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1 Would compensation be necessary? The importance of service recovery strategy in e-retail delivery problems

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Would
compensation
be necessary?

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1 Abstract

Purpose – This study examines the different effects of service recovery strategies on customers' future intentions when online shoppers were experiencing delivery failures. Two types of problem severity are evaluated: wrong-product delivery (issues with the product quality or quantity) and late delivery. This study also investigates the impact of service criticality on the relationship between service recovery strategies and customers' future intentions.

Design/methodology/approach – This study employs experimental research with 123 online shoppers as participants. Following the results, a subsequent test is conducted to examine the effect of participants' demographics on future intentions. Finally, the current study elaborates the findings using qualitative research, interviewing both sides impacted by the service failures: online shoppers and e-retail managers.

Findings – The findings show that complementing product replacement with monetary compensation is the most effective strategy to improve repurchase intention after a dissatisfaction moment. This effect is indifferent to service criticality and severity. Age influences the participants' repurchase intentions, in which younger people are less tolerant of service failures. In contrast, gender and education level do not provide any differences. To prevent delivery failures, managers participating in this study suggest several best practices regarding systems and infrastructure, people and coordination and collaboration with logistics partners.

Research limitations/implications – The study mainly examines a limited type of service and service failures. Further studies are encouraged to expand the variables and scenarios, as well as to employ more distinctive methods, to enrich the findings related to recovery strategy in the e-commerce industry.

Practical implications – Given proper compensation, service failure could create momentum for online retailers to boost customer loyalty. This study suggests that managers design the most effective service recovery to win customers back to the business.

Originality/value – This paper enriches the literature related to a service recovery strategy, particularly within the online shopping context.

Keywords Service failure, Delivery problems, Service recovery, Future intentions, Online retail,

Supply chain management

1 Paper type Research paper

1. Introduction

The growth of e-commerce, or buying and selling through the Internet, has been remarkable in the past five years. In 2019, global e-commerce sales reached approximately USD26.7 trillion, a 4% increase from 2018, and accounted for 30% of 2019 global gross domestic product (UNCTAD, 2021).

11 Among the many activities on the Internet, online shopping is one of the most favored. The United Nations Conference on Trade and Development reported that global e-commerce sales from business to consumer (B2C) increased by 11% to USD4.9 trillion in 2019 over the previous year. The report also documented a 7% increase in the number of people who made

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online purchases worldwide to 1.48 billion people in 2019. In 2020, the online retail sales of 13 selected economies have grown 22.4% over 2019 to USD2.5bn (UNCTAD, 2021).

The COVID-19 pandemic has triggered a leap in online shopping, more than ever previously predicted. In North America and Canada, online shopping transactions have increased by 146% from the previous year (Wertz, 2021). Around the world, lockdown policies and social restrictions have caused more people to switch to shopping online.

Emerging economies are also experiencing remarkable online transaction growth. In Asia, Indonesia is one of the “pacesetters” in the Internet economy, with a growth of more than 40% per year compared to its neighboring countries (Google and Temasek/Bain, 2019, p. 4). The Central Bank of the Republic of Indonesia documented that the annual growth of e-commerce in Indonesia was approximately 33.2% and predicted the e-commerce transactions to be USD23bn in 2021 (Hindranto, 2021). Between 2014 and 2017, the average growth of online commerce in Indonesia was 38%. Drawing from a report by Das (2018), “Indonesia has the most billion-dollar tech startups in Southeast Asia, including Bukalapak, Go-Jek, Tokopedia, and Traveloka” (p. 3) and predicted that by 2022, Indonesian e-commerce would create 26 million job opportunities.

Amid the pandemic hit, online retailing (or e-retail) is vastly developing in Indonesia. A report by the Indonesian E-Commerce Association expected that e-retail would significantly increase from merely 0.7% of Indonesia’s GDP in 2015 to 5% of Indonesia’s GDP by 2020. During the pandemic, 90% of Indonesian Internet users made online purchases, thus allowing the country to be the fastest growing online market in Southeast Asia.

Despite this remarkable growth, e-retailing is prone to issues, namely those related to the shipment or delivery of the products. In addition, poor logistics infrastructures, especially outside Indonesia’s main islands, make it even more difficult for e-retailers to reach remote areas (Das, 2018) and increase the delivery price significantly (KADIN Indonesia, 2014).

Indeed, e-retailers require distinct supply chain management that is dissimilar to conventional business (Yu *et al.*, 2017). Studies have investigated the barriers and challenges in managing the sourcing and shipment of e-retail products (e.g. Hajli *et al.*, 2014; Hjort *et al.*, 2019; Jain *et al.*, 2021). Scholars primarily agreed that not only are service failures inevitable (Lin *et al.*, 2011; Jung and Seock, 2017; Soares *et al.*, 2017), but they also happen more in online businesses than conventional ones (Forbes *et al.*, 2005; Jung and Seock, 2017; Sousa and Voss, 2009).

Yet, to the best of our knowledge, studies examining delivery failures in emerging economies were still rare. Scholars have abundantly examined the topic of service failures; nevertheless, the current research deviates from others in these particular facets:

First, the concept of service failures and recovery (SFR) was widely discussed in the marketing literature, specifically related to its impact on customer satisfaction, loyalty and positive word of mouth (Roschk and Gelbrich, 2014; Martin *et al.*, 2018). As such, this topic does not seem to be in the realm of operations management. However, service failures in e-retail are closely related to supply chain management. Companies’ inability to manage supply chains is one of the leading causes of failures in shipping goods to consumers. Failures can take the form of product inaccuracies (either specifications or quantities, or both), shipping location errors or late delivery. Therefore, operations management literature needs to be exposed to this type of empirical research, as suggested by Azemi *et al.* (2019).

Second, SFR studies peaked in the late 2000s to early 2010s. Therefore, the findings are relatively outdated, and there are not many studies examining the online retail industry. A thorough meta-analysis study by Roschk and Gelbrich (2014) investigated previous research and mainly documented conventional business as the research setting, namely, restaurants, consumer goods stores, hotels, air travel companies and others such as telecommunication companies or car repair providers. Online business was not mentioned. Even in online business studies, the types of services discussed are minimal (that is, MP3

player e-retailers by [Lin et al. \(2011\)](#), apparel e-retailers by [Jung and Seock \(2018\)](#) and online banking services by [Sousa and Voss \(2009\)](#). Therefore, the online service setting is still open for more research.

Finally, out of very few SFR studies of online retail, it is fairly rare to discuss delivery issues, though delivery problems are the most frequent failures in the e-retail industry ([Holloway and Beatty, 2003](#); [How et al., 2019](#)). [Das \(2018\)](#) has predicted that 1.6 billion parcels will be shipped by 2022 due to industry growth; hence, this type of business needs to pay specific attention to service failure issues and design the most suitable recovery strategies. This fact calls for more SFR research on delivery problems faced by e-retailers ([Crisafulli and Singh, 2017](#)).

This study attempts to fill the gap in the literature and investigate the SFR concept that is pertinently related to supply chain management. It aims to address three research questions:

- RQ1. When delivery failures occur, is there a difference in the effectiveness of various service recovery strategies in increasing customers' future intentions?
- RQ2. Given RQ1, is there a difference in the effectiveness of the service recovery strategy in increasing customers' future intentions for different types of failures?
- RQ3. Given RQ1, is there a difference in the effectiveness of the service recovery strategy in increasing customers' future intentions for more critical services as compared to less critical ones?

The remaining part of the paper is structured as follows. The following section, [Section 2](#), discusses the concept of e-retailing and order fulfillment, service failures, service recovery strategy and customer future intentions. This section also presents the hypotheses to be empirically tested. [Section 3](#) describes the research methodology, followed by the results of the study. The last section discusses the findings, implications and study limitations.

2. Literature review and hypotheses formulation

2.1 E-retailing and order fulfillment

Among the many e-commerce businesses, business to consumers (B2C) retailers experienced a major growth during the COVID-19 pandemic. The term e-retailing or e-tailing is usually used for sellers who offer goods or services over the Internet to consumers ([Jain et al., 2015](#); [Kautish et al., 2021](#)). The encounter between seller and buyer occurs first on a website and further through products received by the buyer. [Jain et al. \(2015\)](#) summarized the order fulfillment cycle in the context of online purchasing. The process starts with an order placement by the customer on the e-retailer's website; followed by order processing by the seller; order picking, packing and shipping; and finally the customer's acceptance or rejection, leading to product returns. As the whole process is complex, errors often occur, such as faulty products, late delivery or damaged product ([Crisafulli and Singh, 2017](#); [Singh and Rosengren, 2020](#); [Jain et al., 2015](#)).

Therefore, a carefully managed order fulfillment process is very crucial. Proper and careful service in order fulfillment will provide satisfaction for customers. It also provides an opportunity for sellers to increase their competitive advantage ([Kautish et al., 2021](#)). Studies evaluating this quality aspect leads to a stream of logistics service quality research, such as physical distribution service quality/PDSQ ([Mentzer et al., 1989](#)), logistics service quality/LSQ ([Murfield et al., 2017](#)) and electronic logistics service quality/e-LSQ ([Jain et al., 2021](#)).

In the context of online purchasing, scholars suggested several dimensions comprising its fulfillment quality: physical distribution service, which is measured by availability, timeliness and condition ([Jain et al., 2021](#)), and logistics or return ([Jain et al., 2017](#); [Kautish and Sharma, 2019](#)). Companies that manage the process of returning and exchanging goods

well, even designing it through various distribution channels, would gain customer satisfaction and increase customer loyalty (Murfield *et al.*, 2017).

2.2 Service failures and recovery strategies

A service failure happens when a particular service expectation of customers fails to be entirely fulfilled by a service provider (Jung and Seock, 2017; Azemi *et al.*, 2019). It is a “form of a company’s flaw when delivering a product or service” (Roschk and Gelbrich, 2014, p. 197). Given the characteristics of service, failure in this domain is unavoidable, and it is even more unavoidable in online services than off-line (Jung and Seock, 2017; Azemi *et al.*, 2019).

Holloway and Beatty (2003), one of the early studies that examine service failure in an online retail industry, found several issues encountered by customers when shopping online. Those are delivery problems, website design, payment, security, product quality and customer service. Among these issues, delivery problems were the most frequent service failure based on a survey of 295 online shoppers. A recent study by How *et al.* (2019) validated the finding through a survey of 150 online customers in Malaysia. When a service failure happens, the negative impact of the postpurchase was severe, ranging from dissatisfaction (Bitner *et al.*, 1994; Jain *et al.*, 2021), complaints (Holloway and Beatty, 2003), repurchase intention reduction (Martin *et al.*, 2018; How *et al.*, 2019; Jain *et al.*, 2021), to a switch to competitors (Lin *et al.*, 2011; Singh and Rosengren, 2020).

Therefore, whenever services fail to meet customers’ expectations, companies need to have their remedy at hand. This remedy includes actions to fix the failure and reduce customer dissatisfaction simultaneously (Jung and Seock, 2017; Azemi *et al.*, 2019). Roschk and Gelbrich (2014) proposed the remedy as a service recovery or the “form of benefit complainants receive from the company following a failure” (p. 197). Through a meta-analysis of 55 prior researches, Roschk and Gelbrich (2014) categorized compensation types into (1) delayed monetary compensation (such as vouchers), (2) immediate monetary compensation (such as discount), (3) new/exchanged goods, (4) new/reperformed service and (5) psychological compensation (i.e. apology). They argued that the most effective recovery strategy is giving the complaining customers goods or services that are similar to the ones that are flawed. That is, “immediate monetary compensation for a monetary failure, exchange for a flawed product, reperformance for a failed service, and psychological compensation for lack of attention” (p. 195).

It is pertinent for companies to deliberately design their recovery strategy since an effective service recovery would substantially alter customers’ grievances into more positive attitudes. Interestingly, companies can make these consumers even more satisfied and loyal than customers who do not experience service failure (Hart *et al.*, 1990; Chen *et al.*, 2018). This phenomenon is called the “recovery paradox” (McCullough and Bharadwaj, 1992). The literature is rich with studies examining the positive impact of service recovery strategy on satisfaction and loyalty (Lin *et al.*, 2011; Sousa and Voss, 2009; Jung and Seock, 2018; Zhang and Smutkupt, 2021), positive word of mouth (Levesque and McDougall, 2000; Jung and Seock, 2017, 2018; Singh and Rosengren, 2020) and repurchase intentions (Tarofder *et al.*, 2016; How *et al.*, 2019).

Drawing from these findings, we examine the different effects of service recovery strategies on customers’ future intentions (e.g. their plans to repurchase and spread positive word of mouth). However, contrary to Roschk and Gelbrich’s recommendation that shoppers should get an exchange for a flawed product as a recovery, we argue that merely giving a replacement does not imply a recovery strategy. A defective product should be replaced nonetheless. When a company wants to retain the satisfaction level and the positive attitude of customers, it must go beyond a product replacement so that consumers will be fully “recovered.” In other words, when there is a delivery failure and customers do not get their

products as promised, they will get the same product as an exchange. If nothing else is given, it will not be considered a recovery strategy by the e-retailer. An apology is the least powerful recovery strategy. Monetary compensation, as suggested by several studies (e.g. [Chrisafulli and Singh, 2017](#)), could be an alternative strategy; yet, it would be most valuable as an immediate compensation (such as a discount).

We posit the hypotheses as follows.

H1a. When delivery failures occur, the effectiveness of service strategies will be significantly different.

Such that,

H1b. When delivery failures occur, offering immediate monetary compensation is more effective than an apology in improving customers' future intentions toward the retailer.

Furthermore, a handful of studies have argued that scholars should take into account the severity of the problems when designing service recovery strategies ([Levesque and McDougall, 2000](#); [Magnini et al., 2007](#)). The severity of the service failures is found to influence the quality of the service recovery as perceived by the customers ([Jung and Seock, 2018](#)). Therefore, we also consider the severity of the delivery problems and propose:

H2. The effectiveness of service recovery strategies in improving customers' future intentions is greater for higher severity problems than for lower severity problems.

2.3 Service criticality

Criticality in service is defined as "the importance of the service to the consumer" ([Levesque and McDougall, 2000](#), p. 22). Through a scenario-based survey of 636 hotel guests in Canada, [Levesque and McDougall \(2000\)](#) found that different types of service recovery strategies should be employed for different kinds of service issues and criticality levels. For a lower critical-level service, merely offering compensation or assistance (that is, fixing the customers' problem) is equally effective as providing both. This finding does not apply for a higher critical-level service, in which offering either one is considered less effective than offering both to the customers.

Therefore, the critical level of service will affect the attitude of consumers, as well as their expectations, whereby the more critical or significant the service, the higher the customers' expectations, and the more likely a service fails.

Furthermore, if there is a service failure, then it becomes increasingly difficult to satisfy the complaining customers or improve the e-retailer's image. Based on [Chrisafulli dan Singh's \(2017\)](#) study, online customers might demand more than those who purchase from less critical service. The customers might not welcome any delay in receiving compensation.

H3. The effectiveness of service recovery strategies in improving customers' future intentions is greater in higher critical service than in lower critical service.

3. Methodology

1 This study examines the impact of recovery strategies on customers' future intentions, given the service failure circumstances. It also compares this relationship in more critical services to less critical ones. To operationalize this study, we designed the research and detail it below.

3.1 Research design

Prior studies have empirically found that delivery problems, such as wrong address delivery or faulty products, were the most frequent failures encountered by online shoppers

(Holloway and Beatty, 2003; How *et al.*, 2019). Therefore, delivery problems were the proxy of service failures in the e-retail industry. We classified problem severity as either *high* (e.g. wrong products) or *low* (e.g. late delivery).

Service recovery strategies included (1) *no strategy or no treatment* (e.g. merely a replacement of the same order), (2) *an apology* (accompanying the product replacement) and (3) *monetary compensation* (e.g. product replacement and compensation). This study differentiated types of service according to their criticality. More critical service was represented by e-retailers selling groceries (the items are perishable and required fresh and in good quality with proper handling). In contrast, less critical service was represented by e-retailers selling apparel products (which are not perishable and easier to package and carry).

The current study employed an experimental design to examine the effectiveness of three service recovery strategies across two different levels of problem severity with two different types of online service criticality. The experimental research design has been used in the operations management literature, especially to investigate the impact of treatments on people's behavior (Gino and Pisano, 2008). This method is best suited to test the effects triggered by a controlled condition (Field and Hole, 2002; Maxwell *et al.*, 2018).

Therefore, an experimental study was deemed appropriate for the study. It is a $3 \times 2 \times 2$ between-subject experimental design using scenarios with real online shoppers in Indonesia. Specifically, the study employed the Posttest-Only Control Group Design, in which one group serves as a control group, and the rest are treatment groups.

3.2 Research setting and manipulation

This study used an experimental laboratory design in which the experimenter conducted the study under a controlled condition. Figure 1 depicts the design of the experiment.

3.3 Participants

The participants were online shoppers of e-retailers in Indonesia. Since a directory or list of data of online shoppers in Indonesia is not available, the experimenter pooled a contact list of

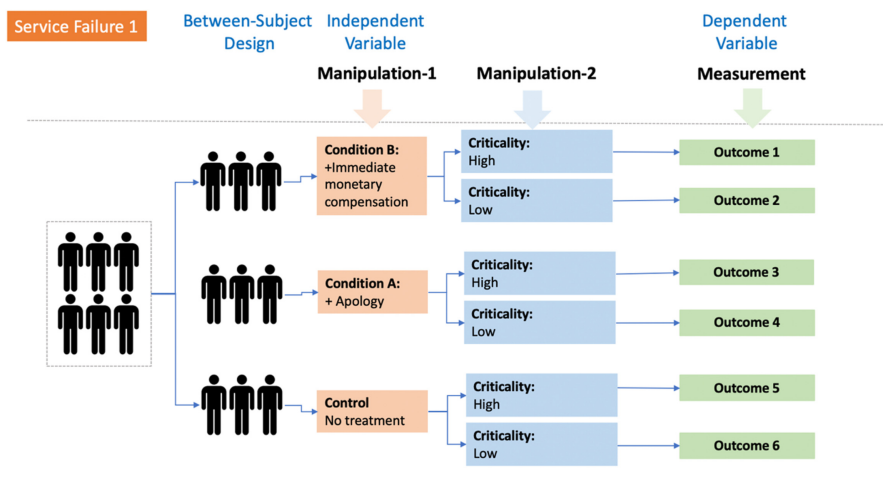


Figure 1.
The posttest-only control group design for each service failure (service failure 1 = wrong products; 2 = late delivery)

Note(s): Service Failure 1 = Wrong Products; 2 = Late Delivery

colleagues and students and offered them the opportunity to participate in this experiment. Participants need to meet two criteria to ensure that they are familiar with online shopping:

- (1) The participants have used online shopping in the last three months.
- (2) They have made at least three online purchases.

We recruited 123 participants after two weeks of contact pooling; therefore, each scenario was assigned to 10 participants (that is, $3 \times 2 \times 2 = 12$ times 10 participants = 120 participants plus 3 added participants). Even though approximately 10 participants represented each cell, the data were analyzed across cells, and thus, at least 20 participants belong to the control group or the treatment group. For example, there were 40 participants in the control group (No Recovery), 40 participants in Treatment 1 (Apologize) and another 40 participants in Treatment 2 (Immediate Monetary Compensation) (see Table 1).

To obtain randomness, the experimenter numbered the participants and assigned the scenarios using a random generator. After the participants were randomly assigned to each scenario, the participant received a link to a specific scenario.

3.4 Instrument and research procedure

Table 2 details the operational definition and the measures used by this study.

Would compensation be necessary?

		Late delivery (severity LOW)		Wrong quantity and/or quality (severity HIGH)	
		Criticality service LOW (apparel e-retailer)	Criticality service HIGH (grocery e-retailer)	Criticality service LOW (apparel e-retailer)	Criticality service HIGH (grocery e-retailer)
Recovery strategies	No recovery strategy (merely product replacement)	#1	#2	#3	#4
	Replacement + apology	#5	#6	#7	#8
	Replacement + immediate monetary compensation	#9	#10	#11	#12

Table 1.
The matrix of experimental design

Variables		Operational definition	
Dependent variable	Future intentions	Customer's intention to repurchase from the same e-retailer and spread positive word of mouth	Four items, five-point Likert scale (Levesque and McDougall, 2000)
Independent variable	Service recovery strategies	Forms of benefit that complainants receive from the company following a failure (Roschk and Gelbrich, 2014)	Three groups - No treatment - Apology - Immediate monetary compensation (e.g. discount)
	Service criticality	The importance of the service to the consumer (Levesque and McDougall, 2000)	Two conditions - High (grocery e-retail) - Low (apparel e-retail)
	Failure severity	Consumer's perception of seriousness of the service failure (Jung and Seock, 2018)	Two conditions (factors) - High (wrong products) - Low (late delivery)

Table 2.
Operational definition of variables

3.4.1 Manipulation check. The study performed manipulation checks after the treatment by asking the participants after they read the scenario and before measuring their future intentions. Manipulation checks were performed to determine whether the stimuli given were perceived by the respondent as intended by the experimenter. A check was performed toward the different types of service recovery strategies, the criticality of the services and the severity of the failures.

3.5 Data analysis

There were two steps of analysis performed. The study began the analysis with a manipulation check, using independent sample *t*-test and ANOVA, then proceeded to the hypothesis testing using general linear model (GLM). All statistical tests were performed using SPSS ver. 25.

3.6 Follow-up analysis

After obtaining the results from data processing, this study deepens the findings by examining the correlation between participants' demographic data and their willingness to repurchase after a failure in service delivery. The variables chosen were gender, age and level of education because these variables might influence a person's purchasing decisions.

Furthermore, the research results were elaborated by conducting interviews with five participants. We obtained their contact numbers through the initial questionnaire that the participants filled out. These five participants were then asked about their experiences during delivery failures, their opinions and decisions.

Separate interviews were also conducted with seven managers who work at online retailers to explore more insights into the results obtained. This part was conducted using a snowball method, which allowed the experimenter to obtain the contact on a referral basis. All interviews ranged from 45 to 90 min and were recorded. The information was then transcribed and coded using NVivo 12.0 software.

The researcher and an assistant read the transcripts separately and extracted meaningful keywords related to frequent delivery problem types, challenges in managing e-retail deliveries and problem encounters. There were no *a priori* categories since we aimed to explain and justify the experimental results. Finally, the researcher and the assistant compared notes, grouped the codes around the same theme and proposed links among relevant clusters or themes.

4. Results

The profile of the participants is detailed in [Appendix 1](#). Female participants dominate with 65% of the total. Participants' ages ranged from 18 to 60 years old, with a mean of 31.33 years old. Most of the participants have at least an undergraduate degree and serve as private employees at work.

[Table 3](#) shows the manipulation check. The results indicate the effectiveness of all manipulations. The participants rated the apparel products as low (less perishable and therefore less critical). In contrast, another group of participants rated the grocery products as high (more perishable), and the difference between groups was significant ($t_{(121)} = 18.69$; $p < 0.05$), whereas, in terms of severity manipulation, participants rate late delivery as less severe than wrong products. The difference between the two groups was significant ($t_{(121)} = -2.49$; $p < 0.05$).

The last manipulation check was performed for the service recovery strategies. Since there were three groups assessed (i.e. one control group and two treatments), a one-way ANOVA was employed. The results showed the different means of the three strategies. No recovery

Would compensation be necessary?

was perceived to be the least meaningful ($\mu = 2.15$ of 5.0), apology was the second best ($\mu = 3.23$), while monetary compensation or discount voucher was the best strategy ($\mu = 4.20$). The three groups were significantly different ($F_{(2,120)} = 34.30; p < 0.05$).

Before the study proceeded with the hypothesis testing, the experimenter checked the validity and reliability of the measurement for the dependent variable (that is, future shopping intentions) and the violation of assumptions for the data (that is, normality and homogeneity of variance).

Using the Spearman correlation, we found that all future intentions (FI) items correlated to some extent (ranging between 0.575 and 0.792). The values were not too high but still statistically significant ($p < 0.05$). Furthermore, confirmatory factor analysis (CFA) was performed to establish the dimensionality of the FI construct. The loading of all items was above 0.50, which was the threshold for unidimensionality (Anderson and Gerbing, 1988), and the goodness-of-fit indices were above 0.90 (Gerbing and Anderson, 1988). The results confirmed the validity of the items in measuring future intentions (detailed in Appendixes B.3). Cronbach's alpha was 0.91, indicating high reliability (Hair et al., 2009).

The normality of the data was tested using skewness and kurtosis statistics, as suggested by Kline (2015). The results showed that the skewness statistic was 0.235, and the kurtosis statistic was -0.680 , which indicated a normal distribution (Kline, 2015). Furthermore, Levene's test checked homogeneity of variance, and the result was not significant or $p = 0.384$. This result denoted no heterogeneity of variance. We proceeded further as no violation of assumptions was detected.

Table 4 details the results of two-way ANOVA testing using the GLM to test all hypotheses. Hypothesis 1a conjectured that the effectiveness of the three service recovery strategies in encouraging future shopping intentions would be significantly different. We found that the result supported H1a ($F_{(2,120)} = 7.524; p < 0.05$). Furthermore, the *post hoc* test confirmed that the monetary compensation (that is, voucher) was the most effective. The mean difference between voucher and apology and between voucher and no recovery was significant ($p < 0.05$). Therefore, H1b was also supported.

		<i>F</i>	<i>t</i>	<i>df</i>	Sig. (two-tailed)
Criticality	The criticality (or durability) of products (low vs High)	n/a	18.694	121	0.000
Severity	The severity of the service failure (low vs High)	n/a	-2.489	121	0.014
Service recovery	No recovery vs apology vs discount voucher	34.303	n/a	(2; 120)	0.000

Note(s): n/a = statistics not applied

Table 3. Results of manipulation check

DV: Future intentions	Type III sum of squares	<i>df</i>	Mean square	<i>F</i>	Sig.	Decision
Recovery	15.048	2	7.524	7.546	0.001**	H1 supported
Severity	0.194	1	0.194	0.195	0.660	-
Criticality	0.065	1	0.065	0.066	0.798	-
Severity × recovery	2.240	2	1.120	1.123	0.329	H2 not supported
Criticality × recovery	1.204	2	0.602	0.604	0.548	H3 not supported

Note(s): Significant at $p < 0.01$

Table 4. Results of hypothesis testing

Hypothesis 2 conjectures that the effectiveness of service recovery strategies in improving customers' future intentions is greater for higher severity problems than lower severity problems. At this point, three variables are examined, that is, service recovery strategies (no recovery, apology, discount voucher), severity (low, high) and future intentions as the dependent variable.

From **Table 4**, severity was not significant ($F_{(1, 117)} = 0.195, p = 0.660$), and the interaction between recovery and severity was also not significant ($F_{(2, 117)} = 1.123, p = 0.329$). These results indicate a lack of evidence to support **H2**.

H3 predicts that the effectiveness of service recovery strategies in improving customers' future intentions is greater in higher critical service than in lower critical service. The data analysis and results were similar to **H2**. While recovery was significant, criticality was not ($F_{(1, 117)} = 0.066, p = 0.798$); hence, the insignificant interaction between recovery and criticality ($F_{(2, 117)} = 0.604, p = 0.548$). Therefore, there was a lack of support for **H3**. **Table 4** also presents the decision.

The interactions between service recovery, criticality and severity for the last two hypotheses are displayed below. The pattern of the low critical service resembles that of the high critical one, denoting insignificant difference. A similar result is found in the severity groups (see **Figure 2**).

As we pondered these initial results, we explored the chance that the participants' demographics played roles in their decisions. **Table 5** displays the final result. Of the three basic profiles – namely, age, gender and education level – only age significantly relates to future intentions. Interestingly, it is a negative effect ($t = -2,856, p < 0.05$). This indicates that younger participants are less willing to repurchase following a delivery failure.

Finally, the interview with five participants gave insights into results. Their responses are quoted in Discussion section. In comparison, the interview with managers provided more perspectives related to e-retail delivery practices. We coded all valuable viewpoints and clustered the codes into meaningful relations. This clustering was exploratory in nature and shown in **Figure 3**. Future studies might test these proposed relationships.

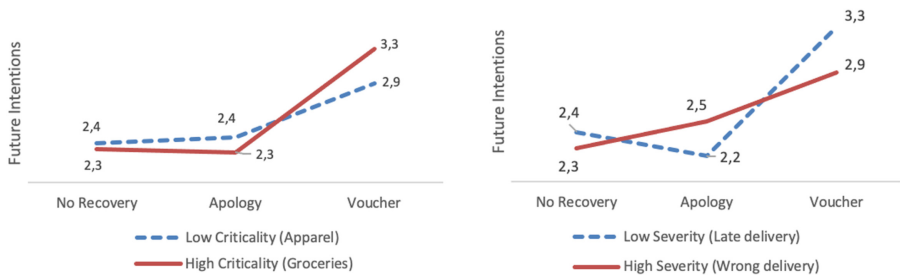
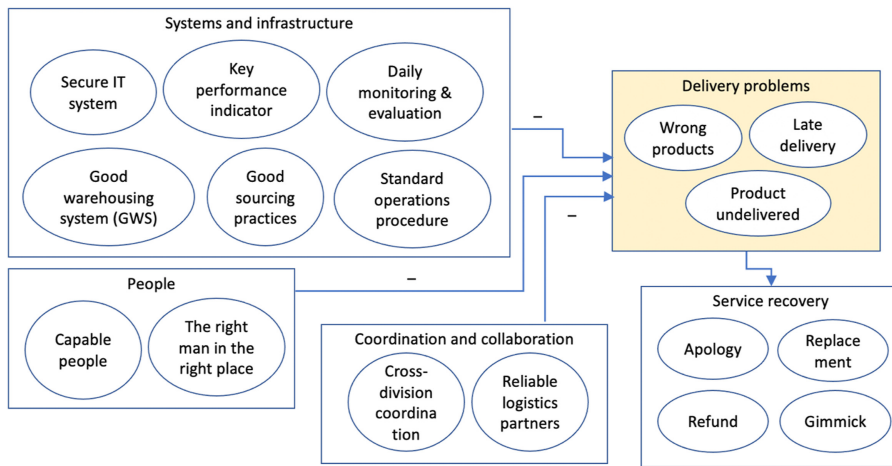


Figure 2. Results of the interactions effects

Table 5. Results of participants' demographics and effect on future intentions

	β^*	Std. error	F	t	Sig.
Age	-0.028	0.010	8.158	-2.856	0.005**
Gender ^a	n/a	n/a	2.396	n/a	0.124
Education level	n/a	n/a	0.792	n/a	0.501

Note(s): *Unstandardized coefficient is reported
 **Significant at $p < 0.01$
^aFor Gender and Education, ANOVA was employed



Would compensation be necessary?

Figure 3. Coding results from interview with managers

The shaded cluster represents forms of *delivery problems* frequently encountered by the managers (i.e. wrong products, late delivery and undelivered products). The *service recovery* cluster indicates strategies to overcome the issues, based on the managers' responses. For example, giving a gimmick (or gift) is a unique strategy to win their customers back. The rest of the clusters represent actions by the managers to prevent the problems, hence the negative association. In other words, these three groups of practices (namely, systems and infrastructure, people and coordination and collaboration) could preempt the delivery problems.

These findings, along with the qualitative data, will be further discussed in the next section.

5. Discussion

The COVID-19 pandemic has made fundamental changes in our lives. Businesses struggle to survive due to social restrictions and the declining economy of the community. On the other hand, companies that equip themselves with online shopping schemes upsurge and gain advantages. Still, many e-retailers use third parties in the delivery of their products, and this is a vulnerable thing. Delivery errors can occur, and it becomes increasingly difficult for e-retailers to control the overall quality of their services. Given that delivery defects are unavoidable, e-retailers need to understand the most effective recovery strategies.

This study examines the effect of different service recovery strategies on customers' future intentions after a service failure. As theorized by McCollough and Bharadwaj (1992), a recovery paradox could happen; that is, the service failures could become moments to improve customers' satisfaction to a level that is even higher than before the failure. This study also tests the impact of different service failures in terms of their level of severity and criticality. The results support some of the conceptual hypotheses specifically related to the service recovery but fail to find support for the rest of the hypotheses.

All qualitative data are utilized to reveal the reasons and underlying meaning of the first-stage findings. All findings are discussed further below.

5.1 Implications for theory

One of the early studies investigating service failure in an online industry was that of Holloway and Beatty (2003) who confirm that delivery problems are the most common failure

to happen to online shoppers. The current research draws upon this discovery and assesses the influence of service recovery strategy on customers' future intentions.

Using an experimental method, this study found that recovery attempts indeed matter for customers. Nevertheless, different recovery types work differently in improving customer intention. As it turns out, merely replacing the wrong products and giving an apology are not sufficient to encourage customers to repurchase in the future. Giving an immediate monetary compensation is the most effective in doing so. This finding deviates from [Roschk and Gelbrich \(2014\)](#) who argue that giving compensation similar to the defective items would be the most effective. In this case, our participants are reluctant to shop again when an online service provider merely replaces their purchase and feel indifferent accepting an apology. A monetary compensation that could be used right away is deemed more beneficial.

This study also assesses different severities of the problem to check whether customers would still be willing to repurchase and create positive word of mouth after the provider fails to deliver on its promise. Furthermore, the different types of online products are tested to ensure that customers perceive product criticality differently.

In contrast to what we expected, the results show no support for these conjectures. We are puzzled by these findings, which are not aligned with previous studies (e.g. [Levesque and McDougall, 2000](#); [Jung and Seock, 2018](#)). After a careful examination of the data, we found that the mean level of customers' future intentions decreases from low criticality (apparel products) to high criticality (groceries), as well as from low service failure (late delivery) to high service failure (wrong products). This pattern is aligned with what we predicted. However, the reduction of customers' willingness to repurchase is merely slight and does not warrant a significant difference between the groups.

The results of interviews after obtaining these experimental data show that for the participants, the level of service criticality does not determine their decision to make a repurchase. Based on an interview, one of the participants confirmed this:

A failure is a failure, whether it is merely late delivery or wrong products. Getting the wrong package is *of course* more annoying, but that does not necessarily mean I could easily forgive a late delivery. I will just switch to a different seller next time. (Participant 1)

Another participant seems to agree with this stance,

Could there be any more nuisance than delivery failures? [It] does not matter if I bought a dress or a shoes or meals. I will demand a *proper compensation* or else blacklist the seller. (Participant 3, italic was added)

Based on the interviews, online shoppers would not go easy on any delivery failures for any products they purchase. Recovery strategies, nevertheless, matter to win them back. E-retailers could not merely justify themselves, since a prior study has established the insignificant effect of excuses on customer satisfaction after a failure ([Tarofder et al., 2016](#)).

Furthermore, insights are also elicited from managers responsible for the logistical aspects of an online store. The managers specified the importance of delivering the right products the first time to customers since customers could be dissatisfied with minuscule mistakes and spread negative reviews to other customers through social media. This is aligned with previous research related to logistics service quality ([Murfield et al., 2017](#); [Jain et al., 2021](#)) and fulfillment reliability ([Kautish et al., 2021](#)). The managers of the current study suggested good practices in terms of systems and infrastructure, selecting capable people and coordination and collaboration with reliable logistics partners.

Therefore, this study could infer that, regardless of the service criticality and failure severity, customers would be disinclined to make a subsequent purchase or a recommendation when the provider fails to meet the expectations. It will take some time to win customers' trust, as suggested by [Božič et al. \(2020\)](#). Taking into account the tight

competition among online providers, customers seek high-quality services and are more intolerant toward failures, especially younger people. In sync with Singh and Rosengren (2020), the current study argues that customers might easily switch to different online providers whenever encountering issues with the delivered products.

Finally, this study also shows that it is pertinent for e-retailers to not make any mistakes in shipping packages to consumers. As argued by Hjort *et al.* (2019), managing the returned goods will be far more complicated and costly. In this case, the concept of return management in the supply chain is commonly neglected. Future research on delivery failures needs to be integrated with reverse logistics and service recovery strategy.

5.2 Implications for practice

This study confirms the importance of service failure in lessening customers' willingness to repurchase or spread positive word of mouth to their surroundings. If given the proper compensation, the service failure could become a powerful driver for online providers to boost customer loyalty.

This study suggests that managers should design the most effective service recovery to win customers back to the business. Conveying an apology is not sufficient, as customers are now more demanding. Ironically, an apology could be considered cliché by the customers and may even reduce their repurchase intentions (please refer to Figure 2). Based on the findings of this study, customers prefer monetary compensation, either for immediate usage or for their subsequent purchases. This strategy would improve their repurchase and word-of-mouth intentions.

One of the interviewed managers affirmed that employees have to work thoroughly in an e-commerce's logistics since there are various problems that can occur, mostly: (1) delivering the wrong products, (2) delivering over or under the ordered quantity by mistake and (3) undelivered products. This manager has to manage 50,000 stock-keeping units in his warehouse and manage daily workers. These operations are prone to mistakes with such a wide variety of products and enormous number transactions per day.

It is essential to have a good warehousing system (GWS) in place. This suggestion was raised by one of the managers during an interview. It does not have to be a high-technology-based GWS – even though this would be an excellent enabler – because the system itself is more important. While a GWS would enable managers to prevent sending the wrong products, a reliable logistics partner would hinder an incorrect delivery.

Furthermore, managers should be aware that customers might not tolerate even minor or negligible service failures. Therefore, any service issues could be the pathway for losing customers. Accordingly, operation managers should design the service blueprint meticulously, coupled with the implementation of control points where services might fail as well as preventive-contingent actions.

5.3 Limitations of the study

The findings associated with this study are not without limitations. First, this study assesses two treatments of service recovery strategies in improving customers' future intentions (i.e. apology and voucher), as well as one outcome (i.e. future intentions). Future research might expand the alternatives and examine their impact on customer satisfaction or loyalty.

Second, this study recruited participants who were easily accessed by the researcher: most of them are women and work as employees in private companies. Future research should enrich the findings with a more expansive range of participants to ensure generalizability.

Finally, the findings are limited to the data obtained using a scenario-based experiment. Future studies could improve this by designing a more robust technique for testing causality or unique approaches, such as the causal impact technique and the data envelopment analysis [1].

6. Conclusion

This study draws upon service failure research from the marketing literature. Operations theorists and managers need to be cautious of any delivery issues in service sectors, particularly in the online retail business. As e-commerce business grows in Indonesia, consumers are spoiled with a vast choice of products in various online marketplaces. A robust service delivery needs to be designed and its high standards maintained. Only through such practices can online companies retain their valuable customers and sustain their presence in the market.

Note

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Appendix 1

Would
compensation
be necessary?

	Experiment (<i>n</i> = 123)		Interview (<i>n</i> = 5)	
	Frequency	Percent	Frequency	Percent
<i>Gender</i>				
Men	43	35.0	2	40.0
Women	80	65.0	3	60.0
<i>Age</i>				
	18–60 years old*		22–50 years old*	
<i>Education</i>				
High school graduate/equal	24	19.5	–	–
Undergraduate degree/equal	57	46.3	2	40.0
Master's degree/equal	39	31.7	2	40.0
Doctoral degree/equal	3	2.4	1	20.0
<i>Occupation</i>				
Student	34	27.6	3	60.0
Housewives	10	8.1	–	–
Civil service staff	1	0.8	–	–
Private employee	66	53.7	2	40.0
Entrepreneur	8	6.5	–	–
Others	4	3.3	–	–

Table A1.
Profile of the
participants

Note(s): *Each participant reveals their actual age (in years)

	Frequency	Interview (<i>n</i> = 7)	
		Frequency	Percent
<i>Gender</i>			
Woman	2		28.6
Man	5		71.4
<i>Position in the company</i>			
Director/equal	2		28.6
Manager/general manager	3		42.8
Supervisor/equal	2		28.6
<i>Tenure at e-commerce industry</i>			
	1–3 years		

Table A2.
Profile of the e-retail
managers

*Criticality**Low*

You shop online from the lalaland.com retail store. You have never shopped at this online shop, but have often heard the name and read the reviews. The lalaland.com online store is the most complete place to shop if you want to buy *apparel products*. You shop online from the gogogreen.com retail store. You have never shopped at this online shop, but have often heard the name and read the reviews. The online shop gogogreen.com is the most complete place to shop if you want to buy *fresh products* (groceries), such as fruits, fresh vegetables, even fresh meat (chicken, beef, fish, etc.)

*High**Severity**Wrong products*

You have made a transaction for the product offered. However, when the package arrived, the item does not match the description on the shop page

Late delivery

You have made a transaction for the product offered. However, the package you purchase does not arrive and is now past the delivery period promised by the shop

*Recovery**No recovery (product replacement)*

When you complain, the customer service department just says, "OK, we will replace the item". you get a replacement the next day

+Apology

When you complain, the customer service department says, "we apologize profusely. This will not happen again. We will replace the goods. You get a replacement the next day

+Immediate monetary compensation

When you complain, the customer service department says, "this will not happen again. We will replace the goods, and as an apology, we will discount your purchase as much as 30%." you get a replacement item the next day, and the store only deducts the credit card you used when purchasing by 70% from the initial price (30% discount)

2.1 Scenarios**2.2 Measures for future intentions (Levesque dan McDougall, 2000)**

How likely would you (five-point Likert scale, 1 = very unlikely, 5 = very likely)?

- (1) Recommend the business (gogogreen.com or lalaland.com) to your friends and colleagues? (loading: 0.982)
- (2) Consider gogogreen.com or lalaland.com as your primary choice in shopping? (0.975)
- (3) Continue to shop at gogogreen.com or lalaland.com even if there is a price increase? (0.956)
- (4) Encourage your friends or colleagues to shop at gogogreen.com or lalaland.com? (1.068)

2.2.2 List of interview questions

- (1) How long have you been managing the firm's supply chain?
- (2) What specifically are your responsibilities?
- (3) Could you please describe your tasks and daily activities?
- (4) What kind of problems do you encounter along the line?
- (5) How do you resolve the problems or challenges?
- (6) What do you think are the key success factors in managing the supply chain of e-retail?

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