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EVALUATING THE PERFORMANCE OF ONLINE FOOD DISTRIBUTION SYSTEMS: A CUSTOMER PERSPECTIVE IN JAMBI CITY

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Abstract *This study aims to analyze the influence of delivery delays, order inaccuracies, and courier capacity limitations on the distribution performance of online food delivery (OFD) services in Jambi City from a customer perspective. This study used a quantitative approach with 100 respondents who had used OFD services more than twice. Data were collected through an online questionnaire and analyzed using multiple linear regression with the help of SPSS. The results showed that all three independent variables simultaneously had a significant effect on distribution performance. Partially, the variables of order inaccuracies and courier capacity limitations had a positive and significant effect on distribution performance, while delivery delays had no significant effect. The Adjusted R Square value of 39.4% indicates that the model is able to explain variations in distribution performance quite well. These findings indicate that the effectiveness of the courier operational system and the accuracy of order processing play an important role in improving the efficiency of the OFD supply chain in medium-sized urban areas such as Jambi. The results of this study are expected to provide a strategic basis for service providers in improving delivery systems and logistics capacity management.*

Keywords: *Delivery Delays; Order Inaccuracies; Courier Capacity; Distribution Performance; Online Food Delivery*

Introduction

Service delivery online food delivery has become part important from digital transformation of the sector logistics and services in Indonesia. With high smartphone penetration and rapid adoption of e-commerce, consumers the more utilise application booking food online and demanding fast, accurate and quality delivery (Suhardjo et al., 2023). Growth Indonesia's digital economy has reached mark transaction more from USD 77 billion in 2023 This show that improvement significant in consumption base on applications, including in industry culinary (Wijatmoko, 2025).

In perspective management chain supply, efficiency distribution become factor main influencing factors performance service logistics. Inefficiencies that arise at the stage delivery like delay delivery, error order, or lack of capacity courier can cause performance

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disruption distribution in a way overall and impactful straight to satisfaction customers (Setyawan, 2022; Restuputri et al., 2022). Therefore that, understanding about source inefficiency in chain supply distribution online food becomes important, especially when phenomenon This observed from perspective customer as recipient end service.

In Indonesia, services online food delivery grow to fast and provide impact big on shift behavior significant consumers so that sue the provider company service online food delivery like GoFood, GrabFood, and ShopeeFood For increase efficiency chain supply, especially in the aspect of last-mile delivery which becomes point crucial in experience customer.

Currently, the service online food delivery experience rapid growth especially in the city big such as Jakarta, Surabaya, and Yogyakarta where the study show that time Wait more online delivery big compared to time journey to restaurant in a way physical. However, in context city medium such as Jambi City, services This Still face various challenge operational. Based on data from the Central Statistics Agency (BPS, 2024), Jambi City has population more from 600 thousand soul with level internet penetration reached 83%, however infrastructure transportation and logistics Not yet as efficient as possible city big. This is potential cause delay delivery consequence condition Then cross, limitations amount courier active, or less than optimal coordination between restaurants, digital platforms, and partners logistics (Indrayani & Muhammad, 2022). In the context of this, perspective customer become key for understand How inefficiency chain supply influence performance distribution and level satisfaction to service online food in Jambi City.

Empirical facts show that problem inefficiencies in the chain supply distribution online food indeed real like research conducted by Kurniawan and Farihah (2021) identified that fulfillment and reliability time delivery is factor dominant in form perception satisfaction users service online food delivery. Meanwhile that, Nuharini and Purwanegara (2022) found that The attributes “driver” and “delivery procedur” are cluster important things that influence experience customer in economy sharing. Problem like delay delivery delay, error order mismatch, and limited capacity courier can extend time Wait customers (Safira, 2023) and reduce quality perceived service (Setiawan & Aprillia, 2025). In several case, customers in the middle region as Jambi reported time Wait up to two times from estimate applications, especially at meal times afternoon and weekend (Jambi City Communications and Information Service, 2024).

However thus, research that links in a way direct factors inefficiency chain supply like delay delivery, inaccuracy orders, and limitations capacity courier to performance distribution online food from perspective customer Still limited. Most of study previously in Indonesia more focus on non- operational factors like promotion, convenience use application, or loyalty Customers (Tedjakusuma, 2023; Emiliana & Efawati, 2025; Putri, 2025). Research the of course give outlook valuable about behavior customers, but not yet describe How inefficiency logistics in a way specific influence performance distribution from corner view customer. In other words, there is gap study in understand dimensions operational chain supply service online food in mid-sized cities like Jambi which has structure logistics different from metropolitan city.

Based on phenomenon said, research This aim for analyze influence delay delivery (X1), inaccuracy order (X2), and limitations capacity courier (X3) against performance online food distribution (Y) in Jambi City from perspective customer. Research This expected can give contribution empirical to development of improvement strategies efficiency chain digital supply based on customer as well as become base for provider service in repair system distribution, management capacity courier, and handling complaint customer.

Method

This study employed quantitative research, with data presented numerically and calculations using statistical methods. The data analysis process employed multiple linear

regression analysis assisted by SPSS software. The data analysis process included:

1. Validity testing measures the extent to which each item in the questionnaire measures what it is supposed to measure. A correlation value (r count) of ≥ 0.30 can be considered practically valid (Sugiyono, 2019).

2. Reliability testing is used to determine whether a research instrument produces consistent and stable results when measured repeatedly. If the Cronbach's Alpha result is ≥ 0.70, the questionnaire is considered reliable, meaning that respondents' answers are stable and can be trusted to measure the same variables at different times (Ghozali, 2021).

3. The classical assumption test is an important procedure in linear regression to ensure valid and unbiased estimation results. Normality tests are performed to ensure the residuals are normally distributed using the Kolmogorov–Smirnov or Shapiro–Wilk test, as suggested by Gujarati and Porter (2013). Multicollinearity tests are performed to ensure there is no strong relationship between the independent variables by observing VIF values <10 and Tolerance >0.10 (Hair et al., 2021). Furthermore, heteroscedasticity tests such as the Glejser or Breusch–Pagan tests are performed to ensure the residual variance is constant, as heteroscedasticity can make estimation inefficient (Wooldridge, 2016).

4. Equality Multiple linear regression testing uses a normality test to determine whether data is normally distributed. The results of the normality test indicate that the respondents or research sample fairly represent the population, thus ensuring reliable statistical analysis. Data with a normal distribution or hypothesis are accepted if the p-value is <0.05 (Ghozali, 2021). This research uses a normality test, which is an essential requirement in linear regression analysis.

The data collection technique used in the research is a survey method with a sampling technique that is a convenient sampling method, namely there are no special standards for respondents (Suryani, 2023), where in data collection the researcher distributed the questionnaire link using the help of Google Form media to respondents online via social media.

The following is the framework for this research.

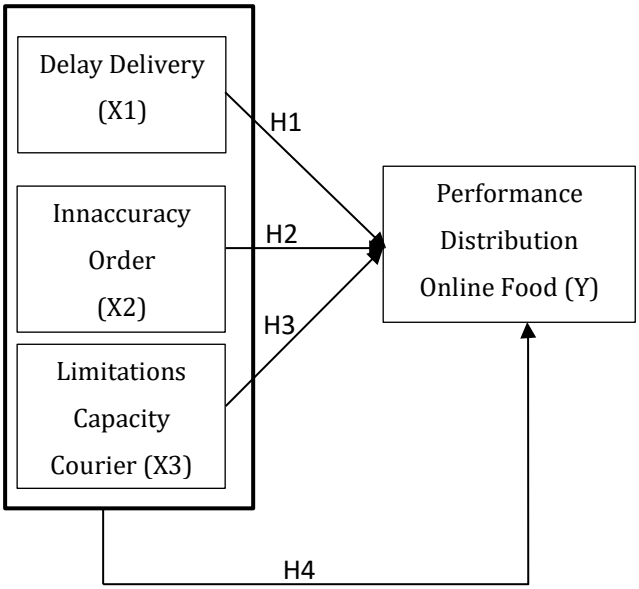

Figure 1. Framework Study

Based on the research framework, the following research hypotheses are obtained:

H1: Delivery delays are suspected to influence online food distribution performance in Jambi City.

H2: Order inaccuracy is suspected to influence online food distribution performance in Jambi City.

H3: Capacity limitations are suspected to influence online food distribution performance in Jambi City.

H4: Delivery Delays, Order inaccuracy, Capacity Limitations are suspected to influence online food distribution performance in Jambi City.

Result and Discussion

Respondents Characteristics

Total Respondents Received are 100 respondents who have fulfil criteria that is Once buy food or drinks in online food delivery services more than twice at Jambi City. As for the profile from respondents can seen in the table following :

Table 1. Respondent Data

Respondent Characteristics	Freq.	Percent
Sex		
Male	38	38%
Female	62	62%
Age		
20-24 years	9	9%
25-29 years	43	43%
30-34 years	21	21%
35-39 years	17	17%
40-44 years	10	10%
Education Status		
High School	11	11%
Diploma	19	19%
Bachelor Degree	58	58%
Master's Degree/PhD	12	12%
Total	100	100%

Based on the data in table 1, it is known that that majority respondents in study This is women (62%) with group age dominant are in the 25–29 year age range (43%) and own level education undergraduate (58%). Findings This show that users online food delivery services are dominated by the upper class young productive who have level education high and good digital literacy, so more easly adapt to use technology based on application. Conditions This in line with trend digital consumption in Indonesia, where the generation young play a role big in push growth digital economy through behavior efficient and practical consumption in fulfillment need daily (Nugroho & Fadilah, 2022).

Validity Test and Reliability Test

Analysis conducted in study This is do calculation on validity and reliability testing with using SPSS like table following.

Table 2. Validity and Reliability Test Delay Delivery Variable

Delay Delivery		R-Count	Cronbach's Alpha
X1.1	Order often come longer than time estimate	0.000	0.781
X1.2	Delivery order often late	0.000	
X1.3	Delay delivery lower satisfaction	0.000	

Table 3. Validity and Reliability Test Inaccuracy Order Variable

Inaccuracy Order		R-Count	Cronbach's Alpha
X2.1	I often accept orders that are not in accordance	0.000	0.670
X2.2	System application capable take notes order with accurate	0.000	
X2.3	Platform gives compensation If happen error order	0.000	

Table 4. Validity and Reliability Test Limitations Capacity Variable

Limitations Courier Capacity		R-Count	Cronbach's Alpha
X3.1	Amount courier No comparable with many order	0.000	0.826
X3.2	I often waiting a long time because courier limited	0.000	
X3.3	Courier less efficient in arrange route delivery	0.000	

Table 5. Validity and Reliability Test Distribution Performance Variable

Online Food Distribution Performance		R-Count	Cronbach's Alpha
Y.1	Delivery order arrive appropriate time	0.000	0.792
Y.2	The order I placed accept always in accordance with order	0.000	
Y.3	I am satisfied with service delivery online food	0.000	

Based on the results of the validity and reliability tests in table 1, all statement items in variables delay delivery, inaccuracy orders, limitations capacity courier, and performance distribution online food show mark significance (Sig.) of 0.000, which means more small from 0.05. This is significantly that all statement items declared valid, because own significant relationship with total score of each variable. With Thus, every grains question capable in a way appropriate measure the aspects in question in study This.

From the results of the reliability test, it was obtained Cronbach's Alpha value of 0.781 for variables delay shipping, 0.670 for inaccuracy order, 0.826 for limitations capacity courier, and 0.792 for performance distribution online food. Based on criteria reliability, value the show that part big variables own reliability high ($\alpha > 0.7$), whereas One variable that is inaccuracy order is in the category Enough reliable ($0.6 < \alpha < 0.7$). This result indicates that instruments used in study has consistent and able reliable for measure perception customer to aspects distribution service online food.

In a way overall, results of this show that instrument study has fulfil criteria eligibility Good from aspect validity and reliability. This means that the questionnaire used can trusted for describe condition real related performance online food distribution from perspective customer. Variable with reliability tall like delay delivery and capacity courier show that respondents own stable perception to second aspect said, while variables inaccuracy orders that have reliability more low show existence variation perception among respondents, so that can become attention for improvement instruments in research furthermore.

Assumption Classic Test

Following is stages in the assumption test classic performed in study this:

a. Normality Test

Table 6. Kolmogrov Smirnov Test

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		100
Normal Parameters [ab]	Mean	.0000000
	Standard Deviation	1.40005955
Most Extreme Differences	Absolute	.142
	Positive	.087
	Negative	-.142
Test Statistics		.142
Asymp. Sig. (2-tailed)		.000 [c]

Based on the results of the One-Sample Kolmogorov-Smirnov test were obtained mark

asymp. Sig. (2-tailed) is 0.000, which means more small from 0.05. This is show that the residual data is not normally distributed. With thus, in a way statistics, assumptions normality in the regression model No fulfilled. However, because amount sample in study This as many as 100 respondents, violations assumptions normality the No become problem Serious. According to Ghasemi and Zahediasl (2012), when size sample Enough big (more of 30), the distribution of residuals is not normal in a way significant influence parametric test results Because sampling distribution tends to be approaching normal. The same thing was also stated by Hair et al. (2019), that linear regression still can give results reliable estimates even though the data is not completely normal, as long as no there are extreme outliers and numbers sample adequate. Therefore that, the data in study This still worthy used for analysis regression continued.

b. Multicollinearity Test

Table 7. Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	X1	.803	1,246
	X2	.664	1,507
	X3	.731	1,367

Based on multicollinearity test results in the table Coefficients, obtained tolerance value for each variable independent namely X_1 is 0.803, X_2 is 0.664, and X_3 is 0.731. Meanwhile mark The Variance Inflation Factor (VIF) is X_1 of 1.246, X_2 of 1.507, and X_3 of 1.367 respectively. Based on criteria taking decision, if Tolerance value > 0.10 and VIF < 10, then can concluded that no happen multicollinearity between variables free and the test declared to have passed the test. With thus, the results analysis This show that all variables independent in the regression model No each other correlated tall one each other, so that each variable own unique abilities in explain variables dependent. This is means regression model has fulfil assumptions classic about no existence multicollinearity, and analysis regression can to be continued without existence indication of bias due to linear relationship between variables free (Gujarati & Porter, 2009; Hair et al., 2019).

c. Heteroscedasticity Test

Table 8. Heteroscedasticity Test

Model	Unstd B	Unstd Std. Error	Std Beta	t	Sig.
(Cons)	.498	1,229		.406	.686
X1	.047	.074	.072	.640	.524
X2	.043	.070	.076	.608	.545
X3	-.057	.071	-.095	-.803	.424

Based on heteroscedasticity test results with method Glejser, obtained mark significance (Sig.) for each variable independent that is delay delivery (X1) of 0.524, inaccuracy order (X2) of 0.545, and limitations capacity courier (X3) of 0.424, where all mark is more big from level significance of 0.05. This result show that no there is significant influence between third variables independent to mark absolute residual.

With thus, it can concluded that no happen heteroscedasticity in the regression model, this means that the residual variance of One observation to observation other nature constant (homoscedastic). Condition This signify that the regression model used Already worthy for analysis more carry on Because fulfil assumptions classic and productive efficient, unbiased, and accurate parameter estimation reliable. In other words, the variable delay delivery, inaccuracy orders, and limitations capacity courier No cause inequality variance error to performance online food distribution as variables dependent (Ghozali, 2021).

Equality Multiple Linear Regression

Following is stages in the multiple linear regression test conducted in this study.

Table 9. Equations Multiple Linear Regression

Model		Unstandardized Coefficients B
1	(Constant)	2,314
	X1	-.081
	X2	.281
	X3	.611

Based on results analysis multiple linear regression obtained equality regression :

$$Y = 2.314 - 0.081\ X_1 + 0.281\ X_2 + 0.611\ X_3$$

As for the explanation is as following:

a. Constant value of 2,314 shows that if variables delay delivery (X_1), inaccuracy order (X_2), and limitations capacity courier (X_3) is considered constant or worth zero, then mark performance distribution online food (Y) will still amounting to 2,314. This means that without existence influence from third variables free said, performance distribution Still own mark positive basis.

b. Coefficient value regression variables delay delivery (X_1) of -0.081 has mark negative. This is means that every improvement One units on delay delivery will cause decline performance distribution *online food* by 8.1%, with assumptions variables other remains the same. In other words, the more tall of level delay delivery, then the more decrease performance distribution.

c. Coefficient value regression variables inaccuracy order (X_2) of 0.281 indicates influence positive to performance distribution. This means that every improvement One units of inaccuracy order will increase performance distribution by 28.1%, with assumptions other variables remain constant. However, the direction positive This need reviewed more carry on Because in a way logical inaccuracy order should lower performance. This is Can So influenced by other factors such as handling fast complaint or system effective compensation.

d. Coefficient value regression variables limitations capacity courier (X_3) of 0.611 indicates influence the biggest positive to performance online food distribution. This means that every improvement One units on limitations capacity courier will increase performance distribution by 61.1%. This result can interpreted that although There is limitations capacity courier, system operational or management good distribution capable balance obstacle the so that performance still increase.

Hypothesis Test

Table 10. Determination Coefficient Test

Model	R	R Square	Adj. R Square	Std. Error of the Estimate
1	.642	.413	.394	1,422

The Adjusted R Square value is 0.394 or 39.4 %. The coefficient value determination This show that variables delay delivery (X_1), inaccuracy order (X_2), and limitations capacity courier (X_3) in together capable explain changes in variables performance distribution online food (Y) of 39.4%.
Whereas the rest 60.6 % is explained by other variables that are not entered in the research of this model, like factor system management logistics, conditions Then traffic, weather, and effectiveness technology applications used by distribution platforms online food.
With thus, it can concluded that the regression model used own ability Enough Good in explain variation performance online food distribution, even though Still there is factor other external factors that also have an influence to results distribution in a way overall.

F test

Table 11. F Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	136,383	3	45,461	22,490	.000 [b]
	Residual	194,057	96	2,021		
	Total	330,440	99			

Calculated F value amounting to 22,490 with mark significance (Sig.) of 0.000 indicates that the regression model used fit for used in research. Because the value significance more small from 0.05 (0.000 < 0.05), then can concluded that in a way simultaneous variables delay delivery (X_1), inaccuracy order (X_2), and limitations capacity courier (X_3) has an effect significant to performance online food distribution (Y).

That is, the combination third variables free the in a way together give influence real to improvement or decline performance distribution. The more good management accuracy delivery, accuracy orders, and capacity courier, then the performance is even more optimal distribution generated by online food services.

In addition, the results This strengthen that the regression model that was built has in accordance for used in analysis, because variations that occur in variables dependent (Y) can explained in a way significant by variable independent (X_1, X_2, X_3).

T-test

Table 12. T-test

Model		Unstd B	Unstd Std. Error	Std Beta	t	Sig.
1	(Cons)	2,314	1,924		1,203	.232
	X1	-.081	.116	-.061	-.698	.487
	X2	.281	.110	.246	2,563	.012
	X3	.611	.111	.505	5,522	.000

Influence variables independent to variables dependent in a way partial is as following:

a. Variables Delay Delivery (X_1) *t* -value count as big as *–0.698 < t table 1.985** and value significance 0.487 > 0.05, then H_0 is accepted and H_a is rejected. This means that variables delay delivery No influential significant to performance online food distribution. With thus, the delay time delivery No become factor main influencing factors performance distribution, probability Because customer Still can tolerate delay within certain limits If service other still Good.

b. Variables Inaccuracy Order (X_2) Value *t* count as big as *2.563 > t table 1.985** and value significance 0.012 < 0.05, then H_0 is rejected and H_a is accepted . This means that the variable inaccuracy order influential positive and significant to performance online food distribution . This show that the more low level error in order or the more appropriate suitability between order customers and goods received , then the more tall performance distribution generated by the company service delivery online food.

c. Variables Courier Capacity Limitation (X_3) *t* Value count as big as *5.522 > t table 1.985** and value significance 0.000 < 0.05, then H_0 is rejected and H_a is accepted. With Thus, the variable limitations capacity courier influential positive and significant to performance online food distribution. These results show that the more efficient regulation and utilization capacity courier like scheduling, division of territory, and number hourly delivery then performance distribution will increase in a way significant.

Conclusion

Based on results analysis, it is known that delay delivery No influential significant to performance distribution online food delivery, meanwhile inaccuracy orders and limitations capacity courier influential positive and significant, This is show that customer Still can tolerate delay during orders received accurate and service courier walk efficient. In addition, the value coefficient determination by 39.4% indicates that factors operational like accuracy orders and management capacity courier is determinant main in increase performance OFD distribution. Therefore that, provider service need prioritize optimization system recording orders and management courier as a strategy for strengthen efficiency chain supply as well as guard satisfaction customer.

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