IMPLEMENTATION OF VALUE CREATION IN PUBLIC TRANSPORT
(CASE STUDY: PT. KAI CUSTOMER SATISFACTION)

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Abstract

PT. KAI as the train operator in Indonesia need to provide good service quality that will result in customer satisfaction. To evaluate service quality need to be known customer expectation and customer perception toward services offered. From Importance-Performance Analysis, shown that punctuality, easiness to mode change and waiting room are attributes that belong to performance shortfall, that means those attributes need to get priority in improvement. Then regression analysis was conducted to know how quality attibutes influence the satisfaction. The result show that, there are two component factor that are main services and additional services. All of three attrtibutes that obtained from IPA analysis belong to main services that has significant influences to customer satisfaction. Related with value creation dimension, PT. KAI need to improve services quality in customer experience. Customer who has good experiences toward service offered can increase level of satisfaction and create positive emotional bonds.

Key Word: *Service Quality, Customer Satisfaction, Value Creation*

INTRODUCTION

Background

Transportation sector is a public service that has important role in the people's activity. In fact, today most of public transport providers in Indonesia only focus to transporting passenger from one place to other place regardless theirservice quality. Public transportswhich rarely get any direct competition will tend to be product-oriented and focus on reach their own objective withoutgivingsufficient attentionto customer satisfaction (Enquist 1999, cited in Davoudi 2012). The high quality of service is considered an essential determinant of the long-term business profitability. Companies with perceived high quality of their product typically had higher market share also higher return on investment and asset turnover compare with other companies that provide low quality. By considered a critical determinant of competitiveness can help an organization to differentiate itself from other organizations. Service quality will influence the repurchase intentions not only for existing customer but also for potential customers (Ghobadian et al. 1994).Otley (1999), stated that service provider should be based on customer perspective and consider on the value that create for the customer. Therefore service provider need to set objectives that meet customer need and desire to make sure that offered service is satisfying and comfortable for the customer.

Several previousstudiesrelated with PT. KAI services (e.g. Saputra 2010, Sunarto 2009), show that their service quality is low and customer is not satisfied with the service offered.

However, today PT. KAI has madeinnovation and breakthrough steps that indicate readiness to improve quality of service. Therefore requires astudyto evaluate service quality that performed byPT. KAIand the influenceto thecustomer satisfaction. In this thesis, author tries to connect service quality and customer satisfaction using Gebauer et al. (2010) value creation framework in Public transport. By using this approach, customer posits as active participants in the value-creating process. Value is not only embedded in the output of product but also co-created with the customer during the consumption.

Purpose and Research Question
The purpose of this thesis is to evaluate PT. KAI service quality and customer satisfaction related with value creation framework. Based on the research purpose, there are some research questions that will be finding in this research**:**
1. What kind of service quality attributes that need to be improved by PT. KAI?
2. How services quality attributes influence the PT. KAI customer satisfaction?
3. How to implement value creation framework in PT. KAI services?

Service Quality
According to Lewis and Booms (1983; cited in Parasuraman et al. 1985), service quality is a measure of how well the service level delivered matches customer expectations. In the service marketing literature, customer perception can be defined as customer beliefs concerning the service received or experienced service. While customer expectations can be defined as desires or wants of customer such as what they feel a service provider should offer. Expectations represent an individual's psychological state that relates to future behavioural consequences for that person. Expectations are state regarding future service usages which indicate the customer requirement toward service provider. Customer service expectations can be formed from their past experiences, word of mouth and personal needs Parasuraman et al. (1985) introduced way to measure service quality depends on the conformity of the expected benefit with the perceived result that customer get. Analysis gap as the difference between perceived and expected service can be used by service provider to identify service quality. Then in several years later Parasuraman et al. (1988) introduce service quality dimension called SERVQUAL that consistofTangibles; Reliability; Responsiveness; Assurance and Empathy.Poor quality occurs when perceived performance ratings are lower than expectations, and vice versa (Lim & Tang 2000).

Customer Satisfaction
According to Oliver (2010), satisfaction can be defined as a judgment of service into a pleasurable level of consumption related fulfillment including level of under or over-fulfillment. Satisfaction also can be defined as customer feelings of pleasure or disappointment that results from comparing a service perceived performance or outcome with customer expectations. This is in line with Tse et al. (1988), that defined satisfaction as customer response to the evaluation of the perceived difference between prior expectations and the actual performance of the service as perceived after its consumption. Fornell (1992), considering satisfaction as an overall post-purchase evaluation by the consumer. Level of satisfaction is determined by customer and provider cumulative experience at the point of contact (Sureshchander et al. 2002). Customer satisfaction can be measure at two conceptualization that is transaction-specific and cumulative (Boulding et al. 1993). In the transaction-specific, customer satisfaction is viewed as a post-choice evaluation judgment of a specific purchase opportunity. While cumulative customer satisfaction is an overall evaluation based on the total purchase and consumption experiences with a service over time. The second conceptualization is more fundamental

and useful than transaction specificity customer satisfaction in predicting customer subsequent behavior and the company performances.

Value Creation Framework in Public Transport
Using value co-creation approach customer and provider are relies on joint creation of value that allow the customer co-construct their experience to suit their personalized context. Implementation value creation in public transport sectors, posits customer are not merely aspassiveparticipants, butmoreemphasis as active participantin value creation process (Johnson et al. 2010). Gebauer et al. (2010), introduce value creation framework in public transport by using five activities that consist of customer engagement; self-service; customer experience; problem solving and co-design.

Customer engagement is an involvement activity to persuade customers through advertising and promotions that involve and activate the recipients of the promotional message (Prahalad2004). By engage customer, they are not only emotionally attached to specific marketing activities but also brand image in the general (Payne et al. 2009). Based on Gebauer et al. (2010) customer can make experience reports which are published in internet site or magazines. They facilitated communicating the benefit or through on open dialogue on risk of using public transport such as sustainability and environmental friendliness issues.

With the development oftechnology, self-service has become an important aspect of value co-creation between providers and their consumers (Peppard and Rylander, 2006). Self-service Technologies (SST) enables customers to order and buy product without any direct interaction with the provider employee (Meuter et al. 2000). In their study Bitner et al.(2002), state thatself-service is not restricted to technologically advanced customers; there is evidence that such facilities attract new customers who have few advanced technical skills. By using self service, they not only stop after buying and paying ticket but also using public transport service (Johnson et al. 2010).

Services can create memorable experiences and contribute to customer learning through an accumulation of experiential encounters over the duration of a relationship between provider and customer (Pine and Gilmore, 1998). Good customer experiences can increase customer satisfaction and create positive emotional bonds (Johnston and Kong 2009; cited in Gebauer et al. 2010). According to Payne et al. (2009) by identifying the experiences that are embedded in the value co-creation process will have potential advantages for service providers. In public transport, integration of mode transport such as buses, trams, subway or train is an example activity that can increase customer experience. While integration of individual transport can be realized by provide park and ride or car sharing service (Johnson et al. 2010).

In Public transport problem solving mean that the service provider allow the customer solve the problem autonomously through system information service by themselves. Problem solving can be done by combine customer self-service opportunities with provider assistance through internet-based communities,company web sites and frequently asked questions menu (Prahalad, 2004). Increasing importance of customers skills in problem-solving allow the customer becomes an important operant resource in the creation of value (Constantin&Lusch 1994; cited in Gebauer et al. 2010). Co-creates value by working with consumers to solve their problems can be done in several ways such as through lost-property services that utilize self-service facilities and the internet. Customers can find the information of loss property via the internet, call centre, or customer service. Customers

describe the missing object as fully as possible, provide the date on which the item was lost and train route.

Value creation opportunities developed when public transport provider co-design service together with the customer. This activity happen when there is collaboration work between them to create a new service that is suitable to the customer's needs and wishes (Johnson et al. 2010). By implement co-design activity, it will allow customers to participate in the co-creation process through their own innovative design input. In line with Michel et al. (2008; cited in Gebauer et al. 2010), co-designing allow customers to use or reconfigure their value-creating resources more effectively, thus facilitating their value while using the services. It is important to give the customer assist and education throughout the co-designing process (Payne et al. 2009).

DISCUSSION

Research Design
The research method that used in this study is combination of qualitative and qualitative. Qualitative method was conducted as preliminary study to determine quality attribute that will be used in questionnaire design. Then made a number of questions give to the respondents as quantitative measurement, based on the preliminary study attributes. Quantitative research involves counting and measuring of events and performing the statistical analysis of numerical data. The main concerns of the quantitative paradigm are that measurement is reliable, valid and can be generalized in its clear prediction of cause and effect (Matveev2002).

Determine Quality Attributes
Preliminary study was conducted to investigating customer problem. By using this method, can be found the latent need and problem that customer have toward service quality that offered. According to Griffin and Hauser (1993), they found that by ask between 20 until 30 respondents can be determine about 90-95% of all possible attribute. In this study, there are 30 respondent were asked using open-ended question, so they can expressedwhat is ontheir mindsaboutPT. KAIservices. The question that used to get information in preliminary study is using customer delight approach introduced by Matzler et al. (1996) that consist of customer association, customer problem, customer consideration and new feature about PT. KAI services.

From preliminary study, there are 13 quality attribute were obtained that consist of Environmental friendliness, Comfort, Punctuality, Self-service ticketing, Easiness of mode change, Safety and security, Waiting room, Cleanliness, Internet access (wi-fi), Mobile device application, System Information also Smoking and Hawker prohibition. Then from those attribute will be asked about customer expectation, customer perception and customer satisfaction using 1-7 likert scale as quantitative research.

Importance Performance Analysis (IPA)
Todetermine the service attributesthatneedbe improved according tothe priorityscale, we can use IPAmatrix (Martilla and James, 1977; Oliver 2010). Importance score obtained from customer expectation, while performance score obtained from customer perception toward PT. KAI services.Then will be made the points in Cartesian coordinates by using

the average value of each attribute X and Y axis. Then the references line was obtained from the average scores of all perception score in X axis and the average score of all expectation score in Y axis. The result IPA matrix result about PT. KAI services quality show in figure 1 below.
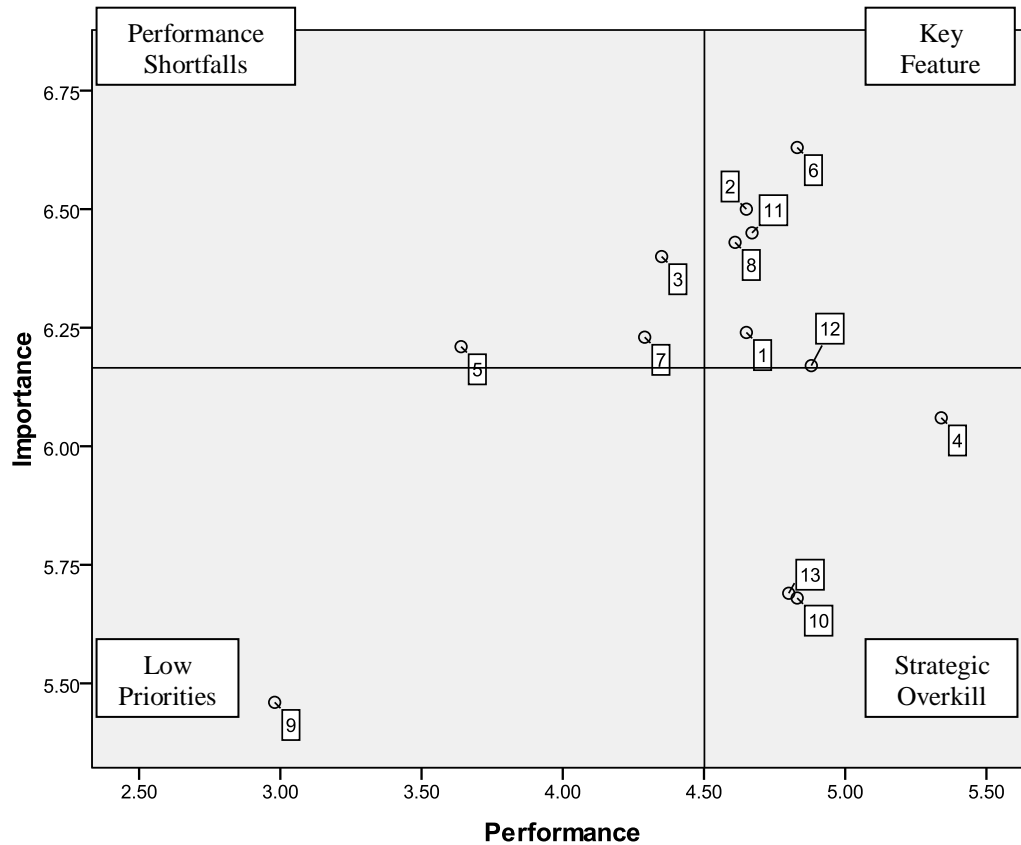

Figure 1 Importance-Performance Matrixes

From IPA matrix above we can summary the service quality analysis result into table that divide attributes into four quadrant. Table 1 below will describe the result from IPA method.

Table 1 Importance-Performance Analysis Result

Quadrant	No	Attributes
Key Feature	1	Environment friendliness
	2	Comfort
	6	Safety and Security
	8	Vehicle cleanliness
	11	System Information
	12	Smoking Prohibition
Performance Shortfall	3	Punctuality
	5	Easiness to mode change
	7	Waiting Room
Low priorities	9	Internet Access (wi-fi)

Quadrant	No	Attributes
Strategic Overkill	4	Self-service ticketing
	10	Mobile device application
	13	Hawker prohibition

Regression Analysis

Regression Analysis was conducted to find out the retationship between quality attributes and customer satisfaction. First of all, correlation analysis was conducted to find the relation of each attributes. The result show that all of attribute has positive relation through overall satisfaction with ($p < 0.01$), it means that when customer satisfaction with a specific service quality attributes increases, overall of satisfaction will increase too.Then analysis factor was conducted to summarize the information contained in a number of composite dimensions. The analysis factor result show that KMO score is 0.909 that greater than 0.5 and significance score is less than 0.05so correlations between variable pairs can be analyzed. Then The SPSS result for MSA calculating show that MSA value is > 0.5, so it means that variable can still be predicted and also can be analyzed.

Table 2 Rotated Component Matrix

	Component	
	1	2
Comfort	.685	
Punctuality	.692	
Self-service ticketing	.698	
Mode change	.766	
Savety and security	.638	
Waiting room	.679	
Cleanliness	.684	
Internet access	.457	
Mobile device application	.787	
System Information	.611	
Environment friendliness		.595
Smoking Prohibition		.894
Hawker Prohibition		.792

From rotated component matrix above, we can divide the attributes into two categories. In this study, author clasify the first category as main service that consist of comfort, punctuality, self-service ticketing, mode change, savety and security, waiting room, cleanliness, internet access, mobile device application and system information. While in the second category, author mention as addition services that consist of environment friendliness, smoking prohobition and hawker prohibition. Then from those factor, regression analysis was performed to evaluate the contribution of each factor on overall satisfaction. By using stepwise method, can be seen that there are two kind of output model.

Table 3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.651[a]	.423	.420	1.001
2	.814[b]	.662	.659	.768

From table 3 above, we can see that the second model is better than the first model. Coefficient correlation show value 0.814 that indicate the relationship between attribute is positive and has high correlation. Using the second model, factor 1 and factor 2 can explain 66.2% of overall satisfaction, while the remain 33.8% influence from other factor.

Table 4 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.706	.075		63.058	.000
	Main Services	.855	.075	.651	11.431	.000
2	(Constant)	4.706	.057		82.188	.000
	Main Services	.855	.057	.651	14.899	.000
	Additional Services	.643	.057	.489	11.197	.000

By using the second model, overall satisfaction as dependent variable influence by main service and additional services as independent variable. The relationship can be describe as Y(satisfaction) = 4.706 + 0.855 X1(Main Service) + 0.643 X2 (Additional Services).

Implementation of Value Creation Framework in PT. KAI
Gebauer et at (2010) value creation dimension can be used by PT. KAI indevelop new business opportunities that involve customer to increase the value. It also can be used as triggers for changing customer's role from passive to active participant, where customers allow creating value (Johnson et al. 2010). As railway operator that faces competition from other mode of transport such as aviation and bus, PT. KAI needs to shift their perspective to more customer-oriented service where value is co-created with customer. By using value creation framework, means that PT. KAI and the customer are relies on joint creation of value that allows the customer co-construct their experience to suit their personalized context (Prahalad&Ramaswamy, 2004a; 2004b).
The first value creation activity is customer engagement, PT. KAI can engaging customers through communicating the benefits. Persuade customers through advertising and promotions that involve and activate the recipients of the promotional message (Prahalad2004). Customer is not only emotionally attached to specific marketing activities but also brand image in the general (Payne et al. 2009). It can start with arguments on sustainability or environment friendliness of railways transport and it continues with articulating the transport quality (Gebauer et al. 2010). Customer engagement used to generate comprehensive information fromthe customerto adapt services and products that satisfy customer and meet customer needs.

The second dimension is self-service activity that can be done by PT. KAI in creating the valuethroughself-service ticketing reservation.According to Meuter etal. (2000), the technological innovations such as internet, mobile phone and computer terminals are enable customers to make reservation and exchange resources with companies without any direct interaction with their employees. By doing this activity, customers not only stop in buying and paying tickets, but also appear to using public transport service (Johnsonet al. 2010). According to Peppard and Rylander (2006), self-service has become an important

aspect of value co-creation between providers and their consumers. Self-service is not only restricted to technologically advanced customers but also attract new customers who have few advanced technical skills (Bitner et al.2002).

The third activity of value creation framework is concern about customer experience. AccordingtoJohnsonet al. (2010), customer experience in public transport starts with an integrated public and individual transport network. Integration service involves different means of public transport such as buses, trams, subway or train. Customer who has good experiences toward service offered can increase level of satisfaction and create positive emotional bonds (Johnston and Kong, 2009; cited in Gebauer et al. 2010). So, PT. KAI need to concern to consider in customer experience to generate good memory in customer perspective. According to Pine and Gilmore (1998), services can generate memorable experiences and contribute to customer learning through an accumulation of experiential encounters over the duration of a relationship between provider and customer.

In problem solving dimension, services provider givesthe customer opportunity to navigate problemindependently through system information services and to solve problems by themselves. According to Constantin&Lusch(1994; cited in Gebauer et al. 2010), increasing importance of customers skills in problem-solving allow the customer becomes an important operant resource in the creation of value. Creating value typically involves positive emotions for customers, compared with co-repairing value after a failure that often entails negative emotions.PT. KAIneeds to apply theco-creating valuethroughproblem solvingtokeep positive emotions from the customers.

Value creation opportunities occur when public transportprovider allow the customer to co-design the services together. Co-design implies either to use customers better aligns services and customer needs during market introduction, or involving customer already in the creation of new service idea (Johnson et al. 2010). Customers have the opportunity to participate actively in the innovation activities through their own innovative design effort. It is important to give the customer assist and education throughout the co-designing process (Payne et al. 2009), so customer knows the correct way to give contribution in service design. PT. KAI using facebook, twitter, customer service and call center to accommodateandreceive the suggestionsorcomplaintsfromcustomers. By involving customer in design the service, will created services in accordance with customer needs.

CONCLUSSION

From this study, author found some conclusion that will answer the research purpose and research question. Based on result on Importance performance analysis, shown that there are three attributes that belong to performance shortfall category that are punctuality, easiness to mode change and waiting room. Combine with result from regression analysis that show all of three attributes belong to main service component that has significant influence to determine satisfaction. To improve service quality, PT. KAI can implement value creation framework that consist of customer engagement; self-service; customer experience; problem solving and co-design. The finding from this study, author tend to classify those three attributes in customer experience activity. Customer who has good experiences toward service offered can increase level of satisfaction and create positive emotional bonds. Service can generate memorable experiences and contribute to customer learning through an accumulation of experiential encounters over the duration of a relationship between provider and customer.

REFERENCES

Bitner, M., Ostrom, A. L., &Meuter, M. L. (2002).Implementing successful self-service technologies.*Academy Of Management Executive*, *16*(4), 96-108.

Boulding, W., Kalra, A., Staelin, R., &Zeithaml, V. A. (1993). A Dynamic Process Model of Service Quality: From Expectations to Behavioral Intentions. *Journal Of Marketing Research (JMR)*, *30*(1), 7-27.

Davoudi, Sara (2012). The Delighted Traveler: Relation of Customer-oriented Quality Attributes to Customers' Satisfaction with Swedish Public Transport: A Study of Värmlandstrafik. Master Thesis. Karlstad Business School.

Fornell, C. (1992). A National Customer Satisfaction Barometer: The Swedish Experience. *Journal Of Marketing*, *56*(1), 6-21.

Gebauer, H. H., Johnson, M. M., &Enquist, B. B. (2010). Value co-creation as a determinant of success in public transport services: A study of the Swiss Federal Railway operator (SBB). *Managing Service Quality*, *20*(6), 511-530.

Ghobadian, A., Speller, S., & Jones, M. (1994). Service quality: concepts and models. *International Journal of Quality & Reliability Management*, *11*(9), 43-66.

Griffin, A., & Hauser, J. R. (1993). The Voice Of The Customer. *Marketing Science*, *12*(1), 1.

Johnson, M., Gebauer, H. andEnquist, B. (2010), "Value creation in public transit services", The 11th International Research Seminar In Service Managemant, La Londe les Maures, France.

Lim, P. C., & Tang, N. (2000).A study of patients' expectations and satisfaction in Singapore hospitals.*International Journal of Health Care Quality Assurance*, *13*(7), 290-299.

Martilla, J. A., & James, J. C. (1977).Importance-Performance Analysis.*Journal Of Marketing*, *41*(1), 77-79.

Matveev, A. V. (2002). The advantages of employing quantitative and qualitative methods in intercultural research: Practical implications from the study of the perceptions of intercultural communication competence by American and Russian managers. *Theory of communication and applied communication*, *1*, 59-67.

Matzler, K.,Hinterhuber, H.H., Bailom, F., and Sauerwein, E., (1996) How to delight your customer. *Journal of Product and brand Management*, Vol. 5, No. 2, pp. 6-18.

Meuter, M. L., Ostrom, A. L., Roundtree, R. I., &Bitner, M. (2000). Self-Service Technologies: Understanding Customer Satisfaction with Technology-Based Service Encounters. *Journal Of Marketing*, *64*(3), 50-64.

Otley, D. (1999). Performance management: a framework for management control systems research. *Management Accounting Research*, *10*(4), 363-382.

Oliver, R. L. (2010). *Satisfaction : a behavioral perspective on the consumer / Richard L. Oliver*. Armonk, N.Y. : M.E. Sharpe, c2010.

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

Parasuraman, A. A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, *64*(1), 12-40.

Payne, A., Storbacka, K., Frow, P., & Knox, S. (2009). Co-creating brands: Diagnosing and designing the relationship experience. *Journal of Business Research*, *62*(3), 379-389.

Prahalad, C. K., &Ramaswamy, V. (2004a).*The future of competition : co-creating unique value with customers / C.K. Prahalad, VenkatRamaswamy*. Boston, Mass. : Harvard Business School Pub., cop. 2004.

Prahalad, C. K., &Ramaswamy, V. (2004b). Co-Creation Experiences: The Next Practice in Value Creation. *Journal of Interactive Marketing*, *18*(3), 5-14.

Pepparrd, J., &Rylander, A. (2006). From value chain to value network: insights for mobile operators. *European Management Journal*, (2-3), 128.

Pine, I., & Gilmore, J. H. (1998).Welcome to the Experience Economy. *Harvard Business Review*, *76*(4), 97-105

Saputra, A.D. (2010). Analysis of Train Passenger Responses On Provided Service Case study: PT. KeretaApi Indonesia and StatensJärnvägar (SJ) AB, Sweden. Master Thesis. Karlstad Business School.

Sunarto, R.S. (2009) Contractual Governance of Indonesia Railway System CaseStudy: Customer Satisfaction in Jabodetabek Area VsVärmlandstrafik AB. Master Thesis. Karlstad Business School.

Sureschandar, G. S., Rajendran, C., &Anantharaman, R. N. (2002).The relationship between service quality and customer satisfaction--a factor specific approach.*Journal of Services Marketing*, *16*(4), 363

Tse, D. K., & Wilton, P. C. (1988). Models of Consumer Satisfaction Formation: An Extension. *Journal Of Marketing Research*, (2), 204.