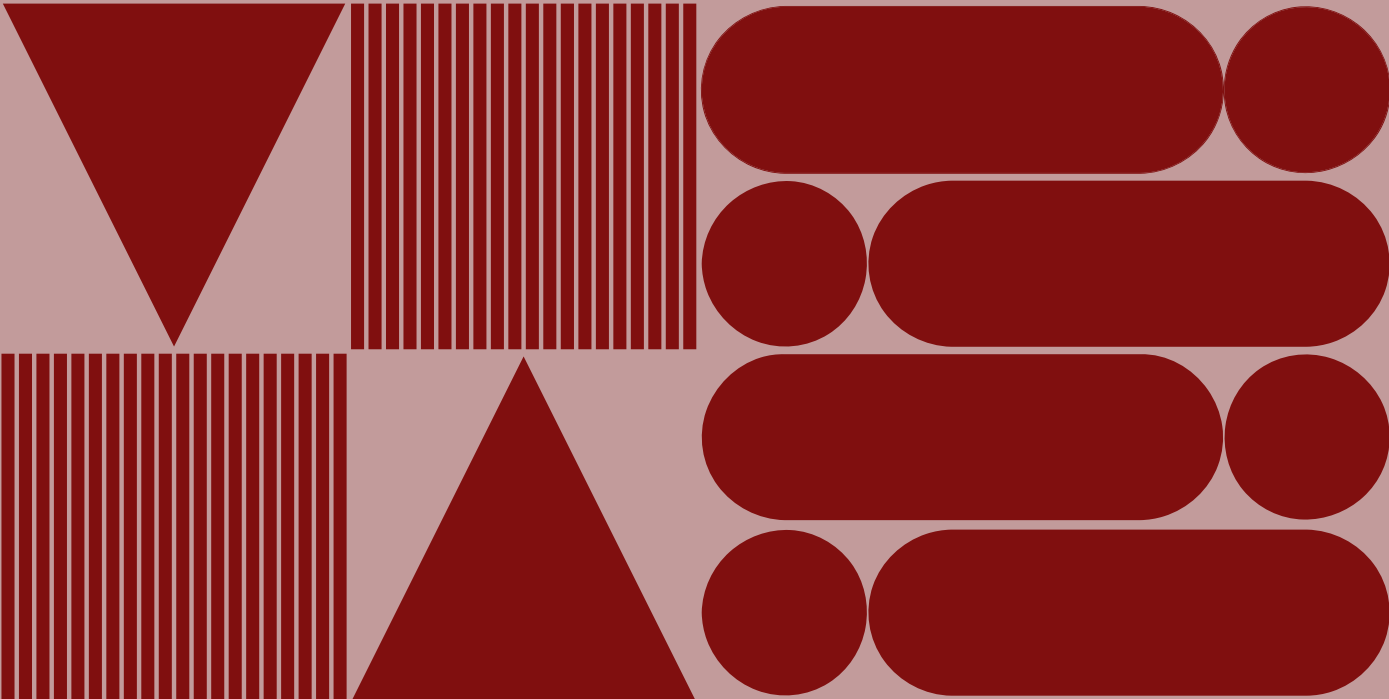


MEASURING SOCIAL CONNECTION

Social Innovation Research
Institute's Social Connection
Measurement (SIRI-SCM) Toolkit



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ACKNOWLEDGEMENT OF COUNTRY

We respectfully acknowledge the Wurundjeri People of the Kulin Nation, who are the Traditional Owners of the land on which Swinburne's Australian campuses are located in Melbourne's east and outer east. We pay our respects to leaders and Elders past, present, and emerging, for they hold all their Peoples' memories, traditions, culture, and hopes.

We express our gratitude for sharing this land, our sorrow for the personal, spiritual, and cultural costs of that sharing, and our hope that we may walk forward together in harmony and the spirit of healing.

We also acknowledge and respect the Traditional Owners of lands across Australia and recognise the continuing sovereignties of all Aboriginal and Torres Strait Islander Nations.

ETHICS STATEMENT

Swinburne's Human Research Ethics Committee approved this project per the National Statement on Ethical Conduct in Human Research, reference number 20225828-9100.

This project has also been given ethical clearance by the University of South Australia, reference number 205483.

WEBSITE

Access more information on the project and other resources and practice toolkits at our website

www.social-connection.au.

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WHY WE NEED THE SIRI-SCM TOOLKIT

Social connection is a latent and multidimensional construct. Although defined in various ways depending on different goals and multi-disciplinary research approaches, a consensus has emerged that social connection cannot be quantified or directly observed through a single measure or experience. Certainly, there are existing measurements related to social connection and dimensions of it however, many of these measurements are context-specific, inconsistently applied, focused on only one aspect of social connection, or are seen as problematic for translation to practice.

As such, while “positive social connections can bolster social well-being and may protect against a wide range of health risks”¹, **both academics and industry lack a consistent, conceptually relevant, and methodologically robust tool that can be applied to assess the multiple dimensions of social connection** and understand the relationship of social connection with outcome measures. As a response, the SIRI-SCM toolkit provides an overview of social connection and describes a process of measurement development based on multiple data collections from 2021 to 2024 with nationally representative Australian population samples.

Our final presented toolkit is multidimensional, incorporating **structural, social support, relationship quality**, and **affective** dimensions of social connection. We focus on strength-based (positively framed) measurement and provide options for long (40 items), medium (17 items) and short form (4 items) measurements for use in a range of academic and industry settings. Technical appendices provide a full list of items for use and replication, as well as results of two 2024 nationally representative Australian population studies (n=927 and n=545).

Overall, this report will allow practitioners to:



Understand the dimensions of social connection and how social connection relates to outcomes of personal wellbeing, satisfaction with life, and resilience.



Deploy the measurement tool via short, medium, and long form versions of the SIRI-SCM.



Compare the average results from their own data collection to results from nationally representative samples.

[1] Holt-Lunstad, 2021; Holt-Lunstad, 2022; Spatz et al., 2023, as cited in Gallup, 2023, p.5

DEFINING SOCIAL CONNECTION

Social connection has been defined in relation to objective elements, such as the physical existence of relationships, but has also been defined relative to its subjective nature, including the feeling of social connection, and putting the self at the centre. In addition, multidimensional frameworks combine both understandings of social connection.

As a result, it is vital that when we develop a measurement for social connection, we identify exactly what we are measuring. A lack of clear conceptualisation can result in inconsistent applications, incorrect inferences of results, and has implications for the impact of research in social connection.

Building upon previous literature, interviews with community members, and expert review, **we define social connection as:**

... an individual's subjective evaluation of the structures of their relationships, access to resources and support, quality of their relationships and their perceived feelings of connection.

Within this definition there are four primary dimensions that collectively comprise social connection: structural, social support, quality, and affective. The following diagram provides a social connection framework aligned with this definition.

For more information on this framework, see <https://social-connection.au/practice-toolkits>.

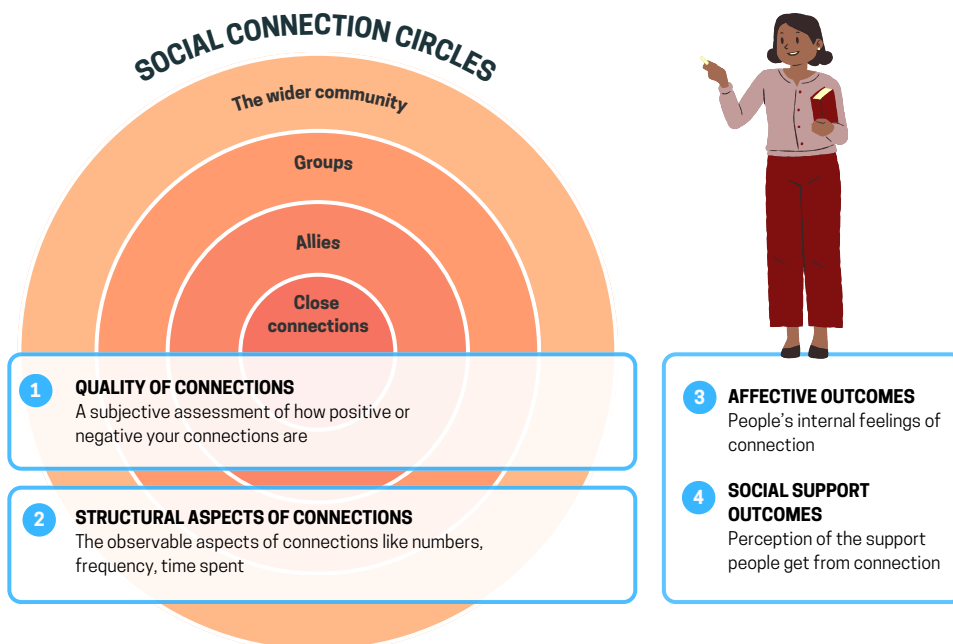


Figure 1: The measurable dimensions of social connection

Note: The SIRI-SCM considers the social connection circles but does not differentiate between them to the extent that they are differentiated in this diagram. Instead, the SIRI-SCM provides detailed insights into each of the dimensions outlined above.

WHY MEASURE SOCIAL CONNECTION

Social connection is an integral aspect of individual and community wellbeing. It is an increasingly prevalent topic in media, community, and policy with recognition of its impact widespread. Recognising this, the World Health Organisation has established a Commission on Social Connection to acknowledge and resource it as a public health priority.

There are many benefits to social connection. A greater level of connection has been shown to improve wellbeing², mental health³, physical health⁴, social capital⁵, and employment opportunities⁶.

*“People with fewer social connections are more likely to report a **range of adverse physical and psychological health outcomes**”*

(Farmer et al., 2019).

*“Good **social relationships and connections** with people around us are vitally important to **individual well-being**”*

(Evans, 2015, p. 10-11).

Despite these benefits, there is currently no standardised population-level measurement to assess social connection. Consequently, measurements of social connection are applied in an ad hoc manner, often specific to contexts. The implication of this is that there is a lack of a common language or dimensions to compare results. This lack of consensus and measurement has potentially far-ranging consequences. For example, how can we advance an evidence-based understanding of social connection and its outcomes if organisations, governments, academics, and individuals each have their own unique definitions of social connection?

In developing the SIRI-SCM, we acknowledge the inherent tension between adopting standardised measurement and contextualisation⁷. However, we propose that developing a robust, multidimensional measurement framework – including short, medium and long forms – can provide the standardisation needed to compare and advance social connection, while still allowing for nuance within its various dimensions.

[2] Frieling et al., 2018

[3] Macfarlane, 2020; Saeri et al., 2018

[4] Berkman & Syme, 1979; Holt-Lunstad et al., 2017; Holt-Lunstad, 2021

[5] Stiglitz et al., 2009

[6] Montgomery, 1991

[7] Pasricha, 2023

DIMENSIONS AND SUB-DIMENSIONS OF SOCIAL CONNECTION

The four dimensions outlined in Figure 1 help us organise and understand social connection in line with current foundational frameworks. Specifically, the structural, social support, quality, and affective dimensions build upon Holt-Lunstad's categories⁸ of social connection and broader conceptualisations across social connection literature.

The definitions and sub-dimensions of the structural, social support, affective and quality dimensions are proposed below:

STRUCTURAL

The structural dimension refers to the **physical or objective qualities of social connection**. They are often identifiable or observable in nature, for example, the number of people or connections one has, the frequency of contact with one's connection or time spent with others. As the SIRI-SCM is designed to measure an individual's subjective evaluation of the structures of their relationships, the questions used to assess this dimension relate to an individual's satisfaction with each of the structural sub-dimensions, including the number of connections, frequency of contact, diversity of connection types, and proximity of connections.

SOCIAL SUPPORT

The social support dimension relates to the **resources an individual perceives they have available to them** through their relationships. Sub-dimensions of social support include reliable alliance (instrumental support), reassurance of worth, guidance, emotional support, and opportunity for nurturance.

AFFECTIVE

The affective dimension describes how an individual **feels in relation to others**. It refers to an individual's affective judgement of their sense of connection. Sub-dimensions of the affective dimension include closeness, comfort/safety, feeling accepted, a sense of belonging, and a sense of connection.

QUALITY

The quality dimension refers to **"the positive and negative emotional nature of our relationships"**¹⁰. This dimension evaluates explicitly whether the relationships an individual has are positive.

[8] Holt-Lunstad et al., 2017

[9] Through analysis of measurements related to social connection, we split Holt-Lunstad et al.'s (2017) functional component into two dimensions: social support and affective. This division enables a broader body of work to be considered within the affective category. Underpinning this conceptual decision, our categorisation of over 500 previously used social connection items in an item generation and classification stage resulted in slightly different sub-dimensions to Holt-Lunstad's work. We do not contest Holt-Lunstad's definitions; however, we want to provide a measurement that considers as much breadth of previous frameworks as possible to empirically test the framework of social connection.

[10] Holt-Lunstad, 2018, p.1308

THE DEVELOPMENT OF THE SIRI-SCM

This research focused on a multidimensional, strengths-based measurement for social connection. Our overall aim was to **advance our understanding of the measurement constructs** and **develop short, medium, and longer form measures**, tested and replicated in Australian nationally representative population-level samples.

The social connection framework used to inform the measurement tool was developed by reviewing past conceptual and empirical research for social connection, related constructs, and various outcomes. The following outlines the process to develop the SIRI-SCM:

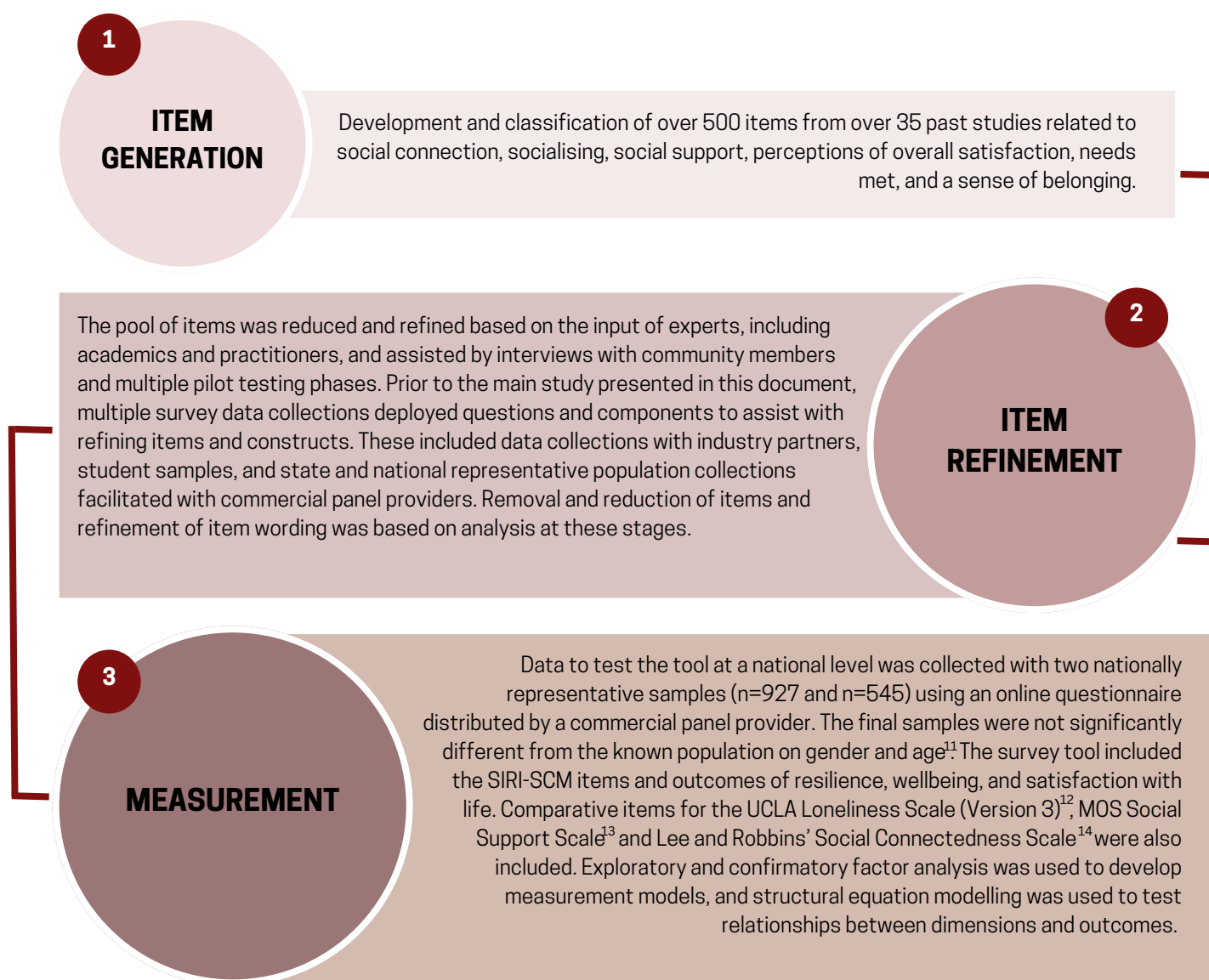


Figure 2: Development of the SIRI-SCM

[11] ABS, 2023

[12] Russell, 1996

[13] Sherbourne & Stewart, 1991

[14] Lee & Robbins, 1995

SIRI-SCM

This toolkit provides three measures (long form, medium form, short form) to assess social connection that each encompass the structural, social support, quality, and affective dimensions of social connection. The number of items included in each, which ranges from 4 to 40, can be found in the summary below:

LONG FORM

Length:

Structural - **4** Questions
 Quality - **3** Questions
 Social Support - **17** Questions
 Affective - **16** Questions
Total = 40 Questions

This measurement is suitable for:

In-depth, comprehensive studies that aim to understand all aspects of an individual's social connection. It is primarily for use in academia.

MEDIUM FORM

Length:

Structural - **4** Questions
 Quality - **3** Questions
 Social Support - **5** Questions
 Affective - **5** Questions
Total = 17 Questions

This measurement is suitable for:

Practitioners and researchers who are seeking a more nuanced understanding of each social connection dimension.

SHORT FORM

Length:

Structural - **1** Question
 Quality - **1** Question
 Social Support - **1** Question
 Affective - **1** Question
Total = 4 Questions

This measurement is suitable for:

Practitioners and researchers who want a snapshot of social connection.

These three measures, including their strengths and limitations, are presented in the following sections. The complete list of all items, which are measured on a scale of 1-7, is provided in Appendix 1. Appendix 1 also provides the scales used to develop these items.

LONG FORM OF THE SIRI-SCM (SIRI-SCM-L)

This measurement is suitable for in-depth, comprehensive studies aiming to understand all aspects of an individual's social connection and have the scope to ask as many as 40 questions. It is primarily for use in academic studies or larger studies including those where understanding the role of each dimension, or relationships between dimensions and specific outcomes, is important. This measurement contains between two and five questions for each sub-dimension*. It is a comprehensive set of questions that provides deep insight into all aspects of social connection.

**Note: The questions within each sub-dimension can be found in Appendix 2.*

Overall, the long form provides a comprehensive understanding of all the questions, sub-dimensions, and dimensions of social connection. Dimensions from the long form can be used alongside all questions from the medium or short form to provide greater context to a particular dimension of interest, while still understanding social connection as a whole. All the questions related to that dimension must be used to understand that construct.



STRENGTHS OF MEASUREMENT	LIMITATIONS
<p>Comprehensive coverage. The long form ensures a holistic assessment and nuanced understanding of social connection by assessing the four dimensions in detail with a minimum of two questions per sub-dimension. By distilling over 500 items down into 40, this long form provides a comprehensive understanding reflective of all past approaches to measuring social connection in a strengths-based manner.</p>	<p>Encompasses everything - not just the best questions for each of the sub-dimensions. This can lead to some questions not contributing much depth to explaining social connection. The long form measurement is best to use when interested in honing in on one particular dimension and getting a comprehensive understanding of all of the questions in all of the sub-dimensions of that dimension.</p>
<p>Positive language. The strengths-based wording encourages respondents to reflect on what they have, not what they lack.</p>	<p>Positive language. We designed the tool to be primarily strengths-based. However, this can lead to potential response bias and the questions may not capture harmful social connections that limit a person's current or future connections.</p>
<p>Preliminary validation and testing. This measurement has been tested and replicated in various samples with consistent results. It has been comprehensively tested with two nationally representative samples alongside other social connection and loneliness measures. It has also been tested for its ability to predict subjective wellbeing, resilience, and satisfaction with life. The language of the survey has been discussed with academics, practitioners, and community members to ensure its suitability.</p>	<p>It's long. If an organisation or a council wants a snapshot of how socially connected people are at the individual level through a community survey, a 40-item measurement is not something viable. It might provide great nuance at an academic level or for other purposes, however, the tools we develop must have practical applicability, which tends to be lacking with many other social connection surveys.</p>
<p>Detailed insights. The length and detailed nature of the survey allow for in-depth analysis across the sub-dimensions of social connection, which can assist in providing detailed findings, useful for researchers and practitioners.</p>	<p>Survey fatigue/lack of responses. Because of the length of the survey, respondents may become eager to finish it and rush their responses, reducing the reliability of the data. Beyond just the length, the time required to complete the survey might be a deterrent. Participants may start the survey but not finish it, leading to incomplete data.</p>
<p>Well-fitting model. Through confirmatory factor analysis, we found the long form model to be well-fitting. This provides a solid foundation for analysis and decision-making and supports the conceptual framework upon which this survey is based.</p>	<p>Not yet tested with diverse groups. This survey has only been tested at an Australian population level, although analysis has been done to establish the impact of some demographic details on results, it has not been tested in specific environments, for example, specifically within culturally and linguistically diverse communities.</p>

SIRI-SCM-L

MEDIUM FORM OF THE SIRI-SCM (SIRI-SCM-M)

This measurement is suitable for practitioners and researchers who are seeking a more nuanced understanding of each social connection dimension. This would be appropriate for surveys interested in understanding social connection at a deeper level than the short form.

This measurement contains one question per sub-dimension. It is most practical for an in-depth, reliable, and easily applied analysis of social connection. All the questions included in the medium form are also included in the long form.

How did we create the Medium Form SIRI-SCM?

One item from each sub-dimension of the affective and social support scales was chosen for the medium form and one scale from the quality and structural dimension was chosen. This was done because affective and social support are multiple construct dimensions, whilst quality and structural were captured through scales aimed at capturing the construct in different holistic ways. To decide on the best question to represent the sub-dimensions, we eliminated items that would not affect the scale's reliability (Cronbach's alpha) if removed and questions with lower factor loading weights on a unidimensional model. The remaining questions were assessed for their conceptual depth of the sub-dimension and then tested in a model. The items were chosen as they provided the best model fit and predictive ability with each dimension consistent with the short form.

How to use the measurement and interpret results:

The medium form provides a great snapshot of social connection through a manageable number of questions. Similarly to the long form, the questions can be compared to national averages to see how your sample relates. Dimensions from the medium form can be used alongside all questions from the short form to provide greater context to a particular dimension of interest while generating an overall social connection average. All questions related to that dimension must be used to generate an overall dimension average.



STRENGTHS OF MEASUREMENT	LIMITATIONS
<p>Detailed insights from a practical length. Although shorter than the long form, the medium form contains various questions to assess the dimensions and social connection as a whole. It includes enough questions to provide a nuanced understanding of social connection and the facets of social connection.</p>	<p>Not yet tested as a standalone measure. The medium form questions have been taken from the long form survey. They have not been asked in a survey by themselves. Context from the other questions may have influenced or primed responses to these questions. This has implications for the validity of this measure as a standalone measure and is something that we will address in future studies.</p>
<p>Good model fit. The goodness of fit for the medium form indicates the questions we are asking accurately measure the dimensions of social connection and that the dimensions of social connection accurately measure holistic social connection.</p>	<p>Lack of nuance within the sub-dimensions. Compared to the long form, the medium form does not provide the same level of nuance to the sub-dimensions.</p>
<p>Outcome prediction. Our testing did not show a reduction in explanatory power between the long and medium forms when predicting personal wellbeing, satisfaction with life or resilience. This indicates that the medium form, while having less nuance, does retain comprehensive representation of social connection.</p>	<p>Not yet tested with diverse groups. This survey has only been tested at a population level, although analysis has been done to establish the impact of demographic details on results, it has not been tested in specific environments, such as within culturally and linguistically diverse communities.</p>
<p>Clear construct distinction. Each of the items measures the construct that they should be measuring. This means that the structural, quality, social support, and affective questions each measure the dimensions they intend to measure.</p>	
<p>Feasibility for organisations. The medium form balances depth and practicality, making it suitable for practitioners across organisations, research institutes, and councils.</p>	

SIRI-SCM-M

SHORT FORM OF THE SIRI-SCM (SIRI-SCM-S)

This measurement suits practitioners and researchers who want a snapshot or quick and parsimonious measure of social connection. This short form helps to evaluate the level of social connection without providing the depth of the dimensions. It is a viable length to standardise a measure of social connection that can be deployed as a quick summary.

This measurement contains one question per dimension. It relates to an individual's subjective evaluation of their satisfaction with the different facets of social connection.

How did we create the short form SIRI-SCM?

The short form questions were designed to assess an individual's satisfaction with each dimension. They were asked in the national population survey after each dimension section and were not tested alone as an independent survey. We did, however, look at how each of the dimensions in the long and medium form related to the corresponding question of the short form and found each of the dimensions in the medium and long form explained between 50% and 75% of the variance in the short form item equivalent. We also explored and tested an alternative short form measure that assessed whether an individual's needs were met at each dimension of social connection. We concluded that the satisfaction questions had a closer relationship to the medium and long form models, provided greater variance, had a better predictive ability of the outcomes of social connection, and had a better model fit, indicating that the questions were more accurately representing the underlying construct of social connection. Therefore, we chose the satisfaction questions as our short form of measurement.

The short form SIRI-SCM and the Social Connection Program Evaluation Tool (SoCPET):

The short form of four questions plus an overall social connection question is included in the Social Connection Program Evaluation Toolkit¹⁵. Only the four questions are required to provide an average social connection score. Results related to the Short Form SIRI-SCM and the SoCPET can currently be evaluated as individual item scores. They can be compared to the national averages from our Australian National samples in Appendix 2.

[15] De Cotta et al., 2024. The SoCPET is a resource to help measure programs and their impact on social connection. Find out more at <https://social-connection.au/practice-toolkits-database/social-connection-program-evaluation-toolkit>

STRENGTHS OF MEASUREMENT	LIMITATIONS
<p>Acknowledges that social connection is an individual's subjective evaluation of these dimensions. An individual's subjective experience lies at the core of social connection. By focusing on satisfaction, this measurement encompasses the understanding that social connection is a personal and subjective construct.</p>	<p>Lack of nuance. The short form of the survey is designed to capture social connection in a straightforward, applicable manner. Because it only asks four questions, the survey may not capture the full complexity and nuance of each social connection aspect, such as the different types of social support.</p>
<p>Short. With only four questions, the survey is quick to complete, which can increase response rates and reduce respondent burden. This simplicity makes it practical for use in various settings, including large-scale surveys.</p>	<p>Double-barrelled structural question. One question required a double-barrelled question to capture the whole structural dimension. This is because the structural dimension encompasses an individual's number of contacts and frequency of contact. Respondents may have different opinions on the two parts of the question, leading to challenges in interpreting the result.</p>
<p>Benchmarking. With its ease of implementation, we can use the measure to establish benchmarks and compare social connection across different groups or time periods.</p>	<p>Not yet tested as a standalone measure. The short form questions were asked after each set of dimension questions in the long form national surveys. They have not yet been tested in a survey alone. The context of the other questions may have influenced or primed responses to these questions. This has implications for the validity of this measure as a standalone measure and is something we seek to address in future studies. We tested the order of the other potential short form measure (that was not selected) through an A/B test where half of the sample received the questions after each dimension, and the other half received them in one block at the end of the survey. We found no statistically significant difference between the responses to the questions based on where they were placed for the affective, structural, or quality questions and a very small significant difference for social support.</p>

PRELIMINARY VALIDATION AND RESULTS OF THE SIRI -SCM

Preliminary Validation of the SIRI-SCM Tool

Our modelling and final tools (described above, with items for each version of the tool provided in Appendix 1 and 2) demonstrate that social connection comprises structural, quality, social support, and affective dimensions. The short, medium, and long measurement forms (provided in Appendix 1 and 2) are all strengths-based and encompass these social connection dimensions. By including all of these dimensions in your data collection and using the exact wording of the long, medium, or short form SIRI-SCM items, you will be able to compare your results with current and future work using a range of samples including national collections. To be able to do this, **it is important that in your data collection, you use all of the questions, exactly as worded, from one of the forms.**

Each of the social connection dimensions has been defined in 'Dimensions and Sub-dimensions of Social Connection'. They are all important aspects of social connection, and some areas, programs, policies, or interventions may focus on targeting one dimension in particular. You can apply the in-depth questions of the medium or long form for that specific dimension to better understand the exact parts of the dimension you may be impacting or need to focus on, e.g., an individual's instrumental support. When taking one dimension, it is important that you still include a full set of the SIRI-SCM items, e.g., if you take the social support questions of the medium form, you still need to include all of the questions from the short form to be able to understand social connection as a whole. If you do not include a full SIRI-SCM set of items, you cannot generate an overall understanding of social connection.

The SIRI-SCM questions allow comparison to Australian population averages obtained from two nationally representative samples (see Appendix 2 for each item's means and standard deviations). Through this, you can see the alignment of the raw level item with the average item score you could expect at a national level.

Results of the SIRI-SCM to Predict Outcomes

In the validation stage, including the national population samples, we tested the short, medium and long form social connection measures as antecedents for personal wellbeing¹⁶, satisfaction with life¹⁷, and resilience¹⁸ (See Figure 3). Each of three models (one model per outcome) fit the data well and had strong explanatory power for each outcome. The results showed the SIRI-SCM is a strong predictor of each of these outcomes.

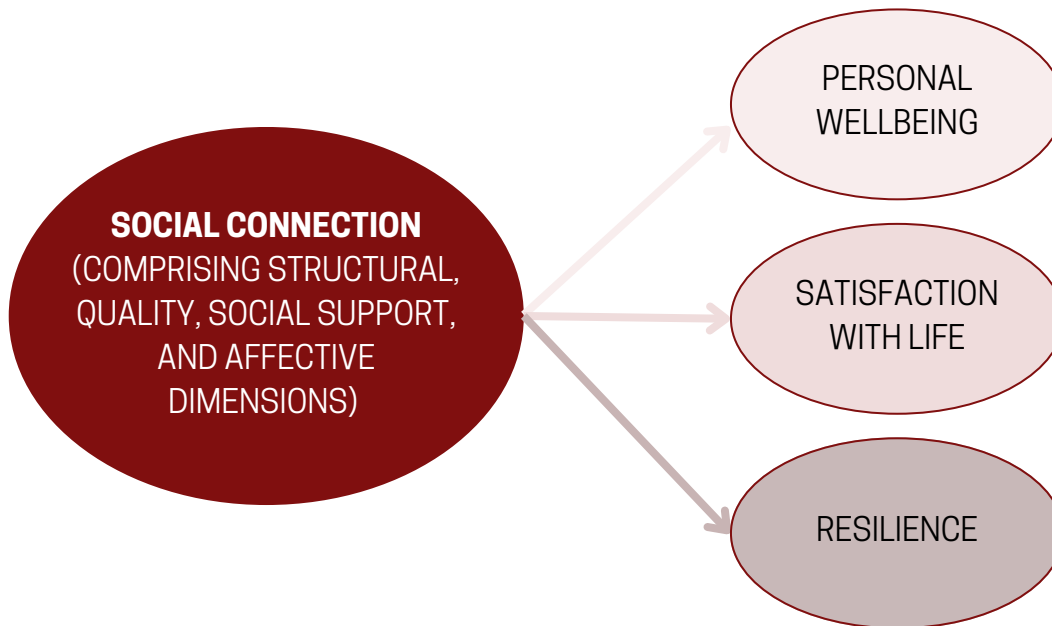


Figure 3: Relationship of Social Connection to Outcomes

Comparisons to Past Measures

We have conducted early testing to compare the SIRI-SCM with existing scales. This early testing shows expected correlations with dimensions from past work. Further, it shows that the SIRI-SCM has a greater ability to explain more variance in the outcomes above when compared to existing measures. We will be conducting further work in this area.

Please contact the lead author for more details about the relationship of social connection and these outcomes, comparisons to past measures, working papers and future publications.

[16] Cummins et al., 2003
 [17] Diener et al., 1985
 [18] Connor & Davidson, 2003

CONSIDERATIONS FOR USING THE SIRI-SCM

Sampling

Sample size should be considered when choosing SIRI-SCM tools to deploy, particularly when looking to accurately compare results to larger or representative populations you are studying. If your sample size is too small, it may not capture the variability present in the population, leading to potentially inaccurate results and less accurate estimations of parameters such as overall social connection scores, means, or correlations.

Demographic Data

It is important to include demographic data, especially if you intend to compare your results to other similar data sets including population studies over time. The inclusion and impact of the following demographic variables are suggested to be considered when using the measurement or designing studies using the measurement: gender, age, location, education and cultural background.

In our early work, we have found preliminary evidence for small differences in the mean scores of the short form items based on the demographic data. This will be a focus of analysis in further planned work on the measures.

We have also included structural questions that can be used for insights such as the number of people in a person's network, the frequency of contact, proximity, and social involvement. All of these items are available in Appendix 1

Question Order

We recommend the social connection questions be kept together to ensure the comparability of findings. Questions or surveys outside the SIRI-SCM should be asked either before or after the SIRI-SCM questions.

Data Storage and Repository

It is important to collect, retain, and store your data securely and consistently over time to ensure the reliability and accuracy of the information collected. Consistent storage (including retaining and coding or collection notes) can also enable you to track changes, analyse trends, and make informed decisions based on historical patterns. In addition, users should ensure that the platform they are using to collect data meets international standards (e.g., ISO27001) and comply with any organisational policies and practice guidelines around data collection, storage, and use.

Retain Item Wording

It is essential to keep the wording of the SIRI-SCM unchanged to maintain accuracy and reliability. Any changes to the language could compromise the measurement's validity and reliability, hindering the ability to compare results over time or across different studies. The applicability of group testing or further benchmarking scores would also not be valid if the language is changed. Item wording is provided in Appendix 1 for replication purposes.

COMMONLY ASKED QUESTIONS

The SIRI-SCM has been discussed and implemented by various partner organisations. To balance practical applicability with measurement robustness and support other practitioners in using the tools, we have summarised some of the commonly asked questions below.

HOW DO WE SCORE AND INTERPRET THE RESULTS?

All items are positively worded to ensure a focus on how socially connected people are, not how socially connected they are not. Consequently, there are no items in any of the measures that need to be reverse-scored.

The SIRI-SCM assesses social connection as a multidimensional and holistic construct, representing an individual's subjective evaluation of the structure of their relationships, access to resources and support, quality of their relationships, and their perceived feelings of connection. It considers the various manifestations of social connection including the structural, social support, quality and affective. For each measurement, an average social connection score can be created with a minimum score of 1 and a maximum score of 7. Higher scores indicate a higher subjective evaluation of an individual's social connection.

For the **SIRI-SCM-S** taking an average of the four questions can provide an overall social connection score that can be easy to report on and interpret.

For the **SIRI-SCM-M**, the individual averages of each dimension can then be summed and divided by four to provide an overall social connection score.

For the **SIRI-SCM-L**, as there are an unequal number of questions within each sub-dimension, we recommend creating individual averages of each sub-dimension, which can be used to create averages of each dimension, and then an overall social connection average.

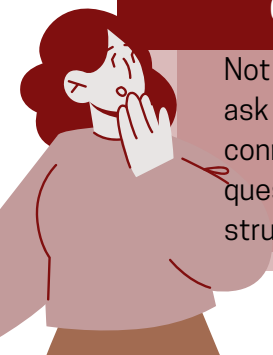
If you are interested in **comparing scores across groups or time**, we recommend using the same measure. Although each of the measures are strongly aligned, consistency in the measurement used is important for valid comparisons.

CAN WE TRANSLATE THE MEASUREMENTS?

Currently, the SIRI-SCM has only been tested in English with people living in Australia. Consequently, survey translation may invalidate the social connection questions and prevent larger-scale reporting and analysis. The meaning of the questions may change across languages. Further work is therefore needed to establish the SIRI-SCM in other languages.

CAN WE JUST USE SOME OF THE QUESTIONS?

Not really, but it depends on your goals. If your aim is to measure social connection then you need to ask all of the questions from one of the tools. If you are only interested in one dimension of social connection, then you would just need to ask all of the questions related to that dimension. These questions have been tested and replicated across various samples, consistently demonstrating the structure of the social connection construct.



CONCLUDING COMMENTS

This document provides an overview of the social connection dimensions, the questions to measure social connection, and the average results from two nationally representative samples (See Appendix 2).

We note the advancement of a practical, strengths-based measurement tool that includes comprehensive coverage of the multiple dimensions of social connection in one toolkit. We also provide three forms of measurement, tested at a population level and shown to have significant relationships with personal wellbeing, satisfaction with life, and resilience. Further to this, we have compared our measurements to existing social connection, loneliness, and social support scales and found they better encapsulate social connection and relate as well or better to known and valid outcome measures.

To assist with the application of the tool, tested short, medium, and long forms of social connection measurements are provided in Appendix 1. We encourage you to select the most appropriate measurement form to capture social connection in your target population.

We note the limitations of each of these measurements throughout this document. However, many of these limitations justify future work in this area. We encourage you to contact the authors if you would like to learn more, have any questions or plan to deploy these measurements in practice.

THE ACTIVATING SOCIAL CONNECTION PROJECT

The Activating Social Connection project aims to fill gaps in evidence, resources and guidance for local social connection activation. Based on research evidence, our project is committed to developing practical resources and guidance that are useable by community workers, planners and community members. The focus is to understand the complex mechanics of fostering positive social connections for people, and to translate this into resources that help to activate change.

As a collaborative endeavour, the project is part-funded by an Australian Research Council Linkage Project Grant LP200301335. It is powered by a partnership between Swinburne University of Technology, RMIT University, the Australian Red Cross, Neami National, City of Casey, City of Whittlesea, City of Wyndham, and Today Design. The project partners with local people and organisations to support their work to enhance social connection within their communities.

APPENDICES

APPENDIX 1: ITEM WORDING FOR SIRI-SCM TOOLS

This appendix provides the wording and suggested preambles for the short¹⁹, medium, and long form social connection measures.

These items were adapted from the surveys in Figure 4. The full references of these surveys can be found in 'Scale References'. Other surveys were also included in the initial item pool.

- Perceived Belonging in Sport Scale
- Berkman-Syme Social Network Index
- Self in a Social Context—Social Connectedness Scale
- Interpersonal Support Evaluation List
- Social Network Index
- Social Provisions Scale
- Adult Toolbox Social Relationship Scales
- Positive Relationship Quality
- Social Network Quality
- Indicators of Social Support
- Social Connectedness Scale Revised
- General Belongingness Scale
- Brief Sense of Community Scale
- The 3B Scale
- Ageing, Leisure and Social Connectedness
- Overall Connectedness Dimensions
- Social Connectedness in Mainstream Society and Social Connectedness in the Ethnic Community Scales
- The Multidimensional Scale of Perceived Social Support

Figure 4: Surveys from which items were adapted

[19] Single item social connection measure

We are currently in the process of testing a single item for social connection. We have not yet determined the comparability of the single item with the other social connection measures. The single item is, however, included in the SoCPET and more information on how it relates to the long, medium, and short measures will be determined within the next stage of the project.

SIRI-SCM-S

The following questions will ask about your satisfaction with various aspects of social connection. Please consider all of your current relationships including online / virtual and offline / in-person relationships when answering these questions.

As you reflect on your satisfaction with various types of support, we encourage you to consider that support can come in many forms (e.g., physical, emotional, informational, reassurance, or the opportunity for you to help / care for others).

Overall, how satisfied are you with:

(Scale: 1= Not at all satisfied → 7 = Extremely satisfied)

- The number of people in your social network (e.g., friends, family, co-workers, known community members) and the amount of social interactions you have?
- The various types of support available through the people in your social network?
- How positive your relationships are?
- How connected you feel?

SIRI-SCM-M

The following questions ask about various aspects of social connection.

First, we will ask about the structure of your relationships, then how positive your relationships are, the support available through your relationships, and finally your feelings of social connection.

STRUCTURAL

This first set of questions will ask about your **level of satisfaction with the structure of your relationships**.

Overall, how satisfied are you with:

(Scale: 1= Not At All Satisfied → 7 = Extremely Satisfied)

- The total number of people in your social network (e.g., friends, family, co-workers, known community members)?
- The total amount of time that you have contact with people in your social network?
- The diversity of your types of connections (e.g., having connections with friends, family, colleagues, and community members)?
- The number of close friends or family members who live nearby (within 30 minutes of travel)?

QUALITY

The following set of questions will ask about the **quality of your relationships**.

On a scale of 1 (never) to 7 (always), in the past month, how often have your overall relationships with your been positive or supportive? (Scale: 1= Never → 7 = Always)

- Close family members
- Close friends
- Other friends, family, co-workers, known community members (physical and online)

SOCIAL SUPPORT

The next set of questions will ask about the **level of support you have in your life**. These questions relate to your current relationships with friends, family members, co-workers, and known community members (both online and off).

To what extent do you agree with the following? (Scale: 1= Strongly Disagree → 7 = Strongly Agree)

- There are people I know who will help me if I really need it.
- There are people who value my skills and abilities.
- I have someone to talk to about decisions in my life.
- I have someone I trust to talk with about my feelings.
- I have people who would share their joys and sorrows with me.

AFFECTIVE

The following questions will ask about your **overall feelings when thinking about the people in your life**.

To what extent do you agree with the following? (Scale: 1= Strongly Disagree → 7 = Strongly Agree)

- I feel close to people.
- I feel safe around others.
- I feel understood by the people I know.
- I feel like I belong.
- I feel connected with others.

SIRI-SCM-L

The following questions ask about various aspects of social connection.

First, we will ask about the structure of your relationships, then how positive your relationships are, the support available through your relationships, and finally your feelings of social connection.

STRUCTURAL

This set of questions will ask about your **level of satisfaction with the structure of your relationships**.

Overall, how satisfied are you with: (Scale: 1= Not At All Satisfied → 7 =Extremely Satisfied)

- The total number of people in your social network (e.g., friends, family, co-workers, known community members)?
- The total amount of time that you have contact with people in your social network?
- The diversity of your types of connections (e.g., having connections with friends, family, colleagues, and community members)?
- The number of close friends or family members who live nearby (within 30 minutes of travel)?

QUALITY

The following set of questions will ask about the **quality of your relationships**.

On a scale of 1 (never) to 7 (always), in the past month, how often have your overall relationships with your been positive or supportive? (Scale: 1= Never →7 = Always)

- Close family members
- Close friends
- Other friends, family, co-workers, known community members (physical and online)

SOCIAL SUPPORT

The next set of questions will ask about the **level of support you have in your life**. These questions relate to your current relationships with friends, family members, co-workers, and known community members (both online and off).

To what extent do you agree with the following? (Scale: 1= Strongly Disagree →7 = Strongly Agree)

- There are people I know who will help me if I really need it.
- If I needed a significant emergency loan, I know someone I can turn to.
- If I was stranded a significant distance from home, there is someone who could help me.
- I have someone to help me if I'm sick in bed.
- I am treated with as much respect as others.
- There are people who value my skills and abilities.
- Others like me the way I am.
- I have someone to talk to about decisions in my life.
- I have a trustworthy person to turn to if I have problems.
- When I need suggestions on how to deal with a personal problem, I know someone I can turn to.
- I have someone to make me feel loved and cared for.
- I feel there are people I can talk to if I am upset.
- I have someone I trust to talk with about my feelings.
- I have people with whom I can share my joys and sorrows.
- I have someone that I trust with my deepest secret.
- There are people who call on me to help them.
- I have people who would share their joys and sorrows with me.

The following questions will ask about your **overall feelings when thinking about the people in your life.**

To what extent do you agree with the following? (Scale: 1= Strongly Disagree →7 = Strongly Agree)

- I feel close to people.
- Even when we are not in each others' company, I often feel "together" with people in my social network somehow.
- I feel comfortable around others.
- I feel safe around others.
- I feel that most people can be trusted.
- When I am with other people, I feel included.
- I have a place at the table with others.
- I am able to relate to my peers.
- I feel understood by the people I know.
- I feel accepted by others.
- I feel valued in my network.
- I feel like I belong.
- I have a sense of belonging.
- I feel that I am a part of a community.
- I feel connected with others.
- I am in tune with the world.

SUGGESTED DEMOGRAPHIC AND BACKGROUND QUESTIONS

What year were you born in? (Please enter your response as a year, e.g. '1975', '1988', or '2001')	Open text
How do you describe your gender?	Woman; Man; Non-binary; I use a different term; Prefer not to say
What state or territory do you live in?	Australian Capital Territory; New South Wales; Northern Territory; Queensland; South Australia; Tasmania; Victoria; Western Australia
Which of the following best describes the area where you live?	Metropolitan; Regional; Rural
What is the highest educational qualification you have completed?	University degree or higher (including postgraduate diploma); Undergraduate diploma or associate diploma; Certificate, trade qualification or apprenticeship; Highest level of secondary school; Did not complete highest level of school; Attending school; Other (please specify below)
What is your employment status? Select all that apply	Working full time; Working part time or casually; Not working; Home duties; Full time student; Part time student; Retired; Other (please specify)
Which of the following best describes your household type?	One adult; Couple; One adult with child(ren); Couple with child(ren); Group household (eg., share house, multi-generational family; Other (please specify below)
Which of the following reflects your current annual household income?	Under \$25,000; \$25,001 to \$50,000; \$50,001 to \$75,000; \$75,001 to \$100,000; \$100,001 to \$150,000; \$150,001 to \$200,000; \$200,001 to \$300,000; Over \$300,000; Prefer not to say
Do you identify as any of the following? (Please select all that apply)	Indigenous Australian; Torres Strait Islander; None of the above; Prefer not to say
Is any language other than English spoken in your household?	Yes (please specify); No; Prefer not to say
Do you identify as a person with a disability?	Yes; No; Prefer not to say
Do you identify as a member of the LGBTIQ+ community?	Yes; No; Prefer not to say

<p>Do you do any of the following?</p> <ul style="list-style-type: none"> • I volunteer or assist with an organisation or group • I help members or groups of people in the community • I participate in a club or group (e.g., sporting club, interest group or hobbies) • I belong to a church, temple, or other faith community • I am currently employed either full-time, part-time, or casually • I attend classes (school, university, technical training, or adult education) on a regular basis • I spend time socially with people locally • I participate in an online group 	<p>Yes – I currently do; No – but I have previously; No – and I never have</p>
<p>Thinking about your social networks, approximately how many of each of the following do you have?</p> <ul style="list-style-type: none"> • Close family members • Close friends • Other friends, family, co-workers, known community members (physical and online) 	<p>0; 1-2; 3-5; 6-10; 11-15; 16-20; 21-25; 26-50; 51+</p>
<p>Based on the number of people you noted above, how many of these people have you <u>seen or talked to in person</u> in the <u>last two weeks</u>?</p> <ul style="list-style-type: none"> • Close family members • Close friends • Other friends, family, co-workers, known community members (physical and online) 	<p>None of them; Less than half; Approximately half; More than half; All of them</p>
<p>Based on the number of people you noted above, how many of these people have you had contact with <u>online or over the phone</u> in the <u>last two weeks</u>?</p> <ul style="list-style-type: none"> • Close family members • Close friends • Other friends, family, co-workers, known community members (physical and online) 	<p>None of them; Less than half; Approximately half; More than half; All of them</p>
<p>Approximately how many close friends or family members do you have living nearby (within 30 minutes of travel)?</p>	<p>None of them; Less than half; Approximately half; More than half; All of them</p>
<p>Overall, how often do you socially interact with people in each of the following groups?</p> <ul style="list-style-type: none"> • Close family members • Close friends • Other friends, family, co-workers, known community members (physical and online) 	<p>1 Not at all →7 To a great extent</p>
<p>How satisfied are you with how often you have social interactions with each of the following groups?</p> <ul style="list-style-type: none"> • Close family members • Close friends • Other friends, family, co-workers, known community members (physical and online) 	<p>1 Not at all satisfied →7 Extremely satisfied</p>

APPENDIX 2: TECHNICAL NOTES

This appendix provides all mean scores and standard deviations for the items in the short, medium, and long form measurements.²⁰ These scores are provided as an indication of a population sample (2024).

DESCRIPTIVE SCORES AND NATIONAL AVERAGES

Tables 2 to 4 provide descriptive scores from two national Australian samples of n=927²¹ and n=545. The demographic make-up of the sample is not significantly different to the general Australian population on gender and age. The samples are provided from commercial research panel providers.

Table 2: Means and standard deviations of each question in the SIRI-SCM-S from the nationally representative data collections

DIMENSION	DESCRIPTION	MEAN ²²	S.D
SOCIAL CONNECTION		5.0	1.3 - 1.5
	The number of people in your social network	4.9 - 5.0	1.5 - 1.7
	The various types of support available	4.9 - 5.1	1.5 - 1.6
	How positive your relationships are	5.1 - 5.2	1.4 - 1.6
	How connected you feel	4.8 - 5.0	1.6

Table 3: Means and standard deviations of each question in the SIRI-SCM-M from the nationally representative data collections

DIMENSION	DESCRIPTION	MEAN	S.D
STRUCTURAL		4.8 - 4.9	1.5
	The total number of people...	5.0	1.7
	The total amount of time...	4.8 - 4.9	1.7
	The diversity of your types of connections...	4.8 - 4.9	1.6
	The number...who live nearby...	4.7	1.8
QUALITY		5.0	1.3 - 1.4
	Close family members	5.3	1.6 - 1.7
	Close friends	5.1 - 5.2	1.6 - 1.7
	Other...	4.5 - 4.6	1.6 - 1.7
SOCIAL SUPPORT		5.3	1.3 - 1.4
	There are people I know who will help me if I really need it*	5.5	1.5 - 1.6
	There are people who value my skills and abilities*	5.2 - 5.3	1.5 - 1.6
	I have someone to talk to about decisions in my life*	5.2 - 5.3	1.6 - 1.7
	I have someone I trust to talk with about my feelings*	5.2 - 5.3	1.7 - 1.8
	I have people who would share their joys and sorrows with me*	5.3	1.5
AFFECTIVE		4.9	1.4 - 1.5
	I feel close to people	4.7	1.6 - 1.7
	I feel safe and around others	5.0 - 5.1	1.5 - 1.6
	I feel understood by the people I know	4.9 - 5.0	1.6
	I feel like I belong	4.9 - 5.0	1.6 - 1.7
	I feel connected with others	4.8 - 4.9	1.6 - 1.7

[20] All measurement and structural models fit minimum recommended thresholds (per Hair et al., 2018).

[21] Questions with a * are from the national population sample of n=398

[22] The range of means and standard deviations are reflective of the statistics across both samples. These means were not significantly different across the samples.

Table 4: Means and standard deviations of each question in the SIRI-SCM-L from the nationally representative data collections

DIMENSION SUB-DIMENSION	DESCRIPTION	MEAN	S.D
STRUCTURAL		4.8 - 4.9	1.5
Structural	The total number of people...	5.0 - 5.1	1.7
	The total amount of time...	4.8 - 4.9	1.7
	The diversity of your types of connections...	4.8 - 4.9	1.6
	The number...who live nearby...	4.7	1.8
QUALITY		5.0	1.3 - 1.4
SNQ	Close family members	5.3	1.6 - 1.7
	Close friends	5.1 - 5.2	1.6 - 1.7
	Other...	4.5 - 4.6	1.6 - 1.7
SOCIAL SUPPORT		5.2 - 5.3	1.3 - 1.4
Reliable Alliance	There are people I know who will help me if I really need it*	5.5	1.5 - 1.6
	If I needed a significant emergency loan...*	4.7 - 4.8	1.9
	If I was stranded a significant distance from home...*	5.1 - 5.2	1.6 - 1.8
	I have someone to help me if I'm sick in bed*	5.1 - 5.3	1.8 - 1.9
Reassurance of Worth	I am treated with as much respect as others*	5.2 - 5.4	1.6
	There are people who value my skills and abilities*	5.2 - 5.3	1.5 - 1.6
	Others like me the way I am*	5.2 - 5.3	1.5 - 1.6
Guidance	I have someone to talk to about decisions in my life*	5.2 - 5.3	1.6 - 1.7
	I have a trustworthy person to turn to...*	5.4	1.6 - 1.7
	When I need suggestions on how to deal with...*	5.3	1.6 - 1.7
Emotional Support	I have someone to make me feel loved...*	5.4	1.6 - 1.7
	I feel there are people I can talk to if I am upset*	5.2 - 5.3	1.7
	I have someone I trust to talk with...*	5.2 - 5.3	1.7 - 1.8
	I have people with whom I can share my joys...*	5.3 - 5.4	1.6 - 1.7
Opportunity for Nurturance	I have someone that I trust with...*	4.9 - 5.1	1.8 - 2.0
	There are people who call on me to help them*	5.1 - 5.3	1.5 - 1.6
	I have people who would share their joys...*	5.3	1.5
AFFECTIVE		4.8	1.4 - 1.5
Closeness	I feel close to people	4.7	1.6 - 1.7
	Even when we are not in each others' company...	4.6	1.7 - 1.8
Comfort / Safety	I feel comfortable around others	4.8	1.6 - 1.7
	I feel safe around others	5.0 - 5.1	1.5 - 1.6
Accepted	I feel that most people can be trusted	4.6	1.7
	When I am with other people, I feel included	4.9	1.6
	I have a place at the table with others	5.0	1.6 - 1.7
	I am able to relate to my peers	5.0	1.6
Sense of Belonging	I feel understood by the people I know	4.9 - 5.0	1.6
	I feel accepted by others	5.0 - 5.1	1.6 - 1.7
	I feel valued in my network	5.0	1.6 - 1.7
	I feel like I belong	4.9 - 5.0	1.6 - 1.7
Sense of Connection	I have a sense of belonging	4.9	1.7
	I feel that I am part of a community	4.7	1.7
	I feel connected with others	4.8 - 4.9	1.6 - 1.7
	I am in tune with the world	4.7	1.6 - 1.7

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WEBSITE Access more information on the project and other resources and practice toolkits at our website
www.social-connection.au.

