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The Factors Influencing Consumer Intention To Adopt Parcel Lockers in Last-Mile Logistics

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Abstract

This research aimed to analyze the influence of logistics value and consumer orientation, both utilitarian and hedonic, on the intention to adopt parcel locker services, with value co-creation as the mediating variable. This study was conducted in Jakarta through a quantitative approach with stratified random sampling technique based on five administrative cities, involving 299 respondents of e-commerce users. The collected data was analyzed using Partial Least Squares method of Structural Equation Modeling version 4.0. The result of research indicated that value co-creation played an important role in bridging the influence of logistics value on the adoption intention. This confirmed that the factors of experience and comfort were more decisive in encouraging consumer involvement compared merely to rationality. The finding of this research gave a significant practical implication. The development of parcel locker system should not only focus on operational efficiency, but also on the creation of positive experience encouraging consumer involvement. In addition, it was necessary to strengthen the strategic collaboration between logistics service providers and e-commerce platform to enhance the service effectiveness and consumer participation at once in the value creation process. However, there were several challenges in its implementation in Indonesia, such as the need for address standardization, limited infrastructures, public preference for home delivery, high labour cost as well as the regulations that did not yet support the optimization of this service. The novelty of this research was on the confirmation of value co-creation role as the main mediator that connected logistics value, consumer orientation, and adoption intention by integrating the perspective of Service-Dominant Logic in the context of last-mile delivery. This result enlarged the understanding of psychological factors and consumer experience in adopting logistics technology, and confirmed hedonic orientation as the key driver in creating shared value and enhancing adoption intention.

Keywords: *Consumer Orientation, Last Mile Delivery, Last Mile Logistics, Logistics Value, Value Co-Creation, Parcel Lockers*

1. INTRODUCTION

E-commerce is one form of modern trades that includes marketing process until cargo distribution through online network [1]–[3]. With the population reaching 274 million people, Indonesia becomes the biggest e-commerce market in Southeast Asia having value of USD 65 billion or around 76% of the total digital economy, and is projected to increase to USD 150 billion in 2030 [4]. The growth shows a big potential, but is still accompanied by serious challenges in the process of cargo delivery. The survey by [5] notes that 36% of consumers feel dissatisfied with the delivery service, with 90% of the complaints are related to delays and minimum information. In this context, logistics plays an important role as a part of supply chain that efficiently arranges the planning, execution, and control of cargo movement [6]. One of the crucial aspects is last-mile logistics, that is the final step of distribution directly related to consumers [7]. Last mile delivery (LMD) includes all activities of cargo delivery to customers [8], and many literatures have discussed it from both the perspectives of operational efficiency and the environmental impacts.

One of the innovations frequently offered to cope with the problem of LMD is *parcel locker* service. This facility allows consumers to pick up and send packages independently in a high flexibility, available 24 hours a day and seven days a week [9]. A previous study emphasizes the potential of parcel locker in increasing the distribution efficiency [10]. The obstacles that arise include low awareness, consumer preference for home delivery, limited infrastructures, and unstrategic location [11]. Furthermore, the most recent research highlights the factor of comfort as consumer's determining attitude toward parcel locker [12], while confirming its contribution to increasing the efficiency of LMD [13]. Other studies indicate that parcel locker provides a high flexibility because it allows consumers to pick up cargo any time not depending on the courier [14]–[16]. However, the low adoption level indicates a research gap related to the factors influencing consumer intention to use this service, especially in the context of Indonesia's unique market.

2. LITERATURE REVIEW AND HYPOTHESES

a. Parcel Locker

Parcel locker is an automatic locker that allows customers to pick up packages independently at strategic locations, such as shopping center or transportation station. This service can increase the efficiency of logistics, support the process of return logistics, and help reduce carbon emission by suppressing the number of direct deliveries to customer's house [17]. [13] emphasize that parcel locker is one of the important solutions for increasing the efficiency of Last-Mile Delivery. [18] explain that parcel locker functions as a storage compartment with a unit of digital control placed strategically in urban areas, although the implementation has started to extend to rural areas. In spite of various advantages, the adoption level of this service is still low. Several researches indicate that it is influenced by the low consumer awareness, preference for home delivery, and limited infrastructures [11], [19]. Therefore, the factors encouraging the intention to adopt this service need to be understood.

b. Logistics Value

In the perspective of Service-Dominant Logic (SDL), value is created through the utilization of resources resulted from the integration of various actors, where consumers act as the main integrator [20]. SDL emphasizes five basic elements, namely actor, service, resource, value, and institution. Consumer participation proves to increase the perceived value and becomes a key in the creation of competitive advantage [21]. Specifically, logistics value includes such aspects as delivery speed, comfort in receiving, and efficiency of returning. These three elements influence value perception which, in turn, gives impacts to customer satisfaction, loyalty, and e-commerce business performance [22].

c. Consumer Orientation

Consumers can have hedonic or utilitarian orientation in the decision making. Hedonic orientation refers to pleasure and emotional satisfaction obtained from consumption experiences, including affective, symbolic, aesthetic, and unique experience aspects [23]–[25]. Hedonic value is subjective and personal, and focuses on pleasant experiences rather than function fulfillment. Research shows that hedonic value gives a significant influence to the satisfaction of e-commerce consumers [26]. On the other hand, utilitarian orientation stresses more on functional benefit, efficiency, and rational consideration related to consumer sacrifices in using a product or service [27]. In the adoption of logistic technology, both orientations potentially act differently to build consumer intention.

d. Value Co-Creation

Value co-creation is considered as a new paradigm in the management literature, allowing companies and customers to create value through an interaction [23]. [28] state that value co-creation emphasizes on consumer involvement in providing services, providing a space of contribution in the service development and improvement. [29] add that this strategy allows the combination of consumer resources to result in a new innovative value. Research by [30] also emphasizes that intention is a key factor of service provider's success and sustainability, where value co-creation can strengthen the intention.

e. Research Model and Hypotheses

Based on the literature review, this research aims to examine the influence of logistics value and consumer orientation (utilitarian and hedonic) on the intention to adopt parcel locker service by considering the mediation role of value co-creation. The research model examines nine hypotheses, including six direct influences or effects and three indirect influences or effects. The conceptual model and research hypotheses are shown in Figure 1.

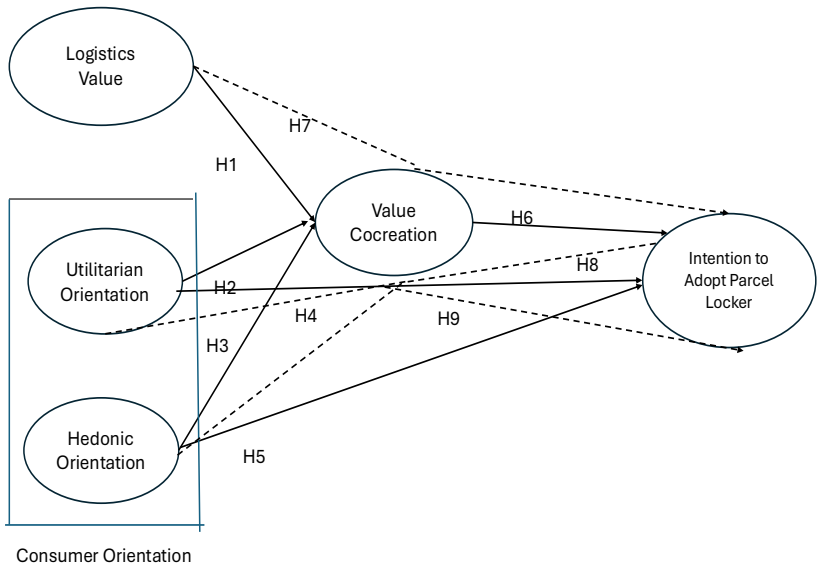

Figure. 1: Conceptual Model

H1. Logistics value influences positively value co-creation
H2. Utilitarian influences positively and significantly value co-creation
H3. Hedonic orientation proves to influence positively and significantly value co-creation
H4. Utilitarian influences positively and significantly the intention to adopt parcel lockers
H5. Hedonic orientation influences positively and significantly the intention to adopt parcel lockers
H6. Value co-creation influences positively and significantly the intention to adopt parcel lockers
H7. Logistic value influences positively and significantly the intention to adopt through value co- creation
H8.Utilitarian orientation influences positively and significantly the intention to adopt through value co- creation
H9. Hedonic orientation influences positively and significantly the intention to adopt through value co- creation

3. RESEARCH METHODOLOGY

a. Data Collection and Sampling

Data collection was carried out through online questionnaires with close questions using Likert scale of five points aimed to measure respondents' response toward 26 research indicators. The sampling technique used probability sampling with stratified random sampling method, based on the administrative areas in Jakarta. The total numer of respondents gathered were 299 people from various backgrounds related to logistic and e-commerce activities.

b. Data Analysis

Data analysis was conducted using variance-based Structural Equation Modeling, namely Partial Least Squares aided by the software of SmartPLS 4. The research focus was directed to the consumers of e-commerce and online retail, especially the individuals utilizing Last-Mile Delivery (LMD) services in Jakarta area. The selection of Jakarta as research location was based on its position as a metropolitan area with a fast-growing e-commerce, as well as demographic and socio-economic varieties representing the characteristics of logistic service users in Indonesia.

4. RESULTS

a. Respondent Profile

The result of survey indicates the majority respondents are female (61%), 26–35 years old (44%), with high education (41% bachelors, 29% diplomas), and dominated by private employees (36%). The distribution of respondents is quite even in the five areas of Jakarta, with South Jakarta (26%) and Central Jakarta (26.2%) as the main areas, while West Jakarta and North Jakarta are still limited in shopping center and apartment. All the respondents have used marketplace, with Shopee as the dominant platform (66%), and the majority do shopping once to twice a month. In term of package receiving, 87% still choose home delivery, whereas the use of parcel locker only 12% and the number of pick-up at the agent is very small. Most respondents prefer regular delivery (73%) for cost efficiency, although quick service shows a potential growth. Knowledge about parcel locker is still low, with 83% have not known this service, requiring more extensive socialization. Overall, although the adoption of e-commerce is high, consumer preference is still centralized on comfort, cost efficiency, and home delivery, while parcel locker just starts to grow in certain segments.

b. Descriptive Data Analysis

The result of analysis shows that the average Logistics Value is 3.859, indicating the high perception of the logistic benefit of parcel locker, where the flexibility of pick-up time becomes the most highly appreciated aspect, while the factors of location and accessibility are still considered not optimal. Utilitarian orientation is also valued as positive (mean 3.726–3.936), with the highest indicator is the new experience which is interesting and at the same time increasing the comfort, the lowest value is in the indicators showing that some consumers have not been fully aware or felt the cost benefit of using parcel locker, possibly because the perception of delivery cost is still competitive or there may be lack of information on the real cost saving. The result of survey indicates that respondent's perception of value co-creation lies on the high category, with the total average value of 3.850. In the CPB dimension, the highest indicator is the awareness of rule, whereas the lowest is the ease of communication. In the CCB dimension, the highest indicator is the willingness to give feedback, and the lowest is the understanding of delays in delivery.

The variable of Intention to Adopt Parcel Lockers is measured by three indicators representing respondent's intention to try, reuse, or integrate parcel locker service into their online shopping activities. Based on the result of the survey, respondent's intention to adopt parcel locker service is categorized as high. The indicators with the highesst score is "I am interested in trying/reusing Parcel locker service", showing a quite high interest of respondents in this service. Whereas the lowest score "I intend to use Parcel locker in the near future", showing a positive intention. The indicator of INT3 shows the readiness of respondents to use parcel lockers in their online shopping activities. Overall, this

result shows that the intention to adopt parcel locker service in Indonesia is categorized as high, especially in the aspect of interest to try or reuse. However, the intention to immediately use in the near future is still relatively lower, indicating that the real adoption still needs supports from other supporting factors, such as locker network extension, increased consumer literacy, and supports from big marketplace.

c. Common Method Bias

To ensure no bias in the data collection method which can influence the result validity, this test is conducted before evaluating the measurement model (outer model). By using Harman's Single-Factor [31], the result shows that one single factor explains only 34.711% of the total variances. This value is below the recommended threshold of 50%. Thus, it can be concluded that there is no serious problem of common method bias in this research.

d. Evaluating Measurement Model (outer model)

Analysis of measurement model is carried out to evaluate the validity and reliability of each construct used in the research [32]. The following is the result of measurement model (outer model) analysis and the summary of Bootsrap Measurement (outer model) of this research;

Table 1: Result of Measurement Model Analysis

Construct	Loading	Cr. α	Rho-A	AVE	$t_{-values}$	$P_{-values}$
First Order Variable						
Information		0.879	0.880	0.805		
INFO1	0.874				33.692	0.000
INFO2	0.915				51.115	0.000
INFO3	0.903				62.929	0.000
Delivery		0.820	0.829	0.736		
DEL1	0.836				39.391	0.000
DEL2	0.836				28.495	0.000
DEL3	0.899				76.561	0.000
Return		0.908	0.909	0.845		
RET1	0.913				74.776	0.000
RET2	0.914				69.703	0.000
RET3	0.930				97.478	0.000
Utilitarian		0.837	0.849	0.755		
UTI1	0.873				46.447	0.000
UTI2	0.826				33.313	0.000
UTI3	0.905				76.316	0.000
Hedonic		0.872	0.871	0.796		
HED1	0.905				67.221	0.000
HED2	0.907				61.485	0.000
HED3	0.865				50.559	0.000
Customer Participation Behavior		0.878	0.879	0.733		
CPB1	0.853				45.821	0.000
CPB2	0.849				43.449	0.000
CPB3	0.899				72.902	0.000
CPB4	0.821				32.436	0.000
Customer Citizenship Behavior		0.853	0.863	0.697		
CCB1	0.854				44.403	0.000
CCB2	0.885				57.061	0.000
CCB3	0.722				18.882	0.000

Construct	Loading	Cr. α	Rho-A	AVE	t_{values}	P_{values}
CCB4	0.868				47.106	0.000
Intention to Adopt		0.914	0.916	0.853		
INT1	0.922				84.000	0.000
INT2	0.924				85.999	0.000
INT3	0.925				80.840	0.000
Second Order Variable						
Logistics value		0.891	0.894	0.821		
Value cocreation		0.899	0.900	0.908		

e. Convergent Validity and Internal Reliability

The result of the analysis shows that all indicators have a significant loading factor value (far above 0.70) with the value of $p < 0.001$. In addition, the AVE value for all constructs is also above 0.50, with the lowest value 0.697 for the construct of Customer Citizenship Behavior. This result shows that the indicators used can explain the latent construct in a good way. Whereas reliability is measured using Cronbach's Alpha (Cr.α) and Composite Reliability (Rho-A). All the constructs show the values of Cr.α and Rho-A above 0.80, exceeding the threshold of 0.70. This shows that all the indicators have an excellent internal consistence in measuring each of their own construct.

f. Discriminant Validity

Discriminant validity is evaluated using the criteria of Heterotrait-Monotrait Ratio (HTMT). The result of the analysis shows that the highest value of HTMT is 0.897 between the constructs of Utilitarian (UTI) and Delivery (DEL). Since all the values of HTMT are below the threshold of 0.90, then the discriminant validity is fulfilled. This proves each construct in this research is conceptually different each other.

g. Structural Model (Inner Model) Analysis

After the measurement model is stated valid and reliable, the analysis continues to the structural model to examine the research hypotheses [32].

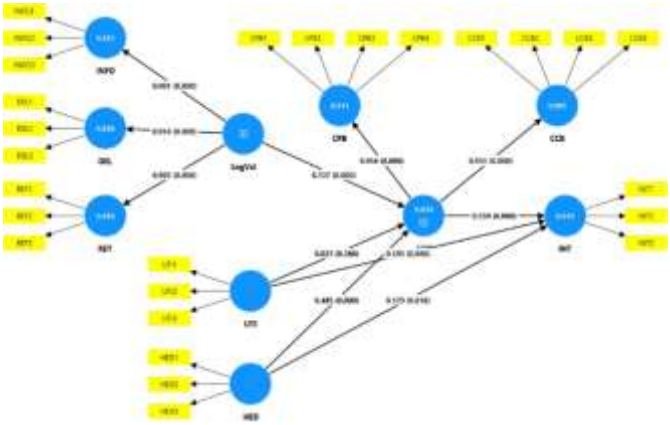

Figure 3: Summary of Bootstrap Structural (Inner) Model Analysis

Table 3: Result of Structural Model Analysis

Path Direct Relations	β	t_{values}	P_{values}	Corrected CI 5%	95%	f^2	VIF	
H1: Logistics value → Value Co-Creation	0.337	3.996	0.000	0.193	0.470	0.098	3.152	Accepted
H2: Utilitarian orientation → Value Co-Creation	0.025	0.307	0.380	-0.122	0.148	0.000	3.627	Rejected
H3: Hedonic orientation → Value Co-Creation	0.484	5.077	0.000	0.320	0.632	0.191	3.347	Accepted
H4: Utilitarian orientation →	0.080	0.904	0.183	-0.061	0.231	0.005	3.634	Rejected

Intention to adopt								
H5: Hedonic orientation → Intention to adopt	0.166	1.973	0.024	0.028	0.307	0.018	3.996	Rejected
H6: Value Co-Creation → Intention to adopt	0.768	26.786	0.000	0.718	0.812	1.437	1.000	Accepted
Indirect Relation								
H7: Logistics value → Value Co-Creation → Intention to adopt	0.259	4.065	0.000	0.152	0.359			Accepted
H8: Utilitarian orientation → Value Co-Creation → Intention to adopt	0.019	0.306	0.380	-0.094	0.114			Rejected
H9: Hedonic orientation → Value Co-Creation → Intention to adopt	0.371	4.751	0.000					Accepted
In-sampe predictive relevance	R^2							
Intention to adopt	0.590							
Value Co-creation	0.634							

h. Result of Hypothesis Test

Hypothesis test is carried out by seeing the value of path coefficient (β), t_{values}, and p_{values} of the inter-variable relationship. The result of analysis in Table 3 shows that some variables have a significant influence on Value Co-Creation (VCC) and Intention to Adopt (INT) as follows;

1) Result of Direct Path Test

Hypothesis 1: Logistics value proves to influence positively and significantly VCC (β = 0.337; t = 3.996; p = 0.000), so that the first hypothesis (H1) is accepted. This indicates that the higher the logistics value is perceived by consumers, the bigger their participation in the co-creation process.

Hypothesis 2 : Utilitarian Orientation does not show a significant influence on VCC (β = 0.025; t = 0.307; p = 0.380), so that the second hypothesis (H2) is rejected. It means, the utilitarian orientation emphasizing functional aspect and efficiency is not enough to encourage consumers to be involved in the value creation.

Hypothesis 3 : Hedonic Orientation proves to influence positively and significantly VCC (β = 0.484; t = 5.077; p = 0.000), so that the third hypothesis (H3) is accepted. This finding confirms that the consumers with hedonic orientation, who seek comfort and pleasure in the logistic experience, are more encouraged to be involved in the co-creation.

Hypothesis 4 : Utilitarian Orientation does not influence significantly the Intention to Adopt (β = 0.080; t = 0.904; p = 0.183), so that the fourth hypothesis (H4) is rejected.

Hypothesis 5 : Hedonic Orientation does not either give a significant influence directly to the Intention to Adopt (β = 0.166; t = 1.973; p = 0.024) although p-value < 0.05, since the value of effect size is very little (f^2 = 0.018), so that its influence is considered weak and not substantial. Thus, the fifth hypothesis (H5) is also rejected.

Hypothesis 6 : Value Co-Creation proves to have a very strong positive influence on the Intention to Adopt (β = 0.768; t = 26.786; p = 0.000), so that the sixth hypothesis (H6) is accepted. This illustrates that the higher consumer involvement in the co-creation, the bigger their intention to adopt parcel locker will be.

2) Hypothesis Test of Mediation

Hypothesis 7 : VCC mediates the influence of Logistics Value on the Intention to Adopt (β = 0.259; t = 4.065; p = 0.000), so that the seventh hypothesis (H7) is accepted, showing that logistic benefit perceived by consumers encourages the intention to adopt parcel locker through increasing their involvement in the co-creation.

Hypothesis 8 : VCC does not prove to mediate the influence of Utilitarian Orientation on the Intention to Adopt (β = 0.019; t = 0.306; p = 0.380), so that the eighth hypothesis (H8) is rejected. It means, utilitarian orientation does not really influence both directly and indirectly the intention to adopt parcel locker.

Hypothesis 9 : VCC proves to mediate the influence of Hedonic Orientation on the Intention to Adopt significantly (β = 0.371; t = 4.751; p = 0.000), so that the ninth hypothesis (H9) is accepted. This finding indicates that hedonic orientation drives indirectly the intention to adopt, but it contributes through increasing consumer involvement in the co-creation.

3) Coefficient of Determination (R^2)

The value of R^2 shows how far the variance of dependent variable can be explained by independent variable. The variable of Value Co-Creation (VCC) has the value of R^2 as big as 0.634, meaning that 63.4% of the variance in VCC can be explained by Logistics Value, Utilitarian Orientation, and Hedonic Orientation. The strength of this model is

categorized as moderat to substantial. The variable of the Intention to Adopt (INT) has the value of R^2 as big as 0.590, meaning that 59.0% of the variance in the intention to adopt can be explained by VCC. This shows a model with moderat strength (Cheung & To, 2021).

4) Effect size (f^2)

Effect size (f^2) shows the relative contribution of each predicting variable [33] to the value co-creation and the intention to adopt parcel locker. Logistics Value has f^2 of 0.098, categorized small to medium, indicating that although the logistic service qualities such as information accuracy, efficiency in delivery, and the ease of return process give positive contributions to customer involvement in the value co-creation, their influences are not dominant. It means, logistic aspect is really important but it is not the only factor or the main factor that drives consumer participation. On the contrary, utilitarian orientation shows the value of f^2 is 0.000, meaning that it has no effect on value co-creation, consistent with the insignificant result of hypothesis test. This indicates that customer orientation to functional aspect, efficiency, and practical benefit is not strong enough to encourage them to be actively involved in the value creation process. On the other hand, hedonic orientation contributes more strongly with the value of f^2 as big as 0.191, which is categorized medium, indicating that positive experience, pleasure, and comfort in the interaction with logistic services have an important role in motivating consumers to participate in the Co-creation. The most prominent is the influence of value co-creation on the intention to adopt parcel locker, with the value of f^2 reaches 1.437 which is categorized very big. This finding confirms that consumer involvement in the mutual value creation process is the strongest and most crucial determinant in the establishment of their intention to adopt parcel locker.

5) Cross Validated Predictive Ability Test (CVPAT) Analysis

To evaluate the predictive relevance of model outside the sample, Cross-Validated Predictive Ability Test (CVPAT) is carried out [34]. The result shows that all the constructs and models have p_{value} as big as 0.000, less than 0.05, indicating that the PLS model has a better predictive ability rather than the basic linear model.

Table 4: Table of CVPAT Analysis

	PLS loss	IA loss	Average loss difference	t_{value}	p_{value}
CCB	0.484	0.773	-0.289	7.258	0.000
CPB	0.439	0.762	-0.323	7.319	0.000
DEL	0.350	0.879	-0.528	12.310	0.000
INFO	0.264	0.760	-0.497	10.706	0.000
INT	0.460	0.786	-0.326	7.529	0.000
RET	0.229	0.732	-0.502	12.224	0.000
VCC	0.461	0.767	-0.306	7.830	0.000
Overall	0.403	0.777	-0.373	11.604	0.000

Thus, the model in this research does not only explain well a causal relationship, but it also has a strong predictive strength for the data outside this research. Overall, the finding of this research confirms the importance of logistic aspect and hedonic dimension in encouraging customer involvement through value co-creation, which in turn influences strongly the intention to adopt the service. While the utilitarian value is less influential, emotional experience and logistic performance prove to become the main catalists in this process.

5. DISCUSSION

a) Hypothesis 1. Logistics Value and Value Co-Creation

From the data analysis it is found that logistics value positively and significantly influences value co-creation. Theoretically, the result of the first hypothesis test is consistent with the perspective of Service-Dominant Logic, according to [35] emphasizing that value is created not only by service providers but also through an interaction with consumers. In the context of logistics, consumer perception of service value will establish the basic of their involvement in the co-creation activity. The result of the first hypothesis test also supports the study by [36] that value is created together when customer and service provider are involved in a dialog and interaction in the stages of designing, production, distribution, until product usage. Thus, based on those previous researches, it can be concluded that in the first hypothesis test the variable of logistics value positively and significantly influences the value co-creation.

b) Hypothesis 2. Utilitarian Orientation and Value Co-Creation

The result of analysis shows that utilitarian orientation does not influence significantly the value co-creation. This finding indicates that functional aspects such as cost and time efficiency, although important, indirectly encourage consumers to participate more active in value creation. Consumers consider utilitarian aspects as the minimum standard to be fulfilled by service providers, not as something that motivates further involvement. In a previous research, [37], explain that in the services with the focus on utilitarian aspects, the consumers with utilitarian orientation tend to interact as far as necessary. They add, if this competence is not owned, intrinsic motivation is not enough to drive the involvement, so that utilitarian orientation will just reduce the tendency to contribute in the Co-creation. The result of the second hypothesis test is not in line with the observation by [38] mentioning that utilitarian orientation is related to value co-creation. Thus, based on those previous researches, it can be concluded that in the second hypothesis test the variable of utilitarian orientation does not influence significantly the value co-creation, although some observers explain different results.

c) **Hypothesis 3.** Hedonic Orientation and Value Co-Creation

Hedonic Orientation proves to influence positively and significantly the value co-creation (VCC). This finding confirms that the consumers with hedonic orientation, seeking comfort and pleasure in the logistic experience, are encouraged more to be involved in the co-creation. Interestingly, hedonic orientation is found as the strongest predictor for VCC. This shows that pleasant, interesting, and entertaining experiences during the shopping and delivery process become the main drivers for consumers in Jakarta to be involved in the VCC. In the context of parcel locker, the experience of package pick-up, which is perceived as modern, quick, and emotionally satisfying, may be more important than just functionality. The result is that Hedonic Orientation becomes the strongest predictor for VCC that indicates a behavior shifting of urban consumers, especially Jakarta, from merely seeking efficiency to seek experiences. The result of this hypothesis test supports the findings of [39]–[41] showing that hedonic orientation is a strong driver for the co-creation of relational and functional values in the online world, meaning that the consumers who seek experience/pleasure are more active to contribute. Thus, based on those previous researches, it can be concluded that in the third hypothesis test the variable of hedonic orientation proves to influence positively and significantly the value co-creation.

d) **Hypothesis 4.** Utilitarian Orientation and Intention to Adopt Parcel Lockers

Utilitarian Orientation does not influence significantly the intention to adopt. In the context of environment-friendly products, consumers may consider functional benefits like efficiency or usefulness as something that must exist, not as the main reason to adopt. In the other word, utilitarian value becomes a baseline expectation. Consumers evaluate services based on utilitarian values such as speed, security, reliability, and flexibility, not on hedonic elements. Different from e-commerce or social media that emphasize pleasant experience, parcel locker is regarded as a practical solution to make easier package pick-up. This strengthens the result of the hypothesis that utilitarian value becomes a dominant factor in establishing the intention to adopt this service. The result of the fourth hypothesis test supports the finding by [26] explaining that utilitarian value significantly influences customer satisfaction, and futhermore, does not drive the intention to adopt the product. Thus, based on those previous researches, it can be concluded that in the fourth hypothesis test the variable of utilitarian orientation does not influence significantly the intention to adopt parcel lockers.

e) **Hypothesis 5.** Hedonic Orientation and Intention to Adopt Parcel Lockers

Hedonic Orientation does not give a significant influence directly to the intention to adopt parcel lockers. The result of the fifth hypothesis test is not in line with the study by [42] showing that hedonic value influences significantly the users' intention to keep using the product, because the aspects of pleasure and positive experience encourage users to keep interested. A different result is also found in the research by [43] showing that hedonic orientation can influence behavioral intention. Practically, this finding confirms the fifth hypothesis that the adoption of parcel locker is more influenced by functional need rather than by entertainment aspect. Thus, based on those previous research, it can be concluded that in the fifth hypothesis test the variable of hedonic orientation does not give a significant influence directly to the intention to adopt parcel locker, although some researches state that hedonic value has a significant influence on user intention to keep using the product.

f) **Hypothesis 6.** Value Co-Creation and Intention to Adopt Parcel Lockers

Value Co-Creation (VCC), proves to have a very strong influence on the intention to adopt parcel locker, confirming that the hiugher consumer involvement in the co-creation, the bigger their intention to adopt parcel locker will be. This involvement includes Customer Participation Behavior like the proper use of service, as well as Customer Citizenship Behavior like giving recommendation and positive review. The combination of the two strengthens the service ecosystem, enhances the perceived value, and accelerates the adoption of logistic innovations. In addition, VCC acts as the mediator between consumer orientation—both utilitarian and hedonic, and intention to adopt, so that the success of implementation is determined more by collaborative experience rather than just orientation to

benefit or pleasure. This finding is in line with the previous study, [44], stressing the importance of consumer's active participation in enhancing the perceived value and driving the adoption of technology-based services. The result of this hypothesis test also supports the researches by [45], [46], stating that VCC has a positive significant influence on the consumer's intention to adopt parcel locker. Thus, based on those previous researches, it can be concluded that in the sixth hypothesis test the variable of value co-creation proves to have a very strong influence on the intention to adopt parcel locker.

g) **Hypothesis 7.** Value Co-Creation as the mediator between Logistics Value and Intention to Adopt Parcel Lockers

The result of analysis shows that Value Co-Creation (VCC) significantly mediates the correalation between logistics value and intention to adopt parcel locker, so that hypothesis H7 is accepted. VCC effectively becomes a bridge between logistics value and intention to adopt parcel locker. This implies that the advantage of logistics and hedonic experience is not directly maximum in driving the adoption of parcel locker. The influence becomes much stronger when mediated by the consumer's active involvement. This indicates that the logistic benefits felt by consumers, such as time efficiency, easy access, and service reliability become more effective in driving adoption intention when consumers are involved in the Co-creation process. With the existence of VCC, consumers feel taking participation in the process of value creation, for example giving inputs or adjusting their preference, so that the advantage of logistic is more highly appreciated and culminated in adoption. Thus, based on this description, it can be concluded that in the seventh hypothesis test the variable of value co-creation proves to have a very strong influence on the intention to adopt parcel locker.

h) **Hypothesis 8.** Value Co-Creation as the mediator between Utilitarian Orientation and Intention to Adopt Parcel Lockers

Regarding the role to mediate the collaboration between utilitarian orientation and intention to adopt parcel locker, the result of this analysis shows that value co-creation does not mediate the correlation between utilitarian orientation and intention to adopt parcel locker so that the eighth hypothesis is rejected. This indicates that utilitarian orientation, stressing on efficiency and practical benefits, insignificantly drives the intention to adopt parcel locker either directly or through co-creation. One of the potential reasons is that consumers have not felt fully the cost efficiency and the convenience of being the main advantage of parcel locker, so that their involvement in the co-creation is not strong enough to mediate this correlation. This finding is in line with the research by [47] that utilitarian factors do not always become the main driver to adopt a new digital service if consumers still face the obstacles of easy usage or a strong value perception has not been established. Thus, based on those previous researches, it can be concluded that in the eighth hypothesis test the variable of value co-creation does not mediate the collaboration between utilitarian orientation and intention to adopt parcel locker.

i) **Hypothesis 9.** Value Co-Creation as the mediator between Hedonic Orientation and Intention to Adopt Parcel Lockers

Regarding Value Co-Creation as the mediator between hedonic orientation and intention to adopt parcel lockers (H9), the result of analysis shows that VCC significantly mediates the collaboration between hedonic orientation and intention to adopt parcel locker, so that hypothesis H9 is accepted. This indicates that hedonic orientation, focusing on pleasant, innovative, and unique experience, does not directly encourage the intention to adopt but through consumer involvement in the co-creation. Pleasant experience plays its roles, but it will only increase the intention to adopt if consumers feel being involved in the process of value creation. Thus, logistic advantage and hedonic experience will only give a full impact when internalized through consumer's participatory interaction. Overall, this result confirms that Value Co-Creation functions as an important mechanism in relating the dimensions of value and consumer orientation to the adoption intention, especially when emotional value or innovative experience becomes the focus. This result is consistent with the paradigm of Service-Dominant Logic (SDL) which emphasizes that value is not created unilaterally by the service provider, but mutually constructed through the interaction between the provider and consumers [48]. VCC becomes a mechanism that allows consumers to feel as part of solutions, not just passive users. Thus, based on those previous researches, it can be concluded that in the ninth hypothesis test the variable of VCC significantly mediates the correlation between hedonic orientation and intention to adopt parcel locker.

6. CONCLUSION

Of the nine direct path hypotheses, five are accepted and four are rejected. The result shows that Value Co-Creation (VCC) plays an important role as the mediator between Logistics Value and Hedonic Orientation against the Intention to Adopt Parcel Lockers. Hedonic orientation proves to most dominantly encourage consumer involvement in VCC, although does not directly influence the adoption intention, whereas utilitarian orientation does not influence significantly. This finding is in line with the paradigm of Service-Dominant Logic [35], emphasizing the role

of consumers as active partners in the value creation. Overall, the result of this research confirms that the success of adopting parcel locker in Indonesia is not only determined by service quality, but primarily by the degree of consumer participation in the service process. The business of parcel locker nowadays is not yet optimal and tends to weaken, so that business players need to adopt new strategies, among others: (1) developing omni-channel delivery model by combining locker, home delivery, pickup agent, and retail partners; (2) focusing on middle-up segment of urban market by deploying lockers at strategic locations such as shopping centers, campuses, railway stations, and office areas; (3) strengthening the collaboration with a big marketplace so as to make lockers as the default option in the e-commerce application; and (4) developng digital features such as real-time tracking, flexible notification, and non-cash payment to increase the comfort and encourage adoption. This research asserts the novelty that value co-creation plays the role as key mediator to connect logistics value, consumer orientation, and intention to adopt a service. This finding also strengthens the implementation of Service-Dominant Logic perspective in the context of last-mile delivery, especially in the use of parcel locker which is still relatively rarely studied in Indonesia. In addition, the result of this research shows that hedonic orientation has bigger influence rather than utilitarian orientation on consumer involvement, so that the aspects of experience and comfort become key factors to encourage the adoption of logistic technology.

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