Airline service quality improvement with The beyond passengers' expectation implementation

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Purpose – This paper is purpose to contribute the development of a conceptual model in airline service quality by conducting an empirical investigation into passengers' beyond expectations to improve the airline service quality.

Methodology – A proposed SERVQUAL and Kano's Model for airline service were studies with a qualitative exploration of the airline service experience from the passengers' perspective was combined with a review of relevant literature to identify variables, to clarify basic concepts and to generate a conceptual model of airline service quality expectations. The research approach to develop a scale to measure passenger expectations of airline service quality, provide the airline service model to reach the beyond airline passenger expectation and improved airline service quality.

Findings –The goal of airline business is to improve the top service quality and high rank in the airline business competitions. The proposed service quality framework comprised of 5 service quality dimension called RATER model which consider passenger perception in 22 criteria to measure and integrate with Kano's Model in airline service measurement to find the Satisfaction Index (SI) and Dissatisfaction Index (DI) of airline passenger.

Research implication – In the competition of airline business which the open sky policy implemented. The airline service quality improvement by implement service quality process to reach beyond passengers' expectation to enhanced the service quality of airline business. Airline Management team can use the developed quality framework to improve service quality in airline business.

Originality/Values – The extended service quality level by provides a comprehensive service management in airline industry to meet the passenger beyond expectation to improved Airline Image. The newly developed SERVQUAL and Kano's Model integrated with the case examples of airline are illustrated and discussed.

Keywords –Airline service quality, Airline Image, SERVQUAL, Kano's Model, Beyond Passengers' expectation

1. Introduction

The service quality is the level of service quality delivered to meet customer expectations (Gronross, (1982). The improvement in airline service quality can be supported to increase passenger demand consequent profitability and also through new and repeat purchases from more loyal passenger (Gilbert and Wong, 2002). Customer satisfaction will influence their loyalty; growth and maximized profitability are primarily stimulated by customer loyalty (Heskett et al, 1994).

2. Literature review

2.1 Service quality in an airline industry

The service quality definitions are variety, those definitions can be formulated from the customers' perspective and what customers perceive are important dimensions of quality (Lewis, 1989). The service characteristics being unable to be produced in advance, the quality of service must exceed customers' expectations and the service quality's outcome is also important (Hong Yen, 2000). Customer satisfaction will influence their loyalty; growth and maximized profitability are primarily stimulated by customer loyalty (Heskett et al, 1994). There is a complexity of service quality in the airline industry that is different from other service industries such as seating comfortable, ticketing and check-in process, in-flight atmosphere, baggage service, arrival service at destination must be considered (Feng and Jeng, 2005).

An airline company could lead in market share through the offering superior service quality with an understanding of competitive advantages in the airline business market share (Cheng et al., 2011). According to Gronroos (1982) and Parasuraman et al., (1988), the the GAP model developed a disconfirmation measurement called the GAP model. The SERVQUAL instrument is used to measure service quality and its dimensions (Clem et al. 2008). The five dimensions are tangibles, reliability, responsiveness, assurance and empathy and 22 scales are contained. The airline service quality is an important factor and should be evaluated. The RATER model of SERVQUAL with 22 criteria has been proposed for airline service quality measurement is one of method to measure an airline industry service quality (Park et al., 2005). According to service processes in the airline industry including reservation and ticketing, check-in, boarding the aircraft, also in-flight service and post flight service, if service failure which caused service quality loss that should be conducted for service quality improvement (Chuang, 2009).

2.2 Kano's model for attractive service in an airline industry

A model to identify core customer requirements and areas of product and service improvement by examining the nonlinear relationship between service performance and customer satisfaction is Kano's model (Ankur et al., 2010). Kano's model developed in 1984 by Dr. Noriaki Kano and his colleagues (Kano et al., 1984). To be applied in airline service, the Kano's model distinguishes in three types of service requirements which influence airline passenger satisfaction in different ways such as:

Must-be requirements (M): The must-be requirements are basic criteria of a product or applied in airline service requirement. If service requirements are not fulfilled to passenger expectation, the passenger will be extremely dissatisfied. On the other hand, as the airline passenger takes these requirements for granted, their fulfillment will not increase his satisfaction. The must-be requirements are basic criteria of an airline service. Airline service fulfilling the must-be requirements will only lead to a state of "not dissatisfied". An airline passenger regards the must-be requirements as prerequisites, he or she takes them for granted and therefore does not explicitly.

One-dimensional requirements (O): These requirements are usually explicitly demanded by the passenger. With regard to these requirements, passenger satisfaction is proportional to the level of fulfillment - the higher the level of fulfillment, the higher the passenger's satisfaction and vice versa.

Attractive requirements (A): These requirements are the product or service criteria which have the greatest influence on how satisfied a passenger will be with a given service. Attractive requirements are neither explicitly expressed nor expected by the passenger. Fulfilling these requirements leads to more than proportional satisfaction. If they are not met, however, there is no feeling of dissatisfaction.

Indifferent quality (I) The passenger is not very interested, whether it is present or not.

Reverse quality (R) The passenger has no desires and expects the reverse.

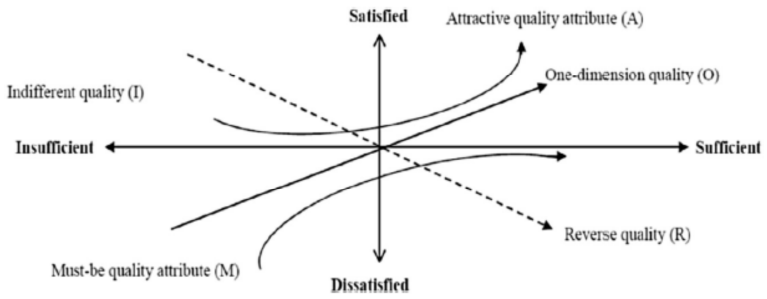

Fig.1 Kano's excitement and basic quality model

According to Matzler and Hiterhuber (1998) (Fig. 1), attractive quality separated Kano's service requirements into Must-be (M), One-dimension (O), Attractive (A), Indifferent (I) and Reverse (R). The customer satisfaction coefficient (CS) measures qualitative values of customer satisfaction and dissatisfaction. The Kano model and the CS formula are applied to indicate the qualitative values of the customer satisfaction index (Berger et al., 1993; Ankur et al.,2010)

Table 1 : A summary of Kano's model applied to airline passenger satisfaction.

Passenger Requirement	Meet service requirement
Must-be requirements (M):	If service requirements are not fulfilled to passenger expectation, the passenger will be extremely dissatisfied.
One-dimensional requirements (O):	Passenger satisfaction is proportional to the level of fulfillment - the higher the level of fulfillment, the higher the passenger's satisfaction and vice versa.
Attractive requirements (A):	Fulfilling these requirements leads to more than proportional satisfaction. If they are not met, however, there is no feeling of dissatisfaction.
Indifferent quality (I)	The passenger is not very interested, whether it is present or not.
Reverse quality (R)	The passenger has no desires and expects the reverse.

Passenger Satisfaction Coefficients

Formula: Satisfaction Index (SI)

$$(SI) = \frac{(A+O)}{(A+O+M+I)}$$

Formula: Dissatisfaction Index (DI)

$$(DI) = \frac{(M+O)}{(A+O+M+I)\times(-1)}$$

Table 2 : A summary airline service quality based on SERVQUAL and Kano's model

RATER dimensions	CODE	Airline Service Criteria
1. Responsiveness	Res 1.1	Airline interest in solving flight delay problems
	Res 1.2	Employees are willing to help in unexpected situations
	Res 1.3	Courtesy of crew
2. Assurance	Asu 2.4	Flight safety operations
	Asu 2.5	Airline performed confident actions with passenger tangibles
	Asu 2.6	Airline provide necessary information
	Asu 2.7	Airline staff have the knowledge to answer questions
	Asu 2.8	Employees willingness to help
	Asu 2.9	Employees promptly handle of flight delays
3. Tangibility	Tan 3.10	Modernized aircraft and seat comfort
	Tan 3.11	In-flight entertainment facility
	Tan 3.12	Appearance of employees
	Tan 3.13	Quality of meal service

RATER dimensions	CODE	Airline Service Criteria
4. Empathy	Emp 4.14	Employees provide individual attention to the passenger
	Emp 4.15	Alternative flight schedules are available
	Emp 4.16	Airline schedules are convenience
	Emp 4.17	Airline handling includes modern equipment and facilities
	Emp 4.18	Employees understand the passenger's specific needs
	Emp 4.19	Employees provide speed handling
5. Reliability	Rel 5.20	Flights are On-time
	Rel 5.21	Airline staff performed accurate service during the case
	Rel 5.22	Airline insistence on travel service

Adapted from Airline service quality measurement based on SERVQUAL and Kano's model (Jeeradist et al., 2016)

3. Research Methodology

This qualitative research has been developed with the integration five dimensions of the SERVQUAL and Kano's model forming part of this study. The researching conducted by personal interviews, focus group interviews and direct or participatory observation with the population which consists of airline passengers and airline staff who have had experience of the service in the airline industry. The methodology for collecting data includes the literature review the past history case study.

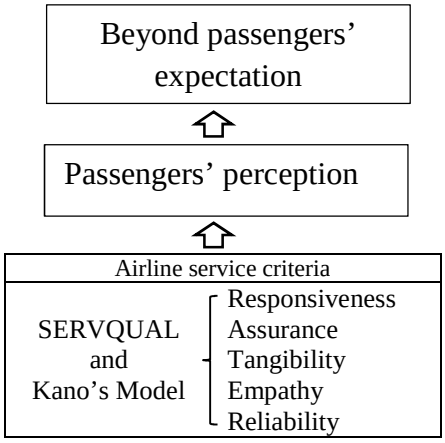

Fig.2 Proposed integrated SERVQUAL and Kano's Model to improve the beyond passengers' expectation implementation

3.1 Analysis in airline service quality improvement

According to the research frame work has shown in Figure 2, it was developed base on SERVQUAL and Kano's Model in the past research (Jeeradist et al., 2016). The purpose is to improve airline service quality with attractive quality in passenger satisfaction with integrate

SERVQUAL and Kano's model. The systematic approach to airline service improvement with attractive quality has been developed base on SERVQUAL and Kano's Model.

3.2 Empirical case study in airline service quality to improve the beyond passengers' expectation implementation

The case study is airline service quality failure cause of severe weather conditions. In the interests of safety, flights are unable to operate in to the severe weather conditions, thus cancellation or delaying the flight to await improved weather is the best practice for airline operations. The survey has been conducted with questionnaire base on SERVQUAL and Kano's Model as shown in Table 3, Fig.3 - Fig.7

Table 3: A summary airline service quality based on SERVQUAL and Kano's model

Service Dimension	Service Code	A	M	O	I	SI	DI	Service Dimension	Service Code	A	M	O	I	SI	DI
Responsiveness	Res 1.1	19	63	13	5	.32	-.76	Empathy	Emp 4.14	15	60	10	15	.25	-.70
	Res 1.2	21	47	17	15	.38	-.64		Emp 4.15	25	35	25	15	.50	-.60
	Res 1.3	17	43	28	12	.45	-.71		Emp 4.16	33	17	38	12	.71	-.55
Assurance	Asu 2.4	5	82	10	3	.15	-.92		Emp 4.17	21	36	17	26	.38	-.53
	Asu 2.5	12	68	12	8	.24	-.80		Emp 4.18	14	57	21	8	.35	-.78
	Asu 2.6	17	23	37	23	.54	-.60		Emp 4.19	23	31	27	19	.50	-.58
	Asu 2.7	24	31	19	26	.43	-.50	Reliability	Rel 5.20	11	69	12	8	.23	-.81
	Asu 2.8	45	29	19	7	.64	-.48		Rel 5.21	19	48	21	12	.40	-.69
	Asu 2.9	11	73	14	2	.25	-.87		Rel 5.22	53	27	13	7	.66	-.40
Tangibility	Tan 3.10	54	31	8	7	.62	-.39	Formula: Satisfaction index and Dissatisfaction index							
	Tan 3.11	52	27	19	2	.71	-.46								
	Tan 3.12	31	47	15	7	.46	-.62	$(SI) = \frac{(A+O)}{(A+O+M+I)}$							
	Tan 3.13	48	32	11	9	.59	-.43	$(DI) = \frac{(M+O)}{(A+O+M+I)\times(-1)}$							

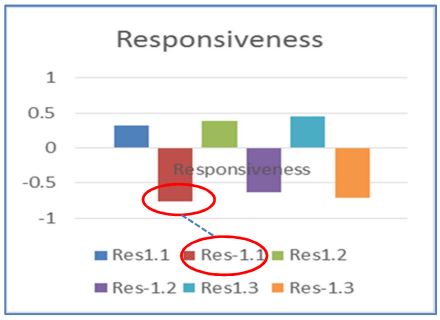

Fig.3 Responsiveness criteria evaluation

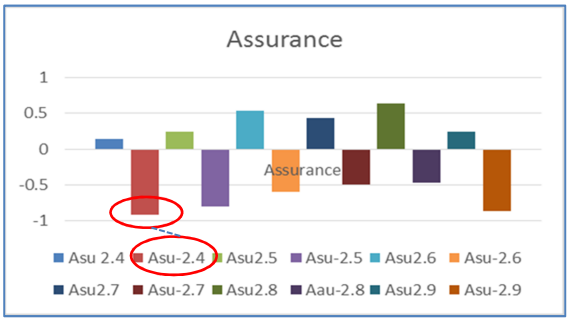

Fig.4 Assurance criteria evaluation

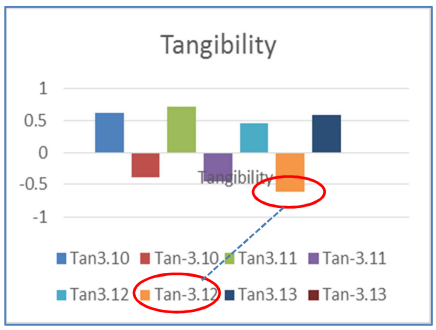

Fig.5 Tangibility criteria evaluation

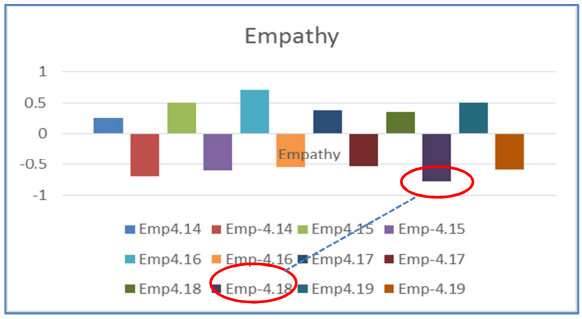

Fig.6 Empathy criteria evaluation

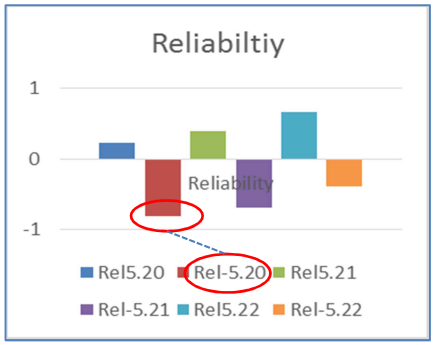

Fig.7 Reliability criteria evaluation

Problem Identification: According to Table 3 and Fig. 3 - Fig.7 shown the criteria base on airline service quality measurement with SERVQUAL 5 dimension and 22 criteria, Kano's Model is a tool in the interests of improvement in service quality. Problem Identification is as follow;

- Fig.3: Responsiveness criteria evaluation, shown the service code Res1.1 mean the highest Dissatisfaction Index is -.76 concerned airline interest in solving flight delay problems, the highest Attractive requirements (A) is Res 1.2 mean employees are willing to help in unexpected situations.
- Fig.4: Assurance criteria evaluation, shown the service code Asu 2.4 mean the highest Dissatisfaction Index is -.92 concerned flight safety operations, the highest Attractive requirements (A) is Asu 2.8 mean employees willingness to help.
- Fig.5 Tangibility criteria evaluation, shown the service code Tan 3.12 mean the highest Dissatisfaction Index is -.62 concerned appearance of employees, the highest Attractive requirements (A) is Tan 3.10 mean the modernized aircraft and seat comfort are needed.
- Fig.6 Empathy criteria evaluation, shown the service code Emp 4.18 the highest Dissatisfaction Index is -.78 concerned employees understand the passenger's specific needs, the highest Attractive requirements (A) is Emp 4.16 airline schedules are convenience.
- Fig.7 Reliability criteria evaluation, shown the service code Rel 5.20 the highest Dissatisfaction Index is -.81 concerned Flights are On-time, the highest Attractive requirements (A) is Rel 5.22 mean airline insistence on travel service.

Problem Solving: In the interest of airline service quality improvement to meet passenger requirement and reached the attractive service. Kano's Attractive requirements (A) by fulfilling these requirements in service quality code such as Res 1.2: Employees are willing to help in unexpected situations, service quality code Asu 2.8: Employees willingness to help, service quality code Tan 3.10: Modernized aircraft and seat comfort, service quality code Emp 4.16: Airline schedules are convenience and service quality code Rel 5.22 Airline insistence on travel service. According to the case study, the attractive airline service criteria analyzed and found that, airline could be provided extra service to support passengers in the problem of service failure is the cause of flight delay or cancellation due to severe weather condition. In this case the extra service such as providing hotel accommodation, extra service

with alternate choice in travel or serving complimentary meals can turn a potentially poor customer experience in to a good one. To improved airline service quality with the attractive service, airline should be arranged the modernized service equipment such as aircraft, inflight entertainment system or passenger cabin seat to support an extra service to passengers. This will fulfill passenger requirement and lead to the attractive service with beyond passenger expectation.

4. Discussion

The airline image is based on the attractive service that airline can be provide to passengers (Chai et al., 2005). But many factors may affect the airline's service such as the case of severe weather conditions (Liou et al., 2007). Based on the case study, the research shown that the attractive service quality can be improved airline image with the criteria studies. Using SERVQUAL 5 dimensions integrate with Kano's Attractive principles for solving the problem and improving airline service quality that can be improved the airline's image. Understanding of the SERVQUAL applied to the airline business and understanding Kano's attractive principles to improve the airline service quality is the path way to attain a top service quality in an airline business.

To investigate the complexity of problems in the case study, the research has been conducted with the framework by identifying problems in the case study by interviewing passengers, focus groups and observing the procedures in airline service. The SERVQUAL with 22 criteria and Kano's Model have been applied as the guide lines to survey the airline service quality.

The empirical case study concerned the airline service quality has been studied. The research methodology was developed base on the problem solving of airline service quality by flights being heavily delayed due to weather condition. The problem has been identified and found that the severe weather conditions may cause lengthy flight delays or cancellations. The discussion of problem solving has shown that extra services for passengers should be applied to meet their needs and these will turn a potentially customer experience in to an attractive service.

5. Conclusion

The purpose of this research is to study and propose a conceptual framework of airline service quality management to achieve higher service quality with an attractive service experience to passenger. The study and discussion with the empirical case study which affect service quality and with airline image. The study presented a relationship of 5 dimensions in airline service quality. Kano's Model has been applied as a tool to improve the service quality and link to attractive service improvement. The study shown that the improvement of serviceability in the airline industry is extremely important in airline management. Also airline image conformance has a relationship with the attractive service quality of airlines. These relationships can be applied SERVQUAL and Kano's Model principles to integrate service quality criteria and attractive service improvement enables an airline to improve its image.

References

Ankur, Chaudha, Jain, Rajeev, Singh, A.R., Mishra, P.K., 2010. Integration of Kano's Model into quality function deployment (QFD). Int. J. Adv. Manuf. Technol. 53,689e698.

Candalino Jr., T.J., Kobza, J.E. and Jacobson, S.H. (2003). *Designing optimal aviation baggage screening strategies using simulated annealing*, 0305-0548(03). Elsevier.doi:10.1016/S030-5-0548(03)00118-7

Charles, p.&Thomas,C., *Management information Systems : Strategy and plan* 2nd ed.(New York : McGraw-Hill,Inc., 1993)

Civil Aviation Authority of New Zealand, (2012).Safety Management Systems.*Advisory Circular AC 00-4 Revision 0, (2012)*

Deb, S. (2007) Airline industry models new operational standard on ISO 9001:2000 ISO Management Systems, March-April

Gilbert, D. and Wong, R.K.C. (2002). Passenger expectations and airlines services: a Hong Kong based study. Elsevier.doi:10.1016/S0261-5177(03)00002-5

Golden, P.N., Debanjan, M. and Moorman, C. (2012). What Is Quality? An Integrative Framework of Process and States. *American Marketing Association*, ISSN: 0022-2429

Headley, D.E. and Bowen, B.D. (1997). International Airline Quality Measurement. *Journal of Air Transportation World Wide* Vol. 2 No. 1

Janic, M. (2000). An assessment of risk in civil aviation, *Journal of Air Transport Management* 6, 43-50. 0696-6997/00, Pergamon Pll :0969-6997(99)00021-6

Liou, J.J.H., Tzeng, G-H. and Chang, H-C. (2007). Airline safety measurement using a hybrid model. *Journal of Air Transport Management*, Vol. 13, Iss. 4, July, 243-249

Liou, J.J.H., Yen, L. and Tzeng, G-H. (2008). Building an effective safety management system for airlines. *Journal of Air Transport Management*, 14 (2008) 20-26

McLean, D. (2004). *Measurement and control in aviation. Aircraft Engineering and Aerospace Technology*, Emerald Group, doi 10.1/00022660410555112

Parasuraman, A., Zeithaml, V.A., and Berry, L.L. (1985).A Conceptual Quality and for Model of Service Its Implications Future Research. *Jounal of Marketing*, 49(4), 41-50

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64, 12-40

Park, J-W., Robertson, R. and Wu, C-L. (2005). Investigating the Effects of Airline Service Quality on Airline Image and Passengers' Future Behavioral Intentions: Findings from Australian international air passengers. *The Journal of Tourism Studies* Vol. 16 No. 1, May

Pittaway, L., Robertson, M., Munir, K., Denyer, D. and Neely, A. (2004). Networking and innovation: a systematic review of the evidence. *International Journal of Management Reviews*, 5-6(3-4), 137-168. doi:10.1111/j.1460-8545.2004.00101.x

Rosenbusch, N., Brinckmann, J. and Bausch, A. (2011). Is innovation always beneficial? Ameta-analysis of the relationship between innovation and performance in SMEs. *Journal of Business Venturing*, 26(4), 441-457. Elsevier Inc. doi:10.1016/j.jbusvent.2009.12.002

T. Jeeradist et al. (2016), Using TRIZ to enhance passengers' perceptions of an airline's image through service quality and safety, Journal of Air Transport Management 53 131-139, Elsevier

Wen, C-H. and Chen, W-Y. (2010). Airlines' Competitive Positioning Using Multiple Correspondence Cluster Analysis. *12th WCTR, July 11-15*

Zhang, J., Chai, K-H. and Tan, K-C. (2009). 40 Inventive Principles with Applications in Service Operations Management.

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