Measuring Service Recovery in Restaurant Settings: A Psychometric Process

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Abstract: The aim of the study is to describe the processes undertaken to evaluate the psychometric properties of a questionnaire developed to measure service recovery in Malaysian's restaurant context. The validation processes include content validation, construct validation and reliability analysis. Purposive sampling technique was employed to collect data from 160 respondents who experienced service failure and recovery in full-service casual restaurants. However, only 114 questionnaires were usable and eligible for subsequent data analysis. The results produced a three-factor solution namely distributive justice, procedural justice and interactional justice. The initial 22 items of Service Recovery Questionnaire (SRQ) was reduced to 16 items after the validation process. The items on the SRQ revealed factor loading >0.5. Reliability analysis indicated that the SRQ is reliable with the value of Cronbach's alpha >0.9 for the three factors. Thus, the final SRQ is valid to be used in examining service recovery since all the items measure the construct accordingly.

Key words: Service failure, service recovery, justice theory, validity, reliability

INTRODUCTION

In today's competitive food service industry, every restaurant strives to deliver exceptional service to the customers. This is critical to deter customers from switching to the competitors. However, in certain circumstances, service mishap may occur unpredictably. Commonly known as service failure, such incident occurs without warning and no restaurant can entirely escape from it (Dong *et al.*, 2008). Therefore, effective measures should be taken to recover the service. According to extant studies, justice theory (Adams, 1965) was considered as one of the most prominent foundations to service recovery studies. It comprises of three dimensions namely distributive justice, interactional justice and interactional justice. It was claimed that these three dimensions of service recovery may lead to customer's satisfaction and future behavioral intentions (Maxham and Netemeyer, 2002). Currently, limited attention has been directed to service recovery studies in Southeast Asian context, especially in Malaysian's foodservice industry with most of the questionnaire items were adapted from Western's perspective. Thus, it is imperative to evaluate the psychometric properties of the SRQ in Malaysian's restaurant context as it may shed light to future researchers who intends to conduct studies related to service recovery.

Literature review

The concept of service failure: Service failure is always associated with negative experience (Bitner *et al.*, 1990). It may tarnish restaurant's reputation, jeopardize long term relationship and negatively affect profitability. Service failure can happen to any service organization even with the strongest quality program (Rio-Lanza *et al.*, 2009). Bitner (1990) defined service failure as a situation where an organization fails to respond effectively to a customer's requests, thus failing to accomplish customer satisfaction in the service encounter. Service failure can occur due to factors contributed by employee, technology and the customers themselves (Michel, 2001). Due to this notion, there is no single cause to service failure as it may occurred to anyone, any time. According to Smith *et al.*, (1999), dissatisfied customers perceive the level of unfairness based the type of service failure they have experienced. Service failure may occur due to outcome or distributive failure (monetary), process or procedures failure and communication failure. Therefore, it is essential to train employees to deal with service failure. Employees should be exposed to the most frequent problems occurred in the organization and they should be empowered to make their own decision in the event of service failure.

Justice theory and service recovery: Justice theory has been extensively used in Western's service recovery

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Table 1: Dimensions of service recovery based on justice theory

Dimension	Definition	Example
Distributive justice	Perceived justice of the outcome (tangible)	Problem resolution, refund, compensation, replacement
Procedural justice	Perceived justice of the process/procedures used in rectifying the service failure	Speed of recovery, follow up, fair policies and procedures
Interactional justice	Perceived fairness of the ways customers are treated	Empathy, courtesy, respect, effective communication

Table 2: Dimensions analysis

Dimension	No. of item	Researchers
Distributive justice	8	Blodgett *et al.* (1997), Maxham and Netemeyer (2002), Smith *et al.* (1999), Vazquez-Casielles *et al.* (2010)
Procedural justice	6	Blodgett *et al.* (1997), Maxham and Netemeyer (2002), Smith *et al.* (1999), Vazquez-Casielles *et al.* (2010)
Interactional justice	8	Blodgett *et al.* (1997), Maxham and Netemeyer (2002), Smith *et al.* (1999), Vazquez-Casielles *et al.* (2010)

studies. However, less attention has been devoted to its application in Southeast Asian context, particularly in Malaysia. Justice theory was originated from the equity theory (Adams, 1965) and social exchange theory (Homans, 1961). According to Wen and Chi (2013), justice theory is appropriate to be used in service failure and recovery context to demonstrate the relationship between customers and service providers. Justice theory delineates that customers evaluate service recovery efforts as fair or unfair (DeWitt *et al.*, 2008). Customers tend to compare the inputs against the outputs and if there is an equal balance between them, the exchange is considered as 'fair' but if the outputs do not meet the customers' expectations, then the result is considered 'unfair' (Adams, 1965).

Justice theory framework has been widely accepted in service recovery studies (Nikbin *et al.*, 2010). It is represented by three dimensions namely distributive justice, procedural justice and interactional justice. Service providers need to understand these three dimensions to establish effective service recovery strategies (Ha and Jang, 2009). According to Patterson *et al.* (2006) the three dimensions of service recovery can be presented as follows.

The service recovery is critical to any service provider especially in the restaurant industry. Theoretically, service recovery is defined as the actions performed by the service provider in response to service failure, including all the activities engaged to correct, modify and restore the loss incurred as a result of the failure (Liao and Cheng, 2013) (Table 1). Service recovery is also considered as one of the important elements in service organization's strategy (Hart *et al.*, 1990). Service organizations include businesses related to hotel industry, restaurant, contact center, government agencies, etc. Now a days, it is difficult for any organization to solely depend on the product itself. A good service recovery is imperative in the event of failure. Fair compensation, less red-tape procedures and effective communication process may bring back dissatisfied customers to the satisfaction state. According to Smith and Bolton (2002), service recovery is important because it represents the moment of truth on the relationship between customers and the service provider. The recovery effort undertaken by the service provider can demonstrate the level of honesty and commitment of the organization towards the relationship.
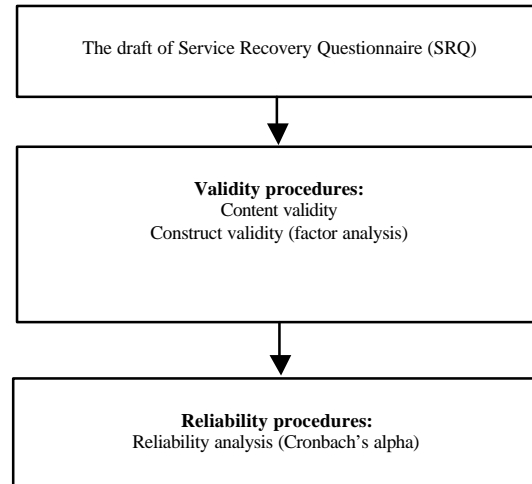

Fig. 1: Process involved in validating the Service Recovery Questionnaire (SRQ)

MATERIALS AND METHODS

The psychometric properties of SRQ was validated using content validity, construct validity (factor analysis) and reliability test (Cronbach's alpha). Figure 1 shows the processes employed to examine the validity of SRQ: the draft of the SRQ was derived and adapted from the relevant existing literature in service recovery studies. The initial draft of the SRQ contained 22 items represented by three dimensions as shows in Table 2.

Content validity: Content validity was undertaken to ensure the items used in the SRQ were appropriate and relevant to the context of the study. Content validity is vital to ensure the representativeness of the items and to see how well the dimension of the concept is defined by the researcher (Lynn, 1986; Sekaran and Roger, 2010). Content validity is normally performed by appointing a panel of experts related to the area of the study to validate the items in the questionnaire (Sekaran and Roger, 2010). There is no specific rule of thumb pertaining to the number of experts required to validate the questionnaire. However, Lynn (1986) suggested a minimum of three experts to validate the questionnaire as the use of less

than three experts will lead to unreliable content validity. Therefore, five experts in the area of service marketing were approached to validate the questionnaire for this study. Each expert independently validated the questionnaire using a 3 point Likert scale (1 = perfect match, 2 = moderate match and 3 = poor match).

Construct validity: The purpose of construct validity is to evaluate how well the items used in the questionnaire tap the concept as theorized (Sekaran and Roger, 2010). Multivariate techniques such as Exploratory Factor Analysis (EFA) is frequently used in business-related research to establish construct validity (Hair *et al.*, 2010; Lynn, 1986; Zikmund *et al.*, 2012). EFA is beneficial in examining the underlying patterns or relationships for a large number of questionnaire items and to assist in deciding whether the items can be reduced into a smaller set of factors (Hair *et al.*, 2010).

Although, the number of respondents required for EFA remains under debate, Hair *et al.* (2010) recommends that the sample size should exceed 100 cases. Therefore, 160 questionnaires were distributed to respondents in Kuala Lumpur and Selangor. Purposive sampling technique was used to carefully select the potential respondents. The selected respondents were working individuals that fulfills the following criteria: they had encountered service failure or negative experience at full-service casual restaurants. They had complained or informed the restaurant's employees regarding the problem they encountered at the restaurant.

The survey return rate was 100%, however only 114 questionnaires were deemed appropriate for EFA. The justifications for eliminating 46 questionnaires were due to missing data, straight lining problems and outliers. As suggested by Pallant (2013) and Parsian and Dunning (2009), the following two criteria were considered to ensure that the collected data set is suitable for EFA:

- Kaiser-Meyer-Olkin (KMO) sampling adequacy
- Factor loadings and the correlation between a variable and a factor

A Principle Component Analysis (PCA) and Varimax rotation technique were employed during EFA. Varimax rotation was used to obtain simpler and more interpretable factor solutions that can be used for subsequent multivariate data analysis (Hair *et al.*, 2010; Nikbin *et al.*, 2014). The utilization of Varimax rotation was appropriate since it was recognized as one of the most widely used rotational methods in EFA (Hair *et al.*, 2010). The

following criteria recommended by Hair *et al.* (2010) and Pallant (2013) were used to determine the number of factors that should be retained during EFA:

- Factors with eigenvalues >1.0 were retained (Kaiser's criterion)
- The change (or elbow) in the shape of the screeplot

Reliability analysis: Reliability analysis was undertaken once the construct validity procedures were completed. The purpose of reliability analysis is to assess the degree of consistency across the various items in the questionnaire (Hair *et al.*, 2010) and to ensure that the instrument measures the theorized concept (Sekaran and Roger, 2010). Recommended by Hair *et al.* (2010), the following criteria were used to assess the reliability of the questionnaire:

- The item-to-total correlation (>0.50) and the inter-item correlations (>0.30)
- The Cronbach's alpha value (>0.70)

RESULTS AND DISCUSSION

Content validity: Content validity was performed by approaching five service marketing experts to validate the questionnaire. From this validation exercise, two important decisions were reached. Firstly, items with overlapping meaning were identified and combined into single items. Secondly, unclear and irrelevant items were removed from the questionnaire. As a result, a total of 18 items were remained after the elimination of 4 items. Those eliminated items were:

- In resolving the problem, the restaurant gave me what I expected
- The compensation that I received from the restaurant was more than fair
- The restaurant employees showed interest in being fair when solving the problem
- The restaurant employees understood exactly my problem

Construct validity: The Kaiser-Meyer-Olkin (KMO) sampling adequacy and Bartlett's test of sphericity were considered to verify that the data was suitable for EFA. In this study, the value of KMO was 0.93 and Bartlett's test was significant (p = 0.000). Therefore, EFA was considered appropriate as Pallant (2013) claimed that the value for KMO should exceed 0.6 and Bartlett's test should be significant (<0.05) to be qualified for EFA. An eigenvalue of 1.0 was set as the minimum criterion to

Table 3: Factor solution with items, factor loadings, eigenvalues, variance explained and communalities

Factor solution	Loadings	Eigenvalues	Variance	Communalities
Factor 1: Distributive justice	-	9.65	60.28	-
DJ1: Considering the trouble caused by the incident, the compensation I received from the restaurant was acceptable	0.856			0.801
DJ2: The restaurant compensated me adequately to solve the problem	0.858			0.809
DJ3: The restaurant put proper effort into offering a satisfactory compensation	0.871			0.829
DJ4: I think the restaurant was fair when compensating me for the problem that occurred	0.858			0.871
DJ5: In resolving the problem, the restaurant gave me what I deserved	0.856			0.886
DJ6: The compensation I received was right	0.829			0.869
Factor 2: Procedural justice	-	1.02	6.40	-
PJ2: I think the restaurant has good policies and practices for dealing with problems	0.692			0.799
PJ3: Despite the hassle caused by the problem, the restaurant was able to respond in a timely manner	0.805			0.861
PJ5: The restaurant tried to solve the problem as quickly as possible	0.738			0.776
PJ6: I believe the restaurant's complaint handling procedure was adequate	0.794			0.799
Factor 3: Interactional justice	-	2.29	14.36	-
IJ1: The restaurant employees were appropriately concerned in my problem	0.739			0.748
IJ2: The restaurant employees did everything possible to solve my problem	0.758			0.790
IJ3: The restaurant employees were honest when dealing with my problem	0.797			0.757
IJ4: The restaurant employees showed enough authority to solve the problem	0.745			0.793
IJ5: The restaurant employees dealt with me courteously when solving the problem	0.868			0.812
IJ6: The restaurant employee's communication with me were acceptable when solving the problem	0.854			0.768

Table 4: Cronbach's alpha, inter-item correlation, item-total correlation, mean and standard deviation for SRQ

Variables	Cronbach's alpha	Inter-item correlation	Item-total correlation	Mean	SD
Distributive justice	0.962	Between 0.737 and 0.906	Between 0.841 and 0.912	-	-
DJ1				3.09	1.11
DJ2				3.04	1.16
DJ3				3.11	1.19
DJ4				3.05	1.19
DJ5				3.10	1.22
DJ6				2.98	1.20
Procedural justice	0.919	Between 0.673 and 0.793	Between 0.783 and 0.860	-	-
PJ2				2.90	1.10
PJ3				2.91	1.08
PJ5				3.08	1.07
PJ6				2.96	1.08
Interactional justice	0.937	Between 0.620 and 0.844	Between 0.777 and 0.835	-	-
IJ1				2.99	1.09
IJ2				2.96	1.06
IJ3				3.09	1.01
IJ4				2.92	1.04
IJ5				2.99	1.10
IJ6				3.11	1.00

determine the number of factor to be extracted. Consistent with Hair *et al.* (2010), factors with eigenvalues >1.0 is required to ensure significant factor loadings. The first run of EFA produced a three factor structure of service recovery (eigenvalues >1.0) that explained close to 80.81% of the variance. However, the result had to be revised due to two items that cross loaded on other factors. These items were "I think my problem was resolved in the right way" and "the restaurant showed adequate flexibility in solving the problem". The problematic items were then identified and removed from subsequent analysis.

The revised results of EFA after removing two problematic items produced a clean three factors solution with a variance explained of 81.04%. The revised KMO was 0.91 while the Bartlett's test was statistically significant (p = 0.000). The correlations among items were significant with communalities ranging between 0.748 and

0.886. The three factors are shown in Table 3 along with their items, factor loadings, eigenvalues, individual variance explained and communalities.

Reliability analysis: Cronbach's alpha was computed for the revised SRQ after construct validation was completed. Values >0.7 are considered acceptable; however values >0.8 are preferable (Pallant, 2013). Table 4 presents the values for Cronbach's alpha, inter-item correlation, item-total correlation, mean and standard deviation for the revised SRQ. In this study, the Cronbach alpha's values were all above 0.9 indicating very good internal consistency reliability for the SRQ. Additionally, the values for inter-item correlation and item-total correlation were greater than the minimum values suggested by Hair *et al.* (2010). Thus, it proves the reliability of the SRQ.

CONCLUSION

Repeat customers are vital to any successful restaurant business. The most effective way to retain repeat customers is by delivering error-free service or by exceeding customer's expectations. Unfortunately, however, flawless service delivery is practically difficult to attain considering the susceptible nature of the service itself. Thus, in the event of service failure, restauranteurs should consider service recovery as it has been recognized as one of the strategies to win back irritated customers. Restauranteurs may consider executing service recovery from three perspectives-distributive justice, procedural justice and interactional justice. These three types of justice are practically beneficial as it covers various aspects of problem resolutions that can be considered by restauranteurs when recovering from service failure.

Although, service recovery has received much attention recently, less focus has been directed to explore its significant contribution in Southeast Asian's restaurant context. Most extant studies utilizes the instrument that was developed based on Western's context. Thus, it is imperative to validate the adapted instrument in Malaysian's restaurant context. The findings of this study proved the validity of the SRQ by employing processes such as content validation, construct validation and reliability analysis. This study provides a significant contribution in term of instrument development of a more all-inclusive service recovery measure in Malaysian's restaurant context. The psychometric properties of the SRQ is considered reliable as the results exceed the minimum measurement level. The SRQ is therefore, may be used by researchers to measure service recovery efforts since all the items measure the construct accordingly.

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REFERENCES

Adams, J.S., 1965. Inequity in Social Exchange. In: Advances in Experimental Social Psychology, Berkowitz, L. (Ed.). Academic Press, New York, pp: 267-299.

Bitner, M.J., 1990. Evaluating service encounters: The effects of physical surroundings and employee response. J. Market., 54: 69-82.

Bitner, M.J., B.H. Booms and M.S. Tetreault, 1990. The service encounter: Diagnosing favorable and unfavorable incidents. J. Market., 54: 71-84.

Blodgett, J.G., D.J. Hill and S.S. Tax, 1997. The effects of distributive, procedural and interactional justice on postcomplaint behavior. J. Retailing, 73: 185-210.

DeWitt, T., D.T. Nguyen and R. Marshall, 2008. Exploring customer loyalty following service recovery the mediating effects of trust and emotions. J. Serv. Res., 10: 269-281.

Dong, B., K.R. Evans and S. Zou, 2008. The effects of customer participation in co-created service recovery. J. Acad. Market. Sci., 36: 123-137.

Ha, J. and S.S. Jang, 2009. Perceived justice in service recovery and behavioral intentions: The role of relationship quality. Int. J. Hospitality Manage., 28: 319-327.

Hair, J.F., W.C. Black, B.J. Babin and R.E. Anderson, 2010. Multivariate Data Analysis. 7th Edn., Pearson Prentice Hall, USA.

Hart, C.W.L., J.L. Heskett and E.W. Sasser Jr., 1990. The profitable art of service recovery. Harvard Bus. Rev., 68: 148-156.

Homans, G.C., 1961. Social behavior: Its elementary forms. Am. Anthropol., 63: 1339-1341.

Liao, S. and C.C. Cheng, 2013. Consumer evaluation of self-service innovation failure: The effect of brand equity and attribution. Ser. Ind. J., 33: 467-485.

Lynn, M.R., 1986. Determination and quantification of content validity. Nurs. Res., 35: 382-385.

Maxham, J.G. and R.G. Netemeyer, 2002. Modeling customer perceptions of complaint handling over time: The effects of perceived justice on satisfaction and intent. J. Retail., 78: 239-252.

Michel, S., 2001. Analyzing service failures and recoveries: A process approach. Int. J. Serv. Ind. Manage., 12: 20-33.

Nikbin, D., I. Ismail, M. Marimuthu and M. Jalalkamali, 2010. Perceived justice in service recovery and recovery satisfaction: The moderating role of corporate image. Int. J. Market. Stud., 2: 47-56.

Nikbin, D., M. Marimuthu, S.S. Hyun and I. Ismail, 2014. Effects of stability and controllability attribution on service recovery evaluation in the context of the airline industry. J. Travel Tourism Market., 31: 817-834.

Pallant, J., 2013. SPSS Survival Manual: A Step by Step Guide to Data Analysis Using IBM SPSS. 5th Edn., McGraw-Hill, UK., Pages: 368.

Parsian, N. and T.A. Dunning, 2009. Developing and validating a questionnaire to measure spirituality: A psychometric process. Global J. Health Sci., 1: 2-11.

Patterson, P.G., E. Cowley and K. Prasongsukarn, 2006. Service failure recovery: The moderating impact of individual-level cultural value orientation on perceptions of justice. Int. J. Res. Market., 23: 263-277.

Rio-Lanza, A.B.D., R. Vazquez-Casielles and A.M. Diaz-Martin, 2009. Satisfaction with service recovery: Perceived justice and emotional responses. J. Bus. Res., 62: 775-781.

Sekaran, U. and B. Roger, 2010. Research Methods for Business: A Skill-Building Approach. 5th Edn., John Wiley and Sons Ltd., UK.

Smith, A.K. and R.N. Bolton, 2002. The effect of customers emotional responses to service failures on their recovery effort evaluations and satisfaction judgments. J. Acad. Marketing Sci., 30: 5-23.

Smith, A.K., R.N. Bolton and J. Wagner, 1999. A model of customer satisfaction with service encounters involving failure and recovery. J. Market. Res., 36: 356-372.

Vazquez-Casielles, R., L.S. Alvarez and A.M. Diaz Martin, 2010. Perceived justice of service recovery s trategies: Impact on customer satisfaction and quality relationship. Psychol. Market., 27: 487-509.

Wen, B. and C.G.Q. Chi, 2013. Examine the cognitive and affective antecedents to service recovery satisfaction: A field study of delayed airline passengers. Int. J. Contemporary Hospitality Manage., 25: 306-327.

Zikmund, W., B. Babin, J. Carr and M. Griffin, 2012. Business Research Methods. Cengage Learning, Ohio, USA.