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**Comparing Different Net Measures in Customer Experience Measurement** 

by

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#### Abstract:

The popularity of the Net Promoter Score (NPS) has highlighted the use of net measures in customer experience measurement. This paper provides a literature overview of different forms of net measures such as the NPS, Secure Customer Index and American Customer Satisfaction Index and discusses amongst others their relationship with company profitability. The authors draw upon longitudinal meta-data analysis of more than 1.5 million customer satisfaction measurement interviews to cite reliable correlations between net measures and other traditional customer satisfaction measurements, as well as establishing statistical properties of these measures, making this investigation beneficial to researchers, research users and marketers.

**Keywords:** customer experience, customer satisfaction, loyalty, net measures, profitability, Net Promoter Score (NPS), American Customer Satisfaction Index (ACSI), Secure Customer Index (SCI), integrated customer experience measurement

#### 1. Introduction

#### 1.1 Background and rationale for research

With product and price parity fast reducing many products to commodity status, the service and customer experience construct is fast receiving more attention as a market differentiator. Grewal, Levy and Kumar (2009) emphatically state that "survival in today's economic climate and competitive retail environment requires more than just low prices and innovative products. To compete effectively, businesses must focus on the customer's shopping experience." However, in order to manage a customer's experience, a proper understanding of customer experience is required.

Verhoef, Lemon, Parasuraman, Roggeveen, Tsiros and Schlesinger (2009) provide an overview of the existing literature on customer experience, including some recent definitions of customer experience: "The customer experience originates from a set of interactions between a customer and a product, a company, or part of its organization, which provoke a reaction. This experience is strictly personal and implies the customer's involvement at different levels (rational, emotional, sensorial, physical, and spiritual)" (Gentile, Spiller & Noci, 2007, page 397). A second and related definition is that "Customer Experience is the internal and subjective response customers have to any direct or indirect contact with a company. Direct contact generally occurs in the course of purchase, use, and service and is usually initiated by the customer. Indirect contact most often involves unplanned encounters with representatives of a company's products, service or brands and takes the form of word-of-mouth recommendations or criticisms, advertising, news reports, reviews and so forth." (Meyer & Schwager, 2007, page 118).

Historically however, researchers have focused on measuring service quality and customer satisfaction (e.g., Parasuraman, Zeithaml & Berry, 1988; Verhoef, Langerak & Donkers, 2007), where satisfaction is a rating of the customer's experience with the service outcome instead of considering customer experience as a separate construct. Quite a lot of research has also been done on the relationship between customer satisfaction and loyalty, retention and economic performance (Kristensen & Martensen, 1996; Rucci, Kirn & Quinn, 1998; Duboff & Heaton, 1999).

It is therefore easy to understand that enhancing customer loyalty has become a popular topic for managers, consultants and academics, based on simple arguments that loyal customers have higher customer retention rates, commit a higher share of their category spending to the firm and are more

likely to recommend others to become customers of the firm (Reichheld & Sasser, 1990; Zeithaml, 2000). Customer surveys containing measures of satisfaction, repurchase intention and word-ofmouth intention as indicators of loyalty are typically used by managers as customer feedback systems to monitor their performance and direct their efforts regarding the improvement of customer loyalty (Keiningham, Cooil, Aksoy, Andreassen & Weiner, 2007).

With such strong titles like "*The One Number You Need to Grow*" and "*The Ultimate Question, Driving Good Profits and Growth*" (Reichheld, 2003; 2006), it comes as no surprise that Reichheld's Net Promoter<sup>®</sup> score (NPS) has on the one hand found rapid application in a variety of industries while on the other hand have also been challenged; and it seems, could still be in an evolutionary phase. Furthermore with the more recent debate questioning whether Reichheld's Net Promoter metric is in fact the best standalone predictor of a firm's growth (Morgan & Rego, 2006; Keiningham, Cooil, Andreassen & Aksoy, 2007; Molenaar, 2007; Hayes, 2008), the debate has unintentionally caused some traditional customer satisfaction researchers to naively shy away from using the question.

The popularity of the Net Promoter Score has highlighted the use of net measures in customer experience measurement. Similar to other net measures, the "recommend" question is an excellent research question and was used extensively before Reichheld (2003) popularised it. But as a standalone question, the NPS has limitations. Using an overview of previous research and literature, as well as empirical studies, this paper will explore quantitative comparisons of different forms of net measures in order to offer you a balanced view.

#### **1.2** Previous research and literature review

A collection of previous research and literature regarding net measures and their use in customer experience measurement are summarised and discussed under the following captions:

- Customer satisfaction and company profitability
- The Net Promoter Score a single net measure
- The American Customer Satisfaction Index (ACSI) as a multi-attribute measure
- Customer Loyalty and the Secure Customer Index as net measures

#### 1.2.1 Customer Satisfaction and Company Profitability

Understanding consumer behaviour began in the 60's; tracking customer satisfaction/dissatisfaction (CS/D) only began in the 70's. Before that there was mainly an internal focus. Today we know that by consistently meeting or even exceeding expectations, an increase in customer satisfaction translates into customer loyalty, retention, referrals and repeat business, which in turn relates to profitability (See Figure 1, adapted from Heskett, Jones, Loveman, Sasser & Schlesinger, 1994). Case studies using empirical analysis to demonstrate these relationships exist for several industries, including retail (Kumar, Shah & Venkatesan, 2006), retail banking (Hallowell, 1996; Rust & Zahorik, 1991), insurance (Eskildsen & Kristensen, 2008) and hospitals (Nelson, Rust, Zahorik, Rose, Batalden & Siemanski, 1992).





Turning the focus to aspects of organisational design which are important for satisfying customers in a service-based economy, one aspect that has received substantial attention in the past two decades is service climate, defined as "employees' perceptions of the practices, policies, procedures, and behaviours that get rewarded, supported, and expected" regarding meeting customers' needs effectively (Schneider, White & Paul, 1998, page 151). Mayer, Ehrhart and Schneider (2009) refer to several empirical research studies which has consistently found a positive relationship between service climate and customer perceptions of service quality and customer satisfaction; they use data from the supermarket industry to conclude that by successfully developing and nurturing a service climate, organisations should gain a strategic competitive advantage and, ultimately, more satisfied customers.

# Figure 2 – General Specification of the Conceptual Model (Anderson, Fornell & Lehmann, 1994)

**EXPECTATIONS**<sub>t</sub> = f<sub>1</sub>(EXPECTATIONS<sub>t-1</sub>, QUALITY<sub>t-1</sub>,  $\xi_{1t}$ ) **SATISFACTION**<sub>t</sub> = f<sub>2</sub>(QUALITY<sub>t</sub>, PRICE<sub>t</sub>, **EXPECTATIONS**<sub>t</sub>,  $\xi_{2t}$ ) **PROFITABILITY**<sub>t</sub> = f<sub>3</sub>(**SATISFACTION**<sub>t</sub>,  $\xi_{3t}$ ) where  $\xi_{it}$  = vector of other factors (e.g. environmental trends, firm-specific factors, error)

Anderson, Fornell and Lehmann (1994) discuss the relationship between customer satisfaction and profitability based on a conceptual model (Figure 2) where profitability (at time t) is positively affected by customer satisfaction, as well as other factors (e.g., past values of the dependent variable, economic conditions, firm-specific factors, luck and error). Customer satisfaction, in turn, is affected by market expectations and experiences (including quality and price). Finally, current market expectations are positively related to both historical expectations and the market's experiences with quality in the most recent period.

Based on this conceptual model, Anderson et al. (1994) formulate and test a set of hypotheses by using data from the Swedish Customer Satisfaction Barometer (SCSB) and traditional accounting measures of economic returns, such as return on investment. Their results suggest that providing high quality and high customer satisfaction is rewarded by economic returns.

By tracking and improving the Voice of Customer (VoC), across different segments, it results in stronger brand equity and increased market share across all sectors. A recent study by Tuli and Bharadwaj (2009) even considers the impact of customer satisfaction on the risk of stock returns and demonstrates that investments in customer satisfaction insulate a firm's stock returns from market movements (overall and downside systematic risk) as well as lower the volatility of its stock returns (overall and downside idiosyncratic risk).

Continuously measuring customer satisfaction therefore has enormous benefits, and knowing how to improve service, holds the promise of dramatic bottom line results.

#### **1.2.2** The Net Promoter Score – a single net measure

The NPS is a simple "recommend" question: "*How likely is it that you would recommend (brand or company X) to a friend or colleague*?" and is measured on an eleven point scale (0-10). The Net Promoter score is calculated by taking the percentage of "promoters" (9-10 rating; extremely likely), and the percentage of "detractors" (0-6 rating; extremely unlikely). The percentage of "passives" (7-8 rating) is ignored. The Net Promoter Score is calculated by subtracting the detractors from the promoters. Companies with scores above 75 percent have world-class loyalty and word-of-mouth, which will correlate with a firm's growth, says Reichheld (2003).

This simple top-of-house dashboard metric has been adopted by executives for obvious reasons: it's swift to survey, simple to understand and communicate, and can be wielded in the boardroom with a fair degree of accuracy. Reichheld (2003) also singles out that the NPS is a more accurate predictor of sales growth than the elaborate American Consumer Satisfaction Index (ASCI). Yet Morgan and Rego (2006) assessed six different metrics over a seven year period (1994 – 2000) and found that the average satisfaction scores had the best predictive future business performance validation. As Morgan and Rego (2006, page 426) put it: "Our results clearly indicate that recent prescriptions to focus customer feedback systems and metrics solely on customer's recommendation intentions and behaviours are misguided."

Also, there have been little scientific research linking recommend intentions to actual intentions (Keiningham et al, 2007). Yet in 2004 with General Electrics CEO stating "This is the best customer satisfaction metric I've seen." (Reichheld, 2008) there is excellent apparent value in this 'oversimplified' "recommend" question. However, Reicheld (2003) already had suggested companies follow this question with an open-ended question. For instance, Reichheld (2008) mentions that GE does follow up the NPS question with a qualitative "Why?" which tracks an array of root-cause service attributes to determine the overall impact on customer satisfaction/dissatisfaction, which of course would require follow-up action by GE.

GE also asks "*How likely to recommend my best competitor, and why*?". These qualitative "whys" transforms the NPS from an ex post facto research design to a more causal/explanatory study. Besides competitive insights, mature or advanced users of the NPS must continuously look at root cause analyses (Brooks, 2010). Brooks (2010) suggests managers should know the top three priorities for improving the NPS, and keep trending the progress of key touch points.

To ascertain which statistically significant attributes are driving overall service, a full-blown qualitative and quantitative benchmark study can of course be done in tandem with regular net measure tracking surveys, offering a richness of data, deeper insights and evidence, improving the "buy-in" of net measure sceptics. The flexibility of using both these approaches meets the desires of different strategic business units' needs. Some may need a quick (and very practical) net metric to compensate their staff, whilst other managers may need to identify the performance of a recently launched product; while a strategist may need more in depth data for strategic and tactical direction.

"Thin-slicing" was a term first coined by psychologists (Ambady & Rosenthal, 1992) to elucidate a thin slice of expressive behaviour as a predictor of other behaviour. After briefly observing couples interact, psychologist Dr. John Gottman can hypothesize - with 94 percent certainty though - which marriages will fail (Gottman, 1994). Likewise, a doctor could detect an increase in a patients pulse rate (inductive reasoning) and hypothesize that their condition had deteriorated due to an infection. In both cases the narrow window of experience is an academic exposition, but is still nevertheless a solid argument used to explain a 'thicker-slice' of the construct being investigated. However, no psychologist or medical doctor would only use one thin-slice and purport it to be conclusive.

Induction and deduction should both be used for plausible predictive research reasoning and inference (Cooper & Schindler, 2008); otherwise false positives and false negatives could easily arise. Likewise, neither should a researcher use one standalone net measure. For reliable reasoning, a triangulation of measures needs to be deployed to deduce that a single net measurement is both true and valid in the real world. Yet even with these inherent flaws - like taking the pulse of a patient - this paper elucidates that there is reasoning behind thin-slicing.

Proponents of the NPS also argue that the elegant simplicity of the question outweighs any statistical validity it may lack (Business Week, 2006). But in a turbulent and disruptive marketing environment, no standalone dipstick measure can claim to unquestionably predict future growth of an organisation, and neither will we.

However, this should not detract researchers from using net measures in customer experience surveys; on the contrary, until something better replaces them, net measures have a role to play. A good question to ask ourselves is if the NPS is not the best standalone question, then what is?

#### 1.2.3 The American Customer Satisfaction Index (ACSI) as a multi-attribute measure

A business is a construct of intertwined determinant dimensions or concepts (Parasuraman, Zeithaml & Berry, 1985), which a single quantitative net measure could not qualitatively probe to elucidate specific service inadequacies and actionable insights. Although a single net measure may probe both 'head' (price, features, quality) and 'heart' (empathy) facets of loyalty, they can't elucidate delineate each attributes' performance. The American Customer Satisfaction Index (ACSI) on the other hand, validates the way a construct behaves within a system of related constructs (Fornell, Johnson, Anderson, Cha & Bryant, 1996), investigating conjoint/ multicolinearity analysis of price tolerance and perceived quality across multiply industry sectors, comparing  $R^2$  coefficients of determination for overall customer satisfaction (ACSI) and loyalty.

As with the first accurate national customer satisfaction index, the Swedish Customer Satisfaction Barometer or SCSB (Fornell, 1992), the ACSI also factors in the valuable predictive nature of customer expectations too. As Claes Fornell, renowned tenured professor at University of Michigan behind the ACSI said this about the NPS (Business Week, 2006): "Clearly, it's attractive to have something simple, but to have something simplistic that points you in the wrong direction is not recommended, either." However, by doing follow-up research and other studies to support the NPS, Fornell's concern can be addressed.

A significant secondary data study (Morgan & Rego, 2006) embarked on closing the knowledge gap to demonstrate which of the six most popular customer feedback systems are the best at predicting future growth and bottom line performance (Tobin's Q, net operating cash flow, total shareholder returns, annual sales growth, gross margin and market share). The research method they used incorporated the data accumulated by the ACSI, which surveyed 40 different industries that accounted for about 40% of the U.S. GDP. The selected ACSI data set was gleaned from 1994 to 2000, allowing both customer satisfaction and loyalty metrics to be computed. The study of 80 different firms' known performance was compared against the predictive data of the six metrics defined in Table 1.

#### Table 1 – Customer Satisfaction & Loyalty Metrics for ACSI data set

<b>Customer Satisfaction Metrics</b>	Customer Loyalty Metrics		
1. Average Customer Satisfaction Score	4. ACSI Net Promoters		
This is the overall average of three ACSI components probed: overall satisfaction, expectancy disconfirmation, and performance versus ideal product or service	<ol> <li>ACSI: "Have you discussed your experiences with (brand or company x) with anyone?"</li> <li>ACSI: "Have you formally or informally <i>complained</i> about your experiences with (brand or company x)?"</li> </ol>		
2.Top 2 Box Customer Satisfaction Score	5. Repurchase Likelihood		
The equivalent of the Top 2 Box metric looked at the "top" four boxes on the ten- point ACSI scale.	ACSI: How likely are you to repurchase this brand/company?"		
<b>3. Proportion of Customers Complaining</b>	6. Number of Recommendations		
The ACSI "voice" component looks at the number of consumers who voice their dissatisfaction with those who don't.	ACSI: "With how many have you discussed (brand or company x)?"		

The regression results indicated a linear relationship that is more directly related to customer satisfaction metrics and business performance, than customer loyalty metrics, with "average customer satisfaction" being the most relevant metric to predict future business performance.

Morgan and Rego (2006) thus strongly suggest that managers do not abandon customer satisfaction monitoring and recommend a "score card" incorporating average customer satisfaction, Top 2 Box satisfaction, proportion of customers complaining, and repurchase intent or likelihood. The average number of WOM recommendations and the ACSI net promoter component performed poorly as a predictor of future business performance. However, the ACSI "net promoter" component is defined completely different to the Net Promoter Score of Reichheld (2003) and in contradiction to this study, other researchers find a strong correlation between revenues and "recommend" questions. On concluding their white paper Macfarlane and Wibberly (2008, page 18) state: "Both Satisfaction and Recommendation do drive future revenues." The 2006 Bains Financial services NPS survey (Reichheld, 2009) shows a strong correlation between growth and the NPS, producing an R<sup>2</sup> coefficient of 0.83 – notedly before the credit crunch and worldwide recession where no NPS score indicated the rapid declined in business growth.

#### 1.2.4 Customer Loyalty and the Secure Customer Index as net measures

Customer satisfaction is necessary but not always sufficient for customer loyalty (Brandt, 1996). For instance, a competitor's product may be unavailable to a customer, who, out of necessity (and habit) may be forced to use, and recommend, the product or service to others. Which is why Brandt (1996) recommended the Secure Customer Index<sup>®</sup> (SCI<sup>®</sup>), which probed three attributes: the "secure" customers was very satisfied, had a likelihood to definitely continue using the service, and had a likelihood of definitely recommending the service to others. Customers then could be grouped into subgroups or loyalty segments: Secure, Favourable, Vulnerable and At Risk Customers, where a direct linkage to financial and market performance was calculated.

Today the new improved SCI<sup>®</sup> is Burke Incorporated's proprietary modelling (Baker-Prewitt, 2007) approach and because they understand the complex multidimensionality of probing customer loyalty, they now include five dimensions to assist validity and predictions of future share of wallet – they are: Earned Loyalty, Likelihood to Recommend, Likelihood to Repurchase, Overall Satisfaction and Preferred Company. Burke has studied data (Burke, 2004) which directly links and also projects a correlation between customer satisfaction, loyalty, and value to financial performance. Through projection and direct linkage, Burke (2004) can calculate which part of the marketing mix will bring the largest ROI.

Whether using the SCI® or the NPS, the current global recession will play havoc with a manager predicting future performance. Burke (2004) warns against this and admits that a customer satisfaction score cannot detect the dynamics of product supply and demand. Failure to be acutely aware of market conditions, they say, leads to erroneous conclusions; but this should not deter management from using customer loyalty measurements.

#### **1.3** The research question or problem

The popularity of the Net Promoter Score has highlighted the use of net measures in customer experience measurement. Considering the preceding literature review and discussion regarding different net measures, it is obvious that no single measure can be used successfully in measuring the complex constructs of customer experience, customer satisfaction and customer loyalty. This paper will explore quantitative comparisons of different forms of net measures such as the NPS and an integrated customer experience index score.

#### 1.4 The research objectives

The purpose of this study is to investigate the following three objectives:

- Explore the use and application of Net Measures in the measurement of Customer Experience
- Compare Net measures in terms of reliability, validity, predictive ability and practical application
- Position Net Measures within the body of knowledge of Customer Experience Measurement theory and practise

# 2. Methodology

#### 2.1 Research design, participants & data collection

The study takes the format of a meta-analysis on data collected over a time frame of more than 5 years covering more than 1.5 million customer interviews. Survey results have been consolidated from proprietary customer satisfaction surveys of a range of clients – for the purpose of this research paper the data is limited to results from surveys in the financial services industry.

Respondent selection for each of the surveys under consideration was quota-based from client contact lists on proportional stratified sample designs. At the time of the interview being conducted, the respondent would have been a current customer of the financial service provider being evaluated, with recent interaction at a specific channel.

Survey data was collected via telephonic, web-based and face-to-face interviews. To ensure minimal sampling observation errors, all interviews were subject to strict quality assurance processes and advanced technology was used to capture data (e.g. a CATI (computer aided telephonic interview) system for telephonic interviews and Remark Scan-system for face-to-face interviews).

No ethical issues are relevant to the study since most of the findings will be reported at meta-data levels without identifying any specific sponsoring company (to protect confidentiality and proprietary measures). Strict SAMRA code-of-conduct was followed in all data collection and respondents were well aware of the institution the surveys were done for and for what purposes the information would be used.

Rader (2006) recommends a case study of Intuit, which clearly illustrates the value of focusing on a relationship measure and evaluating product, pricing, sales channel and other business elements as contributing factors (root causes) of customer satisfaction.



Figure 3 – Multi-attribute model (Parasuraman & Grewal, 2000)

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One of the first multi-attribute cause and effect models was published by Parasuraman and Grewal (2000) – see Figure 3. In Consulta Research Prof Adré Schreuder developed and conceptual causeand-effect model illustrated in Figure 4 as an integrated customer experience measurement, developed through years of academic research combined with extensive experience regarding Customer Satisfaction measurement across multiple industries. The basis for the measurement is a structural model of customer satisfaction that incorporates the important antecedents (drivers) of satisfaction that will identify underlying service or product deficiencies (or strengths) that would otherwise not be identified and a proprietary algorithm for integrating net measures into this multi-attribute model.

Since the calculation of the customer experience index score incorporates the net effect of "failure" and "delight" ratings, it can be classified as a combined multi-attribute and net measure approach.





The integrated customer experience measurement, although resulting in a final index score, acknowledges the fact that a single value for an index might hide more that it reveals. It is important to be able to delve deeper into the results to enable the receiver to delve deeper than satisfaction. For this reason the customer experience index score is not reported in isolation as a single measure, but merely as the net result of multiple items, each of which contains detail results and offers valuable strategic information into the management of customer delight, loyalty, propensity to shift, service recovery, corrective improvement measures and consequence management.

All the research instruments used for data collection followed the same basic layout and included sections corresponding to the components contained in the conceptual model for customer satisfaction measurement (Figure 4). However, in conjunction with the clients (several large corporations in the financial services industry) the first section of each questionnaire was developed to measure a specific channel's value proposition to the client by means of a range of custom designed service attributes.

The measurement of these attributes incorporates both customer perception and customer expectation, by using the well-known confirmation-disconfirmation scale (Danaher & Haddrell, 1996) illustrated in Figure 5 this incorporates into customer satisfaction the important aspect of expectations as discussed earlier by Anderson et al. (1994) and overcome the longer and taxing application of double administration of perception and expectations measurements as earlier proposed by Parasuraman, Zeithaml & Berry (1985) in the famous Servqual-approach.

# Figure 5 – Confirmation-disconfirmation scale Much worse than expected -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5

Further, the research instruments include specific questions relating to the components of product quality, service quality, relationship quality and pricing as contributing factors of customer satisfaction.

The instruments were tested to ensure the two most critical cornerstones of good research:

- Reliability, i.e. the extent to which a research instrument produces consistent results if repeated measures are made, by using Cronbach alpha reliability analysis. The international benchmark is 70%.
- Validity, i.e. the extent to which a research instrument measures what it intends to measure, by using cumulative explained variance in principle factor analysis. The international benchmark is 60%.

For each of the surveys the statistical analysis (using the statistical software package STATISTICA) included reliability and factor analysis as mentioned above, as well as structural equation modelling and multiple regression analysis. The result, for each of the surveys, was a unique structural (cause-and-effect) model of customer satisfaction that considers all the important drivers of satisfaction.

The final data set used for the meta-analysis contained each of the components defined in Table 2 for 704 separate customer satisfaction studies forming part of the enterprise wide measurement of customer experience for each of the financial institutions - each with a sample of at least 100 respondents.

Metric	Description				
Weighted service attribute average score	A weighted average of the (unique channel) service attributes measured in terms of customer expectation				
Service problems %	The proportion of respondents who indicated that they experienced a service problem within a certain time period. This is different from the proportion of respondents <i>complaining</i> (formally or informally) as measured in ACSI				
Problem recovery %	The proportion of respondents who indicated that their service problem was recovered to their satisfaction				
Overall delight %	The proportion of respondents who gave a 9 or 10 rating out of 10 for overall satisfaction. This is much more strict than the typical Top 2 Box metric calculated on a 5 point verbal scale or the "equivalent" "top four" boxes on the ten-point ACSI scale				
Overall failure %	The proportion of respondents who gave a 0 or 1 rating out of 10 for overall satisfaction				
Average overall satisfaction score	A simple average of overall satisfaction rated on a scale from 0 to 10				
Customer satisfaction index score	<ul> <li>The index score (out of 100) is a function of the following key elements:</li> <li>The underlying structural model – incorporating the weighted effect (estimated contribution) of the components product and/or service and/or relationship quality</li> <li>The basic calculation principle of being "rewarded" for positive ratings (e.g. overall delight ratings and problem recovery) and being "penalised" for negative ratings (e.g. service problem occurrence and overall failure ratings) – corresponding to the concept of a net measure</li> </ul>				
Net Promoter Score	Calculated according to the original definition of Reichheld (1993) the Net Promoter Score equals the % of promoters minus the % of detractors: * Promoters = respondents indicating a 9 or 10 out of 10 likelihood to recommend; * Detractors = respondents indicating a 0 to 6 out of 10 likelihood to recommend				

 Table 2 – Customer Satisfaction & Loyalty Metrics for meta-data analysis

## 3. Results & Discussion

#### 3.1 Reporting net measures in isolation

One of the dangers and often cited weaknesses (Burke, 2007) in reporting any net measure (in isolation) is contained in the fact that two measurements having exactly the same value for the net measure can in fact have a range of different values assigned to the components of the net measure. This is clearly illustrated in Figure 6 and Figure 7 with examples of five surveys with equal customer satisfaction index scores and equal Net Promoter Scores, respectively. A high level of variability is noted especially in the percentage of service problems experienced, the problem recovery percentage and the overall delight percentage, yet the satisfaction index scores are all equal.





Figure 7 – Five surveys with equal Net Promoter Scores



Obviously, the larger the number of metrics being used in the calculation of the net measure, the more different combinations of the metric values can possibly yield the same net measure result. The customer satisfaction index score has the additional factor of also being dependent on the structure and weights of the underlying model.

It is therefore strongly recommended that a net measure is never reported and interpreted in isolation, but always in conjunction with the metrics used in its calculation. The main advantage of reporting the values of the metrics together with the actual result of the net measure (specifically in the case of the customer satisfaction index score) is in understanding the important drivers of satisfaction that will assist in identifying underlying service or product deficiencies/strengths, which in turn will form the basis for defining and implementing action plans and/or strategies that will have a positive impact on the customers' experience.

Description	Sample1	Sample2	Sample3	Sample4
Respondent1	50	0	10	0
Respondent2	50	0	10	20
Respondent3	50	0	30	20
Respondent4	50	50	40	20
Respondent5	50	50	50	50
Respondent6	50	50	50	50
Respondent7	50	50	60	50
Respondent8	50	100	70	90
Respondent9	50	100	80	100
Respondent10	50	100	100	100
Average	50	50	50	50

Figure 8 – Four hypothetical surveys with equal average scores



However, this recommendation is not only applicable to net measures, but to other "simple" statistical measures (e.g. the sample mean) as well, where a variety of different respondent values

can also yield the same result for the specific statistical measure and typical "distribution" detail and/or graphs provide more insight into the results. Figure 8 contains the detail of four hypothetical samples, containing 10 respondents each and reporting their responses to a question on a scale from 0 to 100 - each of the hypothetical samples has an average rating of 50, yet the source data and corresponding distribution is obviously different.

#### **3.2** Satisfaction measures as predictors of NPS

The customer satisfaction index score is calculated from various metrics, including the service attribute average score, percentage service problems and percentage problem recovery, as well as delight and failure ratings on overall satisfaction (top & low box ratings). The customer satisfaction model shows a negative correlation between service problems and overall satisfaction. The higher the percentage of service problems, the more index points will be subtracted in the calculation of the index score. Problem recovery can offset the negative effect of service problems and would earn "bonus points" being added to the index score. The Net Promoter Score, based on "likelihood to recommend" as indicator of loyalty, is calculated according to the definition of Reichheld (2003).

The relationship between customer satisfaction and loyalty has been discussed in detail. Now consider each of the net metrics used in calculating the customer satisfaction index score. **Individually**, as independent variables in modelling the Net Promoter Score, the graphs and correlation coefficients ( $R^2$ -values in Figure 9) clearly show that the integrated index score (and not the individual metrics it consists of) with an  $R^2$  of 0.73 seems to be the best predictor of the NPS, followed by the overall delight rating ( $R^2$  of 0.69). As is to be expected, service problems and failure ratings show a negative correlation with customer satisfaction and NPS, while delight ratings show a positive correlation. Service problem recovery shows a very low, but positive, correlation with the NPS.





The simple average of overall satisfaction shows poor correlation with the NPS compared to the integrated customer satisfaction index score, as seen in Figure 10.





However, similar to the conclusion of Schneider, Berent, Thomas & Krosnick (2008), we do not recommend either the NPS or customer satisfaction index score in isolation as "the best and sufficient measurement to evaluate business performance", but agree that "using a variety of measures rather than simply one measure would better capture the complexity underlying customer satisfaction and customer behaviours". Analysing the detail of all the different metrics constituting the customer satisfaction index score and NPS will assist greatly in the need for root cause analyses and strategic/tactical direction, while the net measure(s) in itself can provide a top line measurement to track performance or even be effectively used as a "top-of-house" executive indicator, but supported with the degree of granularity of the VoC. The quantitative data analysis of these measures is further enriched by qualitative questions similar to the "whys" asked by GE, including verbatim descriptions of service problems that were experienced, suggestions on improving service delivery, etc.

#### 4. Conclusion

The relationship between customer satisfaction and loyalty, customer retention and economic performance has been discussed and proven extensively; leading to the conclusion that continuously measuring customer satisfaction has enormous benefits for a company, and that knowing how to improve service holds the promise of dramatic bottom line results. This paper presented an overview of previous research and literature regarding different forms of net measures such as the

Net Promoter Score, Secure Customer Index and American Customer Satisfaction Index and their application in customer experience measurement.

Without denying the fact that net measures has a role to play, the use of net measures as standalone questions has been shown to have some disadvantages. Reporting net measures in context, supported by the multiple items it contains, provides the opportunity to analyse the detail of all the different metrics constituting the net measure. This will assist greatly in the need for root cause analyses and strategic/tactical direction, while the net measure in itself can provide a top line measurement to track performance or even be effectively used as a "top-of-house" executive indicator. The quantitative data analysis of these measures can further be enriched by qualitative questions, including verbatim descriptions of service problems that were experienced, suggestions on improving service delivery, etc.

Using longitudinal meta-data analysis of more than 1.5 million customer satisfaction measurement interviews, we have presented reliable correlations between the Net Promoter Score and an integrated customer satisfaction index score, as well as establishing statistical properties of these measures. The customer satisfaction index score can be classified as a combined multi-attribute and net measure approach, since it incorporates the net effect of "failure" and "delight" ratings, as well as service problems and the recovery thereof.

Understanding that customers, as human beings, are complex by nature and accepting that the measurement of customer satisfaction involves the measurement of a complex construct, the use of multiple-item net measures has the advantage of providing insight into underlying drivers of customer satisfaction, while also offering a simple "top-of-house" dashboard metric that is simple to communicate.

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