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Operationalising the Theory of Social Quality: Analysis of the Reliability of an Instrument to Measure Social Quality

SAMANTHA B. MEYER | FLINDERS UNIVERSITY, ADELAIDE

TINI C. N. LUONG | FLINDERS UNIVERSITY, ADELAIDE

PAUL R. WARD | FLINDERS UNIVERSITY, ADELAIDE

GEORGE TSOURTOS | FLINDERS UNIVERSITY, ADELAIDE

The Theory of Social Quality (TSQ) has not yet had extensive empirical testing for due to the difficulty of developing a validated and reliable tool to 'measure' social quality. A survey investigating social quality was piloted (n = 33) and analysed for test-retest and inter-item reliability in Australia, August 2009. Questions were considered reliable if the results from the test re-test analyses (Kappa, or Spearman Correlation tests) and the inter-item reliability test (Cronbach's α) were statistically significant ($p \leq 0.05$) or the coefficients were (≥ 0.70) for any of the questionnaire items. Two questions and 34 items were removed from the survey. These preliminary data support the reliability and validity of the survey as an instrument for measuring social quality. In addition, the tool provides a means for operationalising the TSQ in future empirical research.

Keywords: Social Quality, reliability, validity, survey, Theory of Social Quality

Introduction

Social Quality is a relatively new area of research that has only become of interest to social researchers in the last decade. The European Foundation of Social Quality has produced a great deal of theoretical scholarship in Europe which has resulted in the Theory of Social Quality (TSQ) (Beck et al., 2001), which was developed in Europe as a means of responding to increasing social and health inequities. However, although awareness of TSQ is becoming more widespread and applicable in social health research, the current theory has not yet had extensive empirical testing (Ward and Meyer, 2009). Ward and Meyer (2009) suggest that the lack of empirical application is due to a number of factors: firstly, the volatility of the current model is problematic because it has been argued that some of the factors outlined may be categorised in more than one domain; secondly, it would be exceptionally difficult to control for the numerous variables that exist outside the current model (variables that are not included in one of the 4 domains); and thirdly, the coordination necessary to research the number of variables would be extraordinary as various areas of expertise would be needed for this holistic model (research would have to be cross-disciplinary). Another plausible explanation may include the difficulty in developing a validated and reliable tool to 'measure' social quality.

Currently the TSQ is defined by four main domains which comprise 50 sub-domains and 94 indicators (Walker and van der Maesen, 2004).

The four main domains or quadrants (Walker and van der Maesen, 2004) consist of:

1. Socioeconomic security – meaning, the extent to which individual people or groups of people have access to and utilization of successful outcomes related to a variety of resources (including finances, housing, healthcare, employment and education) throughout and over time.
2. Social Cohesion – related to the extent to which individual people or groups of people share in social relations (including identities, values and norms).
3. Social Inclusion – related to the extent to which individual people and groups have access to and are integrated into the different institutions and social relations of everyday life.
4. Social Empowerment – related to the extent to which the personal capabilities of people are enhanced by their social relations.

As other papers outline the TSQ in great detail (Beck et al., 2001; Ward and Meyer, 2009; Walker and van der Maesen, 2004; Beck et al., 1998; Meyer et al., 2010; Meyer and Ward, 2009; Taylor-Gooby, 2006; van der Maesen and Walker, 2005; van der Maesen and Keizer, 2002; van der Maesen and Walker, 2005; Ward, 2006; Ward and Meyer, 2008; Ward, Redgrave, and Read, 2006; Ward et al., 2010), this paper does not provide discussion regarding the TSQ itself. Rather, we acknowledge that given the complexity of the TSQ, developing a reliable tool for measuring social quality proves to be an onerous task. The European Network for Indicators of Social Quality (ENISQ) has completed extensive work in terms of developing indicators (or metrics), which can be used by governments and researchers to assess the social quality within and between societies or Nation States, using routinely available data sources (van der Maesen and Walker, 2005); however, no studies, either within or outside Europe, have undertaken research on social quality to develop and evaluate a tool for measuring social quality. It is for this reason that we have performed inter-item and test-retest reliability analyses in order to provide a reliable and valid tool that may be used as a means of operationalising the TSQ.

This paper presents findings from a pilot study (August, 2009) that provides a valid and reliable instrument for operationalising the TSQ in Australia. This paper outlines the pilot study methods and findings used to assist in the further development of the instrument, which included rigorous testing for reliability and to some extent for validity. Suggestions are also made for the application of this validated survey regarding future research on social quality.

Methods

Questionnaire Development and Validity

The questionnaire used in this pilot¹ study has been developed and validated by the Asia-Pacific Scientific Steering Group on Social Quality and

¹ The pilot study outlined in this paper has been conducted as a means of developing a reliable and validated survey that will be mailed to 5,000 random postal addresses across Australia. The study is part of a much larger, international comparative study on social quality, involving universities in China (Nanjing University), Japan (Chiba University), Taiwan (National Taiwan University), Hong Kong (Chinese University of Hong Kong), Thailand (King Prajadhipok Institute), Korea (Seoul National University) and Singapore (National University of Singapore).

in particular, academics at Seoul National University. The questionnaire was developed from the Social Quality Indicators developed by the European Network for Indicators of Social Quality (ENISQ). The process of development involved members of the ENISQ. All of the questions within the questionnaire relate to the four domains of social quality (social inclusion, socio-economic security, social empowerment, and social cohesion). In addition, all of the questions have been taken from pre-validated questionnaires such as the World Values Survey and the General Social Survey, which have been used and validated extensively (National Opinion Research Center (NORC), 2006; World Values Survey Association, 2005/2006). Therefore, the questionnaire, as it stands, has face, content, and construct validity (Bowling and Ebrahim, 2005).

Prior to piloting the survey, the original was reduced in size after the elimination of certain questions that were deemed not culturally relevant or appropriate by the authors.

Pilot Study

Sample

A total of 33 Australian respondents (18 males and 15 females aged 19 to 63), residing in metropolitan Adelaide (South Australia) were recruited as a sample of convenience.

Instrument

The original survey (before testing for reliability and face validity within this study) consisted of 58 questions (mostly nominal and ordinal levels of measurement) relating to the four domains of TSQ, as well as demographic items.

Demographic items – This section includes demographic questions; gender, age, religion, marital status, current employment situation, mode of transportation, difficulty in access to transportation, total annual income, level of English proficiency, main source of income and voting status.

Socio-economic Security – This section includes questions regarding socio-economic security and relate to the respondent's living situation, number of children, and level of satisfaction with their financial situation.

Social Cohesion – This section includes questions related to satisfaction and quality of life with regards to education, job, standard of living, accommodation, family life, health and social life.

Social Inclusion – This section includes questions about visiting medical

doctors (general practitioners and specialists), health status, and the extent to which health problems hampered daily activities. In addition, respondents are asked about their involvement in community groups/organisations, frequency of social activities, security in their living situation and their sense of belonging in social groups.

Social Empowerment – These questions were largely based on trust and doubt of government and non-government organisations, such as religious organisations, the press, the legal system, the media, the government, United Nations, and Banks; as well as trust and doubt in individuals or groups of individuals, such as ‘your family doctor’, ‘doctor’s in general’, ‘family members’, and ‘friends/people you know personally.’ This section also includes questions that ask the respondent to give their views about: politics; Australia; migrants; personal responsibility; gender differences; trade unions; and the level of tension between various groups of people such as between the poor and rich.

Procedure

Face validity, prior to the data analysis, was obtained through asking some of the respondents to offer feedback about their experience of answering the questionnaire. Face validity is often defined as having ‘experts’ review the contents of the instrument for usefulness, relevance, etc. (Reber, 1985). It can be argued that the respondents have expertise. In addition to respondent feedback, two academics who have had research experience and taught on the subject of designing questionnaires have also reviewed drafts of the social quality questionnaire. Following feedback from both types of experts, some difficulties were established and appropriate amendments were made to a few of the questions prior to statistical data analysis.

The analyses were focussed on reliability testing using the Statistics Package for the Social Sciences (SPSS). Both test-retest and inter-item reliability analyses were conducted. If the results from the test re-test analyses (Kappa, or Spearman Correlation tests) and the inter-item reliability test (Cronbach’s α) were statistically non-significant ($p > 0.05$; $N = 10-33$) or the coefficients were < 0.70 for any of the questionnaire items, then the questions were amended or removed. Questionnaire items were also removed if response rates for these items were found to be very low ($\leq 33\%$).

Test-retest reliability and obtaining face validity were conducted prior to inter-item reliability and as a result, some of the questions had already been changed prior to inter-item testing. Consequently, some of the questions were not subject to inter-item reliability. Any questions that scored poorly in inter-item reliability were subsequently altered. SPSS statistical analyses were used

to identify items within questions that lowered the reliability scores. The questionnaire items that lowered the reliability of the questions were removed until Cronbach's α was $\geq .70$.

Results

As noted above, prior to reliability testing, the survey was altered to reflect respondent responses, as part of face validity. These changes involved rewording or adding in additional options for selection when answering a question. For example, in a question asked regarding marital status, respondents indicated that 'de facto's should be an option and as a result, the survey was altered.

After statistically analysing the data to determine test-retest and inter-item reliability, questions were removed from the survey and several questions were changed conceptually or shortened to include fewer items because these items were found to diminish the overall reliability/consistency of the results.

The results below are organised by TSQ domain. Questions that scored high in terms of test-retest reliability and inter-item reliability are provided in corresponding Tables 1-4 along with the related reliability scores.

Test-Retest Reliability

Test-retest reliability scores were found to range from perfect congruency ($Kappa = 1.0$) to poor correlations (worst being Spearman correlation coefficient of 0.2). Questions were removed based on poor reliability unless they had been conceptually altered as a result of respondent feedback (face validity). The results for test-retest reliability will be presented in the categories used for the survey.

Demographic Questions

All of the questions in this section scored $>.8$ Spearman correlation. General questions included gender, age, religion, marital status, current employment situation, mode of transportation, difficulty in access to transportation, total annual income, level of English proficiency, main source of income and voting status. These questions were found to be reliable. The only question in this section that was altered was regarding access to

transportation. Respondents were asked to indicate what, if any, were the difficulties in accessing transportation. Although reliability scores were high, response rates were low and the question was removed.

Socio-Economic Security (Table 1)

Questions regarding living arrangements, number of children, level of satisfaction with regards to financial situation, and spending habits of their family in the past year scored high ($\geq .8$ Spearman correlation). Reliability scores varied (.2 to .8) for the question asking about types of income (wages

Table 1. Reliability of the questions in the social quality questionnaire investigating the TSQ domain socio-economic security

Survey questions within domain	Test-retest*	Inter-item [#]
Which of the following living arrangements best describes your household ?		
• Live along		
• Live with partner/spouse only	.90	n
• Live with partner/spouse and children		
• Live with parents or other related adults		
• Live with other unrelated adults		
• Other (please specify)		
How many children do you have?	1.0	n
How satisfied are you with your current financial situation (scale of 1-10 with 1 being completely dissatisfied)	.70	n
In the past year, did you...		
• 'Save money'		
• 'Just get by'	.80	n
• 'Spend some savings'		
• 'Spend savings and borrowed money'		

*Test-retest reliability scores were measured using Kappa congruencies (for nominal variables) and Spearman correlation coefficients (for scale questions) and were deemed reliable if scores were found to be $> .69$. All values have been rounded to one decimal.

[#]Inter-item reliability scores were measured using Cronbach's α and were deemed reliable if Cronbach's α was found to be $> .69$. Inter-tem reliability scores are not listed for questions that did not have more than one item. All values have been rounded to one decimal. Inter-item scores are not provided for questions that had been changed (based on face validity or test-retest validity) prior to testing.

or salary, income from self-employment or farming, pension (retirement), child benefit, unemployment, disability or other social benefits, other income (from savings, property or stocks etc., informal support from family or relatives) and the question was changed conceptually. Rather than asking 'have you or someone else in your household received any income from the following sources in the past 12 months?' the question was changed to 'have you received any income from the following sources in the past 12 months?' When respondents were asked if, and how much, the money they spend on their child's education is burdensome, the correlation coefficient was .1 and the question was removed.

Social Cohesion (Table 2)

Questions regarding the importance of specific aspects of life (education, job, standard of living) scored well with the exception of 'accommodation', 'family life', 'health' and 'social life' (all .6) and 'the importance of a good social life' which was subsequently removed (.4). The question was changed conceptually and the options for answering 'very important' and 'important' were merged so that only 3 options were provided as choices; 'important', 'a little important' and 'not important at all'. Given that the question was changed, the items that scored only slightly low (.6) remain in the survey while 'the importance of a good social life' was removed. When asked about their level of happiness with certain aspects of life (education, job, standard of living, accommodation, family life, health, and social life) all items scored high in terms of reliability ($\geq .7$).

Reliability scores were high for questions regarding satisfaction levels with regards to respondents' immediate neighbourhood (level of noise, air pollution, access to green areas, level of crime). Similarly, test-retest reliability scores were high for questions regarding how often respondents see various groups of people (family, friends, colleagues, neighbours).

Social Inclusion (Table 3)

When asked about the experiences of family members in the last 12 months (costly medical experiences, job loss or bankruptcy, job insecurity, work injury, becoming a victim of crime, and investment loss) reliability scores were high ($\geq .7$). However, when asked to indicate their membership status with regards to certain organisations, reliability levels were inconsistent with 'labour unions' and 'political parties' scoring $< .6$ (and were removed as

Table 2. Reliability of the questions in the social quality questionnaire investigating the TSQ domain social cohesion

Survey questions within domain	Test-retest*	Inter-item [†]
Could you tell me how important each of these are in your quality of life? (range from very important to not important at all)		.70
• A good education	.80	
• A good job	.70	
• A good standard of living	.70	
How happy or unhappy would you say you are with the following?		.70
• Your job	.70	
• Your standard of living	.70	
• Your accommodation	.70	
• Your family life	.70	
• Your health	.70	
• Your social life	.70	
In relation to your immediate neighbourhood , how satisfied or unsatisfied are you with the following? (very unsatisfied, somewhat unsatisfied, somewhat satisfied, very satisfied)		.80
• Level of noise	.80	
• Level of air pollution	1.0	
• Access to recreational or green areas	.80	
• Level of crime	.70	
• Amount of rubbish in the streets	.70	
How often do you have direct contact with...		n
• Family (not including members of your household)	.80	
• Friends	.70	
• Colleagues	.80	
• Neighbours	.80	
Please indicate how important the following are in your life (very important, rather important, not very important, not at all important, not applicable).		.70
• Family	.90	
• Friends	.90	
• Respect for parents	.80	
• Politics	.80	
• Religion	.80	

*Test-retest reliability scores were measured using Kappa congruencies (for nominal variables) and Spearman correlation coefficients (for scale questions) and were deemed reliable if scores were found to be > .69. All values have been rounded to one decimal.

[†]Inter-item reliability scores were measured using Cronbach's α and were deemed reliable if Cronbach's α was found to be > .69. Inter-tem reliability scores are not listed for questions that did not have more than one item. All values have been rounded to one decimal. Inter-item scores are not provided for questions that had been changed (based on face validity or test-retest validity) prior to testing.

Table 3. Reliability of the questions in the social quality questionnaire investigating the TSQ domain social inclusion

Survey questions within domain	Test-retest*	Inter-item [#]
Please indicate whether you or your family have experienced any of the following in the last 12 months (yes/no).		n
• Costly medical expenses (such as hospitalisation, operation, nursing home etc.)	.90	
• Job loss of bankruptcy	.70	
• Job insecurity (such as getting switched from a regular to non-regular position)	.70	
• Work injury	1.0	
• Becoming a victim of crime (such as fraud, robbery etc.)	.70	
• Investment loss (such as share market/real estate etc.)	1.0	
For each of the following organisations, please indicate your membership status (don't belong, active member, inactive member).		n
• Church or religious organisation	.70	
• Sport or recreational organisation	.80	
• Art, music, educational or cultural organisation	.80	
• Other community-based organisation	.80	
How likely do you think it is that you will need to leave your current accommodation within the next 6 months because you can no longer afford it?	.90	n
• Very likely		
• Quite likely		
• Quite unlikely		
• Very unlikely		
During the past 12 months , have you ever experienced discrimination against you due to any of the following reasons?		n
• Physical/mental disability	1.0	
• Age	.80	
• Sexual harassment	.90	
• Gender	.90	
• Nationality	.70	
• Physical appearance	1.0	
• Ethnic Background	.80	
• Criminal record	.90	
• Religion	.80	
• Other (please specify)	1.0	

Table 3. Continued

Survey questions within domain	Test-retest*	Inter-item [#]
How often do you do each of the following activities in your free time?		n
• Watch TV, DVD, videos	.80	
• Go to live theatre	.90	
• Go to music concerts	.90	
• Go to live sport	1.0	
• Go to museums or cultural heritage	.80	
On the last occasion you needed to see a doctor or medical specialist, to what extent did each of the following factors make it difficult for you to do so?		.90
• Distance to doctor's office/hospital/medical centre	.90	
• Delay in getting appointment	.80	
• Waiting time to see doctor on day of appointment	.80	
• Cost of seeing a doctor	.70	
In general, would you say your health is...	.90	n/a
• Very good		
• Good		
• Fair		
• Bad		
• Very bad		
Do you have any chronic (long-standing) physical or mental health problem, illness or disability? (yes/no)	.90	n
How long have you been seeing your current general practitioner or family physician?	.90	n
• Less than one year		
• 1 to 5 years		
• 6-10 years		
• Over 10 years		
• I do not see a GP		
If you had a health problem that needed immediate attention and your usual doctor was not available, how much would the following factors influence your decision to trust a doctor you have never seen before? Please circle a number from 1 to 3 or tick the box on the far right.		.70
• The way they are dressed	.90	
• They are wearing a white coat	.80	
• They seem to be caring	.90	

Table 3. Continued

Survey questions within domain	Test-retest*	Inter-item [#]
• They listen to you	.70	
• They appear to be competent in their ability as a doctor	.80	
• They appear to be older than 40	.80	
• They appear to be younger than 40	1.0	
• They are female	.70	
• They are male	.70	
To what extent do you feel that you have a sense of belonging as a member of the following?		.80
• Your neighbourhood	.70	
• Your city/town	.70	
• Your state	.70	
• Australia	.80	
• A world citizen	.80	

*Test-retest reliability scores were measured using Kappa congruencies (for nominal variables) and Spearman correlation coefficients (for scale questions) and were deemed reliable if scores were found to be $> .69$. All values have been rounded to one decimal.

[#]Inter-item reliability scores were measured using Cronbach's α and were deemed reliable if Cronbach's α was found to be $> .69$. Inter-tem reliability scores are not listed for questions that did not have more than one item. All values have been rounded to one decimal. Inter-item scores are not provided for questions that had been changed (based on face validity or test-retest validity) prior to testing.

a result) while 'church/religious organisations', 'sport/recreational organisation', 'art/music/educational organisation', and 'other community based organisations' scored $\geq .7$.

The reliability scores were high for questions regarding the likelihood that respondents will have to leave their current accommodation in the next 6 months (because of cost) (.9). Test-retest reliability scores were also high for questions regarding discrimination against the respondents (physical/mental, age, sexual harassment, gender, nationality, physical appearance, ethnicity, criminal record, religion and 'other').

Scores were high ($\geq .7$) for questions about how often the respondent does certain activities in their spare time (watch TV, DVDs, videos, goes to live theatre, goes to music concerts, goes to live sport, goes to museums or cultural heritage sites). However, 'classical music performances' scored low (.5) and the item was removed from the question. Similar questions were asked regarding the amount of time respondents spend at their job/paid

work, with family members living in their household, with family members living outside of their household, with friends, on hobbies/interests, and taking part in voluntary or political activities. The only items that were removed because they did not score well were 'living with family members outside of the household' (.5) and 'taking part in voluntary or political activities' (.6). Additionally 'study' was added as an option based on respondent feedback. However, after inter-item reliability was conducted, this entire question was removed based on poor inter-item reliability scoring (.4).

Questions regarding factors that make it difficult for respondents to see the doctor (distance to doctor's office, delay in getting appointment, waiting time to see doctor on day of appointment, cost of seeing the doctor) scored high ($\geq .7$). Similarly, so did the question asking respondents to rate their overall health (very good, good, fair, bad, very bad), as well as the question asking respondents if they experience long-standing chronic physical or mental illnesses ($\geq .9$). However, when respondents were asked to what extent their physical/mental health problem(s) hampered their lives, response rates were low ($n = 11$) and the question was removed.

Questions that asked about respondents' sense of belonging as a member of their neighbourhood, their city/town, their state, Australia, and as a World Citizen, had high reliability scores ($\geq .7$).

The question asking about how long respondents have been seeing their GP or family physician (less than one year, 1 to 5 years, 6-10 years, over 10 years, I do not see a general practitioner (GP)) scored high (.9) as did the majority of questions regarding factors that would influence respondents' trust in a doctor that they had never seen before (the way they are dressed, they are wearing a white coat, they seem to be caring, they listen to you, they appear to be competent in their ability as a doctor, they appear to be older than 40, they appear to be younger than 40, they are female and they are male). The questions regarding factors that influence trust that did not score high in terms of reliability (and were removed) are 'they are friendly' (.6), 'they appear to be looking out for your best interest' (.6) and 'their ethnicity' (.6).

Social Empowerment (Table 4)

Two questions that created a bit of discussion amongst the researchers were 1. 'Generally speaking, would you say that most people can be trusted?' and 2. 'How often do you trust your government to do what is in the best interest of their citizens?' Both questions scored poorly (.6) but they have

both been used in the World Values Survey as well as in the General Social Survey (both surveys have been used and validated extensively). The questions remain part of the survey.

The question asking whether or not respondents had ever requested a second opinion from a doctor after receiving medical advice scored well (.7), as did the question asking whether or not the respondent thought that most people would take advantage of them if they had the chance (.9).

Respondents were asked if they trust various groups of people. The groups that scored well in terms of reliability were 'family', 'your neighbours', 'people you meet for the first time', 'your regular doctor', 'doctor's in general', 'a doctor you meet for the first time', 'people of another religion', 'people of another nationality', 'national political leader', 'local politician' and 'police officer.' 'Your dentist' and 'a dentist you are seeing for the first time' scored low (< .6) and were subsequently removed.

Questions that asked about trust in organisations scored high (religious organisations, the press, the legal system, the media, your government, United Nations, and banks) with the exception of 'credit card companies' (.6) and 'charitable/humanitarian organisations' (.2) which were removed. Several of the questions asking about doubt in organisations scored low (\leq .6) and were removed from the survey (the legal system, local government, and banks). However, 'your local government', 'credit card companies' and 'the media' showed high test-retest reliability and remain in the survey. Similarly, many of the questions that asked about the respondents' doubt in certain individuals were found to be unreliable (\leq .6) and were removed (your dentist, dentists in general, local politician, national leader, employer, bank employee, news reporter). The only items that remain for the question regarding doubt in individuals are 'your family doctor', 'doctors in general', 'family members', and 'friends/people you know personally'.

Test-retest reliability was high for questions regarding the respondents' interest in politics (.7), their feelings on what the aims should be for Australia over the next 10 years (making sure Australian has strong defence forces, making sure people have more say in how things are done in their communities, the environment, economic growth), their level of pride in being an Australian (.8), and their thoughts on government immigration policy (.9).

The question that asked about respondents' feelings with regards to private vs. government ownership, and income equality were reliable. However, a question of a similar nature which asked respondents about government responsibility vs. individual responsibility did not score well (.5)

Table 4. Reliability of the questions in the social quality questionnaire investigating the TSQ domain social empowerment

Survey questions within domain	Test-retest*	Inter-item [#]
Do you think that most people would take advantage of you if they had the chance? (yes, no, have not thought about it)	.90	n
Generally speaking, do you think most people can be trusted ?	.60	n
Have you ever requested a second opinion after receiving medical advice from a doctor ?	.70	n
How often do you trust your government to do what is in the best interest of their citizens? <ul style="list-style-type: none"> • Almost always • Some of the time • Almost never • Have not thought about it 	.60	n/a
How much do you trust various groups of people ? (trust them completely, trust them somewhat, do not trust them very much, do not trust them at all, have not thought about it, not relevant) <ul style="list-style-type: none"> • Your family • Your neighbours • People you meet for the first time • Your regular doctor • Doctor's in general • A doctor you are seeing for the first time • People of another religion • People of another nationality • National political leader • Your local politician • Police officers 		.70
How much do you trust the following organisations of institutions ? (trust them completely, trust them somewhat, do not trust them very much, do not trust them at all, have not thought about it, not relevant) <ul style="list-style-type: none"> • Religious organisation • The press • The legal system • The media 		.80

Table 4. Continued

Survey questions within domain	Test-retest*	Inter-item [#]
• Your government	.80	
• United Nations	.70	
• Banks	.80	
Have you ever doubted information from the following organisations/institutions? (yes, no, have not received information from this organisation/institution)		n
• Your national government	.80	
• Credit card companies	.70	
• The media	.90	
Have you ever doubted information from the following individual(s)? (yes, no, have not received information from this individual)		n
• Your family doctor	.80	
• Doctors in general	.80	
• Family members	.70	
• Friends/people you know personally	.70	
How interested would you say you are in politics? Are you... (very interested, somewhat interested, not very interested, not at all interested).	.70	n
Please rank the following 4 items listed below from 1-4 regarding what you think the most important aims should be for Australia in the next 10 years (with 1 being the most important and 4 being the least important).		n
• Making sure Australia has strong defence forces	.80	
• Making sure people have more say in how things are done in their communities	.80	
• Cleaning up and protecting the environment	.90	
• A high level of economic growth	.80	
How proud are you to be an Australian? (If you do not identify as an Australian, please tick the last box.) (very proud, quite proud, not very proud, not at all proud, I do not identify as an Australia)	.80	n

Table 4. Continued

Survey questions within domain	Test-retest*	Inter-item [#]
When people immigrate to Australia, which one of the following do you think the government should do? (Let anyone come who wants to, let people come as long as there are jobs available, put strict limits on the number of foreigners who come here to work, prohibit people coming here to work, don't know)	.90	n
Please rate your view on the following scales (1 to 7).		.80
• 1 (incomes should be made more equal) – 7 (we need larger income differences as incentives for individual efforts)	.90	
• 1 (private ownership of business and industry should be increased) – 7 (government ownership of business and industry should be increased)	.80	
To what extent do you agree or disagree with the following statement “Without trade unions the working conditions of employees would be much worse than they are” (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree).	.80	n
Please rate how strongly you agree/disagree with each of the following statements below (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree, can't choose).		.70
• I am optimistic about the future	.90	
• In order to get ahead these days you are forced to do things that are not appropriate	.70	
• I feel left out in society	.70	
• I don't feel the value of what I do is recognised by others	.90	
Have you, or would you, participate in any of the political actions listed below? (have done, might do, would never do)		n
• Petition	.90	
• Boycotts	.90	
• Protests	.90	
• Strikes	.90	
• Online political actions	.90	

Table 4. Continued

Survey questions within domain	Test-retest*	Inter-item [#]
In Australia , how often do you think the following occur? (scale of 1-7 with 1 being always and 7 being never)		n
• That politicians take into account the views of citizens	.70	
How likely or unlikely do you think that people can achieve a higher social status by their own effort? (very likely, a little likely, neither likely nor unlikely, a little unlikely, unlikely, don't know)	.70	n
In your opinion how much tension is there between each of the following groups in Australia? (A lot of tension, a bit of tension, no tension, don't know)		.80
• Poor and rich people	.80	
• Men and women	.70	
• Old people and young people	.80	
• Different religious groups	.70	

*Test-retest reliability scores were measured using Kappa congruencies (for nominal variables) and Spearman correlation coefficients (for scale questions) and were deemed reliable if scores were found to be > .69. All values have been rounded to one decimal.

[#]Inter-item reliability scores were measured using Cronbach's α and were deemed reliable if Cronbach's α was found to be > .69. Inter-tem reliability scores are not listed for questions that did not have more than one item. All values have been rounded to one decimal. Inter-item scores are not provided for questions that had been changed (based on face validity or test-retest validity) prior to testing.

and was removed from the survey.

The question that asked about the importance of trade unions for the job security of employees scored .5 and was removed. However, a secondary question about trade unions and their affects on working conditions scored .8 and remains in the survey.

A question that asked about how important certain items are in the respondents lives (family, friends, respect for parents, duty to children, politics, work, and religion) scored high with the exception of 'leisure time' (.6) which was subsequently removed.

Respondents were asked how strongly they agree or disagree with statements regarding social empowerment (optimism about the future, getting ahead in life, involvement in society, value of one's life). The statements that scored poorly and were removed are 'Life has become so

complicated today that I almost can't find my way' (.6), 'On the whole my life is close to what I would like it to be' (.6), and 'Some people look down on me' (.6).

Respondents were asked about their level of participation in political actions. Each of the specific items scored high ($\geq .9$) (petitions, boycotts, protests, strikes, online political actions). Similarly, the score was high for the question regarding politicians concerns for citizens (.7). The question asking about businesses concerns for citizens scored .6. However, rather than removing the question, it was simplified. Rather than 'That businesses take into account the views of citizens before making major decisions (such as company relocation and plant closure)' the statement provided is 'Businesses take into account the interests of citizens'.

A question that looked at how likely or unlikely a respondent feels it is for a person to achieve a higher social status by their own effort (very likely to very unlikely) scored high (.7). And finally, when asked about the amount of tension there is between certain groups in Australia (poor and rich, men and women, old and young people, different religious groups) scores indicated high test-retest reliability with the exception of 'management and workers' and 'different ethnic and racial groups' (.60). These items were changed conceptually to 'management and employees' and 'different ethnic groups' and remain in the survey.

Inter-Item Reliability

Inter-item reliability testing was used for questions that had multiple questionnaire items. For example, under 'social empowerment' there are 7 Likert scale statements that measure the strength of agreeability/disagreeability with statements regarding the personal views of the respondents. Cronbach's α scores derived from the analyses conducted on the questionnaire (before questions or items were removed) ranged from 0.40 to 0.85. SPSS identified items within questions that lowered the reliability testing. The items that lowered the reliability of the questions were removed until Cronbach's α reached $> .69$.

Test-retest reliability was conducted prior to inter-item reliability. Consequently, some of the questions that had poor Cronbach's α scores for inter-item reliability had already been changed conceptually as the result of poor test-retest scores or as the result of face validity.

Given that the above overview of test-retest reliability findings is very thorough, the overview of the inter-item reliability testing is restricted to only

the changes that were made as a result of poor inter-item reliability. The findings are presented in the four TSQ domains.

Social Cohesion (Table 2)

The results showed poor inter-item reliability (.6) for the question which asked about how important certain aspects of the respondents' life are (education, job, standard of living, accommodation, family life, health, and social life). However, by removing 'social life' the score improved to .7.

The question that asked respondents to indicate how much time they spend 'at their job', 'with family members', 'with friends', and 'other interests and hobbies' was removed after inter-item reliability scored poorly (.4).

A question that asked about the level of importance certain things are in a person's life (friends, family, respect for parents, duty to children, politics, work and religion) scored low (.6) until the items 'duty to children' and 'work' were removed.

Social Inclusion (Table 3)

The only question in this section that had poor inter-item reliability as the result of one of the items was regarding factors that influence respondents trust in a doctor whom they are seeing for the first time. By removing the item 'ethnicity', Cronbach's α increased to $> .7$.

Discussion

The findings of this investigation have identified reliable and valid questions that may be used to measure and empirically test the Theory of Social Quality (TSQ). This is important given the lack of information found in respective literatures on the operationalisation of the conceptual components that are central to the TSQ.

Several questionnaire items were removed because they were not found to be consistent following both inter-item and test re-test reliability testing analyses. There were also 2 questions removed when the response rate was found to be quite low ($n \leq 11$). The low response rates may be explained by the fact that both questions were contingency questions (contingent on a certain response in the previous question). In alignment with the strategy to minimise the size of the questionnaire, and therefore the response burden,

Table 5. Summary of deletions/conceptual changes made throughout test-retest reliability testing

Domain of TSQ	Original Question	Deletion/addition or conceptual change
Demo-graphic questions	<p>Do you ever experience difficulty in using public transportation? (such as bus, subway, and train; not including taxi)</p> <ul style="list-style-type: none"> • Yes • No • Don't know <p>➔ If yes, why? You may tick more than 1 box.</p> <ul style="list-style-type: none"> • Fare is too expensive for me. • Bus stops or train stations are too far away. • Inconvenience due to frequency of service • Inconvenience due to accessibility (such as elevators and escalators) • Other: Specify _____ 	<p>Although reliability scores were high, response rates were low and the question was removed.</p>
Socio-economic security	<p>If you have children of school age, how much of a burden is the money you spend on their education?</p> <ul style="list-style-type: none"> • Very burdensome • A little burdensome • Not burdensome at all <p>Have you or someone else in your household received any of the following types of income over the past 12 months?</p> <ul style="list-style-type: none"> • Wages or salary • Income from self-employment or farming • Pension (retirement) • Child benefit • Unemployment, disability or any other social benefits • Other income (e.g. from savings, property or stocks, etc.) • Informal support from family or relatives 	<p>The correlation coefficient was .1 and the question was removed.</p> <p>The question was changed conceptually because reliability scores varied (.2 to .8) for the question. The question was changed to 'have you received any income from the following sources in the past 12 months?'</p>

Table 5. Continued

Domain of TSQ	Original Question	Deletion/addition or conceptual change
Social cohesion	<p>Could you tell me how important each of these are in your quality of life? (scale of very important, rather important, not very important, not important at all, not applicable)</p> <ul style="list-style-type: none"> • A good education • A good job • A good standard of living • Good accommodation • A good family life • Good health • A good social life 	<p>The items 'accommodation', 'family life', 'health' and 'social life' all score low (.6). The item 'the importance of a good social life' scored the lowest (.4) and was subsequently removed. This question was changed conceptually. The options for response changed to 'important', 'a little important' and 'not important at all'. As a result of this, the items scoring .6 remained in the survey.</p>
Social inclusion	<p>For each of the following organisations, please indicate your membership status (don't belong, active member, inactive member).</p> <ul style="list-style-type: none"> • Church or religious organization • Sport or recreational organization • Art, music, educational, or cultural organization • Labour union • Political party • Community-based organization 	<p>Reliability levels for items 'labour unions' and 'political parties' were low scoring < .6 and were removed as a result.</p>
	<p>How often do you do each of the following activities in your free time? (daily, several times a week, several times a month, several times a year or less often, never)</p> <ul style="list-style-type: none"> • Watch TV, DVD, videos • Go to live theatre • Go to classical music performance • Go to music concerts • Go to live sport • Go to museums or cultural heritage 	<p>The item 'classical music performances' scored low (.5) and the item was removed from the question.</p>

Table 5. Continued

Domain of TSQ	Original Question	Deletion/addition or conceptual change
Social inclusion	<p>Please indicate the amount of time you spend on the following (too much, just right, too little, not applicable, don't know).</p> <ul style="list-style-type: none"> • My job/paid work • Spend time with family members living in your household • Spend time with family members living outside of your household • Spend time with friends • Own hobbies/interest • Taking part in voluntary or political activities 	<p>The items 'living with family members outside of the household' (.5) and 'taking part in voluntary or political activities' (.6) were removed due to low reliability. Additionally 'study' was added as an option based on respondent feedback.</p>
	<p>Are you hampered in your daily activities by this physical or mental health problem, illness or disability?</p> <ul style="list-style-type: none"> • Yes, severely • Yes, to some extent • No 	<p>Response rates were low (n = 11) and the question was removed.</p>
	<p>If you had a health problem that needed immediate attention and your usual doctor was not available, how much would the following factors influence your decision to trust a doctor you have never seen before (a lot, somewhat, not at all, don't know)?</p> <ul style="list-style-type: none"> • The way they are dressed • They are wearing a white coat • They are friendly • They seem to be caring • They listen to you • They appear to be looking out for your best interest • They appear to be competent in their ability as a doctor • They appear to be older than 40 • They appear to be younger than 40 • They are female • They are male • Their ethnicity 	<p>The questions regarding factors that influence trust were removed are 'they are friendly' (.6), and 'they appear to be looking out for your best interest' (.6).</p>

Table 5. Continued

Domain of TSQ	Original Question	Deletion/addition or conceptual change
Social Empowerment	<p>How much do you trust various groups of people? Please tick a box (trust them completely, trust them most of the time, do not trust them very much, do not trust them at all, have not thought about it, not relevant).</p> <ul style="list-style-type: none"> • Your family • Your neighbours • People you meet for the first time • Your regular doctor • Doctors in general • A doctor you are seeing for the first time • Your dentist • A dentist you are seeing for the first time • People of another religion • People of another nationality • National political leader • Local politician • Police officers 	<p>The items 'Your dentist' and 'a dentist you are seeing for the first time' scored low (< .6) and were subsequently removed.</p>
	<p>How much do you trust the following organisations or institutions? Please tick a box (trust them completely, trust them most of the time, do not trust them very much, do not trust them at all, have not thought about it, not relevant).</p> <ul style="list-style-type: none"> • Religious organisations • The press • The legal system • The media • Your government • United Nations • Credit card companies • Charitable of humanitarian organisations • Banks 	<p>The items 'credit card companies' (.6) and 'charitable/humanitarian organisations' scored (.2) were removed because of low reliability scores.</p>

Table 5. Continued

Domain of TSQ	Original Question	Deletion/addition or conceptual change
Social Empowerment	<p>Have you ever doubted information from the following organisations/institutions? (yes, no, Have not received information from this organisation/institution)</p> <ul style="list-style-type: none"> • The legal system • Your local government • Your national government • Credit card companies • The media • Banks 	<p>The items that scored low in terms of reliability low ($\leq .6$) were removed from the survey (the legal system, local government and banks.</p>
	<p>Have you ever doubted information from the following individual(s)? (yes, no, Have not received information from this organisation/institution)</p> <ul style="list-style-type: none"> • Your family doctor • Doctors in general • Your dentist • Dentists in general • Local politician • National leader • Employer • Bank employee • News presenter • Family member • Friends/people you know personally 	<p>The items 'your dentist', 'dentists in general', 'local politician', 'national leader', 'employer', 'bank employee', 'news reporter' score low and were removed.</p>
	<p>Please rate your view on the following scales (1-10).</p> <ul style="list-style-type: none"> • 1 The government should take more responsibility to ensure that everyone is provided for • 10 People should take more responsibility to provide for themselves 	<p>This question scored low and was removed.</p>
	<p>To what extent do you agree or disagree with the following statements? (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree)</p> <ul style="list-style-type: none"> • Trade unions are very important for the job security of employees 	<p>This question scored .5 and was removed.</p>

Table 5. Continued

Domain of TSQ	Original Question	Deletion/addition or conceptual change
Social Empowerment	<p>Please indicate how important each of the following are in your life (scale of very important, rather important, not very important, not important at all, not applicable).</p> <ul style="list-style-type: none"> • Family • Friends • Respect for parents • Duty to children • Leisure time • Politics • Work • Religion 	<p>The item 'leisure time' scored low (.6) and was subsequently removed.</p>
	<p>Please rate how strongly you agree/disagree with each of the following statements below (strongly agree, agree, neither agree nor disagree, strongly disagree, can't choose).</p> <ul style="list-style-type: none"> • I am optimistic about the future • On the whole my life is close to how I would like it to be • In order to get ahead nowadays you are forced to do things that are not appropriate • I feel left out of society • Life has become so complicated today that I almost can't find my way 	<p>The statements that scored poorly and were removed are 'Life has become so complicated today that I almost can't find my way' (.6), 'on the whole my life is close to what I would like it to be' (.6), and 'some people look down on me' (.6).</p>
	<p>In Australia, to what extent do you think the follow occur? (scale of 1-7 with 1 being always and 7 being never)</p> <ul style="list-style-type: none"> • That businesses take into account the views of citizens before making major decisions (such as company relocation and plant closure). 	<p>This reliability score was low so the question was conceptually changed to 'Businesses take into account the interests of citizens.'</p>

Table 5. Continued

Domain of TSQ	Original Question	Deletion/addition or conceptual change
Social Empowerment	In your opinion how much tension is there between each of the following groups in Australia? (a lot of tension, a bit of tension, no tension, don't know) <ul style="list-style-type: none"> • poor and rich • men and women • old and young people • different religious groups 	The items 'management and workers' and 'different ethnic and racial groups' scored low (.6). These items were changed conceptually to 'management and employees' and 'different ethnic groups' and remain in the survey.

the investigators removed these 2 items. The number of questions for the final questionnaire is 56. The removal of many questionnaire items has also assisted in reducing the size of the questionnaire, which should ultimately assist in increasing the response rate. This becomes more important if this instrument is to be administered by post, where the response rate is usually lowest (De Vaus, 2002).

Conclusion

The long-term aim of developing and implementing the TSQ is to enhance the social quality of peoples' lives (especially vulnerable groups). However, before this can be achieved we need to have empirical data on the domains of social quality, especially in relation to the groups who have lower social quality, to inform changes in policy and/or practice. This paper is our contribution to the further development of the current Theory of Social Quality. We have provided a reliable tool that may be used as a means of measuring social quality in Australia by operationalising the current TSQ. In addition, we have provided methods for testing reliability and validity that may be utilised internationally as a means of developing culturally and nationally relevant tools elsewhere. Tables 5 and 6 map the development of this tool by providing a summary of the changes made to the questions.

Table 6. Summary of deletions made throughout inter-item reliability testing

Domain of TSQ	Original Question	Deletion/addition or conceptual change
Social cohesion	<p>Could you tell me how important each of these are in your quality of life? ('important', 'a little important' and 'not important at all')</p> <ul style="list-style-type: none"> • A good education • A good job • A good standard of living • Good accommodation • A good family life • Good health 	By removing 'social life', the inter-item reliability score improved to .7.
	<p>Please indicate the amount of time you spend on the following (too much, just right, too little, not applicable, don't know).</p> <ul style="list-style-type: none"> • My job/paid work • Spend time with family members living in your household • Spend time with friends • Own hobbies/interest • Study 	This question was removed after inter-item reliability scored (.4).
	<p>Please indicate how important each of the following are in your life (scale of very important, rather important, not very important, not important at all, not applicable).</p> <ul style="list-style-type: none"> • Family • Friends • Respect for parents • Duty to children • Politics • Work • Religion 	This question scored low (.6) until we removed the items 'duty to children' and 'work'.
Social inclusion	<p>If you had a health problem that needed immediate attention and your usual doctor was not available, how much would the following factors influence your decision to trust a doctor you have never seen before? (a lot, somewhat, not at all, don't know)</p> <ul style="list-style-type: none"> • The way they are dressed 	The poor inter-item reliability was the result of the item 'ethnicity'. By removing the item 'ethnicity', Cronbach's α increased to > .7.

Table 6. Continued

Domain of TSQ	Original Question	Deletion/addition or conceptual change
Social inclusion	<ul style="list-style-type: none"> • They are wearing a white coat • They seem to be caring • They listen to you • They appear to be competent in their ability as a doctor • They appear to be older than 40 • They appear to be younger than 40 • They are female • They are male • Their ethnicity 	

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SAMANTHA MEYER is a PhD student in the Discipline of Public Health at Flinders University. Her PhD is currently being examined and explores the sociology of trust in relation to healthcare professionals and social systems. *Address*: Discipline of Public Health, Flinders University, Adelaide, South Australia [*Email*: meye035@flinders.edu.au]

TINI LUONG is a Masters student in the Discipline of Public Health at Flinders University. She recently completed her Honours which explored social quality in Australia as part of an International comparative study on social quality. *Address*: Discipline of Public Health, Flinders University, Adelaide, South Australia.

PAUL WARD is Professor of the Discipline of Public Health at Flinders University. His research interests include social theories of risk and trust as well as applying social theory to public health research. *Address*: Discipline of Public Health, Flinders University, Adelaide, South Australia [*Email*: Paul.ward@flinders.edu.au]

GEORGE TSOURTOS is a Senior Lecturer in the Discipline of Public Health at Flinders University. His research interests including psychology of resilience, social determinants of health, and health promotion and prevention. *Address*: Discipline of Public Health, Flinders University, Adelaide, South Australia [*Email*: george.tsourtos@flinders.edu.au]