Sydney Airport Corporation Limited

Independent Review of the 'Airport Quality of Service Monitoring' Section of the ACCC Airport Monitoring Report 2008-09

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About GA Research

GA Research is a specialist market and social research firm with particular expertise in corporate, financial and issues projects. We focus on projects related to:

- Stakeholder perceptions
- Financial transactions and shareholder attitudes
- Issues management
- Corporate positioning
- Transport and infrastructure
- Sustainability and behaviour change
- Social issues
- Education
- Communications strategies, concepts and materials

GA Research is AS: ISO20252 accredited and is a member of the Association of Market and Social Research Organisations (AMSRO). As such it is bound by the Market and Social Research Privacy Principles (M&SRPPs).

Its individual researchers are members of the Australian Market and Social Research Society (AMSRS), and as such, are bound by the AMSRS Code of Professional Behaviour.

The comparisons with industry standards in this report have been conducted by GA Research Associate Director Damon Jalili and overseen by CEO Sue Vercoe.

Sue Vercoe has more than 15 years experience as a market researcher, research buyer and communications consultant in the corporate, financial, issues and political arenas. Sue established GA Research in early 2006 and she previously spent three years as a Research Director with UMR Research working on a wide range of political and issues projects. Before that Sue was a Director at Kreab Gavin Anderson, working in both the Sydney and Tokyo offices over an eight year period. Sue holds a Bachelor degree in Organisational Communication from Charles Sturt University (Bathurst) and a Master in International Communications from Macquarie University. She is a Qualified Practising Market Researcher (QPMR).

Damon Jalili is a quantitative research specialist with more than ten years experience in research design, fieldwork and data analysis. Damon holds a Bachelor of Science – Psychology from Macquarie University where he was awarded the Macquarie University Psychology Department Prize for Design and Statistics. He has also completed a Masters of Peace and Conflict Studies at Sydney University.

Damon is the Quality Officer and Privacy Officer for GA Research. Damon designed and implemented the firm's AS: ISO 20252 systems, including the Quality Policy and Procedures Manual and managed the process of gaining AS: ISO 20252 accreditation. In his role as Quality Officer he has attended several ISO workshops, including the ISO Internal Auditors Training, which is a requirement to be able to conduct internal audits of the GA Research AS: ISO 20252 system.

In preparing this report, GA Research has presented and interpreted information that it believes to be relevant for completing the agreed task in a professional manner. It is important to understand that while it has sought to ensure the accuracy of all the information incorporated into this report, information has been gathered through desk research of published materials. Where GA Research has made assumptions as a part of interpreting the data incorporated in this report, it has sought to make those assumptions clear. Similarly, it has sought to make clear where it is expressing a professional opinion rather than reporting findings.

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1. Executive Summary

Introduction

Sydney Airport Corporation Limited (SACL) is concerned about the validity and reliability of the research used to compile the Australian Competition and Consumer Commission (ACCC) Airport monitoring report 2008-09 (the ACCC report). In particular, it has concerns about the Airport quality of service monitoring section of the report.

This ACCC report is used to monitor the performance of the largest airports in the country. Sydney Airport is concerned about decisions which may be made on the basis of this report and the impact that dissemination of the report has had or could potentially have on its reputation.

Sydney Airport engaged GA Research to review the research used in the Airport quality of service monitoring section of the ACCC Airport monitoring report 2008-09 and compare it with the accepted standards of the market and social research industry in Australia. GA Research was also asked to outline the potential methodological issues that arise from this comparison.

In its analysis, GA Research made comparisons between the published report and the standards required for organisations and individuals who are members of the two market and social research peak industry bodies in Australia, the Association of Market and Social Research Organisations (AMSRO) and the Australian Market and Social Research Society (AMSRS). It also made comparisons with the AS: ISO 20252 standard, which is required by all AMRSO members as of June 2010.

In its review, GA Research has found that, in its opinion, there are three key issues with the research used in the Airport quality of service monitoring section of the ACCC report:

1. There appears to be a lack of detail around the methodology, fieldwork and analysis used in the published ACCC report *(see Reporting of the Research Details)*

2. There appear to be some inconsistencies between the research published in the ACCC report and accepted market and social research industry standards in Australia *(see Reporting of the Research Details)*

3. There are several potential methodological issues with the research approach that has been used *(see Research Methodology Used)*

Key Findings

In conducting this review of the Quality of service monitoring of the ACCC Airport monitoring report 2008-09, it is GA Research's opinion that as a result of a lack of transparency in the reporting of the research methodology, fieldwork and analysis undertaken, the published ACCC report is insufficient to justify the validity and reliability of the reported findings and the conclusions.

It is GA Research's opinion that:

1. The level of detail reported in the published ACCC report does not appear to meet the accepted standards of the market and social research industry in Australia. The lack of this information means GA Research is unable to determine whether the research methods used to collect and analyse the findings are robust, reliable or valid.

2. There are significant questions around methodological issues including representativeness of the sample, the reliability and validity of the data collected and the appropriateness of the aggregation used to calculate the data, including the overall quality of service measure which is used to rank the five monitored airports.

To overcome these issues, GA Research recommends that the Quality of service monitoring research conducted for future ACCC Airport monitoring reports should be independently conducted and reported by a market research firm that is a member of AMSRO or which is accredited to AS: ISO 20252. Alternatively, the ACCC could itself consider getting AS: ISO 20252 accreditation. AMSRO members (through accreditation to the AS: ISO 20252 standard) are required to report the necessary details of the methodology, fieldwork and analysis used to justify their conclusions and recommendations.

Given the ACCC is not a member of AMSRO, and the individuals who put the report together have not been identified as members of AMSRS, it cannot formally be held to these standards. However, these are the standards of the research industry in Australia, set up to ensure that the research conducted is of the highest quality, transparency and follows international best practice. In GA Research's experience, much of the market and social research projects conducted for Federal and State governments in Australia are required to be undertaken by members of these organisations.

More detail on the main findings follows.

Reporting of the Research Details

We have found the ACCC report published on the ACCC website and supporting documents to be lacking in the detail required by Australian market and social research industry standards.

The report contains very little information on the research methodology used to gather the data in each airport and this makes it extremely difficult to make a definitive determination on compliance with industry standards. However, the

reporting of much of this methodological information is required for compliance with AMSRO, AMSRS and AS: ISO 20252 standards.

- *Quality Standards:* Section 7.2 of the AS: ISO 20252 Standard outlines the requirements for reporting on quantitative research projects and there are several of these details which we were unable to determine from the ACCC Airport monitoring report 2008-09 or from the supporting materials.
- *Ethical Standards:* The AMSRS Code of Professional Behaviour details the ethical responsibilities of researchers, clients and respondents in the research process. Under this Code, clients are entitled to certain information regarding the way the research project was conducted, including information regarding the background, sample, data collection and presentation of the results of a research study. GA Research was unable to determine whether the ACCC report has met these ethical requirements due to a lack of information presented in the report and its supporting materials.

Research Methodology Used

Given the limited information provided about research methodology in the ACCC report, we are unable to clearly determine whether acceptable methodological standards have been met in the conduct of the research, and as such are unable to make a definitive determination. However, we have endeavoured to identify potential methodological issues based on the information that is available and these are detailed in this section of the review.

Potential issues range from non-representative sampling, which could result in findings which do not represent the perceptions of all passengers using an airport, through to potential for data collection to be biased. We also identified issues such as the potential for airport operators to decide on the questions used in collecting the data, which raises questions around the validity and reliability of the data gathered.

Additionally, there is very little detail provided in relation to the analysis conducted on the data, raising questions about whether appropriate proportions and weightings were used for the aggregation. There is uncertainty about whether the appropriate scaling and pretesting was done for the scales. More details follow.

Sampling

In the case of the ACCC report, the passenger and airline perception surveys are intended to represent the opinions of all of the passengers and airlines using each of the five airports. There is very little detail regarding sampling in the report itself, apart from listing the different types of respondents and stating that the ACCC requires a statistically robust methodology. GA Research was not able to determine the minimum requirements for the ACCC's definition of statistically robust from the report or any of the associated documents, nor could we identify the proportions in which each of the different respondent types were to be sampled to ensure representativeness.

Fieldwork

We were unable to determine the fieldwork methodology used to collect the data presented in the passenger perception survey used in the ACCC Airport monitoring report 2008-09. However, the Airport quality of service monitoring guideline does

note that the survey can be conducted 'in-house', providing that the airport operators consult with the ACCC on the contents of the survey and the methodology used.

As the ACCC requires airport operators to provide the data, we assume that 'in-house' refers to the data being collected by staff of the airport operator as opposed to contracting the fieldwork out to a market research fieldwork agency. If the research conducted by individual airports was not, in fact, carried out by professional market research firms who are obliged to adhere to industry standards then there must be serious doubts about the reliability and validity of the data collected.

Research Materials

Information in the published report and supporting materials suggests that airport operators were not provided with specific questions. In order for results from different airports to be comparable, each airport would have had to use exactly the same questionnaire wording, from the actual question that was asked through to the scale that respondents were given to record their responses.

Analysis

The ACCC report appears to include several types of analysis that has been conducted on the data as submitted by each of the airport operators. This analysis ranges from aggregation of the data and creation of new variables, to the use of scales which require scaling and pretesting. However, from the details provided, we were unable to determine whether appropriate proportions and weightings were used for the aggregation, nor could we determine whether the appropriate scaling and pretesting had been done for the scales.

2. Background

Sydney Airport Corporation Limited is concerned about the validity and reliability of the research used to compile the Australian Competition and Consumer Commission's (ACCC) Airport monitoring report 2008-09 (ACCC report), and specifically the Airport quality of service monitoring section.

Sydney Airport Corporation Limited has engaged GA Research to conduct an independent review of the ACCC report and report on how it compares to standards required for organisations and individuals who are members of the market and social research peak industry bodies in Australia.

These peak bodies include the Association of Market and Social Research Organisations (AMSRO), and the Australian Market and Social Research Society (AMSRS).

GA Research notes that the ACCC itself does not appear to be a member of AMSRO and that it is unclear whether individuals within the ACCC are members of AMSRS. As such they are not bound by the standards set by these peak bodies. However, we note that, in our experience, much of the market and social research projects undertaken for Federal and State governments in Australia are conducted by members of these organisations. Further, these are the standards of the research industry in Australia, set up to ensure that the research conducted is of the highest quality, transparency and follows international best practice.

GA Research also notes that this review is based on publicly available information that has been published by the ACCC and that many of the concerns raised could be addressed with information that exists, but has not been made public. Should this information be made public, GA Research is prepared to conduct a fully informed review.

An explanation of each of the reports and documents considered in this review follows.

2.1 ACCC Airport Monitoring Report 2008-09

The Australian Government has directed the ACCC to monitor the prices, costs and profits of Australia's five leading airports. The quality of service monitoring is undertaken as part of this responsibility. The ACCC has published what it believes to be the objectives of quality of service monitoring:

- Assist in the assessment of an airport operator's conduct in the prices monitoring environment
- Improve the transparency of airport performance to:
  - Discourage airport operators from deteriorating standards for services that are associated with significant market power
  - Provide information to users of airport facilities, including passengers and the aviation industry, as a basis for improved consultation and negotiation in pricing and investment proposals

- Assist the Government in its industry analysis.[1]

In its report, the ACCC describes its quality of service monitoring as follows:

"The ACCC monitors the airports' dealings with airlines as well as other stakeholders, such as passengers and border agencies. The ACCC determines an overall rating of quality of service, taking into consideration a range of quality of service indicators, including survey responses from all of these airport users."[2]

The Quality of Service Monitoring is one section of the ACCC Airport Monitoring Report and it involves the reporting of data collected from a number of different sources:

- Airport operators
- Airport users, such as passengers
- Airlines
- Airservices Australia
- Other government agencies such as the Australian Customs and Border Protection Service, the Australian Quarantine and Inspection Service, and the Department of Immigration and Citizenship

The data collected includes both objective and subjective data. The objective criteria include counts of items such as television screens and seats. The subjective criteria include passenger and airline perceptions.

The resulting data is then *"aggregated to give an overall view of the quality of service provided by the airport operators over the whole reporting period."*[3]

This review focuses on the survey responses used as part of the Quality of Service analysis, with a particular focus on the customer perception surveys. The data used in this section of the ACCC's report was collected from the five airport operators who were each asked to complete an airport quality of service monitoring template for 2008-09.

As a guideline for airport operators completing these spreadsheets, the ACCC has published;

i. Airport quality of service monitoring guideline, October 2008
ii. Airport quality of service monitoring guideline, Statement of reasons, October 2008

The ACCC's approach to its quality of service monitoring role is outlined in these guidelines.

[1] ACCC Airport quality of service monitoring guideline, October 2008, p3.
[2] ACCC Airport Monitoring Report 2008-09, p. ix.
[3] ACCC Airport monitoring report 2008-09, p59.

2.2 Market and Social Research Industry Standards

Market and social research in Australia is a specialised industry represented by two peak bodies:

i. The Association of Market and Social Research Organisations (AMSRO) which represents research organisations; and
ii. The Australian Market and Social Research Society (AMSRS) which represents individuals who work in the industry.

An explanation of the roles of these organisations in terms of setting, promoting and maintaining industry standards follows.

2.2.1 Association of Market and Social Research Organisations (AMSRO)

AMSRO represents the companies in the industry and part of its mission is "*representing their interests in… quality assurance"*, specifically by assisting member companies meet the highest quality assurance standards[4].

AMSRO further explains that *"market and social research is built on quality and will only continue to flourish if quality levels are maintained and improved. Buyers and users of market and social research need to have a good understanding of the various standards and the confidence to ask for and expect these in the research that they buy or use. At the same time, people who participate in research need assurance that researchers are committed to protecting their interests, especially their privacy.*

AMSRO is strongly committed to work with the industry to help ensure the very best quality assurance and to uphold the standard for excellence in market research within Australia. We work:

- *To present market and social research with the professionalism of a mature industry*
- *To promote the benefits of quality assurance to buyers*
- *To increase the awareness of, and promote the value of, quality assurance to all market research stakeholders*
- *With our members to ensure that they understand the value behind quality assurance*
- *To provide the administrative capability to implement quality standards*
- *To ensure that the costs of accreditation are maintained at cost effective levels*
- *To continually identify and evaluate the international best practice for market research excellence and use this to set the standards in Australia*
- *To drive the continuous improvement of market and social research quality within Australia."* [5]

As part of this commitment, all AMSRO members are required to be accredited to AS: ISO 20252 by June 2010. *"The Australian Standard for market, opinion and social research (AS: ISO 20252) was published by Standards Australia in January 2007… The Standard establishes the terms and definitions as well as the service*

[4] Association of Market and Social Research Organisation's website: http://www.amsro.com.au/
[5] Association of Market and Social Research Organisation's website – Quality Assurance: http://www.amsro.com.au/index.cfm?p=2915

requirements for organisations and professionals conducting market, opinion and social research." [6]

The AS: ISO 20252 quality management system provides a measurable framework to ensure the quality of staff, design, fieldwork, analysis and reporting of all research undertaken complies with established professional standards for the purpose of maintaining industry integrity and delivering high quality research outcomes for clients.[7]

The AS: ISO 20252 quality management system is internationally recognised, and in GA Research's experience, is typically required when tendering for State and Federal Government research in Australia.

AMRSO explains that "*The adoption of a consistent, standardised process in an AS: ISO 20252 based quality management system:*

- *enhances the management of risk*
- *increases efficiency and productivity*
- *improves product and service quality*
- *improves buyer confidence*
- *increases loyalty and satisfaction*
- *is a model to reflect the professionalism of your organisation*
- *assists in the protection of respondent privacy*
- *becomes a training platform for new employees*
- *fosters a culture of quality/continuous improvement*
- *confirms your organisation's commitment to quality assured processes internationally*
- *increases opportunities for international business*
- *brings professionalism to our industry*

In addition, it can assist in:

- *reducing waste*
- *streamlining processes and avoid duplication*
- *minimising exposure to risk and*
- *reducing staff turnover."*

We (AMSRO) encourage all buyers and users of market and social research to purchase, or at least be familiar with, the Standard." [8]

2.2.2 Australian Market and Social Research Society (AMSRS)

AMSRS describes itself as *"a not-for-profit professional membership body of over 2,000 market and social research professionals who are dedicated to increasing the standard and understanding of market and social research in Australia"*[9]. One of its objectives is *"to establish and maintain high technical and ethical standards."* [10]

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[6] Ibid.

[7] GA Research Quality Management System Procedure Manual.

[8] Association of Market and Social Research Organisation's website – Quality Assurance: http://www.amsro.com.au/index.cfm?p=2915.

[9] Australian Market and Social Research Society Website – About AMSRS: http://www.mrsa.com.au/index.cfm?a=detail&id=114&eid=13

[10] Ibid.

AMSRS further explains that the *"The society assists members to develop their careers by heightening professional standards and ethics in the fields of market and social research. Specifically, we aim to:*

- *Persuade business executives to use market and social research*
- *Encourage marketers to use scientific methods of market and social research*
- *Provide training and forums to extend knowledge and understanding of market and social research*
- *Enhance quality of discussion and understanding of market and social research."* [11]

"AMSRS members are bound to observe the Code of Professional Behaviour, which covers both the ethics and standard conditions of conducting and reporting marketing research and covers everyone who participates in the practise of research including researchers, clients and respondents. The AMSRS Code conforms to international standards and has been modified for the Australian market." [12]

[11] Ibid.
[12] Australian Market and Social Research Society Website – Professional Standards: http://www.mrsa.com.au/index.cfm?a=detail&id=2649&eid=138

3. Research Objectives

Given the nature of the quality of service monitoring section of the ACCC report as essentially a market and social research report, the purpose of this report is to compare the 'Airport quality of service monitoring' section of the ACCC Report with the standards required for organisations and individuals who are members of the two market and social research peak industry bodies in Australia, AMSRO and AMSRS.

Based on a preliminary review of the report, GA Research identified two key areas to be explored:

1. ACCC reporting of the details of the actual research methodology and findings
2. The actual methodology used to collect the data – in terms of sampling, fieldwork, research materials and analysis.

4. Methodology

The steps that GA Research has undertaken include the following:

i. Detailed desk research to identify the specific requirements of AMSRO and AMSRS in regards to reporting of methodological details of research

ii. Detailed review of the ACCC Airport Quality of Service Monitoring Guidelines and Statement of Reasons (including reporting templates)

iii. Detailed review of the 'Quality of Service Monitoring' section of the ACCC Airport Monitoring Report 2008-09

iv. Development of a report detailing the results of this independent review, including a review of the methodology used in the research reported in the ACCC report.

5. Research Reporting Review

One of the key components of good research is a report which details the entire research process, from the initial objectives or hypotheses, through to how the research was conducted. It should also include details about who participated in the research, the quality system used (which includes the techniques used to validate and verify the integrity of the data), the analytical methods employed, as well as the results and conclusions.

Transparency of the research process in a report allows readers to reach their own independent conclusions about the findings. It also means that results can be directly verified through replication.

> *"A research report is a written document (or oral presentation based on a written document) that communicates the methods and findings of a research project to others. It is more than a summary of findings; it is a record of the research process…In addition to findings, the report includes the reasons for initiating the project, a description of the project's steps, a presentation of data, and a discussion of how the data relate to the research question or topic"* (p.469)
> Neuman, W.L. 2003, **Social Research Methods: Qualitative and Quantitative Approaches** (5th ed.), Allyn & Bacon, New Jersey.[13]

While common industry practice in the reporting of research is for maximum transparency, we need a framework to examine the transparency of the ACCC report. For this review, we will use market and social research industry standards.

Following a review of AMSRO and AMSRS' roles and the requirements they have for members, GA Research determined that the most appropriate industry standards for the ACCC report to be compared to are:

- Quality standards in reporting using the AS: ISO 20252 reporting requirements as required for AMSRO membership
- Ethical standards in transparency using the AMSRS Code of Professional Behaviour

Airport Operators are required to collect the data for the Quality of service monitoring section of the report and deliver it to the ACCC in the required format, along with a full description of survey methodology and raw data.

While the ACCC does not prescribe a methodology, it says it "*needs to be satisfied that the data collected, and the methodology and processes used, target priority areas and are statistically robust*"[14]. As such, we assume that the ACCC has access to the information required and could publish the full methodology if it chose to do so.

[13] Listed on the 'AMSRS Suggested titles for continuing professional development and Qualified Practising Market Researcher (QPMR)' list.
[14] ACCC Airport quality of service monitoring guideline, pp.6-7

The report published on the ACCC's website contains very little information on the research methodology used to gather the data in each airport. It is assumed that the ACCC has access to this information but has not made it public (in the report and supporting materials). This makes it extremely difficult to make a definitive determination on compliance with the standards. However, the reporting of much of this methodological information is itself required for compliance with AMSRO and AMSRS standards.

As such, while this comparison was undertaken using the same rigour and detail as an internal audit conducted as part of ISO requirements, in the interests of transparency and fairness, determinations have not been made as to whether the ACCC report complies with the AS: ISO 20252 standard, but have focussed on whether the information was available in the published report and guidelines.

5.1 Industry Standards – Quality

This section of the review compares the ACCC report to quality standards in reporting using the AS: ISO 20252 reporting requirements. As previously stated, compliance with the AS: ISO 20252 standard is required for AMSRO membership as of June 2010.

In the introduction to the AS: ISO 20252 Standard, it explains that some of the essential principles of international standardisation include openness and transparency[15], and it is the embodiment of those principles which are demonstrated in the requirements of reporting on research projects under the AS: ISO 20252 Standard for Market, opinion and social research.

Section 7.2 of the AS: ISO20252 Standard outlines the requirements for reporting on quantitative research projects and this section is detailed below in full.

7.2 Quantitative Research. In quantitative research the following minimum details shall be documented in the project report. These allow the reader to understand the way the research project was conducted and the implications of its results:

- the name of the client;
- the name of the research service provider;
- the objectives of the research project;
- the target group for the research project;
- the achieved sample size against projected sample size and reasons, if relevant, for not obtaining the projected sample;
- the date of fieldwork;
- the sampling method, including the procedure for selecting respondents;
- the data collection method;
- the response rate (in the case of probability samples) and the definition and method of calculating it;
- the type of incentives, if applicable;
- the number of interviewers, if applicable;
- the interviewer validation methods, if applicable;
- the questionnaires, any visual exhibits or show cards, and other relevant data collection documents;
- the documents, materials or products used as part of the research project, if applicable;
- the weighting procedures, if applicable;

[15] AS: ISO20252 – 2007 Market, opinion and social research - Vocabulary and service requirements, p. v.

- the estimating and imputation procedures, if applicable;
- the reliability of the findings, including (when probability samples are used) estimates of sampling variance and estimates of non-sampling errors or indicators thereof;
- the results that are based on subgroups and the number of cases used in subgroup analysis. [16]

The following table contains comparisons between these ISO requirements and the information available in the ACCC report.

Please note that the colour coding of this table does not represent compliance or non-compliance with the requirements of the AS: ISO 20252 standard, but whether the information is available in the report.

[16] Section 7.2 of the AS: ISO20252 – 2007 Market, opinion and social research - Vocabulary and service requirements, p.32.

Section 7.2 of the AS: ISO20252 Standard In quantitative research the following minimum details shall be documented in the project report. These allow the reader to understand the way the research was conducted and the implications of its results:	Status of detail reported in the Quality of Service Monitoring section of the ACCC Airport Monitoring Report 2008-09	Status
The name of the client	Determined that the ACCC required individual airport operators to provide the data for the report	
The name of the research service provider	Unable to determine the name of the research service provider who collected the data or conducted the analysis[17]	
The objectives of the research project	The objectives of the research are detailed on p.4 of the ACCC report, as well as p.3 of the Airport quality of service monitoring guideline document	
The target group for the research project	The target group for the research is detailed on p.3 of the Airport quality of service monitoring guideline document	
The achieved sample size against projected sample size and reasons, if relevant, for not obtaining the projected sample	Unable to determine the exact sample size for any of the measures reported[18]	
The date of fieldwork	Unable to determine the date of fieldwork for any of the measures reported[19]	
The sampling method, including the procedure for selecting respondents	Unable to determine the sampling method or the procedure for selecting respondents[20]	

[17] However, it is noted in the Airport quality of service monitoring guideline that under certain circumstances the surveys may be undertaken 'in-house' by airport operators and that it is not normally expected that surveys will be undertaken by independent consultants. It further states that under s.156(6) of the Airports Act, the Airports Regulations need not limit how the ACCC requires information from an airport operator for this report .

[18] The achieved sample size is the number of people who answered the survey. The Airport quality of service monitoring guideline document and the template does require Airport Operators to provide the ACCC with a full description of survey methodology and raw data, including sample size along with the collated results. However, we were unable to find this information in the report published by the ACCC. Further, in the Airport quality of service monitoring guideline Statement of Reasons, the Airports Council International (ACI) Airport Service Quality (ASQ) survey is deemed an acceptable method of data collection, with supplementary information. The ACI ASQ survey requires a minimum of 350 responses per quarter from each airport. (http://www.airportservicequality.aero/content/survey/main/methodology.html). For those airports that use the ACI ASQ, it may be assumed that a sample size of at least 350 responses is included. The ACI ASQ website lists Sydney, Melbourne and Adelaide airports as participants in this survey(http://www.airportservicequality.aero/content/participating.html#), however, from the ACCC report, it cannot be determined which airports used the ACI ASQ to gather the data submitted for the ACCC report.

[19] Except that it was most likely collected during the 2008-09 period because of the date of the report.

Section 7.2 of the AS: ISO20252 Standard In quantitative research the following minimum details shall be documented in the project report. These allow the reader to understand the way the research was conducted and the implications of its results:	Status of detail reported in the Quality of Service Monitoring section of the ACCC Airport Monitoring Report 2008-09	Status
The data collection method	Unable to determine the data collection method[21]	
The response rate	Unable to determine the response rate[22]	
The type of incentives (if applicable)	Unable to determine whether this is applicable[23]	
The number of interviewers (if applicable)	Unable to determine whether this is applicable[24]	
The interviewer validation methods (if applicable)	Unable to determine whether this is applicable[25]	

[20] The Airport quality of service monitoring guideline document and the template does require Airport Operators to provide the ACCC with a full description of survey methodology and raw data, including sampling method along with the collated results. However, we were unable to find this information in the report published by the ACCC. Further, in the Airport quality of service monitoring guideline Statement of Reasons, the Airports Council International (ACI) Airport Service Quality (ASQ) survey is deemed an acceptable method of data collection, with supplementary information. The ACI ASQ website lists Sydney, Melbourne and Adelaide airports as participants in this survey, however, from the ACCC report, it cannot be determined which airports used the ACI ASQ to gather the data submitted for the ACCC report. The ACI ASQ website explains that each airport has a custom designed sample plan to ensure representative results; however, each airport's custom designed sample plan could not be determined. This does suggest that sampling for each airport could have been different.

[21] Data collection method refers to the way the surveys were administered, e.g. intercept surveys at the airport or over the phone. The Airport quality of service monitoring guideline document and the template does require Airport Operators to provide the ACCC with a full description of survey methodology and raw data, including data collection method along with the collated results, however, we were unable to find this information in the report published by the ACCC.

[22] The response rate is the proportion of people who completed the survey compared to those who were asked. When using a probability sample, a higher response rate increases the chances of a representative sample. The Airport quality of service monitoring guideline document and the template does require Airport Operators to provide the ACCC with a full description of survey methodology and raw data, but does not specify the response rate, along with the collated results, however, we were unable to find this information in the report published by the ACCC.

[23] While we were unable to determine the type of incentives used, it is also not stated whether incentives were used or not and as such we are unable to determine whether it is applicable.

[24] While we were unable to determine the number of interviewers used, the data collection method was not specified and as such we are unable to determine whether it is applicable. For example, it is not applicable if the survey was conducted online.

[25] While we were unable to determine the interviewer validation methods, the data collection method was not specified and as such we are unable to determine whether it is applicable. Interviewer validation methods include observation, monitoring and call-back confirmation with the respondent to ensure the integrity of the data collection process. The industry standard is at least 10% of each interviewer's surveys are validated.

Section 7.2 of the AS: ISO20252 Standard In quantitative research the following minimum details shall be documented in the project report. These allow the reader to understand the way the research was conducted and the implications of its results:	Status of detail reported in the Quality of Service Monitoring section of the ACCC Airport Monitoring Report 2008-09	Status
The questionnaires, any visual exhibits or show cards, and other relevant data collection documents	Unable to determine the questionnaires and data collection documents used[26]	
The documents, materials or products used as part of the research project (if applicable)	Unable to determine whether this is applicable[27]	
The weighting procedures (if applicable)	Unable to determine the weighting procedures[28]	
The estimating and imputation procedures (if applicable)	Unable to determine whether this is applicable[29]	

[26] The Airport quality of service monitoring templates for 2008-09 do specify the aspects of service quality to be rated as well as the scale to be used, however, the questionnaires or data collection documents to be shown to respondents could not be located. Further, in the Airport quality of service monitoring guideline Statement of Reasons, the Airports Council International (ACI) Airport Service Quality (ASQ) survey is deemed an acceptable method of data collection, with supplementary information. The ACI ASQ website lists Sydney, Melbourne and Adelaide airports as participants in this survey, however, from the ACCC report, it cannot be determined which airports used the ACI ASQ to gather the data submitted for the ACCC report. However, it can be determined that those airports which did use the ACI ASQ survey used the same questionnaires.

[27] While we were unable to determine the documents, materials or products used as part of the research, the data collection method was not specified and as such we are unable to determine whether it is applicable.

[28] Weighting of the results can be used to increase representativeness, i.e. the data is weighted according to key demographic and behavioural variables to ensure that the data is more representative of the intended population. The ACCC Airport monitoring report 2008-09 on p.59 states that surveys of several different respondents' types were aggregated to give an overall view of the results. While the report recognises that the results were different for some of the different respondent types, it does not specify the details of the aggregation conducted.

[29] As we were unable to determine any estimating or imputation procedures used, we are unable to determine whether it is applicable. While aggregation appears to have been used in the analysis, we are unable to determine whether any imputation or estimation has been used in the analysis.

Section 7.2 of the AS: ISO20252 Standard In quantitative research the following minimum details shall be documented in the project report. These allow the reader to understand the way the research was conducted and the implications of its results:	Status of detail reported in the Quality of Service Monitoring section of the ACCC Airport Monitoring Report 2008-09	Status
The reliability of the findings, including (when probability samples are used) estimates of sampling variance and estimates of non-sampling errors or indicators thereof	Unable to determine the reliability of the findings[30]	
The results that are based on subgroups and the number of cases used in subgroup analysis	Results that are based on subgroups are reported, however the number of cases used in the subgroup analysis could not be determined[31]	

[30] Margins of error are usually calculated and reported as a measure of the reliability of the findings, i.e. the extent to which the same results would be achieved if the research was repeated. The Airport quality of service monitoring guideline document and the template does require Airport Operators to provide a full description of survey methodology and raw data, including information to determine that it is statistically robust, to the ACCC. However, we were unable to find this information in the report published by the ACCC. Further, in the Airport quality of service monitoring guideline Statement of Reasons, the Airports Council International (ACI) Airport Service Quality (ASQ) survey is deemed an acceptable method of data collection, with supplementary information. The ACI ASQ survey requires a minimum of 350 responses per quarter from each airport. For those airports that use the ACI ASQ, it may be assumed that a sample size of at least 350 responses is included and a minimum reliability measure could possibly be imputed based on the passenger information reported in the ACCC report. However, the ACI ASQ website lists Sydney, Melbourne and Adelaide airports as participants in this survey, however, from the ACCC report, it cannot be determined which airports used the ACI ASQ to gather the data submitted for the ACCC report, as such, the reliability of the findings can also not be determined.

[31] The ACCC Airport monitoring report 2008-09 on p.59 states that surveys of several different respondents' types were aggregated to give an overall view of the results. While the report recognises that the results were different for some of the different respondent types, and reports them separately, the number of cases used in the subgroup analysis could not be determined.

5.2 Industry Standards – Ethical

The reporting of methodological and technical details of research is an integral part of the findings of any research project and the AS: ISO 20252 industry standards require them to be reported to maintain quality standards.

In the same way, the AMSRS Code of Professional Behaviour details the ethical responsibilities of researchers, clients and respondents in the research process. Under this Code, clients are entitled to certain information regarding the way the research project was conducted.

GA Research was unable to determine whether the ACCC report has met the ethical requirements in relation to reporting as listed under the AMSRS Code of Professional Behaviour.

The Rules in the Code of Professional Behaviour that cover this reporting are detailed below, along with the Notes that are included in the Code on how it should be applied.

AMSRS Code of Professional Behaviour[32]

Rule 25: The Researcher must provide the Client with all appropriate technical details of any research project carried out for that Client.

Rule 27: Where any of the findings of a research project are published by a Client the latter has a responsibility to ensure that these are not misleading. The Researcher must be consulted and agree in advance the form and content of publication, and must take action to correct any misleading statements about the research and its findings.

Notes on how the Code of Professional Behaviour should be applied:

(RULE 25) The Client is entitled to the following information about any market research project to which he/she has subscribed:

1. Background
   - for whom the study was conducted
   - the purpose of the study
   - names of subcontractors and consultants performing any substantial part of the work
2. Sample
   - a description of the intended and actual universe covered
   - the size, nature and geographical distribution of the sample (both planned and achieved); and where relevant, the extent to which any of the data collected were obtained from only

[32] AMSRS Code of Professional Behaviour available on the AMSRS website: http://www.mrsa.com.au/index.cfm?a=detail&eid=138&id=2649

part of the sample
- details of the sampling method and any weighting methods used
- where technically relevant, a statement of response rates and a discussion of any possible bias due to non-response

3. Data Collection
   - a description of the method by which the information was collected
   - a description of the field staff, briefing and field quality control methods used
   - the method of recruiting respondents including number of callbacks used to contact selected Respondents; and the general nature of any incentives offered to secure their co-operation
   - when the fieldwork was carried out
   - (in the case of 'desk research') a clear statement of the sources of the information and their likely reliability
4. Presentation of Results
   - the relevant factual findings obtained
   - the bases of percentages (both weighted and unweighted)
   - general indications of the probable statistical margins of error to be attached to the main findings, and of the levels of statistical significance of differences between key figures
   - the questionnaire and other relevant documents and materials used including data maps and associated documentation, if the data is being provided in an electronic form (or, in the case of a shared project, that portion relating to the matter reported on).

The Report on a project should normally cover the above points or provide a reference to readily available separate documents that contain the information.

(RULE 27) If the Client does not consult and agree in advance, the form of publication with the Researcher the latter is entitled to:

a. refuse permission for his/her name to be used in connection with the published findings; and
b. publish the appropriate technical details of the project (as listed in the Notes to Rule 25).

Given the ACCC is not a member of AMSRO, and the individuals who put the report together have not been identified as members of AMSRS, they cannot formally be held to these ethical standards. However, these are the standards of the research industry in Australia, set up to ensure that the research conducted is of the highest quality, transparency and follows best practice to maintain the integrity of the industry.

Following is a comparison of the ACCC report with the details listed in the notes to Rule 25 that are required to be provided under the ethical requirements of the AMSRS Code of Professional Behaviour.

1. Background

The purpose of the study and for whom the study was conducted is clearly stated in the ACCC report. However, it could not be determined whether any subcontractors or consultants had performed a substantial part of the work.

2. Sample

The intended universe of the passenger survey is explained as passengers using the target airports. However, details of the size and nature of the sample could not be determined. Nor could we determine details of the sampling method, quotas (the proportion of surveys to be conducted amongst different types of passengers, at different times of day, in various parts of the airport, etc.), weighting procedures (to ensure the representativeness of the data) or response rates.

3. Data Collection

We were unable to determine the method of data collection, the field staff, quality controls or recruitment of respondents. Information regarding the fieldwork dates was limited to the dates of 2008-09 which the report is labelled with.

4. Presentation of Results

While the findings of the research are reported, we were unable to determine the bases of percentages (i.e. the sample sizes), nor could we determine the statistical margins of error. While the variables rated were reported in the presentation of results, we could not determine the questionnaire used to collect the data. While further detail was provided in the Airport quality of service monitoring guideline, we could not determine any of this information from that document.

The Airport quality of service monitoring guideline does specify that the *"ACCC needs to be satisfied that the data collected, methodology and processes used, target priority areas and are statistically robust"*[33]. However, we were unable to determine whether any of these details were actually provided to the ACCC by those who conducted the research. It is important to note that if an AMSRO member conducted any part of the data collected for the ACCC Airport monitoring report 2008-09, they would have met these requirements.

[33] Airport quality of service monitoring guideline, October 2008, pp.6-7.

6. Research Methodology Review

Given the limited information provided about research methodology in the ACCC report, we are unable to clearly determine whether acceptable methodological standards have been met in the conduct of the research, and as such are unable to make a definitive judgement. However, we have endeavoured to identify potential methodological issues based on the information that is available in the report and the Airport quality of service monitoring guidelines document and these are detailed in this section of the review.

This section of the review is in four parts; sampling, fieldwork, research materials and analysis.

6.1 Sampling

Sampling refers to the method by which respondents are chosen to participate in research to ensure that the respondent pool is a statistically representative sample of the population that the research is intending to understand. Put simply, it is how you choose the people that you survey. It is an extremely important part of the research design because market and social research aims to survey a part of the population (the sample) to produce accurate generalisations about the whole population.

In the case of the ACCC report, the passenger and airline perception surveys are intended to represent all of the passengers and airlines using each of the five airports (the population).

There is very little detail regarding sampling in the report itself and the following note from the Airport quality of service monitoring templates for 2008-09 is the most detailed explanation of the sample frame regarding the passenger perception survey.

> *"The ACCC needs to be satisfied that the data collected, and the methodology and processes used, target priority areas and are statistically robust. The ACCC therefore expects that a full description of survey methodology is provided as a complement to the collated results including:*
>
> - *sample size*
> - *mix of international/domestic passengers surveyed*
> - *mix of arriving/departing passengers surveyed*
> - *who conducted the surveys (e.g. the airport operator or otherwise)*
> - *details of the scoring system used (e.g. 1 = very poor, 5 = excellent)"*[34]

While this demonstrates that the ACCC required a statistically robust methodology, we were unable to determine the minimum requirements for the ACCC's definition of statistically robust from the ACCC report or any of the associated documents that have been published.

[34] Airport quality of service monitoring templates for 2008-09

Sampling a subset of the population to produce accurate generalisations about the larger group requires a representative sample, and this is most commonly done using probability sampling.[35] The population for the passenger perception survey is all passengers who use each of the airports being rated. A representative sample of this population has similar proportions of different types of passengers as the population. It is for this reason that the ACCC requirements have specified that the mix of international/domestic and arriving/departing passengers must be reported, in order for them to determine how representative the sample is.

Typically there are quotas set for each of these requirements to ensure that the sample has a representative mix of each. For example, specific quotas would determine what proportion of the sample is made up of international or domestic or arriving/departing passengers.

Recognising that it is not financially viable, nor methodologically imperative that all possible differences in a population are controlled for, it is the researcher's role to identify those differences which are most likely to affect the variables being measured. The mix of international/domestic and arriving/departing are both extremely important, however, we suggest that the airline which the passenger is using is just as important.

To demonstrate the importance of ensuring representativeness of the airline a passenger used, in 2007-08, Qantas, Jetstar, Virgin Blue and Tiger Airways accounted for 87.9% of the total domestic passenger movement in Australia.[36] Passengers of these airlines are obviously going to be the most prevalent in an airport and as such much easier to survey. However, if a sample does not include the appropriate number of respondents from the remaining 12.1% of passengers, then the sample will not be representative. If the ACCC passenger satisfaction measure did not include those passengers, airport operators would be less likely to be held accountable for negotiating lesser provisions with those airlines.

Other factors that could also be important include the time and day a passenger uses an airport as well as those flying economy versus first or business class and those travelling for business or leisure. We recognise that there are many factors which could impact on a passenger's ratings of satisfaction, and it is not practical to control for all of them. However, those most likely to impact the ratings should at least be measured. While it may be impractical to ensure that a representative spread have been surveyed, if the information is captured, the data can be weighted to ensure that they reflect it.

The AS: ISO 20252 quality standard requires that *"the approach used in drawing up the sample shall be documented"*[37], and the sample size and sampling method are both required to be detailed in the research report[38]. This kind of transparency is

[35] Neuman, W.L. 2003, **Social Research Methods: Qualitative and Quantitative Approaches** (5th ed.), Allyn & Bacon, New Jersey, Ch.8.
[36] Bureau of Infrastructure, Transport and Regional Economics [BITRE], 2008, *Avline 13*, BITRE, Canberra ACT, p.17.
[37] AS: ISO20252 – 2007 Market, opinion and social research - Vocabulary and service requirements, Section 4.5.1.1
[38] AS: ISO20252 – 2007 Market, opinion and social research - Vocabulary and service requirements, Section 7.2

required because a research report is … *"more than a summary of findings; it is a record of the research process."*[39]

It should be noted that if the sampling approach used by each participating airport is not controlled and representative of their passengers and airlines, then this raises serious questions about the ability to compare the results from each airport. To demonstrate this point, if one airport submitted survey results that were representative of all passengers, but another airport only surveyed passengers from the first class lounges, then the results would obviously not be comparable. We are not suggesting this has happened, however, if the samples from any of the airports are not representative of all of their passengers, then the differences between the airports identified in the results may not reflect actual differences in the perceived quality of service, but rather a difference in the passengers sampled.

6.2 Fieldwork

Fieldwork refers to the methodology used to conduct the surveys and gather the data used in the ACCC report. Fieldwork operators refer to specialist market research organisations who offer data collection services, whether it is by telephone, online or intercept surveys conducted face to face with respondents.

We were unable to determine the fieldwork methodology used to collect the data presented in the passenger perception survey of the ACCC report as details are not published in the report or the supporting documentation.

However, the Airport quality of service monitoring guideline does make note that the survey can be conducted 'in-house', providing that they consult with the ACCC on the contents of the survey and the methodology used. As the ACCC requires airport operators to provide the data, we assume that 'in-house' refers to the data being collected by staff of the airport operator as opposed to contracting the fieldwork out to a professional market research fieldwork agency.

It further states that auditing and verification procedures will be important. We were unable to determine what level of auditing and verification was deemed acceptable on this matter as no details are published in the ACCC's Report.

The market and social research industry has very clear requirements for researchers and fieldwork operators in terms of quality controls for fieldwork to ensure that data is collected accurately and according to privacy requirements. Researchers accredited to AS: ISO 20252 are required to use fieldwork providers who are similarly accredited. These fieldwork companies have stringent requirements for gathering data, from interviewer training requirements, through to monitoring and auditing interviewers. These requirements and processes are completely transparent and outlined in the AS: ISO 20252 Standard.

By using a fieldwork company accredited to AS: ISO 20252, researchers can be confident of the quality, accuracy and objectivity of the data collected by these companies. Permitting the use of in-house resources to conduct this research, as opposed to professional market research firms, carries a number of inherent risks as they are not trained in objective data collection techniques. Market research

[39] Neuman, W.L. 2003, **Social Research Methods: Qualitative and Quantitative Approaches** (5th ed.), Allyn & Bacon, New Jersey, p.469

interviewers are trained in objective data collection methods such as reading the questions out verbatim to ensure that all respondents are asked the question in the same way and not to prompt respondents unless instructed to in the questionnaire. As demonstrated in section 6.3 of this review, slight changes in wording can greatly impact the meaning of the question and skew the data that is collected. If the research conducted by individual airport operators was not, in fact, carried out by professional market research firms then there must be serious doubts about the reliability and validity of the data collected.

6.3 Research Materials

We were unable to determine the research materials, such as questionnaires and showcards, which were used in the passenger perception survey of the ACCC report. However, the Airport quality of service monitoring guideline does note that the *"contents of the surveys"*[40] should be provided to the ACCC as part of the reporting, which we assume includes details of the questionnaire and other materials.

The ACCC requires airport operators to collect the data and report the findings in Airport quality of service monitoring templates 2008-09. While the variables to be measured are listed in this document, the actual questions used to elicit the responses are not. As the questions are not specifically provided, we must assume that the ACCC allows airport operators to design their own questionnaire to collect the information and then submit this to the ACCC.

Further, while a scale to measure these variables is detailed in the Airport quality of service monitoring templates 2008-09, a note in that document also requires airport operators to detail the scoring system that was used[41], suggesting that different scales may be used by the airport operators. This raises some issues for discussion.

Firstly, there is potential for data from different airports to be collected using different questions. While variables such as 'check-in waiting time' and 'quality of security search process' appear quite straightforward, the question used to elicit a passenger's impression of these measures can greatly impact their response.

For example when asked to evaluate **check-in waiting time** using the scale provided, this could be asked in two ways:

a. "How would you rate the amount of time **spent waiting** to check-in? Would you say it was very poor, poor, satisfactory, good or excellent?"
b. "How would you rate the amount of time **it took** to check-in? Would you say it was very poor, poor, satisfactory, good or excellent?"

While seemingly similar, these two questions are likely to elicit a different response from the same passenger as one is specifically prompting them to consider how much time they were "waiting".

Similarly, there is ambiguity in some of the variables. One of the variables to be reported on is the "quality of the security search process"[42], which is quite ambiguous. Are passengers reporting on how thorough the security search process was, how long it took or how satisfied they were with the process? The question

[40] Airport quality of service monitoring guideline, October 2008, pp.6.
[41] Airport quality of service monitoring templates for 2008-09
[42] Ibid

asked will likely determine what is being measured, and if the question asked is not standardised, then the results are likely to be based on a different understanding of the question and as such measuring something different.

There is also a potentially significant issue around the use of different word and number scales. Airport operators are required to detail the scoring system that is used in collecting the data. The note to this requirement in the Airport quality of service monitoring templates 2008-09 explains *"e.g. 1 = very poor, 5 = excellent."*[43]

We were unable to determine the scoring system used by the airport operators; however, we do suggest that it is important to ensure that all of the airport operators used the same scale if their results are to be compared. For example, the results of a variable scored on a 5 point scale of 'excellent, good, fair, poor, very poor' cannot fairly be compared to the results of a variable scored on a 5 point scale of 'excellent, above average, average, below average, unacceptable.' This is because the point of reference given to respondents answering each of those questions is not the same and therefore they are not validly measuring using the same construct and as such, not comparable in this sense.[44] Again, we note that we are not suggesting that this has occurred in the ACCC report, but we are unable to determine the scale used by the various airport operators.

So, in summary, in order for results of different airports to be comparable, each airport would have had to use exactly the same questionnaire wording, from the actual question that was asked through to the scale that respondents were given to record their responses. We were unable to determine whether this is the case based on the details provided in the published ACCC report and supporting materials.

6.4 Analysis

There appear to be several aspects to the analysis conducted on the data from the passenger perception surveys reported in the ACCC report. However, we were unable to determine the level of analysis that was conducted, as very little detail regarding this analysis is reported.

From the results that are reported, there are some issues identified for discussion.

a. Firstly, there appears to be aggregation conducted to calculate the overall quality of service ratings, and then again for the airline and passenger ratings.

   The airport and airline survey quality of service monitoring templates 2008-09 show that the data submitted to the ACCC does not include an overall quality of service measure asked of either the airline respondents, or the passenger respondents. As such, we assume that the overall quality of service measures as presented for airlines and passengers in the published ACCC report are aggregated from the other measures. We were unable to determine the method of aggregation used to calculate these results from the published ACCC report.

[43] Ibid

[44] Neuman, W.L. 2003, **Social Research Methods: Qualitative and Quantitative Approaches** (5th ed.), Allyn & Bacon, New Jersey, pp.178-207

This is important because this overall measure is the one used to rank airport quality of service. However, respondents were not directly asked for their perception of overall quality, this measure is imputed and therefore wholly determined by the aggregation procedure and weighting given to each of the variables used to calculate it.

GA Research notes that some of the measures collected from the passenger surveys are satisfaction with check-in waiting time, findability of baggage trolleys and the standard of washrooms. In determining the overall measure, it may be that the standard of the washrooms was given a higher weighting than check-in waiting time or findability of baggage trolleys, but we cannot tell from the detail provided in the published report. We are not suggesting that this has occurred, however, we are unable to determine what weighting was given to each of the variables to calculate the overall quality of service measure as these details were not published in the ACCC report.

b. It is also reported that aggregation of the results from various respondent types was conducted for the overall quality of service ratings.[45] However, there is no further detail on how that was done, or what proportions and weighting were used as part of this aggregation. It is noted that there are differences in the average ratings of the airport given by the passengers and the airlines, and they are reported separately. However, we could not determine the aggregation used to calculate the overall ratings by which the quality of service monitoring is judged.

   This is also an important aspect of the analysis as the weighting given to different respondent types could greatly affect the overall score. For example, if five customs officers are surveyed to represent the border agencies, and their responses are given the same weight as a survey of 600 passengers in the aggregation, then each customs officer is given the same weighting as 120 passengers. By the same token, if each airline completes a single survey, and each response is given equal weight, this does not take into account the vast differences in the number of passengers each airline is responsible for. When it is not feasible to sample proportionately, then proportionality should be applied in the analysis through weighted aggregation. We are not suggesting this has not occurred, however, we are unable to determine what, if any, weighting has been applied as these details are not provided in the ACCC report.

c. Moving on to the method of analysis of the rating scales used, the subjective criteria of the passenger perception surveys are reported as averages, with the corresponding label for the average score used to describe that average score. For example, if one of the subjective criteria receives an average score of 4.2 on a 5 point scale, and the fourth point on that scale was labelled “good”, then it has been reported as an average score of “good” in the report. Extensive research into questionnaire and rating scale design has shown that verbal labels assigned

[45] ACCC Airport monitoring report 2008-09, p.59.

to a scale are not perceived as equal intervals along a continuum amongst respondents.[46] In fact, it has been stressed that:

"…researchers should be certain that they select labels that have relatively precise meanings for respondents and that reflect equal intervals along the continuum of interest. This should be done by using labels that have been previously scaled and are known to possess good psychometric properties. When such labels are not available, researchers should conduct pretesting to identify appropriate labels. Because numeric values can alter the meaning of the labels, researchers should probably avoid using them altogether and simply present verbal response options alone."[47]

We were unable to determine from the ACCC report whether the labels used reflect equal intervals, nor could we determine whether any previous scaling or pretesting had been conducted, nor the results of any such testing. In addition, we could not determine whether any measures had been put in place to counter the effects of numeric values altering the meaning of the labels on the scales used to measure the subjective measures in the passenger perception survey.

In summary, the ACCC report appears to include several types of analysis that have been conducted on the data that was submitted by each of the airport operators. This ranges from aggregation of the data to the creation of new variables and the use of scales which require scaling and pretesting. However, we were unable to determine whether appropriate proportions and weightings were used for the aggregation, nor whether the appropriate scaling and pretesting had been done for the scales from the details provided.

These details are integral to determine whether the published ACCC report can justify the findings and conclusions contained therein. Not only does it raise questions about findings around individual measures, but the overall quality of service rating used to rank the five airports is an aggregated measure, which means that it was not directly reported by respondents. Given that this is the key determinant used by the published ACCC report to determine the overall quality of service provided by each airport, it is imperative that the aggregation and analysis used to calculate this measure is reported to ensure transparency and integrity.

[46] Krosnick, J.A. & Fabrigar, L.R., *Designing Rating Scales for Effective Measurement in Surveys*, In L.Lyberg, P.Biemer, M.Collins, E. de Leeuw, C.Dippo, N.Schwarz & D. Trewin (Eds.) Survey Measurement and Process Quality. New York: John Wiley, 1997

[47] Krosnick, J.A. & Fabrigar, L.R., *Designing Rating Scales for Effective Measurement in Surveys*, In L.Lyberg, P.Biemer, M.Collins, E. de Leeuw, C.Dippo, N.Schwarz & D. Trewin (Eds.) Survey Measurement and Process Quality. New York: John Wiley, 1997, p.152

7. Conclusion

In conducting this review of the Quality of service monitoring of the ACCC Airport monitoring report 2008-09, it is GA Research's opinion that, as a result of a lack of transparency in the reporting of details, the published ACCC report is insufficient to justify the validity and reliability of the reported findings and the conclusions that have been reported.

The level of detail reported in the published ACCC report does not appear to meet the accepted standards of the market and social research industry in Australia and as such we are unable to determine whether the research methods used to collect and analyse the findings are robust, reliable or valid.

- Of the 19 minimum details required to be documented in a research project report by Section 7.2 of the AS: ISO 20252 Standard, GA Research's review of the ACCC report was
  - able to determine three;
  - unable to determine 10; and
  - unable to determine whether 5 were applicable (because of lack of information about the actual methodologies used).

- Some of the details that we were unable to determine included integral aspects of the research methodology such as the sample size, the sampling method, the questionnaire used the data collection method and the reliability of the findings. These details are required under AS: ISO 20252 to ensure full transparency because a research report must not only present the findings of the research, but must also justify the validity and reliability of those findings by detailing the methodology used to ensure that it can be independently reviewed.[48]

From the detail that is provided in the published ACCC report, this review also raises questions around the representativeness of the sample, the reliability and validity of the data collected and the appropriateness of the aggregation used to calculate the data, including the overall quality of service measure which is used to rank the five monitored airports.

- The sampling procedures and sample frame could not be determined from the detail provided in the published ACCC report, nor could it be determined from the accompanying documents. While the ACCC states that it requires a *"statistically robust"*[49] methodology, this is a subjective criterion, and as such should be reported for those who are using the findings and conclusions to determine whether the sampling used is sufficient for their requirements.

- The fieldwork method used to collect the data could also not be determined from the detail provided in the published ACCC report. However, the ACCC specifies that fieldwork can be conducted *"in-house"*.[50] While 'in-house' is not defined, we assume it to mean by the staff of the airport operators who are required to provide the data to the ACCC. This raises serious questions about

[48] Neuman, W.L. 2003, Social Research Methods: Qualitative and Quantitative Approaches (5th ed.), Allyn & Bacon, New Jersey, p.469.
[49] ACCC Airport quality of service monitoring guideline, October 2008, p.7.
[50] Ibid, p.6.

the validity and reliability of the data as the market and social research industry has very clear requirements for researchers and fieldwork operators in terms of quality controls for fieldwork to ensure that data is collected accurately and according to privacy requirements.[51] These requirements are to ensure the quality, accuracy and objectivity of the data used in research. While the ACCC allows for fieldwork to be conducted 'in-house', if the research conducted by individual airport operators was not, in fact, carried out by professional market research firms then there must be serious doubts about the reliability and validity of the data collected.

- While the individual measures used to judge the quality of service are identified in the published materials, GA Research could not determine whether there is a standard questionnaire to collect the data for these measures. If there is no standard questionnaire and airport operators are left to design their own questions to collect the data, then any differences in the questions used by each airport operator will result in potential differences in what is being measured. Given this potential for the data from each airport to be measuring different variables, the validity of comparing the data from each of the different airports is questionable. If each airport operator used different questions to collect the data, then the data collected is not comparable as the same variable, as it is reported in the published ACCC report.

- Further, the Airport quality of service monitoring templates for 2008-09 explain that airport operators are required to report details of the scoring system used[52], suggesting that respondents at each of the airports could potentially have rated the measures using different scales. This potential for the variables from each of the airports to be rated using different scales raises further questions around the comparability of the data from each airport. If each airport operator used a different scale to collect the data, then the data collected is not comparable using a single scale across the airports as it is reported in the published ACCC report.

- Finally, we were unable to determine the details of the analysis that was conducted on the data to calculate the findings presented in the published ACCC report. The overall quality of service measure, which is the key measure used in the published ACCC report to judge the overall quality of service for each airport, is an aggregated measure, as there is no overall quality of service variable in the data sheet used for airport operators to provide the data.[53] The analysis used to calculate this aggregated measure could not be determined from the published ACCC report. This lack of transparency raises questions about whether it is appropriately weighted, and consequently, questions about the validity of using it to judge the overall quality of service for each airport.

- Further aggregation is used to compile responses from various respondent audiences such as passengers, airlines and government border agencies into a single score. The analysis and weighting used to calculate these proportions could not be determined from the published ACCC report, raising further questions about the representativeness of the findings and the potential for skewed results.

[51] AS: ISO20252 – 2007 Market, opinion and social research - Vocabulary and service requirements, Section 5.
[52] ACCC Airport quality of service monitoring templates for 2008-09
[53] Ibid.

- In the scales reported in the published ACCC report, verbal labels are assigned to a number scale. Extensive research into questionnaire and rating scale design has shown that verbal labels assigned to a scale are not perceived as equal intervals along a continuum amongst respondents and that scaling and pretesting should be conducted to ensure the scale possesses good psychometric properties.[54] We were unable to determine whether any testing has been undertaken to determine whether the scales used were perceived as equal intervals amongst respondents, nor could we determine whether any scaling or pretesting has been conducted. The lack of transparency around the determination of the scale's reliability and validity raises questions about its use and the conclusions that are drawn from the results it has produced.

To overcome these issues resulting from a lack of transparency as well as the potential methodological issues identified in the published ACCC report, GA Research believes that the Quality of service monitoring research conducted for future ACCC Airport monitoring reports should either be independently conducted and reported by any of the AMSRO member research companies or the ACCC should consider getting AS: ISO 20252 accreditation themselves. AMSRO members and companies accredited to the AS: ISO 20252 Standard are required to report the necessary details of the methodology, fieldwork and analysis used to justify their conclusions and recommendations.

[54] Krosnick, J.A. & Fabrigar, L.R., *Designing Rating Scales for Effective Measurement in Surveys*, In L.Lyberg, P.Biemer, M.Collins, E. de Leeuw, C.Dippo, N.Schwarz & D. Trewin (Eds.) Survey Measurement and Process Quality. New York: John Wiley, 1997

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Listed on the 'AMSRS Suggested titles for continuing professional development and Qualified Practising Market Researcher (QPMR)' list.

Neuman, W.L. 2003, Social Research Methods: Qualitative and Quantitative Approaches (5th ed.), Allyn & Bacon, New Jersey