# OPERATIONS PROCESS OF e-SERVICE RECOVERY ATTRIBUTES AND THEIR RELATIONSHIP WITH PERCEIVED JUSTICE

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**Abstract**
An e-service recovery process is an important operational process. It is a second chance to retain loyal customers by rectifying e-service failures. This study investigates the relationships between e-service recovery processes attributes (compensation, respond speed, and apology) and perceived justice constructs (interactional, distributive, and procedural). Based on the equity theory and exchange theory customers expect to be rewarded with equal value to the losses during the recovery process. This study looks at how users respond to perceived justice when subjected to different levels of e-service recovery attributes. The results indicate that all service recovery process attributes had a significant main effect on all perceived justice variables. The study suggests that the different levels of compensation, responds speed, and apology will affect customer's perception of perceived justice differently. The results indicate that the relationship between service recovery process and perceived justice is applicable even in an e-service environment. The outcome of this study contributes to the research on e-service recovery processes. The empirical results further delineate the role of social justice in e-service recovery.

**Keywords--**Service failure, service recovery, perceived justice, compensation, respond speed, apology

## INTRODUCTION
In 2019, e-commerce sales contribute about USD3.5 trillion and are projected to increase by 15% each year [1]. E-commerce has changed retail. It has developed accordingly to the changing needs of people. E-commerce has altered customer to shop online. Hence, most service providers venture into e-commerce or online business making online business a strategy that allow service providers to remain competitive [2].

Service recovery is mostly significant in order to restore the order cycle. Unreliable deliveries can post a disruption to customer supply chains. Delivery time is one of the main concerns that could cause dissatisfaction. According to Brinsmead [3], there is a trend in the logistics industry to be proactive in recovering service failures. It can constitute a competitive edge for a service provider.

To remain competitive, e-service service providers must be able to fulfil customers' request. Fulfilling customers' request is one of the challenges in service delivery.

This is true for both face-to face service or e-services. It is often difficult to attain, as goal of services is to meet or exceed customer expectations. Since humans are susceptible to service errors, which could be setbacks in fulfilling customer needs. The quality of a service depends on the provider's performance as well as the customer's participation [4].

When service fails, service recovery is important in regaining the customer's loyalty, and this in turn has a direct link to increased profit for the service firm. Effective problem solving in a service environment had a strong impact on customer satisfaction, loyalty, and therefore profit [5]. Generally, customers are angrier or dissatisfied if no action was taken after a failed service. Past research show that service failures are viewed more positively after service recovery actions. Occasionally these efforts can improve customer satisfaction higher than if there are no failures [6].

In this study, E-services are considered as any interactive services delivered on the Internet using advanced telecommunications, information, and multimedia technologies [7]. During e-service transactions, failure in meeting customer needs do occur. Hence, e-service providers will have to find ways to counteract these failures to maintain good standing with customer.

Accordingly, this study was designed to identify effective recovery processes for failures during e-service transactions. The setting is based on failure during e-service transaction. The purpose is to find the appropriate levels of reimbursement to be given to customers as a service recovery action. The result could be included in company policy as a measure to counter service failure.

Links between service recovery and justice theory have been found in past studies. Justice theory can help postulate an image of how customers perceive service recovery activities. Since people are keener to perform online transactions, so this study can help service providers to determine the necessary type of recovery activities for online service transactions. The justice theory constructs under investigation are procedural, distributive, and interactional justice.

Procedural justice is focused on the process by which the result is obtained [8]. Distributive justice is concerned with the actual outcome of service recovery. Interactional justice is the way complaints are treated [9]. The study will focus on the levels of compensation, apology, and response time, and their relationship on perceived justice (procedural, distributive, and interactional justice).

## LITERATURE REVIEW
### Service Failure
Service failure happens when the services being delivered fail to meet the customer's expectation [10]. When this happens, customer will seek other service providers to do their shopping.

If there are no rectify action by the service provider, they will lose the customer to another service provider. Research show that service failure is the key that drives customer-switching behavior [11]. It is important for service providers to have a good recovery policy in place as about 60 percent of customers switching behavior are due to service failures and failed recoveries [12].

The ability to resolve the failure issue will determine if the customer stays with the current service provider or choose another provider for their services.

Service providers should emphasize failure recoveries because studies have shown that customers are more displeased when failures are not corrected than during the actual failures [13]. Lack of response from a service provider after failure is a main cause of customer displeasure, which often leads to customer defection.

### Service Recovery
Service literature recommends that service recovery attempts should be instigated during service failure. Service recovery is the action a supplier takes to rectify dissatisfaction [14]. Successful service recovery action has become a favorable strategy to minimize failures and retain customers. Effective service recovery can help service providers gain a competitive edge [15].

When a service failure happens, the service provider is given a second chance to correct the mistakes to achieve customer's trust and loyalty. This is the "moments of truth" between the service provider and customer [13] [16]. Service recovery plan should be in place to handle customer complaints and grievances.

Compensation is one of the ways to address service failures. Service providers can offer tangible compensation such as money, discounts, or replace with new product or services, or it can be in intangible form such as apology, empathy, or showing concern when the customer face failure.

Response time to handle the failure will also be examined in this study. This is also an important factor for e-service recovery where customer will expect responds within seconds. According to the justice theory and equity theory, customer will be satisfied if the retribution is equal to the inconvenience that they encounter. In this study we will look at how customer perceive the different levels of compensation in time of failure.

### Service Recovery and Justice Theory
In past studies, service recovery was linked to perceive justice theory and equity theory [17] [18] [19] [20]. Perceived justice comprises of procedural justice, interactional justice, and distributive justice.

Procedural justice is the fairness of the policies and procedures in the recovery activity [21] [22]. It is focused on the process by how the result is obtained [8]. According to Goodwin and Ross [20], customer's voice to present information is considered in procedural justice.

The ability of the service provider to be neutral influence the decision-making process in procedural justice [23]. The customer feels that the service provider is being fair during the recovery action. Following a set of rules and procedure in service recovery activity is also an important factor in procedural justice [24].

Interactional justice focusses on how service provider handles complain. It considers interpersonal fairness. That is, how front-liners or contact employees handled the recovery process will be remembered by the customer [18] [25]. Customers satisfaction increase if service providers show empathy and concern following a service failure. Hence, the interaction between service provider and customer during the recovery process is as important as the outcome of the service recovery itself.

Distributive justice is concern with the physical outcome of service recovery. The customer will be perceived if the solution offered by the service provider is fair.

Past research reflects different results for distributive justice. Goodwin and Ross [24] implies that customers prefer tangible remuneration as a solution for service failure while, others show that atonement was not a requirement [26] [14]. According to Sabharwal et al., [27], distributive justice is important in influencing decisions of customer satisfaction during a service recovery transaction.

All customers with service failure experience want to be compensated fairly for their inconvenience. Service providers need to find the correct level of compensation in the recovery process to ensure that customers are satisfied and will continue to do business with them. A comprehensive understanding of customers' reaction to compensation is a key factor in service recovery.

### RESEARCH METHODOLOGY
#### Data Collection Method
The sampling frame for the data set consisted of university community located in the Midwestern United States. Questionnaires were sent via e-mails to the identified respondents and 252 questionnaires were analyzed. This study utilized a between subjects' multivariate analysis of variance (MANOVA).

The purpose of the utilizing MANOVA is to investigate the effects of different levels of the service recovery variables: compensation, apology and respond speed as independent variables on respondents' perceived justice as dependent variables in an e-service environment. All variables were manipulated with fixed effects.

The service recovery factors are compensation, apology and respond speed are examined as between-subjects' factors. The two levels of compensation are no compensation versus $20 refund. The two levels of apology are automated apology versus personal call apology. The levels for respond speed are immediate respond versus delayed respond. A sample scenario is provided in Appendix.

All the respondents were exposed to a written scenario describing a service failure in an e-commerce setting. Using scenarios in service recovery studies is suitable as it minimizes memory bias, enhance variability, and reduces the randomness of individual responses in customized service settings [28] [13] [29]. Eight scenarios were developed, each with a combination of the manipulated factors. The analysis was conducted using SPSS version 18.0 for Windows.

### DATA ANALYSIS
The data was tested for all the four assumptions for running MANOVA. All assumptions were met. Table 1 shows the descriptive statistics of the data. When a $20 compensation is given, apology is given through personal call and the respond speed is within 1-day, Interactional justice has a mean value of 5.317 and distributive justice has a mean value of 5.315.

Interactional justice has the highest mean value of 4.176 when the respond speed is within 5 days with personal apology and $20 compensation. When apology is given through email, procedural justice has the highest mean value of 4.531 when the

respond speed is 1 day. However, when the respond speed is 5 days, Interactional justice has the highest score of 4.108.

When no compensation is given, Interactional justice scored the highest at 4.438 with personal apology and 1-day respond speed. Even with the respond speed of 5 days, Interactional justice score the highest mean at 3.458.

**Table 1.** Means for Interactional Justice, Distributive Justice, and Procedural Justice as a Function of Compensation, Apology and Respond Speed

| COMP | APO | RS | n | Interactional Justice M | Distributive Justice M | Procedural Justice M |
|---|---|---|---|---|---|---|
| No Comp | Email | 5 days | 27 | 2.426 | 1.889 | 2.222 |
|  |  | 1 day | 35 | 3.429 | 2.714 | 3.667 |
|  | PC | 5 days | 30 | 3.458 | 2.456 | 2.656 |
|  |  | 1 day | 32 | 4.438 | 3.354 | 4.083 |
| $20 Comp | Email | 5 days | 37 | 4.108 | 3.829 | 3.343 |
|  |  | 1 day | 27 | 4.444 | 4.358 | 4.531 |
|  | PC | 5 days | 27 | 4.176 | 3.691 | 3.346 |
|  |  | 1 day | 37 | 5.317 | 5.315 | 5.27 |

MANOVA was conducted to examine if the service recovery factors, 1. compensation (no compensation or $20 compensation), 2. apology (e-mail or personal call), and 3. respond speed (5 days or 1 day) will have effects on the perceived justice construct. All main effects and interactions were tested for significance. The results show that customers perception of interactional justice, procedural justice, and distributive justice levels were significantly different for each level of compensation, apology, and respond speed. All independent variables showed significant effects at $p<.05$, meaning that all the service recovery process (respond speed, apology, and compensation) attributes had a significant impact.From Figure 1, it can be observed that when there is no compensation, distributive justice is significantly lower than both interactional and procedural justice. When there is a $20 compensation, distributive justice surpasses procedural justice. It can also be observed the distance between interactional justice and distributive justice is lesser. The level of interactional justice transcends both distributive and procedural justice, regardless of compensation.
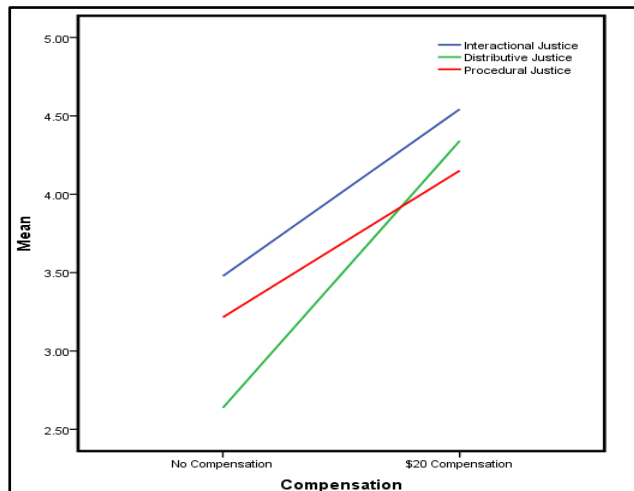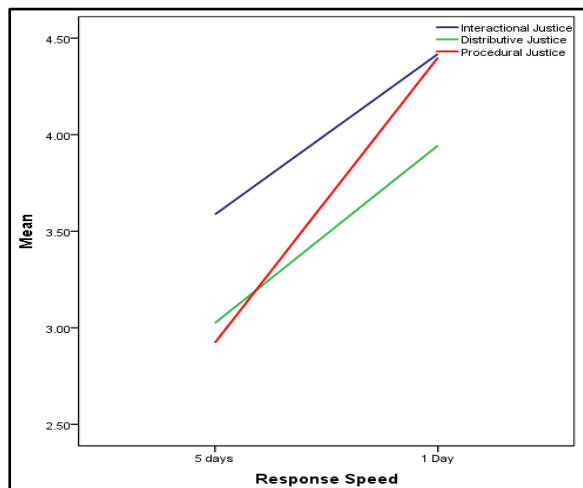

**Figure 1.** Levels of Compensation

It can be observed from Figure 2, interactional justice exceeds both distributive justice and procedural justice at both levels of

apology (e-mail, personal call). This is followed by procedural justice and distributive justice. Furthermore, interactional justice has the steepest slope demonstrating that interactional justice is the most sensitive to the different levels of apology. The gap between procedural justice and distributive justice reduce with a more personal apology.
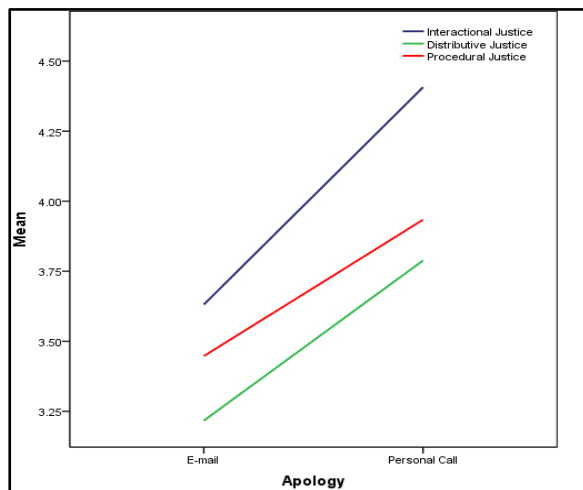

**Figure 2.** Levels of Apology

Procedural justice is greatly affected by the difference in respond speed (Figure 3). For longer response speed, procedural and distributive justice responded equally at almost comparable levels. However, interactional justice is at a higher level. When the respond speed is shorter, procedural, and interactional justice shows similar responds however distributive justice shows a much lower respond. This indicates that procedural justice is the most sensitive to the length of the response time taken by service providers to rectify a failure.


**Figure 3.** Levels of Response Speed

**DISCUSSION AND CONCLUSIONS**

This study investigates the different levels of service recovery factors (compensation, respond speed, apology) and how they influence customers perception based on perceive justice. The test of main effects for the e-service recovery attributes (compensation, respond speed, and apology) on the perceived justice constructs (interactional, distributive, and procedural) reflects that all three e-service recovery attributes had a significant main effect to all three perceived justice variables. These findings are supported by previous research in traditional service recovery processes and their effect on perceived justice

[28]. From the results, it shows that e-service customers are willing to receive these forms of recovery practice. The customer will be more satisfied if the recovery practice is fair or equitable to the losses [17] [18] [20] [30].

The study reflects that the most favorable practice is when the service provider provide compensation, give a personal apology, and respond fast to the failure. When compensation is given, the lines for interactional justice and procedural justice are near to parallel. The mean line for distributive justice shows a sharper angle with a $20 compensation. This supports past research as interactional justice is more concerned about how information is communicated in the recovery process, and the monetary compensation reflects acknowledgement of responsibility in the recovery effort [31]. The steeper slope for distributive justice supports the justice theory as distributive justice respond to the actual outcome of the recovery process. Accordingly, monetary, or physical compensation will have a significant effect on distributive justice.

Procedural justice reflects how the customers perceive the fairness of policies and procedures during service failure. Procedural justice's positive main effect denotes that the compensation given by the service provider is a practical effort at recovering from the failure that they encountered.

For respond speed, procedural justice has a steeper positive slope as compared to interactional justice and distributive justice. The slope for interactional justice and distributive justice are quite parallel. When a service provider responds to service failure in a much shorter time, customers associated this action to an act of responsibility. If the service providers then follow the rules and procedure for correcting their failure with a quick response, this will enhance customers perception of procedural justice. This shows that the time taken for a service provider to respond to failures is of great importance to e-service consumers.

For different levels of apology, the mean line for interactional justice and distributive justice are near to parallel. This is because interactional justice is more focused with how the service provider communicates after the failure, and distributive justice is concerned about fairness and that the service provider takes responsibility for the failure. Hence, their respond is more positive than procedural justice. Procedural justice is more concern on how the service provider follows the policy and guidelines, the slope for procedural justice is less positive as compared to the former constructs.

Since customers who performs online transaction has some level of trust with the service providers [32], the action of recovery seems to reflect that the provider is acting in the best interest of the customer. This study shows that the recovery factors are also applicable to counter e-service failure.

This investigation is not exhaustive. There may be other forms service recovery attributes that would cause positive effects on respondents' level of perceived justice (interactional, distributive, and procedural). Further research on this topic is needed.

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