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## The relationships among service failure, service recovery, customer satisfaction and trust at international hospitals: A Case in Vietnam

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### CHRONICLE

#### Article history:

Received March 9, 2021

Received in revised format May 6, 2021

Accepted June 17 2021

Available online

July 25 2021

#### Keywords:

Service failure

Service recovery

Satisfaction, trust

International hospital

### ABSTRACT

The objective of this study is to demonstrate the relationships among the severity of service failure, service recovery, customer satisfaction and loyalty towards the Vietnamese international hospital system. The research data were collected from 303 customers who have used services and experienced service failures at international hospitals. Applying Structural Equation Modeling, the study pointed out that service failure includes three dimensions, which are system failure, request failure, and behavior failure. Meanwhile, service recovery is made up of three dimensions which are distributive justice, procedural justice, and interactional justice. The severity of service failure positively affects service recovery and service recovery puts a powerful impact on customer satisfaction, thereby increasing their trust in international hospitals in Vietnam.

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## 1. Introduction

Service failure is any mistake, omission, or incident that occurs during the service delivery process (Namasivayam and Hinkin, 2003). While trying hard, even the best service provider is certainly unable to eliminate service failures (Gursoy et al., 2007). Service failures may occur in all service activities, affecting the turnover and reputation of the service provider. When a service failure occurs, customers often have negative emotions including anger, frustration, irritability, anxiety, dissatisfaction, disappointment, and regret (Smith and Bolton, 2002). At this time, the customer is dissatisfied with the service and pays attention to what the service provider will do to deal with the problem, in other words, they are concerned about how the service recovery will be made. If service failures are not handled promptly by the service provider, this may result in losing revenue and customers (Liu et al., 2000; Maxham, 2001). A good service recovery strategy will positively impact on the business results of the service provider (Tax and Brown, 1998).

Vietnam with the continuous economic growth in the period of 2015-2019, has become an impressive destination for investors, especially in the field of high-quality medical services. The image and quality of medical services at international hospitals in Vietnam are increasingly improved to meet customers' needs. However, due to the special characteristics of the health sector, service failures are an inevitable problem for international hospitals. In particular, if customers highly evaluate the service quality of an international hospital, service failures cause a greater impact on their satisfaction with the hospital. To enhance the situation, international hospitals always consider that service recovery is important. This study was conducted to assess the effect of service failure on service recovery, customer satisfaction and loyalty in Vietnamese international hospitals.

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## 2. Theoretical Framework and Research Hypotheses

### 2.1 Theoretical framework

#### *Service failure*

Service failure is a service provision process that is below customer expectations, an unavoidable part of the service delivery process (Hoffman & Bateson, 1997). Therefore, effective service failure management is critical in improving service quality (Bejou & Palmer, 1998). Service failures can be caused by the service's characteristics or psychological factors of individuals involved in providing services (Lewis & Spyropoulos, 2001). According to Namasivayam and Hinkin (2003), service failures are any mistakes, omissions, or incidents that occur during the service provision process. Other researchers thought that service failures can also result from customer behaviors in the service delivery process (Armistead et al., 1995; Johnston, 1994). Service failures may stimulate negative emotions and behavioral intentions of customers towards service providers (Kelley et al., 1993; Armistead et al., 1995; Mattila, 2001; Ha & Jang, 2009; Pranić & Roehl, 2013; Koc, 2017). According to Bitner et al. (1990), employees' response to service failures is directly related to customer satisfaction and dissatisfaction. As reported by some researchers, if the service provider does not handle service failures promptly, it will lead to a waste of money and losing customers (Liu et al., 2000; Maxham, 2001). In a study in 1999, Smith et al. suggested that the severity of service failure is the loss experienced by the customer after the service failure. Customers' evaluation of the loss depends on the severity of the service failure. The service failure's severity varies not only from time to time but also from customers' perception, expectation, and assessment (Susskind, 2002; Ha and Jang 2009; Kim et al., 2005).

#### *Service recovery*

According to Boshoff (1997), service recovery is a part of quality assurance, and its goal is to maintain customer relationships. This is based on the previous findings of customer satisfaction, customer loyalty, repurchase intention, and positive word of mouth of Bearden and Teel (1983). Service recovery is an effective complaint handling, including all of the service provider's actions to solve the problems that customers have encountered (Gronroos, 1990), to achieve the satisfaction and improve service quality (Gronroos, 1988; Andreassen, 2000; Sheth et al., 2000). Research by Zemke and Bell (2000) has described that service recovery is a process to return customers what they expected but not yet been satisfied. These actions are designed to solve problems, change the negative attitudes of dissatisfied customers, and ultimately retain them (Miller et al., 2000; Li, 2011). Tax and Brown (2000) confirmed that service recovery is a process of identifying service failures, effectively resolving problems, collecting data, and proposing solutions to evaluate and improve the service system. A good service recovery strategy will positively impact the service provider's performance (Tax & Brown, 2000). In the service recovery process, justice is the most important factor. It is because customers often react more seriously to unexpected service experiences (Schneider and Bowen, 1999). Customers' interactions with the service provider, complaint handling procedures, and service recovery results all create a sense of justice for customers. Therefore, this theory is suitable to become a basis for analyzing the service recovery process (Goodwin & Ross, 1992; Blodgett et al., 1997; Smith et al., 1999; Knox & Van Oest, 2014). Three important criteria to measure justice in service recovery are Distributive justice (DJ), Procedural justice (PJ), and Interactional justice (IJ).

*Distributive justice* refers to customers' perceptions of justice in service recovery outcomes (Holloway and Beatty, 2003; Holloway and Wang, 2015). Previous studies have measured distributive justice by the fairness, demand, value, and reward of the result (Chebat and Slusarczyk, 2005; Smith et al., 1999; Wirtz and Mattila, 2004).

*Procedural justice* refers to the methods used by service providers to solve problems arising during the service delivery process (del Río-Lanza et al., 2009). The previous research measured procedural justice in terms of flexibility, accessibility, process control, decision control, response speed, and acceptance of responsibility (Blodgett et al., 1997; Tax et al., 1998; del Río-Lanza et al., 2009).

*Interactional justice* represents the level of customers' experience of justice in interacting with the service provider (Sparks & McColl-Kennedy, 2001). Previous studies measured interactional justice with the following criteria, courtesy, honesty, explanation, sympathy, effort, and apology (Tax et al., 1998, McColl-Kennedy and Sparks, 2003; del Río-Lanza et al., 2009).

#### *Customer satisfaction*

As mentioned in the Equity Theory of Oliver and Swan (1989), satisfaction occurs when customers receive benefits or value based on what they spent such as money, time, and effort. Customer satisfaction is the customer's evaluation of a product or service that meets their needs and expectations (Zeithaml & Bitner, 2000; Kotler & Keller, 2006). Satisfaction is a state of psychological feeling, a sense of satisfaction after being satisfied in using products or services. Besides, satisfaction is associated with a feeling of acceptance, happiness, excitement, and joy (Hoyer & MacInnis, 2001). Customer satisfaction is an overall attitude towards the service provider. Also, it is a perception of the difference between what customers expected and what they received for their needs, goals, or desires (Olsen & Johnson, 2003; Hansemark & Albinsson, 2004).

#### *Customer trust*

The importance of trust in the service sector is extremely essential for both buyers and sellers. Trust is an important factor in maintaining the relationship between customers and service providers (Parasuraman et al., 1991). Therefore, trust is said to be one of the key components for developing a close and lasting relationship between customers and suppliers (Morgan and

Hunt, 1994; Tax et al., 1998; Garbarino and Johnson, 1999). According to Aiken and Boush (2006), there are three dimensions of trust, affective trust, cognitive trust, and behavioral trust. These dimensions perform most clearly in the cooperation among objects, especially in economic cooperation. Affective trust shows emotional connections that lead to trustworthy results between parties (Hansen and Morrow, 2003). Behavioral trust is a state of trust expressed through two levels of behavior that are cooperation and communication. The cooperation level is related to actions/ behaviors that may injure themselves because the partner acts negatively (Lahno, 2004). The communication level represents the highest value of trust, including sharing with third parties (Adali et al., 2010).

## 2.2. Research hypotheses

### *The severity of service failure affects service recovery*

Hoffman et al. (1995) have shown that the greater the severity of a service failure, the harder it will be to make an effort to recover the failed service. As reported by Dunning et al. (2004), the more serious a service failure is, the higher the level of customers' response including frustration, disappointment, and anger. Therefore, it requires more effort to improve the service quality from providers. The service provider should accurately assess the severity of service failure to find the most appropriate solution (Craighead et al., 2004). Consumers tend to believe that service providers will have an adequate service recovery process with serious service failures (Chang et al., 2015). Therefore, the hypothesis is set as follows:

**H<sub>1</sub>:** *The severity of service failure has a positive impact on service recovery of international hospitals.*

### *Service recovery affects customer satisfaction*

Several studies have indicated a positive relationship between distributive justice and customer satisfaction in service recovery (Fang et al., 2013; Maxham & Netemeyer, 2002; Smith & Bolton, 1998). Service providers can increase customer satisfaction with the service recovery by raising their awareness of procedural justice (Vázquez-Casielles et al., 2010). Researchers claimed that procedural justice has a significant influence on customer satisfaction through complaint handling (Homburg & Fürst, 2005; Karatepe, 2006; Huang et al., 2015). Interactional justice has a great impact on customer satisfaction in the process of service recovery (Homburg & Fürst, 2005; Maxham & Netemeyer, 2002). It was proved that there is a positive relationship between interactional justice and customer satisfaction in service recovery (Goodwin and Ross, 1992; Tax et al., 1998; Huang et al., 2015). From the above discussion, the hypothesis H<sub>2</sub> is proposed as follows:

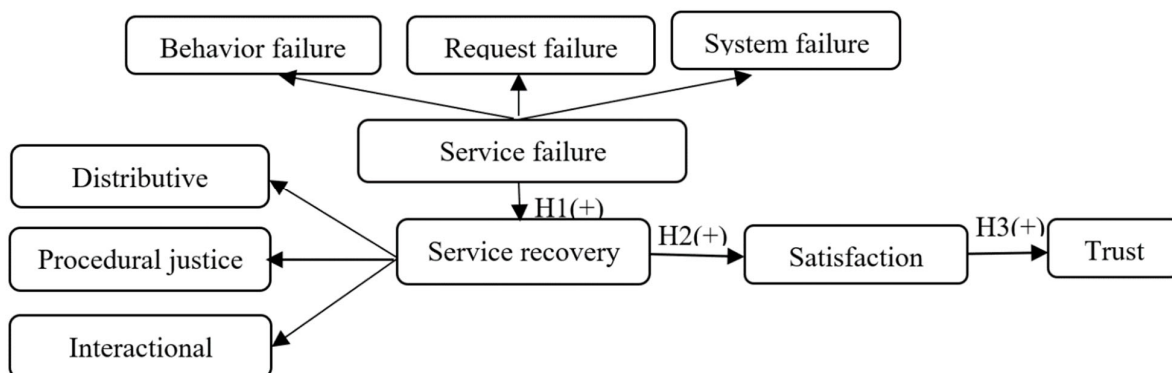
**H<sub>2</sub>:** *Service recovery positively affects customer satisfaction at international hospitals.*

### *Service recovery affects customer trust*

A good service recovery process helps eliminate customer anger and discomfort, promoting positive behaviors and retaining customers (Ettel & Silverman, 1981; Hart et al., 1990). Therefore, the satisfaction towards the service recovery is considered as a predictor of customer trust (Tax et al., 1998; Ok and Shanklin, 2005; Kim et al., 2009). Satisfaction plays an important role in customer trust after service recovery. Besides, satisfaction is a crucial factor affecting customer awareness in complaint handling (Kau and Loh, 2006; dos Santos and Fernandes, 2008). The satisfaction with service recoveries has a positive impact on customers' trust in the service (Nadiri, 2016). Thus, hypothesis H<sub>3</sub> is suggested:

**H<sub>3</sub>:** *Satisfaction with service recovery positively impacts customer trust at international hospitals.*

Based on the literature review and research hypothesis, the study used the group discussion method (qualitative research) with 8 clients who have used medical services and experienced service failures at international hospitals. The objective of the discussion is to identify the appropriate scales for the research model. Hence, the proposed research model is as follows:



**Fig. 1.** Proposed research model

**Table 1**  
Interpretation of observed variables in the research model

Factor	Observed variable names	Scale	Reference resources
<b>Service failure (SF)</b>	<b>SYF: System failure</b>		Bitner et al. (1990); Lewis and McCann (2004); Craighead et al. (2004); McQuilken (2010)
	SYF1: The service is delayed.	Liker 1-5	
	SYF2: The service is still defective.	Liker 1-5	
	SYF3: Equipment is missing or degraded.	Liker 1-5	
	SYF4: There is no parking area or it is not safe.	Liker 1-5	
	SYF5: The instructions are complicated and confusing.	Liker 1-5	
	SYF6: Regulations and policies are not clear.	Liker 1-5	
	<b>REF: Request failure</b>		
	REF1: Disrespect of customers' requirements.	Liker 1-5	
	REF2: Not meet customers' special requirements.	Liker 1-5	
	REF3: Mistaking the required service.	Liker 1-5	
	<b>BEF: Behavior failure</b>		
	BEF1: Rude behaviors with customers.	Liker 1-5	
	BEF2: Disturbing customers.	Liker 1-5	
	BEF3: Bad attitude of the staff.	Liker 1-5	
	BEF4: Incorrect service charge.	Liker 1-5	
	BEF5: Inaccurate information feedback.	Liker 1-5	
<b>Service recovery (SR)</b>	<b>DJ: Distributive justice</b>		Tax et al. (1998); Smith et al. (1999); Maxham and Netemeyer (2002)
	DJ1: The compensation I receive is fair.	Liker 1-5	
	DJ2: The compensation I receive is more than expected.	Liker 1-5	
	DJ3: I get what I need in problem-solving.	Liker 1-5	
	DJ4: With the inconvenience of service failures, the results I get are consistent.	Liker 1-5	
	DJ5: If I make reasonable requests, I always get satisfactory results.	Liker 1-5	
	<b>IJ: Interactional justice</b>		
	IJ1: In the process of service recovery, the hospital staff is always polite to me.	Liker 1-5	
	IJ2: The hospital staff understands the problem(s) I'm having.	Liker 1-5	
	IJ3: The hospital staff always shows me their honesty.	Liker 1-5	
	IJ4: The hospital staff always cares about me.	Liker 1-5	
	IJ5: The hospital staff does what they can to solve my problem(s).	Liker 1-5	
	IJ6: When dealing with problems, the hospital staff always considers my opinion.	Liker 1-5	
	<b>PJ: Procedural justice</b>		
	PJ1: It is annoying but my complaint is resolved quickly.	Liker 1-5	
	PJ2: My complaint is handled promptly.	Liker 1-5	
	PJ3: The process of complaint handling is appropriate.	Liker 1-5	
PJ4: In terms of policies and procedures, the hospital handles the problem fairly.	Liker 1-5		
<b>Satisfaction (SAT)</b>	SAT1: I am satisfied with the service recovery of the hospital.	Liker 1-5	Maxham and Netemeyer (2002), Taleb and Kamar (2013), Smits (2018)
	SAT2: The hospital response to the service failures is better than I expected.	Liker 1-5	
	SAT3: I now have a positive attitude to this hospital.	Liker 1-5	
	SAT4: Overall, I am satisfied with what I received after the service recovery.	Liker 1-5	
<b>Trust (TRU)</b>	TRU1: I am confident in this hospital's medical service.	Liker 1-5	Morgan and Hunt (1994); Wong and Sohail (2002)
	TRU2: The hospital staff is honest.	Liker 1-5	
	TRU3: This hospital makes every effort to ensure their commitments with customers.	Liker 1-5	
	TRU4: Overall, this hospital is reliable.	Liker 1-5	

Source: The author's synthesis, 2020

### 3. Research Methodology

*Analytical method:* The research used quantitative analysis methods, in the following order: Cronbach's Alpha coefficient to test the reliability of the scales, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM). In this study, all the scales are in the form of a 5-level Likert scale, with the level 1 = strongly disagree and the level 5 = strongly agree.

*Research data:* The SEM method requires a large sample size because it is based on the Sample Distribution theory (Raykov and Widaman, 1995). According to Hoyle (1995) and Fornell and Larcker (1981), to ensure the reliability in the SEM model, the sample sizes should be between 100 to 200. Besides, Hoelter (1983) stated that the sample size limit in the structural equation is 200. As a result, the study surveyed 303 customers who have used services and experienced one or more service failures in international hospitals in 2 major cities (Hanoi City and Ho Chi Minh City). The quota sampling by demographic criteria (gender, age, educational background, occupation, income) was adopted. Thus, the sample size met the requirement, thereby ensuring the reliability of model testing.

### 4. Research Results and Discussion

To test the research hypothesis, the steps are as follows Step 1: Test the reliability of the scales; Step 2: Exploratory Factor Analysis (EFA); Step 3: Confirmatory Factor Analysis (CFA); Step 4: Structural Equation Modeling (SEM).

#### 4.1 Test the reliability of the scales

The study used Cronbach's Alpha coefficient to assess the reliability of the scales and to check the link among observed variables. The testing result shows that all the scales are guaranteed with Cronbach's Alpha coefficients greater than 0.6 (Nunnally, 1978; Nunnally & Bernstein, 1994; Peterson, 1994). The smallest is the "Satisfaction" scale (0.799) and the highest

is the “Interactional justice” scale (0.898). Besides, the item-total correlation of variables is greater than 0.3 (minimum is 0.516), so no variable is excluded from the research model (Slater, 1995; Hair et al., 2006). Therefore, all observations are satisfactory and can be used for the EFA step.

**Table 2**

The result of the reliability test

Scales	Number of variables	Cronbach's Alpha	Minimum item-total correlation
System failure (SYF)	6	0.894	0.677
Request failure (REF)	3	0.821	0.649
Behavior failure (BEF)	5	0.892	0.721
Distributive justice (DJ)	5	0.882	0.672
Interactional justice (IJ)	6	0.898	0.617
Procedural justice (PJ)	4	0.874	0.699
Satisfaction (SAT)	4	0.799	0.516
Trust (TRU)	4	0.804	0.583

Source: Survey data, 2020

**4.2 Exploratory Factor Analysis (EFA)**

The EFA is used to test the convergent and discriminant validity of the scales (Hair et al., 1998). After testing the reliability of the scales, the EFA result achieves the following values, (1) Reliability of observations (Factor loading > 0.5); (2) the appropriateness of the model is guaranteed ( $0.5 < KMO = 0.911 < 1.0$ ); (3) Bartlett test of correlation among variables (Sig. =  $0.00 < 0.05$ ). The cumulative variance test = 69.24% higher than 50% (Anderson & Gerbing, 1988; Hair et al., 1998), this shows that the variables in the model reach a high level of explanation. Thus, 8 factors are formed from 37 observations. There is no disturbance of observations, so the factors' names remain as in the proposed model.

**Table 3**

Factors formed from the exploratory factor analysis (EFA)

Sign	Observed variables	Factors' names
F <sub>1</sub>	6 variables: SYF1, SYF2, SYF3, SYF4, SYF5, SYF6	System failure (SYF)
F <sub>2</sub>	3 variables: REF1, REF2, REF3	Request failure (REF)
F <sub>3</sub>	5 variables: BEF1, BEF2, BEF3, BEF4, BEF5	Behavior failure (BEF)
F <sub>4</sub>	5 variables: DJ1, DJ2, DJ3, DJ4, DJ5	Distributive justice (DJ)
F <sub>5</sub>	6 variables: IJ1, IJ2, IJ3, IJ4, IJ5, IJ6	Interactional justice (IJ)
F <sub>6</sub>	4 variables: PJ1, PJ2, PJ3, PJ4	Procedural justice (PJ)
F <sub>7</sub>	4 variables: SAT1, SAT2, SAT3, SAT4	Satisfaction (SAT)
F <sub>8</sub>	4 variables: TRU1, TRU2, TRU3, TRU4	Trust (TRU)

Source: Survey data, 2020

**Table 4**

Test the reliability of the scales

Factors	Number of variables	Composite Reliability (Pc)	Average Variance Extracted (Pvc)
System failure (SYF)	6	0.89	0.59
Request failure (REF)	3	0.82	0.61
Behavior failure (BEF)	5	0.89	0.63
Distributive justice (DJ)	5	0.88	0.62
Interactional justice (IJ)	6	0.90	0.61
Procedural justice (PJ)	4	0.88	0.64
Satisfaction (SAT)	4	0.80	0.51
Trust (TRU)	4	0.81	0.51

Source: Survey data, 2020

**4.4 Structural Equation Modeling (SEM)**

The SEM was used to test the research hypotheses. The result is presented in Table 4.

**Table 5**

Testing the relationships among factors

Relationships	Unstandardized			Standardized Estimated value	P-value
	Estimated value	Standard Error S.E.	Critical Ratios C.R.		
SR ← SF	0.441	0.075	5.862	0.493	***
SAT ← SR	0.540	0.080	6.720	0.683	***
TRU ← SAT	0.844	0.118	7.162	0.669	***
BEF ← SF	1.000	-	-	0.792	***
REF ← SF	1.172	0.120	9.769	0.855	***
SYF ← SF	1.044	0.113	9.257	0.846	***
IJ ← SR	1.000	-	-	0.787	***
PJ ← SR	1.187	0.138	8.627	0.819	***
DJ ← SR	1.071	0.131	8.181	0.793	***

Source: Survey data, 2020 Note: \*\*\*: significant at 1%

Based on Table 5, 3 dimensions are included in a service failure, which are system failure, request failure, and behavior failure. In which the request failure is evaluated at the highest level. This means that customers at international hospitals are concerned about the special requirements, the respect for customers, and the accuracy of the required services. Moreover, the study also points out that service recovery is built with 3 dimensions, including distributive justice, procedural justice, and interactional justice. In which customers consider procedural justice is an important element of service recovery. This shows that if the service failure occurs, customers focus on how the service recovery process is done quickly, promptly, appropriately, and fairly. According to Table 5, the hypothesis H1 is accepted with a 99% significance level. The analysis indicates that the severity of service failure positively affects service recovery. Service failures are at different severity levels, international hospitals are required to have service recovery strategies and risk prevention systems at a high level. This result is similar to the findings of Hoffman et al., (1995), Dunning et al., (2004), Craighead et al., (2004), Chang et al. (2015). As presented in Table 5, the hypothesis H2 is accepted with a 99% significance level. The study proves that service recovery positively impacts customer satisfaction at international hospitals. This shows that the service recovery process through positive interaction, quick procedure, and the result that meets customers' expectations will satisfy customers. This result is consistent with the studies of Goodwin and Ross (1992), Tax et al., (1998), Maxham and Netemeyer (2002), Smith and Bolton (2002), Homburg and Fürst (2005), Karatepe (2006), Fang et al., (2013), Huang et al. (2015). Table 5 suggests that hypothesis H3 is accepted with a 99% significance level. That is, customers' satisfaction with service recovery positively influences their trust for international hospitals. This finding is similar to the discovery of Tax et al., (1998), Ok and Shanklin (2005), Kau and Loh (2006), Santos and Fernandes (2008), Kim et al., (2009), Nadiri (2016). It can be implied that the service recovery plays a key role in the service quality and brand image of international hospitals in customers' minds.

## 5. Conclusion

Service failure and recovery are concerns by many researchers. In the case of international hospitals, the severity of service failures is made up of 3 dimensions, system failure, request failure, and behavior failure. Meanwhile, there are 3 dimensions in service recovery, distributive justice, interactional justice, and procedural justice. The study has pointed out that the service failure positively affects service recovery, the service recovery positively impacts customers' satisfaction, thereby improving their trust for international hospitals in Vietnam. The research results emphasize the importance of service recovery to the service quality and brand image of international hospitals.

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