 respondents in Indonesia conducted by DailySocialid in collaboration with Jakpat Mobile Survey Platform, in which the survey results have found that 57.32% of the public had heard and knew of B2B and the remaining 42.68% had never heard of or known B2B (23).

Maintaining customer experience and building an in-depth and long-term relationship is one of the keys for ecommerce B2B to continue growing and provide benefits to its users (24). To escalate the quality of long-term relationships with customers, the business must also increase customer satisfaction (25), which would result in even more loyal customers and better financial performance (26). The satisfaction of B2B customers has a positive influence on customer retention (27). This implies that when customer satisfaction increases, buyer engagement will also increase, which would result in the escalation of business revenue (28).

The importance of creating perceived value in B2B business concept is presumed to be a key factor in creating buyer engagement (29); (30). Perceived value is seen as a thorough customer valuation on product usage with the perception of what is received and what is given (31), which means there is a balance between the sacrifice they made when paying at a certain amount of price with the quality and benefit they gained from the product (32).

In addition to perceived value, the level of technology adoption is another variable that could influence customer satisfaction seen from an organization's characteristics (33). The level of technology adoption will provide different use values and satisfaction levels. The level of technology adoption can be seen from the scope of ecommerce usage, which refers to the level of use of ecommerce for several different activities in the value chain. This can range from advertising and marketing to sales, procurement, service and support, data exchange with customers and suppliers, and business process integration (34). The level of value orientation has a moderator for perceived value (35).

Furthermore, customer satisfaction will relate to buyer engagement satisfaction (36). If the buyer who has made the transaction is satisfied, they will recommend or reference the satisfaction obtained to other people (37). Indirectly, the customer has engaged in the promotional activity of the product. The complex connection between customer and e-marketplace B2B, especially with the limited literature studying this phenomenon, has encouraged researchers to study buyer engagement on emarketplace B2B in Indonesia's service companies.

MATERIALS

E-commerce

E-commerce is first introduced in the early 1990s. According to (38), e-commerce is an online-based service with social benefits, competitive promotion, and advances towards the digital market. Specifically, e-commerce has economic and social implications such as changing consumption habits and adapting to new business environments (39). E-commerce applications on companies are categorized into two, which are: sell-side ecommerce, which sells products and services to consumers, and buy-side e-commerce who purchases resources such as raw materials, machines, and the like at manufacturers suppliers(40). E-commerce or stakeholders consist of Costumer (C), Business (B), dan Government (G). hence, based on its functions, ecommerce can be categorized into nine which are C2C, C2B, C2G, B2C, B2B, B2G, G2C, G2B, dan G2G (41). In this research, e-marketplace B2B is an information system that brings together various sellers and buyers to perform electronic purchases starting from identification, information exchange of price, product information, product delivery, to payment. Simultaneously, this research focuses on the relation between e-marketplace B2B with main functions such as sourcing, automated purchasing, and processing to make it easier for sellers and buyers to conduct business transactions.

Perceived value and buyer satisfaction

Perceived value has become the main object of attention for writers and practitioners in the business-to-business (B2B) and business-to-consumer (B2C) scope. Much research is currently being conducted on academic values, which have not been explored much (42). In business, knowledge of value is of great importance and could be considered the cornerstone of a marketing strategy (43). Meanwhile, B2B customer satisfaction is also proven to influence its customer retention(44) positively. The dimension of customer satisfaction is seen from the aspects of convenience, product performance, customer service, social interaction, and security (45). According to (46), customer satisfaction in the context of B2B is often defined as a positive result produced from an assessment of all aspects of the company's work relationship with other companies.

The theory of perceived value holds a notable role in the perception of consumer value (47). (48)stated that perceived value is formed based on the market characteristic. Indirectly, the transaction that happens will form perceived value, thus create customer satisfaction

based on market user behavior (47). A study conducted by (49)showed that perceived value relates to customer satisfaction. Perceived value can be used to assess the consumer's product or service to produce satisfaction with the goods or services used.

Based on these arguments, the study proposes the following hypothesis:

H1: Perceived value positively influence customer satisfaction

Perceived value, buyer satisfaction, and level of value orientation

Perceived value is the foundation of most businesses. Customer value creation must be the reason for suppliers' existence and certainly a key condition for its current and future success (Slater, 1997) in (50). Perceived value is seen from the dimensions of utilitarian value, selfgratification, epistemic, social interaction, transactional, time, and convenience (51). In this research, perceived value is measured through customers' benefits after transacting on the e-marketplace and the sacrifices needed to obtain value from products or services on the emarketplace B2B.

Every activity is based on values as a reference in decisionmaking. In the context of B2B, value orientation is defined as the main vision, and value-oriented measures are an integral part of performance measurement (52). (53) proposed five dimensions of value, including functional, social, emotional, epistemic, and conditional values. Three-dimensional conceptualization combines intrinsic or extrinsic, self-oriented / other-oriented, active or passive customer value (CV) dimensions, and emotional, social, and functional value dimensions such as price or value for money (53).

The value orientation level between the seller and the customer will differ, and even the value proposed by the seller may not be what the buyer wants. Consequently, these divergent views in the B2B context can be very detrimental for marketers (54). The level of value orientation links to buyer characteristics, and buyer characteristics link to buyer behaviors (55). This connection explains how buyer behavior and characteristic may influence the value of a product and service based on personal self-reference. This characteristic will display the power to control the business based on the level of value orientation. Value orientation based on the grand theory of (56) on value elaborates that each individual must answer a small number of universal problems with limited value solutions. However, cultural preferences are of a different kind. There are 10 different types of values in simple terms and grouped into four groups: self-improvement, selftranscendence, openness to change, and traditional values (57). One of the forms of perceived value able to create customer satisfaction moderated by the value of orientation is the perception of a value in the form of goods or services that can be used and felt by consumers, thus triggering a sense of satisfaction. Values can influence an individual's feelings towards an object because the value is its own experience, strength, and motivation (58).

Based on this discussion, the following hypothesis is proposed:

H2: Perceived value influence customer satisfaction moderated by level of value orientation

Technology adoption and buyer satisfaction

According to (59), most empirical studies on technology adoption originated from DOI theory and TOE framework. As the TOE framework covers an environmental context (not included in the DOI theory), it becomes easier to explain intra-firm innovation adoption. The TOE framework also has a solid theoretical basis, consistent empirical support, and potential information systems adoption applications. According to (60), B2B technology adoption is a process of Attributes of Innovation Model (AIM), which has five dimensions that are relative advantage, compatibility, complexity, trialability, and observability. Furthermore, Fayad & Paper (2015) proposed that the theoretical framework for studying technology adoption behavior in a company refers to the Theory of Reasoned Action (TRA) through the Technology Acceptance Model (TAM). In this research, customer satisfaction is a perception perceived by customers after conducting a transaction and using a specific product or service on e-marketplace B2B. The indicators used in this research are satisfaction with services, satisfaction with available information, ease of purchasing products/services from selected vendors, and satisfaction with buying online compared to offline.

Referring to a prior study conducted by (61), it is noted that technology adoption will increase transaction and establish relationships between seller-suppliers so that the impact of technology adoption has a positive value. This statement is reinforced by the research results conducted by (62), which shows that technology will be beneficial for transactions, positively impacting service, thus creating a good image for customer satisfaction. (63)proposed that technology could also provide satisfaction when users feel happy and fun or enjoyable.

Based on this argument, the following hypothesis is formulated:

H3: Technology adoption has a positive effect on customer satisfaction

Technology adoption, buyer satisfaction, and level of value orientation

The belief to adopt technology consists of two elements: perceived usefulness (PU), which implies the extent to which individuals believe in the use of information systems will improve their performance, and perceived ease of use (PEOU), which signifies the level of individual confidence about the use of information systems. According to(64), adopting e-commerce technology will change consumer and supplier behavior. B2B has fewer partners resulting in closer buyer-seller relationships, better technology, and better information exchange than B2C. (65) stated that to survive the new business era, businesses should be encouraged to adopt e-commerce technology. Businesses that do not adopt these philosophies and practices will be abandoned by those who adopted e-commerce first. The level of e-commerce adoption can be seen from the scope of e-commerce use, which refers to the "level of e-commerce use for several different activities in the value chain, from advertising and marketing to sales, procurement, service and support, data exchange with customers and suppliers, and business process integration (66). This interaction on B2B platform is commonly used to establish a stronger connection to influence customer behavior through a comprehensive communication strategy (67). In this research, technology adoption benefits from utilizing e-commerce in conducting business processes, which includes network reliability, costs to adopt technology, readiness to adopt technology, company size, and external pressure on the B2B e-marketplace. Whereas the indicators used are benefits gained from e-commerce adoption, company and technology policy compatibility, costs to adopt ecommerce technology, business competition, and external support such as government in adopting e-commerce.

According to (68), in the B2B or B2C scope, buyer characteristics can moderate trust, loyalty, even establish a connection. Only a few studies focus on buyers' specific characteristics in the business field, even though individual business customers generally make up a larger share of the provider's income than individual consumers. Two of the said B2B customer characteristics are internal customer's external organization and husiness environment. Consumers' characteristics can also be seen from the attitudinal factors that influence the intention, bidding, and excessive buying (69). In this research, the orientation level is the degree of benefit value orientation perceived by the customer through quality orientation and price orientation on e-marketplace B2B.

(63) argued that the element of value also drive the nature of the technology that can affect satisfaction. The meaning of the value in question is consumer-oriented; how are their perceptions and attitudes towards the device's capabilities that they feel can provide convenience and provide the desired result (activities and objectives). The level of user value orientation obtained from engagement must increase satisfaction. The initial and subsequent relationships that occur during the activity can increase the engagement attitude of their value. Engagement is driven by the potential to offer a value-added and satisfying activity reaches its final desired state (utilitarian, hedonic, social), the user must be satisfied.

Based on this argument, the following hypothesis is proposed:

H4: Technology adoption affects customer satisfaction moderated by the level of value orientation

Buyer satisfaction and buyer engagement

According to (53), buyer engagement is an innovative marketing concept, which originated from social sciences, psychology, sociology, including politics, and organizational behavior. Besides, (70) also stated that managers see buyer engagement as changing short-term customer relationships to long-term relationships. The process of engagement involves various attributes such as attention, novelty, interest, control, feedback, and challenge (71). (72)stated that the approach of relationship marketing is based on the idea that two (or several) parties form a business engagement that allows both parties (or all parties) to get something. While (73) argues that buyer engagement is a behavior that is more than just buying behavior. In this research, buyer engagement is a non-transactional behavior of several parties involved in the transaction process, such as attention, interest, awareness, feedback, and participation. According to (70), satisfaction is a condition necessary for buyer engagement. However, it is not enough for buyer engagement. Satisfaction with interactions during the buying process can precede or follow a purchase, and dissatisfaction at any stage can disrupt the process and result in customers leaving. However, customer satisfaction also allows buyers to avoid long-term returns and breakups. A high level of satisfaction is achieved when customer expectations are exceeded, and positive emotions are satisfaction and pleasure. Based on this discussion, the following hypothesis is proposed:

H5: Customer satisfaction has a positive influence on buyer engagement

METHODS

Survey development

To obtain the research objectives, hence descriptive and verificative approaches are utilized. The purpose of the descriptive approach is to obtain a description or characteristics of each variable under study (74), which are the conditions of perceived value, technology adoption, level of value orientation, customer satisfaction, and buyer engagement. The purpose of the verificative approach is to discover the correlation or connection of each variable in this research and verify the linkages inbetween variables through a set of hypothetical tests conducted in the field (75). The two approaches are interrelated and used to answer the research hypothesis. The research method is conducted using a descriptive and explanatory survey, with the analysis unit being emarketplace B2B companies that provide service (33). Observation units are individuals responsible for decision making within the company, which also influence or carry out the transaction through e-marketplace B2B. The data collection method used in this study, using one shoot-cross sectional method, which is the collection of data in a certain time and without repetition. Sample

The sampling technique uses proportional random sampling, which means that the sample is taken randomly according to the proportions (74). The number of samples taken by each B2B buyer varies depending on the size of the company. According to (76), suitable sample sizes ranged from 100-200 respondents. However, the larger the population, the greater the number of samples taken, while the population in this study is estimated to reach 100.000 buyers. According to (77) in the Nomogtam table Herry King, if the population is 100.000, the number of samples is 245.

Data collection

The data used for this research are primary data taken by interviewing, observing, and distributing questionnaires in the form of google form to company leaders who are buyers of e-marketplace B2B in Indonesia. The data source comes from buyers who have transacted e-marketplace B2B in Indonesia. Buyers from e-marketplace B2B in Indonesia are chosen by companies that are quite large rather than start-up companies, such as Ralali.com, Bizzi. co.id, Indotrading, Bhinneka.com. Ralali itself has 90.000 registered buyers. Then it can be predicted that the population will exceed 100.000 buyers.

RESULT

Profile of the respondents

The questionnaire is distributed in google form to respondents who have involvement as buyers in the e-marketplace B2B. Of the total 245 research respondents, 111 respondents or 45.31% were respondents from service companies, 77 respondents or 31.43% of respondents came from trading companies, 13 respondents or 5.31% came from manufacturing companies, and the rest, 44 respondents or 17.96%, were respondents from other institutions such as banking, government, IT companies, education, property, health services, and others. In detail, the profiles of respondents are presented in table 1.

Table 1: Profile of respondents (n = 245)							
Variable	Description	Frequency	Percentage (%)				
Position	Owner/CEO/C- Level/Director	115	46.94				
	General Manager/Senior Manager	56	22.86				
	Manager/Supervisor	36	14.69				
	Staff with a total of	26	10.61				
	Lecturer, Docter, and others	12	4.9				
Work experience	6-10 years	82	33.47				
	1-5 years	67	27.35				
	11 – 15 years	57	23.26				
	>20 years	21	8.57				
	16 – 20 years	13	5.31				
	< 1 years	5	2.04				
Staff/Employee	> 100 people	83	33.88				
Total	5 – 19 people	63	25.71				
	< 4 people	50	20.41				
	20 - 99 people	49	20				

Source: Primary data, 2020

The research model is built based on the extraction of several studies that have been carried out so that the research model's basis in this study is theoretical. To test the model and get results that meet the research objectives, an analytical method that accommodates multivariate testing is needed. This data collection will be used to test the hypotheses built on the research model in this study. The variables in the research model in this study have a stratified relationship. The SEM (Structural Equation Model) statistical method will be used to perform hypothesis testing.

The analysis will be carried out for the research using the Structural Equation Modeling (SEM) method using Partial Least Square (PLS). The reason for choosing Partial Least Square is because this study wants to see the fundamental relationship and causality based on the influence of the related variables. (78) argued that PLS is suitable for obtaining a causality relationship and is a good alternative because it does not require assumptions.

Measurement model results

The Outer Model analysis is specifically to analyze the relationship between latent variables and their indicators. Analysis of the structural equation model's outer model can be done by assessing the measurement model results, namely through confirmatory factor analysis (CFA). Confirmatory factor analysis serves to describe the relationship between the observed variable and its latent variable. In this case, CFA shows the measured variable's contribution to the latent variable, which is expressed by the loading factor. Conceptually, a construct can be formed unidimensional and multidimensional. Suppose the construct is unidimensional to test the validity and reliability of the construct. In that case, it can be done with

first-order confirmatory factor analysis. If the construct is multidimensional, it can be done using second-order confirmatory factor analysis to test the construct's validity and reliability. The second-order confirmatory factor analysis evaluation can be seen from several items, which include (79):

a. Convergent validity. The convergent value of validity is the loading factor's value on the latent variable with its indicators. Expected value > 0.50.

b. Composite reliability. Data that has composite reliability > 0.60. has high reliability.

c. Average Variance Extracted (AVE). Expected AVE value > 0.50.

d. Cronbach alpha. Cronbach's alpha strengthened the reliability test. Expected value > 0.6 for all constructs.

e. Coefficient of Determination (R^2) . The R-square results are 0.67, 0.33, and 0.19 for the endogenous latent constructs in the structural model, respectively, indicating that the model is "good," "moderate," and "weak" (80).

f. F-square effect size

g. Bootstrapping estimation is used to determine the significance value of loading factors for both first and second orders.

Second-order exogenous constructive confirmatory analysis Second-order confirmatory factor analysis perceived value construct.

The latent variable tested in this analysis is the variable perceived value of B2B EMS (PV), which is built by measurable variables, namely the benefits of transacting in the e-marketplace (MAN) and the sacrifices that must be made to get the value of the product or service (PENG). *Convergent validity*



Figure 1: The result of loading factor Perceived value for the first order and second order is above 0.50

Test of construct reliability

Table 2: First-order and second-order construct reliability values

		5	
First and Second-Order Construct	Alpha Cronbach	Composite Reliability	Explanation
MAN	0.774	0.849	Reliable
PENG	0.693	0.866	Reliable
PERVAL	0.766	0.834	Reliable

Based on Table 2, it can be concluded that each of the second-order and first-order constructs has a Cronbach alpha value, and composite reliability is quite high above 0.60. The coefficient of determination (R^2)

Table 3: The coefficient of determination in the first-order constru-	ct
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First Order Construct	R ²	R ² Adjusted	Information
MAN	0.868	0.868	Good
PENG	0.426	0.423	Moderate

Table 3 shows that the results of testing the benefits model from transacting on the e-marketplace. From the R-square value, it is found that the indicator variables M1, M2, M3, M4, and M5 can reflect the diversity of the benefit constructs of transacting on the e-marketplace (MAN) of 86.8%, and the remaining 13.2% are explained by other factors not examined by the authors.

F-square effect size and bootstrapping estimation **Table 4: Outer Loadings**

	Original Sample	Sample Mean	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
MAN1 <- PERVAL	0.763	0.767	0.031	24.405	0.000
MAN1 <- MAN	0.812	0.812	0.027	30.137	0.000
MAN2 <- PERVAL	0.753	0.755	0.037	20.555	0.000
MAN2 <- MAN	0.809	0.807	0.030	26.921	0.000
MAN3 <- PERVAL	0.691	0.692	0.044	15.786	0.000
MAN3 <- MAN	0.775	0.774	0.036	21.711	0.000
MAN4 <- PERVAL	0.641	0.639	0.056	11.398	0.000
MAN4 <- MAN	0.685	0.679	0.056	12.136	0.000
MAN5 <- PERVAL	0.528	0.523	0.079	6.682	0.000
MAN5 <- MAN	0.534	0.530	0.077	6.916	0.000
PENG1 <- PERVAL	0.506	0.490	0.103	4.921	0.000
PENG1 <- PENG	0.845	0.836	0.060	13.979	0.000
PENG3 <- PERVAL	0.624	0.612	0.084	7.391	0.000
PENG3 <- PENG	0.901	0.904	0.017	52.875	0.000

Table 5:	Path	Coefficients	
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	Original Sample	Sample Mean	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
PERVAL -> MAN	0.932	0.936	0.011	84.272	0.000
PERVAL -> PENG	0.652	0.640	0.089	7.302	0.000

Table 4 shows that all loading factors, both second order and first-order, are significant at 0.05. This is indicated by the t-statistic above 1.96. Then in Table 5, it can be concluded that the second order PERVAL has an effect on the dimensions of the first order MAN and PENG with a tstatistic value above 1.96. So, it can be concluded that two dimensions form the construct of the perceived value of B2B-EMS. The effect size value of all the first-order constructs to the second-order construct has a strong relationship. The F-square value indicates this above 0.35 that is MAN-PERVAL, with an F square value of 6.601, and PENG-PERVAL, with an F-square value 0.741.

Second-order confirmatory factor analysis of technology adoption constructions

The latent variable tested in this analysis is the technology adoption variable (ADOPTEK), which is built by measurable variables, namely the benefits of e-commerce adoption (MADOP), Network reliability (JAR), the cost of adopting e-commerce technology (COST), readiness to adopt. Technology (KES), external pressure (EXT), and external support such as government for E-commerce adoption (DUK).

Convergent validity



Figure 2: The final factor loading of technology adoption for first and second orders is above 0.50 Test of construct reliability

First dan Second-Order Construct	Alpha Cronbach	Composite Reliability	Information
ADOPTEK	0.803	0.859	Reliable
BIAYA	1.000	1.000	Reliable
KES	0.660	0.800	Reliable
MADOP	0.764	0.849	Reliable

Table 6: First-order and second-order construct reliability values

Based on Table 6, it can be concluded that each of the second-order and first-order constructs has a Cronbach alpha value and relatively high composite reliability above 0.60. The coefficient of determination (R^2)

Table 7: The value of the coefficient of determination in the first-order construct

First Order Construct R ²		R ² Adjusted	Information
BIAYA	0.492	0.489	Moderate
KES	0.429	0.424	Moderate
MADOP	0.886	0.886	Good

Based on Table 7 shows the results of testing the cost model for adopting e-commerce technology. The R-square value shows that the BIAYA1 indicator variable can reflect the cost construct's diversity for adopting e-commerce

technology by 49.2%. The remaining 50.8% is explained by factors others that the authors did not research. F-square effect size and bootstrapping estimation

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
BIAYA1 <- ADOPTEK	0.701	0.700	0.043	16.303	0.000
BIAYA1 <- BIAYA	1.000	1.000	0.000		
KES1 <- ADOPTEK	0.678	0.677	0.079	8.550	0.000
KES1 <- KES	0.863	0.867	0.023	37.546	0.000
KES2 <- KES	0.648	0.643	0.100	6.458	0.000
KES3 <- KES	0.749	0.746	0.054	13.772	0.000
MADOP1 <- ADOPTEK	0.632	0.628	0.061	10.374	0.000

Table 8. Outer Loadings

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (0/STDEV)	P Values
MADOP1 <- MADOP	0.711	0.706	0.051	13.803	0.000
MADOP2 <- ADOPTEK	0.748	0.746	0.036	21.014	0.000
MADOP2 <- MADOP	0.783	0.784	0.028	28.125	0.000
MADOP3 <- ADOPTEK	0.741	0.739	0.043	17.239	0.000
MADOP3 <- MADOP	0.768	0.767	0.037	20.575	0.000
MADOP4 <- ADOPTEK	0.753	0.756	0.039	19.320	0.000
MADOP4 <- MADOP	0.796	0.798	0.031	25.410	0.000

Table 9: Path Coefficients

	Original Sample	Sample Mean	Standard Deviation (STDEV)	T Statistics (0/STDEV)	P Values
ADOPTEK -> BIAYA	0.701	0.700	0.043	16.303	0.000
ADOPTEK -> KES	0.653	0.656	0.079	8.239	0.000
ADOPTEK -> MADOP	0.941	0.942	0.012	81.319	0.000

Table 8 shows that all loading factors, both second-order and first-order, are significant at 0.05. This is indicated by the t-statistic above 1.96. In Table 9, it can be concluded that ADOPTEK's second-order affects the dimensions of the first order COST, KES, and MADOP with a t-statistic value above 1.96. So it can be concluded that three dimensions form the technology adoption construct. The effect size value of all the first-order constructs to the second-order construct has a strong relationship, and the F-square value indicates this above 0.35, namely COST- ADOPTEK with an F-square value of 0.967, KES-ADOPTEK with an F-square value of 0.743, and MADOP -ADOPTEK with an F-square value of 7.781.

Second-order confirmatory factor analysis of orientation level constructs (Moderating)

This latent variable is the moderating variable. This analysis is tested in the value orientation variable built by the measured variable, namely the quality orientation (QUAORI) and price orientation (PRIORI). *Convergent validity*



Figure 3: The value orientation level's loading factor for first and second orders is above 0.50. *Test of construct reliability*

Table 10: Reliability value of first-order and second-order constructs						
Alpha Cronbach	Composite Reliability	Information				
0.712	0.822	Reliable				
0.379	0.731	Not Reliable				
0.681	0.682	Reliable				
	Alpha Cronbach 0.712 0.379 0.681	Alpha CronbachComposite Reliability0.7120.8220.3790.7310.6810.682				

Based on Table 10, it can be concluded that each secondorder and first-order construct has a Cronbach alpha value, and composite reliability is quite high above 0.60, except for the PRIORI construct, whose value is still below 0.60, so that the PRIORI construct needs to be selected from the model.

The coefficient of determination (R^2)

Table 11: The coefficient of determination in the first-order construct

First Order Construct	R^2	R ² Adjusted	Information		
QUALORI	0.892	0.891	Good		

Based on Table 11 shows the results of testing the quality orientation model, it can be seen that the R-square value is obtained that the indicator variables NIL2, NIL3, and NIL4 can reflect the diversity of the quality orientation (QUAORI) construct of 89.2% and the remaining 10.8% is explained by other factors not researched by the author. *F*-square effect size and bootstrapping estimation

	Original Sample	Sample Mean	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
NIL2 <- NIL	0.762	0.760	0.037	20.634	0.000
NIL2 <- QUALORI	0.827	0.826	0.024	33.872	0.000
NIL3 <- NIL	0.701	0.699	0.042	16.660	0.000
NIL3 <- QUALORI	0.771	0.770	0.033	23.653	0.000
NIL4 <- NIL	0.749	0.745	0.042	17.845	0.000
NIL4 <- QUALORI	0.746	0.743	0.040	18.508	0.000

Table 13: Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (0/STDEV)	P Values
NIL -> QUALORI	0.717	0.717	0.033	21.884	0.000

Table 12 shows that all loading factors, both second-order and first-order, are significant at 0.05. This is indicated by the t-statistic above 1.96. Then in Table 13, it can be concluded that the second-order NIL has an effect on the QUALORI first order dimension with a t-statistic value above 1.96. So it can be concluded that the construct value orientation level is formed by one dimension. The effect size value of all the first-order constructs to the secondorder construct has a strong relationship. The F-square value indicates this above 0.35, namely QUALORI-NIL with an F-square value of 8.241. Second-order endogenous constructive confirmatory analysis

Confirmatory factor analysis second-order construct customer satisfaction.

The latent variable tested in this analysis is the customer satisfaction variable (PUASPEL), which is built by measured variables, namely product satisfaction (KEP), satisfaction with service (KEL), and ease of transaction (KEM).

Convergent validity



Figure 4: Second-order model and first-order customer satisfaction construct with repeated indicators model *Test of construct reliability*

Table 14: First-order and second-order construct reliability values					
First and Second-Order Construct	Alpha Cronbach	Composite Reliability	Information		
KEL	0.662	0.664	Reliable		
KEM	0.867	0.884	Reliable		
KEP	0.840	0.855	Reliable		
PUASPEL	0.871	0.875	Reliable		

Based on Table 14, it can be concluded that each of the second-order and first-order constructs has a Cronbach alpha value and relatively high composite reliability above 0.60. *The coefficient of determination* (R^2)

Table 15: The coefficient of determination in the first-order construct

First Order Construct	R ²	R ² Adjusted	Information
KEL	0.651	0.650	Good
KEM	0.579	0.577	Moderate
KEP	0.766	0.765	Good

Based on Table 15, which shows the results of testing the service satisfaction model, the R-square value obtained shows that the indicator variables KEL1, KEL2, KEL3, and KEL4 can reflect the diversity of the constructs of

satisfaction with services (KEL) of 65.1% and the remaining 34.9% are explained by other factors not examined by the authors. *F*-square effect size and bootstrapping estimation

Table 16: Outer Loadings Oriainal Sample Mean Standard Deviation T Statistics P Values Sample (M)(STDEV) (|O/STDEV|) KEL1 <- PUASPEL 0.720 0.045 0.000 0.718 15.843 KEL1 <- KEL 0.873 0.873 0.020 44.320 0.000 KEL2 <- PUASPEL 0.677 0.036 0.000 0.676 18.591 KEL2 <- KEL 0.856 0.855 0.021 40.617 0.000 KEM1 <- PUASPEL 0.724 0.721 0.036 20.303 0.000 KEM1 <- KEM 0.935 0.936 0.010 95.538 0.000 KEM2 <- PUASPEL 0.712 0.708 0.039 0.000 18.186 KEM2 <- KEM 0.949 0.950 0.008 119.122 0.000 0.000 KEM3 <- PUASPEL 0.589 0.588 0.057 10.317 KEM3 <- KEM 0.779 0.782 0.048 16.126 0.000 0.000 KEP1 <- PUASPEL 0.773 0.770 0.029 26.376 KEP1 <- KEP 0.880 0.880 0.020 43.491 0.000 KEP2 <- PUASPEL 0.769 0.766 0.031 24.647 0.000 KEP2 <- KEP 0.918 0.919 0.014 64.474 0.000 0.722 KEP3 <- PUASPEL 0.726 0.047 15.612 0.000 0.000 KEP3 <- KEP 0.866 0.865 0.029 29.442 KEP4 <- PUASPEL 0.621 0.627 0.096 6.468 0.000 KEP4 <- KEP 0.622 0.092 6.775 0.000 0.624

Table 17: Path Coefficients

	Original Sample	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
PUASPEL -> KEL	0.807	0.808	0.027	30.292	0.000
PUASPEL -> KEM	0.761	0.756	0.035	21.590	0.000
PUASPEL -> KEP	0.875	0.874	0.020	43.523	0.000

Table 16 shows that all loading factors, both second-order and first-order, are significant at 0.05. This is indicated by the t-statistic above 1.96. Then in Table 17, it can be concluded that the PUASPEL second order has an effect on the dimensions of the first order KEL, KEM, and KEP with a t-statistic value above 1.96. So it can be concluded that three dimensions form the customer satisfaction construct. The effect size value of all the first-order constructs to the second-order construct has a strong relationship. The F-square value indicates this above 0.35, namely KEL-PUASPEL with an F-square value of 1.868, KEM-PUASPEL with an F-square value of 1.373, and KEP-PUASPEL with an F-square value of 3.272. *Second-order confirmatory factor analysis of buyer engagement constructs* The latent variable tested in this analysis is the buyer engagement variable (BUYENG), which is built by measurable variables, namely awareness (AWAR), interest (INT), attention (ATTN), feedback (FEED), and participation (PART). *Convergent validity*



Figure 5: Loading factor Perceived value for the first order and second order after several indicators are selected

Test of construct reliability

Table 18: Reliability Value of first-order and second-order constructs

	5		
First and Second Order	Alpha Cronbach	Composite Reliability	Information
ATTN	0.810	0.821	Reliable
AWAR	0.654	0.652	Reliable
BUYENG	0.887	0.889	Reliable
FEED	0.877	0.883	Reliable
INT	0.686	0.697	Reliable
PART	0.806	0.809	Reliable

Based on Table 18, it can be concluded that each of the second-order and first-order constructs has a Cronbach alpha value and relatively high composite reliability above 0.60.

The coefficient of determination (R^2)

Table 19: The coefficient of determination in the first-order construct

14510 171 1110 0001							
First Order Construct	R ²	R ² Adjusted	Information				
ATTN	0.714	0.713	Good				
AWAR	0.390	0.388	Moderate				
FEED	0.514	0.512	Moderate				
INT	0.508	0.506	Moderate				
PART	0.500	0.498	Moderate				

Based Table 19 shows the results of the attention model test. The R-square value shows that the indicator variables ATTN1, ATTN2, ATTN3, ATTN4, ATTN5, and ATTN6 can reflect the variance of the attention construct (ATTN) by

71.4%, and the remaining 28.6% are explained by other factors not examined by the authors. *F*-square effect size and bootstrapping estimation

	Table 20: Outer Loadings						
	Original Sample	Sample Mean	Standard Deviation (STDEV)	T Statistics (0/STDEV)	P Value		
ATTN1 <- ATTN	0.596	0.590	0.069	8.601	0.000		
ATTN2 <- BUYENG	0.665	0.662	0.047	14.208	0.000		
ATTN2 <- ATTN	0.796	0.793	0.030	26.912	0.000		
ATTN3 <- BUYENG	0.691	0.689	0.043	15.969	0.000		

	Original Sample	Sample Mean	Standard Deviation (STDEV)	T Statistics (0/STDEV)	P Values
ATTN3 <- ATTN	0.748	0.746	0.039	19.338	0.000
ATTN4 <- BUYENG	0.593	0.592	0.056	10.605	0.000
ATTN4 <- ATTN	0.731	0.733	0.051	14.417	0.000
ATTN5 <- BUYENG	0.582	0.582	0.058	10.078	0.000
ATTN5 <- ATTN	0.700	0.701	0.053	13.297	0.000
ATTN6 <- BUYENG	0.633	0.630	0.050	12.558	0.000
ATTN6 <- ATTN	0.720	0.719	0.038	18.976	0.000
AWAR1 <- BUYENG	0.501	0.502	0.083	6.060	0.000
AWAR1 <- AWAR	0.807	0.807	0.043	18.991	0.000
AWAR2 <- AWAR	0.784	0.783	0.046	17.039	0.000
AWAR3 <- BUYENG	0.512	0.505	0.083	6.200	0.000
AWAR3 <- AWAR	0.712	0.706	0.073	9.718	0.000
FEED1 <- BUYENG	0.559	0.557	0.063	8.903	0.000
FEED1 <- FEED	0.838	0.837	0.024	34.971	0.000
FEED2 <- BUYENG	0.535	0.533	0.070	7.628	0.000
FEED2 <- FEED	0.849	0.847	0.025	33.649	0.000
FEED3 <- BUYENG	0.657	0.659	0.056	11.726	0.000
FEED3 <- FEED	0.887	0.887	0.017	53.607	0.000
FEED4 <- BUYENG	0.675	0.675	0.050	13.428	0.000
FEED4 <- FEED	0.840	0.841	0.022	38.740	0.000
INT1 <- BUYENG	0.539	0.537	0.063	8.567	0.000
INT1 <- INT	0.673	0.677	0.053	12.660	0.000
INT2 <- BUYENG	0.506	0.500	0.092	5.515	0.000
INT2 <- INT	0.812	0.803	0.047	17.406	0.000
INT3 <- BUYENG	0.623	0.621	0.075	8.329	0.000
INT3 <- INT	0.864	0.860	0.024	36.066	0.000
PART1 <- BUYENG	0.607	0.606	0.054	11.168	0.000
PART1 <- PART	0.841	0.840	0.020	43.132	0.000
PART2 <- BUYENG	0.517	0.514	0.075	6.888	0.000
PART2 <- PART	0.783	0.779	0.052	15.059	0.000
PART3 <- BUYENG	0.552	0.547	0.065	8.503	0.000
PART3 <- PART	0.815	0.812	0.033	24.956	0.000
PART4 <- BUYENG	0.568	0.571	0.057	10.027	0.000
PART4 <- PART	0.740	0.742	0.040	18.684	0.000

Table 21: Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (0/STDEV)	P Values	
BUYENG -> ATTN	0.845	0.845	0.027	30.997	0.000	
BUYENG -> AWAR	0.625	0.626	0.062	10.106	0.000	
BUYENG -> FEED	0.717	0.718	0.056	12.860	0.000	
BUYENG -> INT	0.713	0.714	0.059	12.053	0.000	
BUYENG -> PART	0.707	0.709	0.052	13.529	0.000	

Table 20 shows that all loading factors, both second-order and first-order, are significant at 0.05. This is indicated by

the t-statistic above 1.96. Then in Table 21, it can be concluded that $\ensuremath{\mathsf{BUYENG's}}$ second order has an effect on

the dimensions of the first order, ATTN, AWAR, FEED, and INT, with a t-statistic value above 1.96. So it can be concluded that four dimensions form the BUYENG engagement construct. The effect size value of all the firstorder constructs to the second-order construct is strong. The F-square value indicates this above 0.35, namely ATTN-BUYENG with an F-square value of 2.500, AWAR-BUYENG with an F-square value of 0.640, FEED- BUYENG with an F-square value of 1.059, INT-BUYENG with an Fsquare value of 1.033, and PART-BUYENG with an Fsquare value of 1.001. *Assessment of structure model*



Figure 6: Results for the proposed model (Full model loading factor)

Convergent validity

Based on Figure 6 above, almost all second-order and firstorder indicators can be seen from the loading factor value, which is greater than 0.50. However, for the second-order, five indicator variables have a loading factor value of less than 0.50, so that it can be said that they are not good at describing the latent variables, namely the PENG1, ATTN1, INT2, AWAR1, and AWAR3 indicators with each loading factor value of 0.479, 0.491, 0.497, 0.494 and 0.494. Whereas for the first order, all indicator variables already have a loading factor above 0.50. Then run again after the indicator variable, which has a loading factor whose value is below 0.50, is selected from the model. After running, the loading factor values for the first and second orders have met the convergent validity; namely, all indicator variables' value is above 0.50.

Test construct reliability

Testing construct reliability uses Alpha Cronbach and Composite Reliability, which produces the following reliability values:

First and Second-Order Construct	Alpha Cronbach	Composite Reliability	Information
ADOPTEK	0.803	0.859	Reliable
ATTN	0.810	0.864	Reliable
AWAR	0.654	0.812	Reliable
BIAYA	1.000	1.000	Reliable
BUYENG	0.889	0.906	Reliable
FEED	0.877	0.915	Reliable
INT	0.686	0.829	Reliable
KEL	0.662	0.855	Reliable
KEM	0.867	0.920	Reliable
KEP	0.840	0.897	Reliable
KES	0.660	0.800	Reliable
MADOP	0.764	0.849	Reliable
MAN	0.774	0.849	Reliable
Moderating Effect 1	1.000	1.000	Reliable
Moderating Effect 2	1.000	1.000	Reliable
NIL	0.712	0.822	Reliable
PART	0.806	0.873	Reliable
PENG	0.693	0.866	Reliable

Table 22: First-order and second-order construct reliability values

PERVAL	0.766	0.834	Reliable
PUASPEL	0.871	0.897	Reliable
QUALORI	0.681	0.825	Reliable

Based on Table 22, it can be concluded that each of the second-order and first-order constructs has a Cronbach alpha value and relatively high composite reliability above 0.60. This shows that the outer model in the study has good internal stability and consistency.

The coefficient of determination (R^2)

Table 23: The coefficient of determination of endogenous latent variables

First Order Construct	R^2	R ² Adjusted	Information
BUYENG	0.427	0.424	Moderate
PUASPEL	0.586	0.594	Moderate

Based on Table 23, buyer engagement is positively influenced by customer satisfaction. The R-square for buyer engagement is 0.427, which means that the contribution of customer satisfaction to buyer engagement is 42.7%, and other factors influence the remaining 57.3%. Furthermore, customer satisfaction is positively influenced by perceived value and technology adoption. R-square on customer satisfaction is 0.586,

which means that perceived value and technology adoption on customer satisfaction is 58.6%, and other factors influence the remaining 41.4%. Structural model (inner model)

Inner model evaluation can be done in three ways. The three ways are by looking at R^2 , Q^2 , and GoF.

Table 24: The value of K^- in the latent construct variable			
	Average Variance Extracted (AVE)	R^2	
ADOPTEK	0.505		
BUYENG	0.338	0.427	
PERVAL	0.424		
PUASPEL	0.495	0.586	
Average	0.4615	0.5105	

CD2

The R-square results are 0.67, 0.33, and 0.19 for the endogenous latent constructs in the structural model, respectively, indicating that the model is "good," "moderate," and "weak" (Ghozali, 2008). This theory and the R-square value of the latent constructs show that this study's model category belongs to the moderate model. Then to test the inner model can be done by looking at the value of Q^2 (predictive relevance). To calculate Q^2 , the formula:

$$\begin{array}{l} Q^2 = 1 - \left[(1 - R_1^2)(1 - R_2^2) \right] \\ Q^2 = 1 - \left[(1 - 0.586)(1 - 0.427) \right] \\ Q^2 = 1 - \left[0.24 \right] \\ Q^2 = 0.76 \end{array}$$

Furthermore, the last one is to find the Goodness of Fit (GoF) value. In contrast to CBSEM, the GoF value in PLS-SEM must be searched manually.

$$GoF = \sqrt{\overline{AVE} \times \overline{R^2}}$$

$GoF = \sqrt{0.4615 \times 0.5105}$ GoF = 0.485

According to Tenenhau (2004), small GoF = 0.1, medium GoF = 0.25 and large GoF = 0.38. From the R^2 , Q^2 , and GoF tests, it can be seen that the model formed is robust. So that hypothesis testing can be done.

Hypothesis testing

The Bootstrapping method on SmartPLS is used to obtain standard errors, path coefficients, and t-statistical values . With this method, researchers can assess the research model's statistical significance by testing the hypothesis for each relationship path so that the six proposed hypotheses can be tested. Other measurements are needed to determine each variable's significance, namely the value of t statistics and the value of p-value. From these two values, it can be seen that the significance of each variable concerning other variables.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
ADOPTEK -> PUASPEL	0.503	0.491	0.077	6.498	0.000
Moderating Effect 1 -> PUASPEL	0.033	0.026	0.085	0.381	0.703
Moderating Effect 2 -> PUASPEL	0.007	0.002	0.082	0.086	0.931
PERVAL -> PUASPEL	0.256	0.257	0.067	3.820	0.000
PUASPEL -> BUYENG	0.653	0.650	0.057	11.363	0.000

Table 25. The coefficient value of the inner model test nath

Hypothesis 1: Perceived value has a positive influence on customer satisfaction

Based on the data processing results, the total effect value of the relationship between the perceived value of B2B EMS and the customer satisfaction variable is 0.256, while the t-statistic value is 3.820, and the p-value is <0.001.

Based on these processed results, it can be seen that the variable Perceived value of B2B EMS does have a positive influence on the customer satisfaction variable as seen from the total effect value, which shows the number 0.256. This effect's significance is high, as seen from the t-statistic value of 3.820 and the p-value <0.001. So, it can be concluded that the variable Perceived value of B2B EMS has a positive effect on customer satisfaction, and this influence is significant. Since there is sufficient evidence to reject the null hypothesis, hypothesis 1 is **accepted**.

Hypothesis 2: Perceived value influences customer satisfaction moderated by the value orientation level variable

Based on the data processing results, the total effect value of the relationship between the Perceived value of B2B EMS variable to the customer satisfaction variable as moderated by the value orientation level variable is 0.033 while the t-statistic value is 0.381 and the p-value is <0.703. Based on the processed results, it can be seen that the variable perceived value of B2B EMS does not affect the customer satisfaction variable, which is moderated by the value orientation level variable, seen from the total effect value, which shows the number 0.033. This effect's insignificance can be seen from the t-statistic value of 0.381 and the p value> 0.703. So, it can be concluded that the variable Perceived value of B2B EMS does not influence customer satisfaction, moderated by the level of value orientation variable, and has no significant effect. Because it is proven to accept the null hypothesis, then hypothesis 2 is rejected.

Hypothesis 3: Technology adoption has a positive effect on customer satisfaction

Based on the data processing results, the total effect value of the relationship between the technology adoption variable and the customer satisfaction variable was 0.503, while the t-statistic value was 6.498, and the p-value was <0.001. Based on the processed results, it can be seen that the technology adoption variable does have a positive influence on the customer satisfaction variable, as seen from the total effect value, which shows the number 0.503. This effect's significance is high, as seen from the t-statistic value of 6.498 and the p-value <0.001. So, it can be concluded that the technology adoption variable has a positive effect on customer satisfaction, and this influence is significant. Since there is sufficient evidence to reject the null hypothesis, hypothesis 3 is **accepted**.

Hypothesis 4: Technology adoption has a positive influence on customer satisfaction moderated by the value orientation level variable

Based on the data processing results, the total effect value of the relationship between the technology adoption variable and the satisfaction variable moderated by the value orientation level variable was 0.07 while the tstatistic value was 0.086 and the p-value was <0.931. Based on the processed results, it can be seen that the technology adoption variable does not influence the customer satisfaction variable moderated by the value orientation level variable as seen from the total effect value, which shows the number 0.07. This effect's insignificance can be seen from the t-statistic value of 0.086 and the p-value > 0.931. So, it can be concluded that the technology adoption variable has no influence on customer satisfaction moderated by the value orientation level variable, and there is no significant effect. Because it is proven to accept the null hypothesis, then hypothesis 4 is rejected.

Hypothesis 5: Customer satisfaction has a positive influence on buyer engagement

Based on the data processing results, the total effect value of the relationship between the customer satisfaction variable and the buyer engagement variable of B2B EMS is 0.653, while the t-statistic value is 11.363, and the p-value is <0.001. Based on the processed results, it can be seen that the customer satisfaction variable does have a positive influence on the buyer engagement variable of B2B EMS as seen from the total effect value, which shows the number 0.653. This effect's significance is high, as seen from the t-statistic value of 11.363 and the p-value <0.001. So, it can be concluded that the customer satisfaction variable has a positive influence on buyer engagement of B2B EMS, and this influence is significant. Since there is sufficient evidence to reject the null hypothesis, hypothesis 5 is **accepted**.

DISCUSSION

This research is a proposed new model as an answer to the problem of low buyer engagement and the unfamiliarity of B2B entrepreneurs in Indonesia. The findings show an increase in perceived value, and technology adoption can increase customer satisfaction by increasing buyer engagement by excluding the value orientation level variable. This finding complements the findings of previous research and, at the same time, can be implemented by B2B entrepreneurs in Indonesia. The resulting model is a proposed solution to increase buyer engagement through customer satisfaction by increasing perceived value and technology adoption. It is hoped that platforms and sellers can make better use of this study's findings to increase buyer engagement. However, the results will differ depending on the supply chain.

Through the results of statistical tests, 3 hypotheses are accepted, and 2 are rejected. The accepted hypothesis is that perceived value has a positive effect on customer satisfaction (Hypothesis 1), technology adoption has a positive effect on customer satisfaction (Hypothesis 3), and customer satisfaction has a positive effect on buyer engagement (Hypothesis 5), while hypotheses 2 and 4 are oriented value cannot moderate perceived value and technology adoption on customer satisfaction.

The results showed that perceived value positively and significantly affects customer satisfaction in B2B Ecommerce in Indonesia based on the hypothesis testing conducted. This means that the higher the perceived value, the better customer satisfaction will be. This influence is mainly influenced by one dominant indicator, namely the benefits of the transaction. Meanwhile, another indicator, namely the sacrifice made to get the product's value, is not dominant but significant. It can be concluded that if the perceived value is greater, customer satisfaction will increase, which affects increasing buyer engagement. B2B business actors who want to increase buyer engagement must increase perceived value through market research or other organizations that review the products or services offered.

The first hypothesis is accepted because it shows the total effect value, which shows the number 0.256. This effect's significance is high, as seen from the t-statistic value of 3.820 and the p-value <0.001. While the contribution of each perceived value indicator is presented in the following table:

	Table 26: Outer Loadings Value with the Variable of Perceived Value		
	Indicator	Score	
	Benefit from conducting a transaction in the e-marketplace	0.980	
	The sacrifice needed to obtain the value of a product or service	0.508	
т			

Source: Data analysis, 2020

From the outer loadings, it can be seen that the most influential indicators with a value above 0.70 are the benefits of transacting on the e-marketplace.

As for the second hypothesis, the results also show that the level of value orientation does not affect the relationship between perceived value and customer satisfaction in B2B e-marketplaces in Indonesia. This is because the price orientation dimension does not form the value orientation level variable's building indicators. Meanwhile, other indicators are significant but not dominant product orientation. Furthermore, the perceived value variable and customer satisfaction cannot be strengthened by this study's value orientation level variable. This is evidenced by the results of the calculation of the p-value is <0.703. This result proves that for business actors in B2B ecommerce, the value orientation level variable is not formed by the price orientation dimension. Hence, the perceived value variable and customer satisfaction cannot be strengthened by this study's value orientation level variable. This indicator's mismatch needs to be corrected by adding other dimensions such as functional, social, emotional, epistemic, and conditional values (53). This finding may be due to a population of 188 respondents

(77%) of companies engaged in services and trade. According to (81), companies engaged in services do not prioritize the level of value orientation but on service quality.

The third hypothesis shows that technology adoption positively and significantly affects customer satisfaction in B2B e-commerce in Indonesia. This means that the higher the level of buyer's technology adoption, the higher the level of customer satisfaction. Based on the analysis results using PLS, the technology adoption variable generally shows that the first-order construct benefits from e-commerce adoption, the costs of adopting ecommerce technology, and the readiness to adopt technology can reflect a considerable amount in describing technology adoption. The second-order construct of technology adoption is reflected in 3 (three) first-order constructs, consisting of the benefits of ecommerce adoption with a loading factor value of 0.947, followed by the cost of adopting e-commerce technology (0.696) and readiness to adopt the technology (0.643). This finding is reinforced by the high factor loading value results on the benefits of e-commerce adoption, which are shown in Table 27.

Table 27: Outer Loading, Technology Adoption Variable

	0, 0, 1	
First Order Construct	Loading Factor	R^2
MADOP	0.947	0.897
BIAYA	0.696	0.484
KES	0.643	0.413

The indicators that form the first-order construct benefit from e-commerce adoption are above 0.5, and the coefficient of determination is 89.7%. According to (82), the benefits of technology adoption are that it can be a core benefit for B2B companies. Core benefits mean a benefit obtained after a company adopts technology. So it is impossible for B2B companies that do not adopt the latest technologies in carrying out their business processes. This discussion further strengthens why technology adoption benefits have the largest factor loading than other indicators in this study. So it can be concluded that the better the benefits of technology adoption used, the higher the customer satisfaction in e-commerce B2B in Indonesia. B2B business actors can better analyze technology's benefits before using the company's operational processes. This can be done by comparing a feature, operating system or comparing it with similar technologies.

The fourth hypothesis shows that the level of value orientation does not affect the relationship between technology adoption and customer satisfaction in B2B emarketplaces in Indonesia. This is because the indicators built on the level of value orientation are entirely insignificant, so that the results cannot be used to moderate technology adoption on customer satisfaction. The results of PLS processing for buyer engagement variables generally show that the first construct, namely awareness, interest, attention, feedback, and participation, can reflect considerable results in describing customer satisfaction. The buyer engagement construct is reflected in 5 (five) first-order constructs, consisting of awareness with a loading factor value of 0.520, followed by interest (0.650), attention (0.852), feedback (0.735), and participation (0.742). These results are summarized in the following table:

Table 28: Score of Loading Factor with the Variable of Customer Satisfaction

U				
First Order Construct	Loading factor	R^2		
AWAR	0.520	0.270		
INT	0.650	0.423		
ATTN	0.852	0.772		
FEED	0.735	0.540		
PART	0.742	0.551		

Analysis of the correlation between the dimensions of customer involvement and satisfaction revealed that a weak relationship existed between the dimensions of behavioral involvement and satisfaction (r = 0.229, p

<0.05), between emotional involvement and satisfaction (r = 0.241, p <0.05) and between cognitive engagement and satisfaction (r = 0.209, p <0.05).

Conversely, the study results indicate that customer satisfaction positively and significantly affects buyer engagement in e-commerce B2B in Indonesia. This means that the better customer satisfaction in the B2B emarketplace, the better the buyer engagement. This influence is mainly influenced by one dominant indicator, namely attention. Meanwhile, four other indicators, namely awareness, interest, feedback, and participation, are not dominant but significant. Although not dominant, these four indicators, when combined, play an important role in creating customer satisfaction. If the attention is getting bigger, customer satisfaction will increase, affecting increasing buyer engagement. B2B business actors who want to increase buyer engagement must increase perceived value by packaging more attractive service products to increase customer attention.

Based on the data processing results, the total effect value of the relationship between the customer satisfaction variable and the buyer engagement variable of B2B EMS is 0.653, while the t-statistic value is 11.363, and the p-value is <0.001. This finding was described by (63) stated that customer satisfaction is a key factor in building long-term relationships, increasing customer satisfaction.

According to (70), satisfaction is a necessary condition for buyer engagement. However, that is not enough for buyer engagement. Satisfaction with interactions during the buying process can precede or follow a purchase, and dissatisfaction at any stage can disrupt the process and result in customers leaving. However, customer satisfaction also allows buyers to avoid long-term returns and breakups. A high level of satisfaction is achieved when customer expectations are exceeded, and positive emotions are satisfaction and pleasure.

MANAGERIAL IMPLICATIONS

For the e-marketplace businesses, this research provides an alternative proposal for buyer engagement and the low level of consumers accessing B2B in Indonesia. This research shows a theoretical model that has been tested so that B2B entrepreneurs can implement it. The tested hypothesis model can provide recommendations in the formulation of policies in producing optimal planning for B2B business actors. B2B entrepreneurs need to pay close attention to buyers' involvement because it significantly affects the company.

To be used by B2B business actors, buyers, organizations, and the government, a simple framework for implementing the model, is necessary from the results of this research. This framework aims to provide steps that need to be taken by business actors to take advantage of the model produced by this study to increase the company's sales performance.

Personally, the leaders of B2B companies can start by deepening the most profitable value for consumers transacting in B2B. This is required as an initial step in planning policies around what technology to adopt and how to increase customer satisfaction to increase B2B E-commerce buyers' involvement. The majority of companies engaged in e-Commerce are led by generation Y and millennials, which has a different level of perceived value from previous generations.

Therefore, with this information, it can be seen that perceived value is following the needs of buyers from a generation who likes change and new things. These findings are followed by effective socialization for potential customers to know. The government plays a role as a supervisor of activities running well, and related organizations play a role in socializing B2B companies' latest features.

Adoption of technology is carried out appropriately by analyzing the right needs among the various available technologies. Technology adoption is very important because technology is an integral part of business processes. It is expected that the adoption of technology can increase customer satisfaction due to increased service quality and efficiency in business processes. The ultimate goal is to increase B2B e-commerces buyer engagement. If these steps are taken, it is almost certain that buyers transacting on B2B will increase their B2B companies' attachment.

CONCLUSION, LIMITATIONS AND FUTURE STUDIES

This study concluded that data analysis results showed that 3 hypotheses were accepted and 2 were rejected. The accepted hypothesis is that perceived value has a positive effect on customer satisfaction (Hypothesis 1), technology adoption has a positive effect on customer satisfaction (Hypothesis 3), and customer satisfaction has a positive buyer engagement (Hypothesis effect on 5). Simultaneously, hypotheses 2 and 4, the value orientation level cannot moderate the perceived value and technology adoption on customer satisfaction. The first hypothesis is accepted because it shows the total effect value, which shows the number 0.256. This effect's significance is high, as seen from the t-statistic value of 3.820 and the p-value <0.001. Conversely, the second hypothesis is rejected because it has a calculated p-value of <0.703. This result proves that for business actors in e-commerce B2B, the value orientation level variable is not formed by the price orientation dimension. Simultaneously, the third hypothesis can be accepted because it calculates the pvalue of <0.001. Meanwhile, the fourth hypothesis is rejected because it has a calculated p-value of <0.931. Its influence on customer satisfaction cannot strengthen the technology adoption variable using the value orientation level variable. The fifth hypothesis can be accepted because it has the total effect value of the relationship between the customer satisfaction variable. The buyer engagement variable of B2B EMS is 0.653, while the tstatistic value is 11.363, and the p-value is <0.001. This research has several limitations, including a general sample and not specific to one type of B2B business, so more research is required if an insight at one of the B2B business fields is needed. Besides, this study's results are still quantitative, which means that it needs to be studied in-depth to discover the causes of the low amount of B2B users in Indonesia. The reasons why Indonesians are still reluctant to conduct a transaction using B2B, for example, must be examined using in-depth interview techniques. Further research is expected to carry out several developments, including using a more specific sample in one type of business in B2B, for example, those based on start-ups. In the future, the study is expected to use mixed methods (quantitative and qualitative) to describe the appearance causes of this phenomenon truly. The hypothesis test results were deepened by conducting interviews with key informants (platforms, sellers, buyers) to determine the factors causing the phenomenon.

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