

# 2

## Professional perspectives on harmonisation and cost-benefit analysis in Australia and New Zealand

Following interviews with government agencies in the various jurisdictions over the period October to December 2014, it was apparent that there was only patchy use of cost-benefit analysis (CBA) in Australia and New Zealand.

At one extreme, transport agencies were generally well equipped with expert analysts and modelling capability to carry out conventional CBA studies of proposed projects. Some, but not all, central agencies possessed in-house expertise in CBA but were generally engaged only in reviewing studies prepared by line agencies or their consultants as part of budgetary processes. Health and environment agencies, which generally lacked CBA expertise, tended to favour the introduction of harmonised values to facilitate utilisation of CBA in their portfolio areas.

Available resources did not permit more extensive face-to-face canvassing of views with portfolios other than the central agencies: transport, health and environment. In order to access a wider range of views among those familiar with CBA, a survey of professionals was conducted under the auspices of the Economic Society of Australia (ESA) and the Government Economics Network in New Zealand.

The objective of the survey was to identify the views of respondents about the use of CBA in public sector decision-making and the potential for greater harmonisation of parameters and variable values.

## 2.1 General survey responses

The web-based survey questionnaire (see Annex to this chapter) was distributed to 1,068 members of the ESA and the participants in a CBA Forum hosted by the NSW Branch of the ESA and NSW Trade and Investment in Sydney on 18 July 2014. An identical questionnaire was distributed to 774 members of the Government Economics Network in New Zealand. In total, 360 responses out of 1842 were received, although not all questions were answered by all respondents.

Table 2.1: Responses by area of employment and education

Respondent characteristics	Per cent
<i>Employment sector (n=229)</i>	
Australian Public Service	22%
New Zealand Public Service	24%
Private sector	32%
Academics	14%
Other	7%
<i>Highest level of education (n = 357)</i>	
Undergraduate degree – economics	29%
Postgraduate degree – economics	36%
Postgraduate degree – business, finance, or public administration	11%
Undergraduate degree – other discipline	15%
Postgraduate degree – other discipline	10%

Source: George Argyrous with Sara Rahman

Table 2.1 indicates that respondents were spread across the public, private, and academic sectors, with 55 per cent of respondents having worked in their current position for 10 years or more. Fewer than 14 per cent had held their current position for less than two years. Further, respondents came from a wide range of policy fields, including transport, environment, health, and urban planning, with only 14 per cent listing their work field as ‘economics’. Respondents

were also highly qualified, with over half having a postgraduate degree, and high economic literacy, with over two-thirds having a degree in economics.

In terms of experience with CBAs, respondents showed a reasonable level of familiarity with various aspects of the use of CBAs in decision-making, as shown in Table 2.2.

**Table 2.2: Responses by degree of experience with CBA**

<b>Level of experience</b>	<b>Per cent</b>
<i>Preparing CBAs (n = 310)</i>	
Not at all experienced	22%
Some experience	44%
High level of experience	34%
<i>Arranging for CBAs to be prepared (n = 299)</i>	
Not at all experienced	34%
Some experience	41%
High level of experience	25%
<i>Reviewing CBAs (n = 309)</i>	
Not at all experienced	17%
Some experience	46%
High level of experience	37%
<i>Using the results of CBAs (n = 307)</i>	
Not at all experienced	12%
Some experience	48%
High level of experience	39%

Source: George Argyrous with Sara Rahman

Prior to seeking the views of respondents on the specific issue of harmonisation of CBA values and methodologies, information was sought on their views regarding some of the broader issues faced by those using CBA in policy formulation and decision-making. Respondents were asked to rate and rank the importance of a range of issues relevant to CBA on a five-point Likert scale with a range from 0 to 4. Table 2.3 presents the main results.

**Table 2.3: Importance of issues associated with the use of CBAs**

<b>CBA issue</b>	<b>Mean rating score</b>	<b>Per cent rating this as the most important issue</b>
CBAs are undertaken at the wrong time	2.2	2.0%
The wrong options for CBAs are being considered	2.6	4.3%
The results of CBAs are not effectively communicated	2.8	5.5%
Variables used in CBAs (e.g. discount rates, value of time) are not consistent	2.7	5.9%
CBAs are not generally published	2.8	6.7%
Policies and programs are not evaluated using ex post CBA	3.2	7.1%
CBAs are ignored in decision-making	2.8	11.1%
CBAs are not being conducted independently and objectively	2.9	12.3%
CBAs are being used to justify rather than inform	3.1	22.1%
CBAs are not undertaken on important decisions	3.1	22.9%

Source: George Argyrous with Sara Rahman

There was variation among different groups of respondents regarding the relative importance of the issues listed in Table 2.3. In general, respondents from outside of the public sectors in Australia and New Zealand were less concerned about the issues listed in Table 2.3. Most notably, public sector respondents did not feel as strongly that CBAs are not undertaken for important decisions, or that they are not being conducted independently or objectively, or ignored in decision-making. A smaller proportion of New Zealand public sector respondents indicated that the fact that CBAs are not generally published was an important issue compared with their Australian counterparts, which possibly reflects a different culture of transparency. Table 2.5 below provides more detail.

As might be expected, there were differences between groups of respondents regarding the issue that was considered to be the most important. One quarter of Australian respondents placed emphasis on the issue that ‘CBAs are not undertaken on important decisions’, but other groups rated as most important the view that ‘CBAs are used to justify rather than inform’. No group considered that ‘variables used

in CBAs (e.g. discount rates, value of time) are not consistent' as a major issue, with less than 10 per cent rating this issue as the most important across any cross-classification of respondents.

Support for harmonisation predominated, although Table 2.4 indicates that it was not unqualified. Support for trans-Tasman harmonisation of CBA, however, was not as effusive as support for within-country and within-jurisdiction harmonisation.

**Table 2.4: Responses regarding support for differing degrees of harmonisation**

Level of support for harmonisation	Within each jurisdiction (n = 227)	Across similar agencies within a country (n = 229)	Across jurisdictions within a country (n = 224)	Between Australia and New Zealand (n = 198)
Do not support	5.3%	4.8%	7.6%	25.8%
Support with qualifications	63.0%	62.0%	66.1%	63.6%
Support without qualifications	31.7%	33.2%	26.3%	10.6%

Source: George Argyrous with Sara Rahman

More respondents from the public sector supported harmonisation, mainly for consistency purposes and cross-departmental comparisons to be made possible. A significant group, however, also supported the alternative of greater transparency through publication. This was largely based on the need to accommodate and justify different variables for sector-specific areas.

Private sector respondents were evenly split between harmonisation and transparency — with support for harmonisation based on much the same reasons as those given by public sector counterparts. Transparency was considered to be the best way to improve the overall quality of CBAs.

Academics also tended to favour harmonisation, but most had reservations regarding how values were to be set; they were sceptical about the ability of a centralised body to set good standards for variables.

## 2.2 Quantitative analysis of survey results

To investigate the strength of the survey results in greater detail, the data were interrogated econometrically to check for insights about relationships between the characteristics of respondents and the answers that they provided to survey questions. The key details of the survey are reproduced below as an annex to this chapter.

The survey questions were grouped around four broad themes:

- application and usage of CBA studies
- support for greater harmonisation in CBA across agencies and jurisdictions
- principles and preferences for increased harmonisation
- potential areas for greater harmonisation in CBAs.

Results in tables 2.5 to 2.8 are presented in blocks based on these four themes. Various questions were asked within each theme and overall there were 30 questions posed in questions 2, 4, 5 and 7 of the survey (which were used as dependent variables) and, therefore, 30 (ordinal logistic) regressions. Due to the large number of regressions and covariates involved, only those relationships that were statistically significant at the 10 per cent level are presented in the tables, but with actual p-values shown in brackets. The tables provide information about which sectors, jurisdictions or experience levels favoured survey question propositions more (or less) than others.

The survey questions were posed on 3- or 5-point Likert scales, so that numerical values from 0 to 2 or 0 to 4 were assigned to them in order to estimate relationships. A higher value means the respondent agrees more with, or assigns a higher importance to, the survey question. Although a ranking of 2 is 'higher' than a ranking of 1, it is not 'twice as large'. There is no numerical measure of distance between the scores. The numerical values represent an ordinal scale rather than a cardinal measure.

An important assumption in the model is, therefore, that the relationship between each pair of outcome rankings is homogenous; for example, the estimate of moving from, 'do not support' to 'support with qualifications' is the same distance as moving from 'support with qualifications' to 'support without qualifications'.

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Because the survey questions have an ordinal structure, ordinal logistic regression was used to analyse the data. Estimated regression coefficients were converted to proportional odds ratios. A proportional odds ratio of 2 can be interpreted as a characteristic having twice the odds (twice as likely) of being associated with a higher ranking response to the survey question. A proportional odds ratio of 0.5 means that those with the characteristics are half as likely to rate a given issue as being important.

Based on questions 1, 8, 9 and 10 of the survey, four broad classes of characteristics were used — CBA experience, education, employment sector and job experience — and their component categories formed the independent variables in the 30 logistic regressions.

‘CBA experience’ refers to four sub-categories in descending order of extent of experience:

- preparing CBAs
- arranging for CBAs to be prepared
- reviewing CBAs
- using CBA results

Survey question 1 asked respondents to indicate their level of experience against each of these four sub-categories on a 5-point scale. Responses stating ‘Not applicable’ or ‘Can’t say’ were eliminated, leaving only three levels of experience for each of the four categories:

- high level of experience (assigned value of 2)
- some experience (assigned value of 1)
- not at all experienced (assigned value of 0).

Response values were averaged across the four sub-categories. The independent variable ‘CBA experience’ was then defined by combining those with a high level and some level of experience, relative to the base case of ‘not at all experienced’.

Sub-categories for education included the following variables:

- undergraduate: economics
- undergraduate: other discipline
- postgraduate: economics
- postgraduate: business, finance, public administration
- postgraduate: other.

In tables 2.5 to 2.7, 'Economics qualification' includes both undergraduate and postgraduate economics qualifications (i.e. excluding business, finance, or associated disciplines). Results for the economics qualification dummy variable (value 1) are expressed relative to the base case (value 0) of undergraduate and postgraduate qualifications in all other disciplines.

A dummy variable of value 1 was used for 'Postgraduate qualification', which included all postgraduate qualifications, irrespective of discipline. The base case was therefore 'no postgraduate qualification', irrespective of discipline.

The following sectoral employment variables were used on the basis of survey information collected:

- academic
- public sector: Australian state government
- public sector: Australian (Commonwealth) Government
- public sector: New Zealand
- 'other' sector: student, retiree, non-government organisation
- private sector: the base case dummy variable; all other sector results are expressed relative to the private sector.

'Job experience' refers to the number of years of experience in the area of current employment. Possible responses ranged from 0 (less than one year) to 10, as well as a category for 'more than 10'. The number of years in the job was compared to a base case of 0 (less than one year). Regression coefficients in the tables are interpreted as the increase in the odds for a one-year increase in experience.

Survey respondents' views were sought regarding the importance of issues to do with the way that CBAs are used or not used. Table 2.5 presents results that were significant at least at the 10 per cent level, with p-levels shown in brackets below the logit coefficients. Respondents with economics qualifications were roughly twice as likely as non-economists to consider that 'CBAs not being published', or 'CBAs being undertaken at the wrong time', were important issues. Respondents classified as part of 'other' sector (students, retirees, NGOs) were between 2.8 and 7.6 times more likely than those in the

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private sector to rate the following issues as more important: CBAs used as justification for projects; CBAs not being consistent, evaluated, published, or the results being ignored.

**Table 2.5: Application and usage of CBA studies**

<b>Estimated proportional odds ratios</b>	<b>CBA experience</b>	<b>Economics qualification</b>	<b>Job experience</b>	<b>Sector other</b>	<b>Sector public NZ</b>
CBAs are being used to justify rather than inform	0.675 (0.068)			3.354 (0.06)	0.357 (0.005)
CBAs are being ignored in decision-making				3.108 (0.062)	
Variables used in CBAs are not consistent				7.556 (0.011)	
Policies and programs are not evaluated using ex post CBA				2.755 (0.076)	
CBAs are not generally published		1.937 (0.075)		3.245 (0.09)	
CBAs are not undertaken on important decisions					0.515 (0.096)
CBAs are undertaken at the wrong time		2.013 (0.052)	0.891 (0.008)		0.383 (0.008)

Note: p-values are shown in brackets below the logit values (logarithms of the odds ratios) recorded in the body of the table. See text for interpretation of logit values.

Source: Patrick Doupe

Respondents from the NZ public sector were two to three times less likely to find some issues more important relative to the private sector. These issues were that CBAs are being used to justify rather than inform; not being undertaken; or, when undertaken, being undertaken at the wrong time. Respondents with more experience in CBAs, however, were less likely than their less experienced peers to think that CBAs ‘being used to justify rather than inform’ is an important issue.

**Table 2.6: Support for greater harmonisation in CBA across agencies and jurisdictions**

Estimated proportional odds ratios	Economics qualification	Postgraduate qualification	Job experience	Sector public AU state	Sector public NZ
Across similar agencies within a country	2.151 (0.074)			0.468 (0.098)	2.123 (0.059)
Between Australia and New Zealand		2.619 (0.025)	0.838 (0.001)		

Note: p-values are shown in brackets below the logit values (logarithms of the odds ratios) recorded in the body of the table. See text for interpretation of logit values.

Source: Patrick Doupe

Survey question 4 asked respondents about the desired degree of harmonisation of input variables used in CBAs. Opinions differed across the Tasman (Table 2.6). Amongst public sector employees, those from New Zealand were two times more likely than their private sector counterparts to believe that harmonisation across agencies was important. State-level public sector employees from Australia were two times less likely than private sector respondents to hold such a view. Australian Commonwealth public sector employees did not differ significantly from private sector respondents in their views.

Those with an economics qualification were 2.2 times more likely than non-economists to be associated with a higher preference for CBA harmonisation across similar agencies in a country. Postgraduates (all disciplines) were 2.6 times more likely than those without a higher degree to be associated with a preference for harmonisation between Australia and New Zealand. Those with more job experience were less likely to be associated with a preference for trans-Tasman harmonisation.

Table 2.7 analyses responses to survey question 5, which asked respondents for their preferences surrounding harmonisation based on different approaches and principles.

**Table 2.7: Principles and preferences for increased harmonisation**

Estimated proportional odds ratios	CBA experience	Economics qualification	Sector academic	Sector other	Sector public AU state
Agreement on how values are to be updated	1.453 (0.078)				
Variable capable of clear definition		0.402 (0.022)			
Full disclosure of estimation method used			3.468 (0.026)	3.191 (0.095)	0.515 (0.093)
Probability distribution of variable values made available				5.815 (0.002)	
Variable values and underlying data to be made publicly available				2.886 (0.072)	

Note: p-values are shown in brackets below the logit values (logarithms of the odds ratios) recorded in the body of the table. See text for interpretation of logit values.

Source: Patrick Doupe

NGO workers, students and retirees ('Sector other') exhibited a higher propensity relative to the private sector to designate disclosure of estimation methods as more important in fostering harmonisation. This includes making the results and probability distributions or variable values publicly available. Academic economists were three times more likely than the private sector to believe that full disclosure of the estimation method was more important. On the other hand, Australian state public employees were two times less likely than the private sector to consider disclosure to be important.

Surprisingly, those with an economics qualification were only half as likely as non-economists to consider the clear definition of variables used in CBA to be important. Respondents with greater CBA experience were more likely than those without CBA experience to think that agreement about how variables will be updated in the future is important.

**Table 2.8: Potential areas of greater harmonisation**

Estimated proportional odds ratios	CBA experience	Job experience	Sector academic	Sector other
Deadweight loss due to tax-funded project		0.919 (0.065)		0.324 (0.079)
Flora and fauna values	1.763 (0.027)			
Period of the analysis		0.893 (0.017)		
Social discount rate	1.696 (0.02)			
Value of statistical life	1.461 (0.098)		0.348 (0.035)	0.182 (0.01)

Note: p-values are shown in brackets below the logit values (logarithms of the odds ratios) recorded in the body of the table. See text for interpretation of logit values.

Source: Patrick Doupe

Question seven asked survey respondents about potential areas of harmonisation of values in CBA (results shown in Table 2.8). Greater CBA experience was associated with a higher weight on the importance of harmonisation for flora and fauna values, the social discount rate and the value of a statistical life. Greater job experience had an opposing relationship with harmonisation of deadweight loss and specification of the period under analysis. Relative to the private sector, academic respondents were less likely to consider that harmonisation of the value of a statistical life was important.

## 2.3 General qualitative feedback

Some qualitative feedback reinforced points already made above, but other, more nuanced points were also made. Some of the more notable issues raised were as follows:

- When ex ante CBA is employed to support a particular policy instead of informing decision-making, ex post CBA is not undertaken.
- CBAs do not necessarily mean that a project is rejected or approved solely based on the CBA, rather CBA is used as a tool for decision-makers to make informed decisions, especially since some factors cannot be easily monetised or there are mandatory restrictions on programs and their outcomes (e.g. targets/standards).

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- Where only an ex post CBA is undertaken, viable options that should have been considered in an ex ante CBA are not examined at all.
- Due to the subjective nature of CBAs, a wide range of calibrations to the analysis can be justified. Monetary considerations, coupled with the view of CBAs as subjective, leads to pressure on practitioners to manipulate variables to support a client's position, effectively resulting in an 'opinion for hire' market for CBAs.
- Discount rates were a specific concern, with several respondents citing instances of discount rates being manipulated to 'spectacularly high' levels in order to dismiss a particular policy. Non-market values were also cited to be commonly and easily manipulated to achieve 'desirable' results.
- Although some respondents thought that publication would be enough to solve the problems faced by CBA, a smaller group was concerned that, without proper communication and explanation of CBAs, the general public would remain uninformed about their content and how to assess their validity. If the public is to influence debate using the CBAs, then they must be able to access the full assumptions, model and calculations involved in CBAs as well as have enough knowledge to understand how to interpret them.
- Having clear definitions would make a big difference to how CBAs are understood and applied in decision-making and would ease comparisons and external validation of different CBAs.
- Harmonisation was thought to be best implemented as default values or ranges and included for comparison purposes across different analyses, with alternative values allowed with justifications for scenario-testing purposes. This approach was thought to reconcile the need for reducing manipulation while allowing for practitioners to use their expertise in employing different approaches. Significant disagreement persists, however, over how harmonisation should be carried out and whether it is a superior solution to greater transparency in the CBA process.

## 2.4 Qualitative responses reflecting concerns about harmonisation

Qualitative responses reflecting concerns about the concept of harmonisation were equally illuminating and instructive. The following is a paraphrased selection of comments made:

- The most common concern that respondents expressed regarding harmonisation related to differences in parameters and situations across different jurisdictions, countries, and agencies, which would make harmonisation difficult.
- Additionally, some were concerned that standardisation across sectors could result in certain types of projects being favoured more than others. Examples given of possible difficulties in harmonisation were interest rates across different countries, laws in different jurisdictions and different non-market valuations across different sectors.
- Another concern regarding possible harmonisation of CBA standards is the degree to which standards can be ignored. Harmonisation and rules must prevent tinkering for political purposes, but allow enough flexibility to allow practitioners to conduct accurate or more robust analyses for their projects and to account for difficulties in collecting data.
- Harmonisation was also thought to possibly restrict debate and prevent innovation in how CBAs are conducted, with some respondents saying that CBAs should be a 'brain on' and not a 'brain off' process. The innovation and debate process was thought to be important, especially with some doubting the ability of a centralised body to create good standards.
- Creativity can be encouraged, because, over time, external scrutiny of transparent CBA processes may lead to a convergence around key variable values, without that having to be a formal process.
- Disagreement was also widespread over which variables should be standardised. One way that respondents approached this was to harmonise variables that they classified as stable across jurisdictions and areas. There was no real agreement, however, on what these variables were, with disagreements even over key variables, such as the period of analysis and discount rates.

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- Some respondents supported harmonisation of variables which the average practitioner could not estimate better than standardised values — basically those that may be difficult to estimate.
- There was more agreement about variables that should not be standardised than those that should — travel time, flora and fauna, and analysis periods were the major variables that were thought to not be suitable for harmonisation whereas harmonisation of the value of statistical life and the cost of emissions was supported.

## Annex to Chapter 2: Survey questionnaire<sup>1</sup>

1. How would you rate your experience with each of the following CBA activities?

	Not at all experienced	Some experience	High level of experience	Not applicable	Can't say
Using the results of CBAs					
Preparing CBAs					
Arranging for CBAs to be prepared					
Reviewing CBAs					

2. In your view, how important are each of the following issues in the use of CBAs as part of public sector decision-making?

	0 – Not at all an issue	1	2	3	4 – Extremely important issue	Don't know	No opinion
CBAs are ignored in decision-making							
CBAs are not generally published							

<sup>1</sup> The survey questionnaire was compiled by Leo Dobes, George Argyrous and Joanne Leung with input by Richard Tooth. The questionnaire was administered by Diane Litherland on behalf of the Economic Society of Australia which sponsored the survey. Initial results were compiled by Sara Rahman and George Argyrous. Econometric analysis was carried out by Patrick Doupe.

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	0 – Not at all an issue	1	2	3	4 – Extremely important issue	Don't know	No opinion
The wrong options for CBAs are being considered							
CBAs are undertaken at the wrong time							
The results of CBAs are not effectively communicated							
CBAs are not being conducted independently and objectively							
Policies and programs are not evaluated using ex post CBA							
CBAs are being used to justify rather than inform							
CBAs are not undertaken on important decisions							
Variables used in CBAs (e.g. discount rates, value of time) are not consistent							

**3. Which of these issues do you consider to be the MOST IMPORTANT in the use of CBAs as part of public sector decision-making?**

- CBAs are not undertaken on important decisions
- The wrong options for CBAs are being considered
- CBAs are undertaken at the wrong time
- CBAs are being used to justify rather than inform
- CBAs are not being conducted independently and objectively
- CBAs are ignored in decision-making
- CBAs are not effectively communicated
- CBAs are not generally published
- Variables used in CBAs (e.g. discount rates, value of time) are not consistent

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The following questions relate to the degree of harmonisation that public sector agencies across Australia and New Zealand should adopt. In this case harmonisation means the extent to which agencies should use agreed values, or ranges of values, for major elements of public sector CBAs, including consistency in the approaches to determining those values. Harmonisation does not mean uniformity or standardisation. It refers to guideline values that can be ignored if specific, local estimates can be justified as being better.

4. To what extent do you support greater harmonisation of input variables used in CBA undertaken by government agencies, or consultants commissioned by these agencies?

Do not support	Support with qualifications	Support without qualifications	Don't know	No opinion
Within each jurisdiction				
Across similar agencies within a country				
Across jurisdictions within a country				
Between Australia and New Zealand				

Can you provide the reasons for your opinion?

5. If a policy of harmonisation were to be adopted for public sector CBAs, please rate each of the following principles in terms of their importance to help guide the specification of input variables.

	0 – Not at all important	1	2	3	4 – Extremely important	Don't know	No opinion
Variable capable of clear definition							
Ease of collection of data required							
Variable value and underlying data to be made publicly available							
Probability distribution of variable values made available							

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	0 – Not at all important	1	2	3	4 – Extremely important	Don't know	No opinion
Full disclosure of estimation method used							
Harmonised variable values used as default only Alternative estimates permitted if demonstrably better							
Harmonise only variables that have significant influence on net present values							
Agreement on how values are to be updated in future							

6. Which of these principles do you regard as the MOST IMPORTANT?

- Variable capable of clear definition
- Ease of collection of data required
- Variable value and underlying data to be made publicly available
- Probability distribution of variable values made available
- Full disclosure of estimation method used
- Harmonised variable values used as default only
- Harmonise only variables that have significant influence on net present values
- Agreement on how values are to be updated in future

7. Do you generally support, within each jurisdiction, harmonisation of the values, or range of values or consistency in the approaches to determining those values, for each of the following CBA input variables?

	Do not support	Support with qualifications	Support without qualifications	Don't know	No opinion
Period of the analysis (by type of project or regulation)					

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	Do not support	Support with qualifications	Support without qualifications	Don't know	No opinion
Noise (by source of noise; e.g. cars, aircraft)					
Travel time					
Social discount rate					
Damage cost of greenhouse gas emissions					
Value of statistical life					
Flora and fauna values					
Deadweight loss due to tax-funded project					

Can you provide the reasons for your opinion?

These final questions will provide some background to our survey respondents. Your responses will remain confidential and anonymous

8. Which of the following best describes your current or more recent position?

- Public sector — Australian Commonwealth
- Public sector — NSW
- Public sector — Victoria
- Public sector — Queensland
- Public sector — South Australia
- Public sector — Western Australia
- Public sector — Tasmania
- Public sector — Territories
- Public sector — New Zealand
- Private sector — Consultant
- Private sector — Other
- Academic
- Student
- NGO
- Retired

9. For how many years have you worked in this area?

- Less than 1 year
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 or more years

10. What are your qualifications (select all that apply)?

- Undergraduate degree — economics
- Undergraduate degree — other discipline
- Postgraduate degree — economics
- Postgraduate degree — business, finance, or public administration
- Postgraduate degree — other discipline

This text is taken from *Social Cost-Benefit Analysis in Australia and New Zealand: The State of Current Practice and What Needs to be Done*, by Leo Dobes, Joanne Leung and George Argyrous, published 2016 by ANU Press, The Australian National University, Canberra, Australia.