

Service Failures and Recovery Strategies in E-tailing: Examining the effects of Product Type and Transaction Frequency

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Abstract—The purpose of this paper is recognize product type differences on post recovery satisfaction levels when online purchase failures happen at any stage during an order fulfilment cycle. In particular, we determine how it changes based on the recovery strategy adopted. Findings support the hypothesis that the satisfaction regarding an online purchase reduces when the product is purchased with more shopping effort, i.e. customers will have more satisfaction regarding the order fulfilment process when buying a convenience good than buying a speciality good. This study is unique in that, unlike previous studies on order fulfilment process in e-tailing investigating the relationship between severity of a service failure and post recovery satisfaction, we examine how does the satisfaction levels upon service recovery strategy adopted changes based on the frequency of purchase of the customer on an e-tailing platform. Results suggest that the satisfaction after an online purchase failure and its recovery tends to be high for a customer who has a high frequency of purchasing online than a person with a low frequency of purchasing online.

Index Terms—Online service failure, Service failure severity, Service recovery strategy Recovery satisfaction.

1. INTRODUCTION

When considering the consumer return decisions on a brick and motor platform or on an online platform, the important issues that become relevant are; why customers prefer to return the products purchased and what are the value propositions of these incidents in the minds of customers. These questions are answered, by researchers who have studied the importance of value proposition of the returns taking into consideration the customer's perspective thereby helping the customer and the company [1]. There is a need for the E-sellers to determine when fast is better for both the seller and the buyer [2]. Customers will enjoy more e-satisfaction when online firms sell a large variety of products/services in order to meet their expectations. Previous researches say interaction, information, usability along with three more quality dimensions are the main aspects that result in to high quality and satisfaction for customer thereby increasing the customer loyalty and spending by consumers [3]. Customer starts taking action against the retailer when the order gets delivered late than the expected time. This will reduce the no of orders in the future as well, negatively affecting the direct revenue of the company.

Operations management actions affect the anxiety level of customers when they experience the longest wait for their orders being delivered. If these

customers continue purchasing from the same firm, they will be more anxious than other customers who also await their future order delivery. Therefore if the customer decides to forgive the firm, they do not easily forget the failures that happened in the past [4].

Customer satisfaction becomes high as a result of the additional effort put in for customization in the purchase process. The two main effects of effectively managing electronic retailing is that; Firstly, it is known that a large number of retail firms now plan to move onto an online platform; they have to understand that the online retail process needs to be simplified for success. Secondly, the product or service being offered needs to be fully understood by the retailers before being offered to the customers [5]. Online Spending in an online platform is reduced due to privacy concerns within the mind of the customer. The data collected from the customers are vulnerable to leakage to the external environment. These unauthorized usages of data happen when there is information loss, causing problems to those customers whose data was used. Researches also suggest that customers spend less on e-tailing platforms when they feel that the data being shared is not protected [6].

2. LITERATURE REVIEW

The fairness of strategy adopted in case of a failure and the fairness in treating the customers during an

online purchase failure are very important in determining the satisfaction after the recovery strategy is implemented. Customers tend to have high satisfaction when there is a friendly approach by the e-tail firm during the order fulfillment process. Thus, apologies should be provided to them at the right time as they consider providing apology and giving proper explanation stating the reasons for the service failure as one the best recovery strategy that can be followed [7]. Psychological costs incurred by the customer can be a strategy for marketing their services as per the e-commerce firms. They use it as a platform to develop a long lasting customer relationship. Customers think it is best to stick onto a single e-tailing firm when they purchase more from them i.e. a higher number of products and services [8].

When the firms have a good reputation among the customers and when they are able to establish a trust in the customer’s minds they succeed in improving the satisfaction of the customer. With higher satisfaction they would want to purchase again from the same firm. The appearance of the e-commerce website is another way of establishing trust in the minds of the customer [9]. The service quality gap, the gap between the expectations of the customer about the product and the delivered product can be reduced if customers are made known about the product from the start of the order fulfillment cycle.

The first step to be taken to improve the quality of products being delivered to the customers is to select an appropriate supplier for the same thereby taking responsibility for the goods they provide. Therefore reliability of the customer on the service provided by the e-tailing firm is significantly improved. Customers who wants to receive reliable help, wants to receive it in a timely manner [10].

There are certain guidelines to be followed while implementing a service recovery called the process guidelines. These guidelines can be efficiently followed by the employees than compensation guidelines. This can definitely be followed by firms with high income but when it comes to firms with less income the usual approach of providing recovery is followed based on the process guidelines. They try to provide recovery services effectively to customers by providing it on time. Along with the recover strategies followed as per the process guidelines they make sure that the customer gets a generous compensation for the failure experienced [11]. Apology is always the most effective recovery method, since it consumes less cost for the e-tailing firms and requires less time from their side. Therefore the effort put in by the frontline employees is made effective. Involving customers in the process of providing a recovery is even more effective as they come to know the reason why the service went wrong. There are other strategies which can be

provided by the firms like problem solving and this can be implemented at a higher cost at times of performing severe failures [12].

3. CONCEPTUAL MODEL AND HYPOTHESIS DEVELOPMENT

Based on an extensive assessment of the literature, the study proposes a conceptual model to understand how factors like recovery satisfaction, repurchase intentions and PWOM are affected by both severity of service failure and the recovery strategy adopted. Also it can be used to understand if there exists a moderating effect by factors like product type and transaction frequency on the relationship mentioned before; it can be used to find whether the model formed by severity of service failure, recovery strategy, recovery satisfaction, repurchase intentions and PWOM gets changed when factors like product type and transaction frequency are added into the same model.

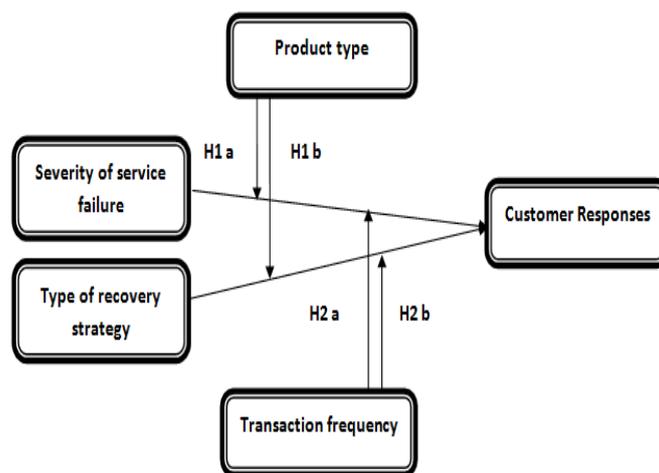


Fig.1. CONCEPTUAL MODEL

Service failure criticality exerts a significant negative relationship on customer loyalty in the case of online purchasing, i.e. customers who have experienced high criticality service failures are more likely to have a low customer loyalty in comparison to those who experienced a low criticality service failure based on their perceptions [13]. In particular, customers are most concerned about the type of compensation received, whether it’s a financial compensation or a psychological compensation, and the criticality of the service experience.

Research has proved that, online service experiences low in criticality, delayed response combined with psychological compensation (vs. financial) will lead to repurchase intentions and PWOM. On the other hand, online service experiences high in criticality, immediate response is most effective service recovery

strategy [14]. Service failures like “gap between expectations and perceptions”, “alterations and repairs”, “leak of personal data” and “seller fraud problem”, includes failures that should be mandatorily avoided because correcting these failures does not improve the buyers’ repeat purchase intention [15]. In the scenario of an e-tailing service failure, higher post-failure customer loyalty is exhibited by customers who receive high procedural justice as a service recovery strategy.

They might not like considering the negative relationship of service failure criticality and customer loyalty, when compared to those customers who receives low procedural justice [13]. If an equally efficient and seamless recovery experience is provided, customers will react positively when services in e-retail settings fail [14]. Sellers should first try identifying the service failure and post identification they should refer to the recovery effects, if it happens during a service delivery process. This procedure when followed will enhance the quality of recovery strategy in online service platforms [15]. Sometimes technology-enhanced retail atmosphere acts as a catalyst in encouraging customer to accept delays during online service failure resolution. This happens due to reduced customer visibility of the firm's recovery actions. Depending on the resource associated with recovery, customers tend to be inclined to exhibit differential construal [14].

There is a decrease in the levels of commitment and customer trust for an e-tailing firm when failures occur. It also means that the relationship that exists between customer loyalty and service failure criticality doesn't weaken because of the switching costs perceived by the customer [13]. The extent to which a retailer's recovery efforts are acceptable usually depends mostly on the level of importance attached by the customer to that online purchase (i.e. criticality), and also by the negative emotions triggered by unsatisfactory experience [14].

Former researches identified that, varied customer satisfaction levels are due to the differences in the order fulfilment processes considering the product types. This means that the order fulfilment processes of specialty goods are not meeting the expectations of the customers as compared to order fulfilment processes when buying convenience goods or shopping goods.

Therefore the e-tailing firms need to attend more to the order fulfilment process of goods which involves more effort from the customer side in particular, and should also try developing customized approaches to fulfilling an order across product types [16].

H1 a: Following service failures in e-retail setup, low severity failure and low compensation recovery strategy will lead to higher (a) recovery satisfaction, (b) PWOM and (c) repurchase intentions when

moving along the product continuum from specialty goods to convenience goods.

H1 b: Following service failures in e-retail setup, high severity failure and high compensation recovery strategy will lead to higher (a) recovery satisfaction, (b) PWOM and (c) repurchase intentions when moving along the product continuum from specialty goods to convenience goods.

The decision on the recovery programs adopted by e-tailing firms' changes based on customer transaction frequency. When there are complaints from customers with a low transaction frequency, they should aim to deliver interactional justice than the other justice dimensions like distributive and procedural justice. When there are complaints from customers with high transaction frequency, they should aim to deliver procedural justice than the other justice dimensions [17]. Repurchase intentions of customers are usually influenced by post-recovery satisfaction, when it comes to consumers with higher cumulative online experience than consumers with lower cumulative online experience [18].

H2 a: Following service failures in e-retail setup, low severity failure and low compensation recovery strategy will lead to higher (a) recovery satisfaction, (b) PWOM and (c) repurchase intentions when the transaction frequency of the customer moves low to high.

H2 b: Following service failures in e-retail setup, high severity failure and high compensation recovery strategy will lead to higher (a) recovery satisfaction, (b) PWOM and (c) repurchase intentions when the transaction frequency of the customer moves from low to high.

4. Methodology

4.1 Questionnaire formation and Measures

Methodology in the initial stage included building a questionnaire followed by an online survey to understand the various service failures that customers had faced during an online purchase. It included the questions which seeks the demographics of the customers, to questions asking how satisfied they are with the recovery strategy adopted for the failures they had faced. This questionnaire begins with questions seeking the demographics of the respondent.

The respondent was asked about the failure incident in the next section where they were asked to select the product type based on the product that they have purchased during that incident. The product types being purchased were adopted from a scale developed by Copeland et.al [19].

Once the detail of the product was specified they were asked to select the type of failure that occurred, the

recovery strategy adopted and rate the failure on the basis of its criticality. The type of failures being experienced and the recovery strategies adopted were from a scale developed by Ying-Feng Kuo et al [15]. And for measuring the severity the scale being used was a 7 point Likert scale which ranged from “Very Strongly Disagree” to “Very Strongly Agree”. Finally the customer responses which includes recovery satisfaction, repurchase intentions and PWOM were measured using the scales adopted by Benedetta Crisafulli et al [14]. These levels of customer responses were measured using questions seeking the customers reactions post a recovery strategy. They were asked whether they are satisfied with the resolution adopted by the e-commerce website or will they continue purchasing from the firm or will they recommend the firm to their friends.

4.2 Data Description

For conducting the study, data was collected through an online survey and the sample included 150 people, across various age groups and locations. The data was collected from people who has purchased online at least once and has faced a problem while purchasing online. The problems during an online purchase can vary from wrong product or fake product to delay in delivering the product purchased online. Therefore the survey respondents were asked to fill the survey keeping in mind an incident which went wrong and made an impact on them, i.e. an issue which happened while purchasing and which they could remember well.

4.3 Empirical Model

The basic model used for testing the hypothesis is shown below:

$$CR = \beta_1 + \beta_2SF + \beta_3RS + U \quad (1)$$

Where,

CR = Customer Responses (Recovery satisfaction, PWOM and Repurchase intentions)
 SF = Severity of the Failure
 RS = Recovery Strategy adopted
 U = Error term

Others terms present in the conceptual model are product type and transaction frequency. These are the moderating variables which would bring a difference to the basic empirical model. Finding out the moderating effect of these variables forms the study behind this paper.

Model 2 used for testing hypothesis 1 i.e. H1, included the moderating effect of the variable product type on the relationship between severity of the failure, recovery strategy adopted and customer responses.

$$CR = \beta_1 + \beta_2SF + \beta_3RS + \beta_4PT + U \quad (2)$$

Where,

CR = Customer Responses (Recovery satisfaction, PWOM and Repurchase intentions)
 SF = Severity of the Failure
 RS = Recovery Strategy adopted
 PT = Product Type
 U = Error term

Model 3 used for testing the hypothesis 2 i.e. H2, included the moderating effect of the variable transaction frequency on the relationship between severity of the failure, recovery strategy adopted and customer responses.

$$CR = \beta_1 + \beta_2SF + \beta_3RS + \beta_4TF + U \quad (3)$$

Where,

CR = Customer Responses (Recovery satisfaction, PWOM and Repurchase intentions)
 SF = Severity of the Failure
 RS = Recovery Strategy adopted
 TF = Transaction Frequency
 U = Error term

The moderating variable Product type was classified into (a) convenience goods (b) shopping goods and (c) specialty goods [16]. The other moderating variable which is Transaction frequency was classified into (a) 1–4 times, (b) 5–8 times (c) 9–12 times and (d) more than 13 times [17]. Moving along the product continuum in the context of product type or moving from high to low frequency levels in the context of transaction frequency, there can be a change in the basic empirical model which is yet to be proved in this paper.

5. RESULTS, DISCUSSION AND FUTURE RESEARCH

Based on the hypothesis, factors like severity of the failure incident impacts customer responses which includes recovery satisfaction repurchase intentions and PWOM. This implies that higher the severity of the failure of an online purchase, as perceived by the customer lower will be the recovery satisfaction, PWOM and repurchase intentions. Similarly recovery strategy also impacts customer responses which includes recovery satisfaction, PWOM and repurchase intentions.

Table 1 depicts the product type- transaction frequency matrix which denotes the percentage of customers who has lower levels of satisfaction as per

the severity of the failure incident and the recovery strategy adopted.

Table 1. PRODUCT TYPE – TRANSACTION FREQUENCY MATRIX

Product Type	Transaction Frequency			
	%	%	%	%
	Low	Moderate	Medium	High
Convenience Goods :	0.006	0.013	0.006	0.006
Shopping Goods :	0.060	0.113	0.080	0.086
Specialty Goods	0.066	0.040	0.006	0.020

Since severity of the online failure incident and recovery strategy adopted has a significant impact on the customer responses, it also changes based on the product type purchased.

A low severity failure along with a low compensation recovery strategy will lead to higher recovery satisfaction, repurchase intentions and PWOM when moving from specialty goods to convenience goods along a product continuum as depicted in Table 2.

Table 2. RESULTSOFTHE REGRESSION MODEL – PRODUCT TYPE

Product Type	Recovery Satisfaction	Repurchase Intention	PWOM
	Coefficient/P Value		
Convenience Goods :			
Severity_ Failure	-0.181/0.017	-0.148/0.008	-0.167/0.023
Recovery_ Strategy	0.377*/0.011	0.038*/0.010	0.344*/0.049
Shopping Goods :			
Severity_ Failure	-0.198/0.029	-0.162/0.006	-0.247/0.035
Recovery_ Strategy	0.370*/0.034	0.021*/0.002	0.339*/0.044
Specialty Goods :			
Severity_ Failure	-0.260/0.018	-0.212/0.025	-0.303/0.029
Recovery_ Strategy	0.234*/0.023	-0.047/0.033	0.241*/0.044

Note: * implies significance at the 5% level

In a similar way, transaction frequency also has a significant impact on the relationship of severity of the failure incident, recovery strategy adopted and customer responses. That is, low severity failure and low compensation recovery strategy will lead to higher recovery satisfaction, PWOM and repurchase intentions when the transaction frequency of the customer moves low to high as depicted in Table 3.

Table 3. RESULTSOFTHE REGRESSION MODEL– TRANSACTION FREQUENCY

Transaction Frequency	Recovery Satisfaction	Repurchase Intention	PWOM
	Coefficient/P Value		
Low :			
Severity_ Failure	-0.290/0.032	-0.218/0.003	-0.387/0.031
Recovery_ Strategy	0.226*/0.022	-0.121/0.009	0.250*/0.032
Moderate:			
Severity_ Failure	-0.194/0.012	-0.159/0.014	-0.274/0.027
Recovery_ Strategy	0.360*/0.018	-0.014/0.006	0.351*/0.022
Medium :			
Severity_ Failure	-0.193/0.012	-0.155/0.005	-0.270/0.011
Recovery_ Strategy	0.379*/0.016	-0.047/0.003	0.392*/0.013
High :			
Severity_ Failure	-0.182/0.033	-0.154/0.005	-0.259/0.016
Recovery_ Strategy	0.381*/0.021	0.005*/0.004	0.430*/0.011

Note: *, ** implies significance at the 5% level and 1% level respectively

6. LIMITATIONS

The study focuses on understanding the relationship between severity of the online failure incident, recovery strategy adopted and customer responses based on the product type (classified as per the customer involvement in the purchase process) purchased by the customers and their transaction frequency. Further study could focus on understanding the relationship between severity of the failure incident, recovery strategy adopted and customer responses, based on product type where the classification can be in terms of the money spent on buying the good.

7. CONCLUSION

The study indicates that the satisfaction associated with the recovery of a failure will be less for a customer who has purchased a product with high involvement and for a customer who shops less frequency on online platforms. This is important because only if the e-commerce services providers come up with a differentiated recovery strategy for consumers who are believed to in the former category, they will be able to maintain a customer base having a

good product type and transaction frequency mix. On the other hand from the number of responses obtained it is understood that most number of purchases happen in the category of customers with a moderate transaction frequency and purchasing a product of type shopping good.

This implies that the service failures in an e-tailing process needs to be reduced for customers who purchase less frequently and buys speciality goods because of their lower satisfaction levels. Since the maximum numbers of online purchases are by customers who buy shopping goods with a moderate frequency, these failures should be monitored to prevent a diminishing customer base.

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