

# A Comparative Study on Several National Customer Satisfaction Indices (CSI)

Xiaoming YANG Peng TIAN Zhen ZHANG  
Aetna School of Management  
Shanghai Jiao Tong University, Shanghai, P.R.China, 200030

**Abstract** In this paper, four influential national CSIs are compared from two perspectives – the latent and manifest variables in CSI models, the relationships among latent variables. Some valuable results are obtained and they will be instructive to establish future Chinese CSI.

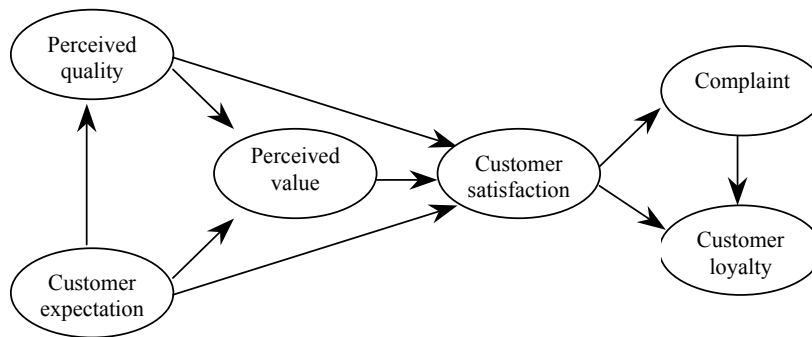
**Key words** national CSI, latent variables, manifest variables, relationships

*\*Sponsored by National Science Foundation of China (Granted number: 70271040)*

## 1. Introduction

Since 1970s, researchers of consumer behavior and marketing in developed countries have begun to make comprehensive studies on customer satisfaction (e.g. Oliver (1977), Churchill and Suprenant (1982), Olshavsky (1993)). In 1989, Fornell and his colleagues in Michigan University helped Sweden build the first nation-level measurement system of customer satisfaction - Swedish Customer Satisfaction Barometer (SCSB) (Fornell, 1992). Later in 1994, American Customer Satisfaction Index (ACSI) was launched (Fornell, 1996). In ACSI model (Figure 1), customer expectation, perception of quality, perceived value were introduced as the antecedents of customer satisfaction and customer loyalty and customer complaint as consequences.

In the middle of 1990s, CSI was gradually recognized by governments and companies worldwide as a good instrument to gauge a nation's or company's output quality. Till now, nation-level CSIs have Swedish Customer Satisfaction Barometer (SCSB), American Customer Satisfaction Index (ACSI), German Barometer, Norwegian Customer Satisfaction Barometer (NCSB), Swiss Index of Customer satisfaction (SWICS), Korean Customer Satisfaction Index (KCSI), Malaysian Customer Satisfaction Index(MCSI). In addition, Brazil, Argentina, Mexico, Canada, Australia, Hong Kong and some regions like Taiwan, are striving to build their own CSI systems.



**Figure 1. The measurement model for American Customer Satisfaction Index**

Although these CSIs are fundamentally similar in measurement model (i.e. causal model), they have some obvious distinctions in model's structure and variable's selection so that their results cannot be compared with each other. On the other hand, for nations who are attempting to construct their own CSIs, only to take full advantages of other nations' CSI experiences can they establish the CSIs which are suited for their nation's characters. Therefore, a comparison and analysis of the differences among these existed CSIs seems to be indispensable and valuable.

In this study, four typical CSIs - ACSI, ECSI, NCSB and SWICS are selected for comparison as they are the most sophisticated and influential CSI systems. We compare them chiefly from following perspectives:

- (1) Variables selection of CSI model
- (2) Relationships between different variables.

The differences between various CSIs are first presented in three tables and the possible reasons are then explained, and the theoretical direction of CSI research is indicated as an end.

## 2. Comparison of CSI models

### 2.1. Selection of latent and manifest variables in CSI model

**Table 1 Comparison of latent variables in the reference of ACSI**

| <i>Models</i> | <i>Differences Compared with ACSI</i>   | <i>Note</i>   |
|---------------|---|---|
| ECSI          | Distinguish service quality from product quality  | There may be slight differences between participating nations in ECSI |
| NCSB          | Introduction of SERVQUAL to measure service quality; Complaint handling replace consumer complaint; Introduction of corporate reputation; |   |
| SWICS         | Introduction of Customer orientation; Replace customer complaint with customer dialogue ,   |   |

**Table 2 Comparison of manifest variables**

| <i>Models</i> | <i>Expectation</i>          | <i>Perception of quality</i>  | <i>of Company Image or Reputation.</i> | <i>Customer Satisfaction</i> | <i>Customer Loyalty</i>   |
|---------------|-----------------------------|-------------------------------|--|------------------------------|---------------------------|
|               | Overall expectation         | Overall perception of quality |  | Overall satisfaction         | Repurchase behavior       |
| ACSI          | Expectation for reliability | Perception of reliability     | No this item                           | Fulfillment of expectation   | Tolerance of price        |
|               | Expectation for feature     | Perception of features        |  | Comparison with ideal        |                           |
|               | Overall expectation         | Overall perception of quality | Overall image                          | Overall satisfaction         | Repurchase intention      |
| ECSI          | Interactive expectation     | Meet requirements             | Business practice                      | Fulfillment of expectation   | Intention to buy addition |
|               |                             | Compared with competitors     | Ethics<br>Social responsibility        | Comparison with ideal        | Intention to recommend    |

|       |                              |  |                                 |  |                                     |
|-------|------------------------------|--|---------------------------------|--|-------------------------------------|
| NSCB  | No this item                 | Tangible                               | Overall image                   | Overall satisfaction                     | Repurchase intention                |
|       |                              | Reliability                            | Image of branches               | Expectation disconfirmation              | Intention to recommend              |
|       |                              | Responsive                             | Image in friends' eyes          |  |                                     |
|       |                              | Assurance                              |                                 | Performance versus Comparison with ideal | Speak favorable                     |
|       |                              | Empathy                                | Image compared with competitors |  |                                     |
| SWICS | Overall expectation          | Overall performance                    | No this item                    | Overall satisfaction                     | Intention to switch product/provide |
|       | Expectation for requirements | Performance compared with requirements |                                 | Satisfaction compared to expectations    | Intention to recommend              |
|       | Expectation for features     | Perception of features                 |                                 | Satisfaction compared to ideal product   | Repurchase intention                |

Table 1 and Table 2 reveal a trend of the evolution of CSI model, that is, results of latest researches on consumer behavior and mentality are successively introduced into CSI models. For instance, in SCSB, perceived quality and perceived value were merged as one variable – perceived value. Till ESCI (Kristensen, 2000), perceived quality was divided into two parts - product quality (hardware) and service quality (software or human ware). In NCSB (Johnson, 2001), SERVQUAL instrument was introduced to evaluate quality. On the other hand, different CSIs measured the same latent variables with different manifest variables. For example, SCSB and ACSI gauge perceived quality with different manifest variables.

In the selection of manifest variables, ACSI has introduced a new indicator for satisfaction since 1996, that is, consistency of information while ECSI, SWICS and NSCB has not directly included information in their models even though the effect of information, in part, was reflected in some of manifest variables.

Evidences of empirical studies have suggested that customer expectation exerts little influence to satisfaction in many circumstances. Thus, NSCB eliminated it from the model and replaced with corporate image.

Researchers found in customer satisfaction surveys that most respondents rarely complained even if they were unsatisfied with products or services, which resulted in large amounts of missing data on complaint. Yet, customers who have no complaints to products or services still likely pay great attention to others' complaint handling. Based on above reasons, NSCB replaced customer complaint with complaint handling.

Customer loyalty as the only consequence of satisfaction has been exalted to a striking position by managers and marketing researchers in recent years. Research fervor focuses on two areas: (1) the definition of customer loyalty; (2) the relationship between satisfaction and loyalty under different circumstances. Now, almost all the researchers accept that any attempts to define loyalty should consider behavior part and attitudinal part of loyalty, that is, customer loyalty is a synthesis of behavior and attitude. As for the relationship between satisfaction and loyalty, some researcher suggested perceived value not satisfaction does matter. In ACSI, customer loyalty was measured by post-purchase behavior; in ECSI, it was extended to include customer word-of-mouth; in NSCB, as it introduces customer relationship into CSI model, loyalty fully represented its behavioral and attitudinal meanings at the same

time.

To be noted, CSI model is structured by a series of latent and manifest variables and its credibility depends on variable selection and definition of relationships among variables. Thus, manifest variables have to reflect the multi-scale feature of the latent variables which they indicate. In the future, research will continue to focus on involving the possible factors into satisfaction model and discern their relations.

## 2.2. The relationships among latent variables

In the models of SCSB and ACSI, customer expectation was postulated having a positive influence to perceived value and quality. However, more and more evidences are showing that expectation has limited effect on other constructs in CSI models. Therefore, both ECSI and SWICS did not posit any relations between them.

Corporate image/reputation was first introduced into NSCB model as an independent latent variable. In initial experiments on ECSI, Corporate image was assumed having direct influences to customer expectation, satisfaction and loyalty. Later experiments in Denmark proved that image only impacted expectation and satisfaction and have no relationship with loyalty. In NSCB, however, corporate reputation was posited as origin from satisfaction and having a positive influence to loyalty. The disputations of the roles of corporate image/reputation in CSI model was stemmed from the different connotation of image or reputation.

In early attempts to build ECSI, image was defined as a variable which involve not only company overall image but products or brand awareness, thus “image” is readily connected with customer expectation and perception. For those good image brands, customer usually has a higher pre-consumption expectation which in turn induce a higher perception. In the perfecting process of ECSI, image was replaced by company’s reputation. Reputation is determined by the performance of company in the whole society not merely in market, that is, reputation is not only related to finial reports, but more important, is evaluated by the role they play in society including its ethics and values. Another notable phenomenon in the ECSI is that European nations have different opinions on the relationships among constructs though they have very similar models.

As a result, these four CSI models have different exogenous and endogenous variables as showed in Table 3.

**Table 3. Comparison of exogenous variables and endogenous variables**

| <i>Model</i> | <i>Exogenous variables</i>   | <i>Endogenous variables</i>   |
|--------------|--|---|
| ACSI         | Customer expectation   | Perceived quality, perceived value, customer satisfaction, complaint, customer loyalty    |
| ECSI         | Corporate image, perceived product quality, perceived service quality        | Customer expectation, perceived value, customer satisfaction, complaint, customer loyalty |
| NCSB         | Five quality drivers – Tangible, Reliability, Responsive, Assurance, Empathy | Customer satisfaction, company reputation, customer loyalty                               |
| SWICS        | Expectation, Performance, Customer orientation                               | Customer value, customer satisfaction, customer dialogue, customer loyalty                |

## 3. Results and Discussion

Through above comparisons, following results could be obtained.

Customer expectation as a pivot exogenous latent variable has different influences to other

constructs in CSI models. This influence is largely determined by the categories the measured products or services belong to. For some products such as fast consumption commodity, the influence of expectation is so weak as to be omitted. Thus, search of substitutes of expectation will be crucial to build a more precise and comparable CSI model.

In the era of service-dominated economy, service quality plays a greater role in customer post-consumption evaluation. Future research will continue to concentrate on distinguishing service quality from product quality and how to measure it.

With the advent of e-commerce, customer behavior in virtual Internet settings shows some new characteristics. How to discern these changes and introduce them into future models will be a hot topic of future research.

### Reference

- [1] Anne Martensen, Lars Gronholdt, Kai Kristensen. The drivers of customer satisfaction and loyalty: cross-industry findings from Denmark. *Total Quality Management*, Vol.11, 2000
- [2] Claes Fornell. A National Customer Satisfaction Barometer: The Swedish Experience. *Journal of Marketing*, Vol.56, June, 1992
- [3] Claes Fornell, Michael D. Johnson, Eugene W. Anderson, Jaesung Cha, & Barbara Everitt Bryant. The American Customer Satisfaction Index: nature, purpose, and findings. *Journal of Marketing*, Vol.60, Oct., 1996
- [4] Christina O'Loughlin, Germà Coenders. Application of the European Customer Satisfaction Index to Postal Services. *Structural Equation Models versus Partial Least Squares*. Working paper.
- [5] Jan A. Eklof, Anders H. Westlund. The pan-European customer satisfaction index program - current work and the ahead. *Total Quality Management*, Vol.13, 2002
- [6] Kai Kristensen, Anne Martensen, Lars Gronholdt. Customer satisfaction measurement at post Denmark: results of application of the European Customer Satisfaction Index methodology. *Total Quality Management*, Vol.11, Sep., 2000
- [7] Lars Gronholdt, Anne Martensen, Kai Kristensen. The relationship between customer satisfaction and loyalty: cross-industry differences. *Total Quality Management*, Vol.11, NO.4, 2000
- [8] Michael D Johnson, Anders Gustafsson, Tor Wallin Andreassen, Line Lervik & Jaesung Cha. The evolution and future of national customer satisfaction index models. *Journal of Economic Psychology*, Vol.22, Apr., 2001
- [9] Michael D Johnson, Andreas Herrmann. Comparing customer satisfaction across industries and countries. *Journal of Economic Psychology*, Vol.23, 2002
- [10] Michael D Johnson, Claes Fornell. A framework for comparing customer satisfaction across individuals and product categories. *Journal of Economic Psychology*, Vol.12, June, 1991
- [11] Sharifah Latifah Syed A. Kadir, Mokhtar Abdullah & Arawati Agus. On service improvement capacity index: a case study of the public service sector in Malaysia. *Total Quality Management*, Vol.11, No4&6, 2000
- [12] Winnie, Yuk-Lan Wong & Gopal K. Kanji. Measure customer satisfaction: Evidence from Hong Kong retail banding industry. *Total Quality Management* Vol. 12, NO 7&8, 2001
- [13] <http://www.swics.ch/englishch/index.html>