

CSISG Fieldwork Methodology Whitepaper



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CSISG FIELDWORK METHODOLOGY WHITEPAPER

Comparisons of Results and Respondent Demographic Profiles between Interviewer Administered Face-to-face Survey and Respondent Self-administered Online Survey for the Customer Satisfaction Index of Singapore (CSISG)

AIM

The Rise of Digital Survey Methodologies

When the Customer Satisfaction Index of Singapore (CSISG) study began 14 years ago, the most suitable fieldwork methodology to achieve a representative sample of customers in the sectors measured by the study was randomised door-to-door and face-to-face interviews. Since then, with the prevalence and pervasiveness of digital technologies, consumers have become much more comfortable and familiar with online interactions. Market research firms in Singapore and elsewhere, have also developed various online survey panels to capitalise on this trend for survey purposes. Collecting data through online surveys provides the researchers potential operational benefits, such as faster deployment, better quota controls, and cleaner data sets. Over time, these panels have grown more mature and may contain respondent profiles that are more representative of certain target customers surveyed by the CSISG study. Looking ahead, research on customers of emerging services' such as streaming media services or mobile wallet payment systems, are likely to be more effectively reached through online sampling via such panels.

Piloting Online Surveys for the CSISG

As online survey panels have developed to have a more robust and representative sampling frame than before, and to leverage on the operational benefits of online data collection, the CSISG study is embarking on the use of online survey panels for suitable industries in 2020. In preparation for this change in sampling methodology, and to better understand the effects, the Institute of Service Excellence (ISE) conducted two pilot studies on selected CSISG sub-sectors. The data from these two online pilots were compared with corresponding data which had been collected through the traditional CSISG methodology of interviewer administered face-to-face surveys. This paper aims to outline the findings from the research, as well as highlight the potential differences in the results of future CSISG studies where data collection has shifted to an online methodology.

A REVIEW OF THE CSISG DATA COLLECTION METHODOLOGY

Development of the CSISG

Prior to the launch of the CSISG in 2007, there was no robust indicator of service levels in Singapore. To fill this gap, the CSISG study was developed to measure customers' perception of services in Singapore. Modelled after the American Customer Satisfaction Index (ACSI), which has been the definitive measure of customer satisfaction in the United States for the last 26 years, the study was designed to raise service competitiveness through (1) benchmarking, (2) providing organisations with insights on the determinants of customer satisfaction, as well as (3) identifying areas for improvement efforts. Other adopters of the ACSI model includes South Korea, United Kingdom, and Sweden etc. Figure 1 shows the CSISG structural model.

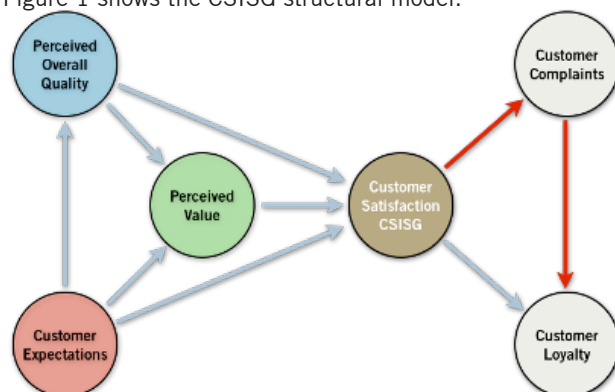


Figure 1: CSISG Structural Model

For certain sub-sectors, Perceived Overall Quality is made up of two sub-dimensions: Product Quality and Service Quality

CSISG Survey Methodology

The primary objective of the survey methodology is to achieve a robust and representative sample that is reflective of the customers of the companies and sectors being measured. At its inception, the CSISG initially utilised a similar interviewer administered phone survey methodology as the ACSI. This was however subsequently changed to a randomised door-to-door methodology due to low response rates for some sub-sectors and the surveys continue to be interviewer administered.

Review on the Feasibility of Online Surveys for the CSISG

In 2010, to leverage on the advent of online survey panels in the US, ACSI began to move its data collection towards an online-based survey methodology. By 2015, all data collected by the ACSI for its index was from online surveys. In considering the increasing ubiquity and use of digital technologies by consumers in Singapore, as well as ACSI's shift towards the use of online panels for its surveys, ISE conducted a review of the feasibility of the use of a similar methodology in Singapore. This was done through the following:

- Review of academic literature on the pros and cons of using online surveys
- 2 online pilot studies of selected sub-sectors
- Discussions with traditional fieldwork vendors
- Discussions with online panel vendors
- Discussions with ISE stakeholders

Based on the review, ISE intends to shift data collection for certain sub-sectors to the online survey methodology in the 2020 cycle of the CSISG. The remainder of this paper outlines our understanding of the pros and cons of the use of online surveys for the CSISG, as well as our findings from the two pilot studies.

Pros & Cons of Interviewer Administered and Respondent Self-administered Online Surveys

A review of the literature on the use of different survey modes was done¹. Table 1 presents the pros and cons of the two survey methods.

Conflicting Results regarding Scale Usage

In addition to the features highlighted in Table 1, research has found conflicting results regarding whether online respondents are more likely to choose midpoints or give extreme responses when answering Likert-scale type questions. Such conflicting results may be due to differences in the topics surveyed. For instance, if the population has strong and opposing views about a topic, extreme responses may be observed from an online survey. This is because online surveys are more likely to reach respondents who are more view-point oriented. This however does not suggest that online responses are less representative of the views of the population. In contrast, it may actually be more helpful to researchers by allowing diverse views to be collected so

¹ References:

Duffy, B., Smith, K., Terhanian, G., & Bremer, J. (2005). Comparing data from online and face-to-face surveys. *International Journal of Market Research*, 47(6), 615–639. <https://doi.org/10.1177/147078530504700602>

Szolnoki, G., & Hoffmann, D. (2013). Online, face-to-face and telephone surveys—Comparing different sampling methods in wine consumer research. *Wine Economics and Policy*, 2(2), 57–66. <https://doi.org/10.1016/j.wep.2013.10.001>

Tran, V. D., & Luong, L. A. (2020). A study on comparing online, telephone and face to face surveys based on different sampling methods in coffee consumer in Vietnam. *Management Science Letters*, 665–674. <https://doi.org/10.5267/j.msl.2019.9.012>

that a more complete understanding of the subject can be obtained. Thus, it remains to be seen how online surveys as a methodology affects respondents use of scale-based questions.

	Interviewer Administered Survey	Respondent Self-administered Online Survey
Pros	<ul style="list-style-type: none"> • Can be well-structured, flexible and adaptable • Allows more control over demographic profiles of respondents • Interviewers are able to assess whether respondents understand the questions and help respondents overcome their errors/biases on the spot 	<ul style="list-style-type: none"> • Less costly • Easier and quicker survey administration • Quicker survey completion time by respondents • Able to reach respondents of certain profiles (i.e., people who are busier, more educated or well-off) • More likely to reach respondents who are more view-point oriented (have active opinions) which can provide more diverse views and greater variation in responses • Respondents are likely to answer sensitive questions more truthfully
Cons	<ul style="list-style-type: none"> • Quality of responses is dependent on interviewers' training and experience • Responses can be subjected to interviewer biases • Respondents are more likely to answer questions in a socially desirable way because of the presence of the interviewer • Costly and time consuming • Exerts time pressure on respondents 	<ul style="list-style-type: none"> • Respondents are likely to have self-selected to take part in the online survey, especially when the surveys were administered through an online panel • Due to the factors above, online samples may not be representative of general population, but can be representative of sub-groups that are well-represented on online panels • Less control over respondent errors/biases

Table 1: Pros and cons of the two survey methodologies

Summary of Literature Review

Consequently, while there are clear benefits to the use of the online medium for surveys, there are potential disadvantages as well. From the literature, the final impact of a shift in methodologies appears to be indeterminant as the reason for differences in scores, if any, stems not only from (1) the ability of the online mode to reach a representative sample of the target population, but also potentially how respondents answer the questions because of (2) the nature of the topic surveyed and (3) the presence/absence of an interviewer. The next section outlines how ISE conducted two empirical studies to gain a better sense of how a shift in methodologies would affect the measured CSISG sub-sectors.

PILOT STUDIES TO UNDERSTAND THE EFFECTS OF A CHANGE IN SURVEY MODE ON THE CSISG

Overview of the Pilot Studies

The pilot studies aimed to understand how a change in survey mode may affect (1) the scores for the measured CSISG dimensions and (2) the demographic profiles. Focusing on these two areas would allow ISE to gain an understanding of (1) how the CSISG results may differ such that benchmarks and ranks may change and (2) how the demographic profiles of respondents may differ between the two data collection methods such that sample representativeness might be affected. This section provides a summary of the findings from the two pilot studies. More information on the studies can be found in Annex A and B.

Research Approach

Two sectors on two extreme ends of the incidence rate² continuum were selected for the pilot studies to understand how the two data collection methods may affect the survey outcomes stated above in a holistic way. The sectors and their sub-sectors are listed below. To allow for comparability, online surveys for these sub-sectors were done in parallel with the main CSISG study for these same sub-sectors, which used the regular face-to-face interviewer administered survey methodology.

Sector with Low Incidence Rate <i>Selected Finance & Insurance Sub-sectors</i>	Sector with High Incidence Rate <i>Selected Land Transport Sub-sectors</i>
Banking Credit Cards Life Insurance Health & Medical Insurance	MRT (excludes LRT) Public Buses

Areas of Focus: Metrics & Demographic Profiles Studied

From the literature review, the change in methodology may affect 1) how respondents rate their answers as well as 2) the respondent types. Hence, ISE's research focused on the following areas of comparison:

CSISG Scores	Demographic Profiles ³
Customer Expectations Perceived Overall Quality ⁴ Perceived Value Customer Satisfaction Customer Complaints Customer Loyalty	Age Employment Status Housing Type No. of Children Dependents Marital Status

2 Incidence rate refers to the number of people in the population who qualify to take part in the survey. A high (low) incidence rate means that a large (small) proportion of the population qualifies to be respondents and for this reason, respondents will be easier (harder) to find.

3 These five demographic profiles were selected because they are good indicators of the different stages of life of respondents, which are likely to affect the products and services required by the respondents and their purchase decisions.

4 Includes Service Quality and Product Quality for certain sub-sectors.

Overview of Findings

Differences in scores and demographic profiles between the two data collection methods were observed. Table 2 provides a summary of these differences.

Category	Sub-sector	CSISG Scores	Demographic Profiles
Low Incidence Sub-sectors	Banks	Differences in all scores Lower scores in most areas Higher complaint rates observed	Differences in 13 out of 15 sub-profiles observed
	Credit Cards	Differences in all scores	Differences in 14 out of 15 sub-profiles observed
	Life Insurance	Lower scores in all areas Higher complaint rates observed	Differences in 8 out of 15 sub-profiles observed
	Health & Medical Insurance	Higher complaint rates observed	Differences in 11 out of 15 sub-profiles observed
High Incidence Sub-sectors	MRT	Differences in 3 out of 6 scores Higher scores in two areas Higher complaint rates observed	Differences in 8 out of 15 sub-profiles observed
	Public Buses	Differences in 2 out of 6 scores Higher score in one area Lower score in one area	Differences in 10 out of 15 sub-profiles observed

Table 2: Summary of differences between results of two data collection modes

Summary of Findings

- Differences in scores were observed, as expected based on the known differences between the two methods.
- Whether these differences in scores will be positive or negative is uncertain as both differences were observed.
- Complaint rates were higher in 5 out of 6 sub-sectors.
- Differences in demographic profiles were observed, with fewer differences observed in the two Insurance sub-sectors and the two Land Transport sub-sectors.
- Although the Land Transport sector saw fewer differences in demographics, they can be challenging to sample representativeness due to the industry's nature.

Study Conclusion

The pilot studies of low and high incidence sub-sectors suggest the following when a shift in methodology is made:

- Changes to scores of sub-sectors with data collected online are to be expected.
- Direct comparison with data collected using previous methodologies would need to be caveated.
- The higher complaint rates observed in the online method suggest that this method may provide more insights on customers' negative experiences, which can help industries and companies identify areas for improvement and enhance their competitiveness.

SUB-SECTORS WITH CHANGES TO THE CSISG DATA COLLECTION METHODOLOGY

A shift in methodology is likely to impact scores and demographic profiles to various degrees, regardless of the incidence levels of the sectors. Based on these findings, as well as the various reviews stated above, a complete shift to an online-only survey methodology, like the ACSI, currently does not appear to be a feasible approach for the CSISG. As a result, only selected sub-sectors were chosen for the shift. The key considerations for selecting the sub-sectors were as follows:

- Operational and resource benefits of shifting online
- Digital usage among customers of the sub-sectors
- Digital transformation trends within the sub-sectors
- Likely impact on representativeness of the survey samples
- Likely impact on scores

This evolution of the CSISG fieldwork methodology is coupled with important changes to the study's scope of coverage. The changes are summarised in Table 3 below:

Sector	Fieldwork Methodology	Remarks
Retail	Online	<ul style="list-style-type: none"> • Responses for all 4 sub-sectors will be collected online. • Department Stores and Supermarkets will no longer have individual brands identified.
Info-comms	Face-to-Face	<ul style="list-style-type: none"> • No change from previous years.
Land Transport	Face-to-Face	<ul style="list-style-type: none"> • No change from previous years. • Taxi and Booking Apps sub-sectors will be collapsed to a new Taxi-Private Hire sub-sector.
Air Transport	Online and Face-to-Face	<ul style="list-style-type: none"> • Local responses for Budget and Full-Service Airlines will be collected online. • Tourist responses will continue to be collected face-to-face at Changi Airport.
Food & Beverage	Online	<ul style="list-style-type: none"> • Snack Bars & Food Kiosks sub-sector will no longer be measured. • Fewer brands will be identified.
Tourism	Online and Face-to-Face	<ul style="list-style-type: none"> • Local responses for Attractions will be collected online. • Tourist responses will continue to be collected face-to-face at Changi Airport. • Fewer brands will be identified.
Health-care	NA	<ul style="list-style-type: none"> • The Healthcare sector will no longer be measured.
Finance & Insurance	Online and Face-to-Face	<ul style="list-style-type: none"> • Banks and Credit Cards sub-sectors will see no change from previous years. • The various insurance sub-sectors will be collapsed into a new Insurance sub-sector and responses will be collected online.

Table 3: List of sectors/sub-sectors with data collection method changed and summary of changes in scope of CSISG

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The following sections provide more details on the results of the pilot studies. For more information on the research methodology and considerations of the pilot studies, please refer to Annex B.

Pilot Studies: Finance & Insurance (Low Incidence Rate) Sector Findings

Studying the Potential Impact on Low Incidence Sub-Sectors

This pilot focused on understanding the potential impact of a shift to online surveys on low incidence sub-sectors. These sub-sectors, or the companies measured within them, have a smaller customer base. This may result in potential difficulties completing the target samples required by the CSISG study using an online survey methodology. A comparison was made between (1) the CSISG metrics, (2) the standard deviation of the metrics, and (3) the demographics of the data collected from both survey modes.

Results: Impact on CSISG Metrics

Table 4 shows the sample sizes and results of the compared sub-sectors of the Finance & Insurance sector on various dimensions of the CSISG model.

CSISG Metric	Banks		Credit Cards		Life Insurance		Medical & Health Insurance	
	FTF	Online	FTF	Online	FTF	Online	FTF	Online
Sample Size (N)	1443	1413	1600	1391	1200	1102	1000	1009
Customer Expectations (Score)	72.7	74.8	71.9	70.2	74.6	71.3	74.0	71.3
Perceived Product Quality (Score)	-	-	74.9	70.4	-	-	-	-
Perceived Service Quality (Score)	-	-	74.6	70.4	-	-	-	-
Perceived Overall Quality (Score)	78.0	75.0	75.2	70.4	76.3	70.7	76.1	71.3
Perceived Value (Score)	77.5	67.3	75.6	67.2	76.3	68.6	76.1	68.7
Customer Satisfaction (Score)	74.6	72.5	72.0	69.5	73.1	69.4	72.3	69.6
Customer Complaints (%)	1.2%	5.9%	1.4%	6.9%	1.2%	11.3%	0.8%	9.6%
Customer Loyalty (Score)	70.9	69.0	72.2	67.9	71.6	66.4	72.0	66.2

Table 4: Comparing metrics between interviewer administered face-to-face (FTF) survey and respondent self-administered online survey for the Finance & Insurance sector

FTF = Face-to-face; **GREEN** scores are statistically higher than FTF at 90% confidence. **RED** scores are statistically lower than FTF at 90% confidence.

Almost all scores of the online study were significantly lower compared to the scores of the face-to-face study. Additionally, the online study reported significantly higher complaint rates across all sub-sectors, which supports literature suggesting that online respondents are less likely to answer questions in a socially desirable way.

Results: Impact on Standard Deviation

Calculating the standard deviation of the scores provides a statistic to understand how respondents differ in their ratings from one another. This provides a sense of the amount of variance in responses based on the different methodologies. Standard deviations of the scores (Table 5) showed that each CSISG dimension had a higher amount of variance for the online self-administered survey data, as compared to the interviewer administered survey data. These results are consistent with literature that suggests that respondents of an online panel are likely to be more viewpoint-oriented or opinionated, leading to a larger variation in responses.

CSISG Metric	Banks		Credit Cards		Life Insurance		Medical & Health Insurance	
	FTF	Online	FTF	Online	FTF	Online	FTF	Online
Customer Expectations (SD)	10.1	15.5	10.8	16.0	10.6	16.3	10.7	15.3
Perceived Product Quality (SD)	-	-	10.3	16.0	-	-	-	-
Perceived Service Quality (SD)	-	-	10.6	16.2	-	-	-	-
Perceived Overall Quality (SD)	10.2	16.8	11.2	16.4	11.1	17.0	10.2	16.3
Perceived Value (SD)	10.9	18.9	11.5	18.3	11.8	17.3	11.1	16.8
Customer Satisfaction (SD)	10.2	16.6	10.8	16.6	10.6	17.2	9.9	16.5
Customer Loyalty (SD)	9.3	18.3	10.4	17.4	10.6	19.8	10.2	19.8

Table 5: Comparing standard deviation of responses between interviewer administered face-to-face (FTF) survey and respondent self-administered online survey for the Finance & Insurance sector

FTF = Face-to-face; **GREEN** scores are statistically higher than FTF at 90% confidence. **RED** scores are statistically lower than FTF at 90% confidence.

Results: Impact on Demographic Profiles

Table 6 shows the demographic profiles of respondents of the two data collection methods for the Finance & Insurance sector.

Profile	Sub-profile	Banks		Credit Cards		Life Insurance		Medical & Health Insurance	
		FTF (%)	Online (%)	FTF (%)	Online (%)	FTF (%)	Online (%)	FTF (%)	Online (%)
Age	18-29 years	12.5%	27.1%	10.1%	20.9%	22.6%	28.2%	21.1%	25.1%
	30-49 years	55.3%	53.1%	64.1%	58.2%	58.4%	58.7%	54.8%	56.3%
	50 years and above	32.2%	19.7%	25.8%	20.8%	19.0%	13.1%	24.1%	18.6%
Employment	Working	85.2%	81.6%	94.6%	88.1%	84.0%	85.7%	79.5%	86.1%
	Not working	14.8%	18.4%	5.4%	11.9%	16.0%	14.3%	20.5%	13.9%
Housing Type	HDB 1-3 RM	10.6%	18.8%	10.3%	14.2%	18.9%	19.5%	21.0%	18.0%
	HDB 4-5 RM / Executive	47.3%	58.9%	55.2%	64.1%	61.4%	63.2%	59.6%	64.8%
	Private Residence	42.1%	22.3%	34.5%	21.7%	19.7%	17.2%	19.4%	17.1%
Marital Status	Single	15.7%	40.6%	11.2%	37.7%	22.3%	40.1%	20.9%	35.9%
	Married	83.9%	52.7%	88.4%	56.0%	77.5%	53.6%	79.0%	58.3%
	Others	0.4%	6.1%	0.4%	5.0%	0.2%	5.8%	0.1%	5.6%
No. of Children Dependents	No children dependents	19.1%	31.4%	13.8%	33.9%	10.1%	28.5%	14.6%	29.9%
	1 or 2 children dependents	55.9%	36.9%	65.6%	36.2%	55.4%	42.2%	53.2%	43.1%
	3 or more children dependents	9.3%	7.6%	9.4%	7.8%	12.2%	8.4%	11.3%	7.6%
	Does not have any children	15.7%	23.0%	11.2%	20.9%	22.3%	20.1%	20.9%	19.0%
Total number of differences		Differences in 13 out of 15 sub-profiles		Differences in 13 out of 15 sub-profiles		Differences in 8 out of 15 sub-profiles		Differences in 11 out of 15 sub-profiles	

Table 6: Comparing demographic profiles between interviewer administered face-to-face (FTF) survey and respondent self-administered online survey for the Finance & Insurance sector

FTF = Face-to-face; **GREEN** scores are statistically higher than FTF at 90% confidence. **RED** scores are statistically lower than FTF at 90% confidence.

Quite consistently across the four sub-sectors, the online study had more respondents who were younger (18-29 years), single and had no children dependents. Compared to the face-to-face study, the online study also sampled fewer respondents who were older (50 years and above), married, and had 1 or 2 children dependents.

Sub-sector wise, the Banks and Credit Card sub-sectors had more significant differences in demographic profiles between the online and face-to-face studies. In contrast, the two Insurance sub-sectors had fewer differences in demographic profiles between the two studies. For instance, online respondents did not differ much in housing types between the two studies in the two Insurance sub-sectors but differed in all housing type sub-profiles in the Banks and Credit Cards sub-sectors.

Conclusion (Low Incidence Online Pilot)

The results suggest that a shift to an online survey methodology would have an impact on scores, responses, and demographic profile of the data collected. Notably in terms of the impact on demographics, the Life Insurance and Health and Medical Insurance sub-sectors appear to be relatively less affected as compared to the two other sub-sectors. This suggests that, even among low incidence sectors, where challenges to data collection using online surveys may be expected, some sub-sectors may be relatively less affected by the shift.

Pilot Studies: Land Transport (High Incidence Rate) Sector Findings

Studying the Potential Impact on High Incidence Sub-Sectors

This pilot focused on understanding the potential impact of a shift to online surveys on high incidence sub-sectors. These sub-sectors, or the companies measured within them, have a larger customer base. For this reason, completing the target samples required by the CSISG study using an online survey methodology is expected to be relatively easier as compared to low incidence sub-sectors. A comparison was made between (1) the CSISG metrics, (2) the standard deviation of the metrics, and (3) the demographics of the data collected from both survey modes.

Results: Impact on CSISG Metrics

Table 7 shows the sample sizes and results of the compared sub-sectors of the Land Transport sector on various dimensions of the CSISG model.

CSISG Metric	MRT (LRT not included)		Public Buses	
	FTF	Online	FTF	Online
Sample Size (N)	750	375	455	300
Customer Expectations (Scores)	67.9	69.3	69.3	70.3
Perceived Overall Quality (Scores)	65.3	69.2	70.3	70.0
Perceived Value (Scores)	66.5	64.2	70.6	68.3
Customer Satisfaction (Scores)	61.9	66.1	66.4	69.0
Customer Complaints (%)	0.6%	6.6%	0.6%	4.7%
Customer Loyalty (Scores)	63.7	60.9	68.7	64.3

Table 7: Comparing metrics between interviewer administered face-to-face (FTF) survey and respondent self-administered online survey for the Land Transport sector

FTF = Face-to-face; **GREEN** scores are statistically higher than FTF at 90% confidence. **RED** scores are statistically lower than FTF at 90% confidence. **BLUE** scores are changes that do not have enough sample size to test for significance.

Results between the online and face-to-face study did not differ in most dimensions of the CSISG model. For dimensions with differences, increases in scores were observed (e.g., Customer Satisfaction for both sub-sectors), except for one dimension (Customer Loyalty for Public Buses sub-sector). Consistent with the findings from the pilot for the Finance and Insurance sector, complaint rates were higher in both sub-sectors for the online study, although the complaint rates for the Public Buses sub-sector were not high enough to test for statistical significance. These results support the literature which suggests that online respondents are less likely to answer questions in a socially desirable way.

Results: Impact on Standard Deviation

Calculating the standard deviation of the scores provides a statistic to understand how respondents differ in their ratings from one another. This provides a sense of the amount of variance in responses based on the different methodologies. Standard deviations of the scores (Table 8) showed that the online study had higher standard deviations as compared to the face-to-face study. This is consistent with the findings from the pilot for the Finance and Insurance sector. Together, the results support the idea that online respondents have stronger views. However, in the Land Transport sector, these views led to few instances where the online survey method produced higher scores.

CSISG Metric	MRT (LRT not included)		Public Buses	
	FTF	Online	FTF	Online
Customer Expectations (SD)	14.2	17.7	11.6	14.0
Perceived Overall Quality (SD)	15.2	19.1	14.0	15.1
Perceived Value (SD)	15.8	20.9	14.0	16.0
Customer Satisfaction (SD)	14.5	19.9	13.6	15.4
Customer Loyalty (SD)	16.8	22.5	13.3	18.1

Table 8: Comparing standard deviation of responses between interviewer administered face-to-face (FTF) survey and respondent self-administered online survey for the Land Transport sector

FTF = Face-to-face; **GREEN** scores are statistically higher than FTF at 90% confidence. **RED** scores are statistically lower than FTF at 90% confidence.

Results: Impact on Demographic Profiles

Table 9 shows the demographic profiles of respondents in the interviewer administered face-to-face (FTF) survey and respondent self-administered online survey for the Land Transport sector.

Profile	Sub-profile	MRT (LRT not included)		Public Buses	
		FTF (%)	Online (%)	FTF (%)	Online (%)
Age	18-29 years	20.4%	22.9%	21.5%	24.0%
	30-49 years	47.1%	46.1%	44.4%	43.3%
	50 years and above	32.5%	30.9%	20.7%	26.1%
Employment	Working	58.7%	81.6%	58.9%	80.0%
	Not working	41.3%	18.4%	41.1%	20.0%
Housing Type	HDB 1-3 RM	27.1%	23.5%	27.0%	17.0%
	HDB 4-5 RM / Executive	59.2%	60.3%	59.8%	64.3%
	Private Residence	13.7%	16.3%	13.2%	18.7%
Marital Status	Single	22.4%	37.9%	26.6%	35.0%
	Married	75.9%	54.4%	70.5%	60.3%
	Others	1.7%	7.2%	2.9%	3.3%
No. of Children Dependents	No children dependents	29.9%	38.7%	26.8%	36.7%
	1 or 2 children dependents	37.7%	41.1%	33.6%	42.0%
	3 or more children dependents	10.0%	5.1%	13.0%	6.0%
	Does not have any children	22.4%	14.4%	26.6%	14.3%
Total number of differences		Differences in 8 out of 15 sub-profiles		Differences in 10 out of 15 sub-profiles	

Table 9: Comparing demographic profiles between interviewer administered face-to-face (FTF) survey and respondent self-administered online survey for the Land Transport sector

FTF = Face-to-face; **GREEN** scores are statistically higher than FTF at 90% confidence. **RED** scores are statistically lower than FTF at 90% confidence.

The results show that the online study, across both sub-sectors, had more respondents who were working, single, and with no children dependents. Conversely, the online study had fewer respondents who were not working, married, had 3 or more children, and did not have any children.

Although it may seem that the online and face-to-face studies did not differ too much in terms of respondent demographic profiles, a few critical areas did see differences. For instance, the online study oversampled respondents who were working. Considering that public transport is used by the majority of Singapore residents, oversampling workers may not give a representative view of the overall customer experience with public transport. This is because commuters who are working are likely to travel during rush hour periods, which will result in their public transport experience being quite different as compared to non-workers such as students and retirees.

In addition to the above, the online study oversampled respondents with no children dependents and under sampled respondents with three or more children dependents. Considering that respondents' public transport experiences are likely to be vastly different when they are travelling with children dependents, it is important to have inputs from a representative sample of respondents with children dependents.

Conclusion (High Incidence Online Pilot)

Overall, scores for the Land Transport sub-sectors appear to be minimally affected by this shift in methodology. However, the apparent impact on sampling for certain critical customer segments suggests that even for high incidence sub-sectors, representativeness may potentially be an issue if a switch to online surveys is made.

Pilot Studies: Discussion on the Findings

Potential Impact on CSISG Scores and Complaint Rates

- **Low incidence sub-sectors** - For the sub-sectors within the Financial & Insurance sector, almost all the CSISG dimensions examined scored lower, while complaint rates were higher.
- **High incidence sub-sectors** - For the sub-sectors within the Land Transport sector, most of the dimensions examined were not different from those of the interviewer administered face-to-face study. However, where there were differences, scores from the online study were generally higher. Complaint rates also tended to be higher in the online study.
- **Higher complaint rates** - The higher complaint rates observed support literature suggesting that online respondents are less likely to answer questions in a socially desirable way.
- **Higher variance in responses** - The standard deviations of all mean scores of both online studies were higher than their face-to-face counterparts. This is consistent with the literature that online respondents are more likely to be more viewpoint oriented. It should however be noted that larger standard deviations do not suggest that results are less accurate, but suggests that the topics surveyed may be more polarising, such that respondents have extreme views concerning them.

Potential Impact on Demographic Profiles Sampled

- **More differences for low incidence sub-sectors** - Differences in demographic profiles were observed, with the Financial & Insurance sector (low incidence rate) having more differences compared to the Land Transport sector (high incidence rate). However, within the Financial & Insurance sector, fewer differences were observed in the two insurance sub-sectors, with the number of differences quite comparable to that of the two Land Transport sub-sectors.
- **Potential differences in critical segments** - Although the effect on high incidence sub-sectors was limited, the importance of demographic representativeness may vary between sectors and sub-sectors. For the MRT and Public Buses sub-sectors, it is important to have representativeness in respondents' employment status and number of children dependents because these areas are likely to affect their customer experience quite significantly. Unfortunately, sampling for these segments was impacted despite the fact that these sub-sectors had a high customer base. As such, the incidence rate of a sector/sub-sector may not be a sufficient consideration for whether data collection for a sector can be moved online.

Conclusion

Having compared the results of the online pilot studies with those of their interviewer administered counterparts, the following observations were made:

- **Shifts in scores to be expected** - Changes to scores of sectors/sub-sectors with data collected online are to the expected, although it is uncertain whether the changes will be higher or lower scores. This is because both higher and lower scores were observed in the two online pilots. The likely magnitude of impact may also vary depending on the unique characteristics of each sub-sector.
- **Trending should be caveated** - When trending results, comparisons of sectors and sub-sectors which have switched to online data collection methods should be caveated due to the potential changes in scores.
- **Higher complaint rates to be expected** - The higher complaint rates observed from the online pilot studies suggest that the online method may provide more insights into customers' negative experiences. When properly utilised, this information can help industries and companies identify areas for improvement and enhance their competitiveness.
- **Considerations** - Decision on which sector/sub-sector to move data collection online should be made on a case-by-case basis, taking into consideration whether the sector/sub-sector presents characteristics that cause its customer experience to be affected significantly by its customers' demographic profiles.

Selection of Sectors for Comparison

The Finance & Insurance sector was chosen for the pilot study of the impact of a shift to an online methodology on low incidence sub-sectors. The sector was chosen because of the presence of a substantial number of measured companies with small market shares (e.g., Maybank and Standard Chartered). This allowed for a careful examination of not just the impact on CSISG metrics and demographic profiles, but also the ability of the online survey methodology to find sufficient samples for these companies.

The Land Transport sector was chosen for the pilot study of the impact of a methodology shift on high incidence sectors due to its large customer base. More specifically, the majority of Singapore residents travel by public transport, with only two major companies (SMRT and SBS Transit) being currently measured by the CSISG within the sector. This allowed for a careful examination of how a shift in methodology may impact the CSISG metrics and demographic profiles, and where finding sufficient samples was not expected to be difficult.

Survey Execution

An online panel company was contracted to conduct the two online pilot studies. To ensure that respondents were representative of the general population, quotas were set for the demographic profiles of age, employment status, and housing type, based on the estimates derived in ISE's incidence study.

Timeline

Data collection for the two online pilot studies were performed in parallel with the face-to-face studies to ensure that respondents' answers were not affected by events that happened at different times. More specifically, the data collection (both online and face-to-face) for the Finance & Insurance sector were done in Q4 2018 and the data collection for the Land Transport sector were done in Q2 2019.

Qualifying Respondents

Only locals (Singaporean citizens and PRs) were sampled in the online studies as tourists would still be sampled face-to-face at the airport in the 2020 cycle of the CSISG. For this reason, the results of the face-to-face studies presented in this paper are only those of locals, to ensure that they are comparable with those of the online studies.

Operational Challenges and Quality Checks

To reduce respondent errors and biases, ISE did the following:

- In the Finance & Insurance sector pilot study conducted in Q4 2018, ISE tested whether online respondents understood questions accurately based on the consistency of their responses to sets of questions that were designed to elicit similar responses. When the difference between the responses to these sets of questions were too large, it was assumed that respondents did not understand the questions as intended. Respondents that were found to have these large differences in their responses were removed from the study. This was done at the data cleaning stage after data collection was completed.
- In the Land Transport sector pilot study conducted in Q2 2019, ISE tested whether respondents understood the questions in real-time, i.e., while the respondents were answering the questions. When a large difference in responses to the aforementioned sets of questions were detected, respondents were prompted to re-examine their responses.



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