

Know Your Members' Trust

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Abstract. This paper outlines the findings of a survey on trust, captured through attitude, experience, behaviour and expectation, of members in a Government run online support network. Overall, the results show that participants have high expectations for the behaviour of others in the community, expecting them to be trustworthy, helpful and supportive. There is a gap, however, between the respondents' own attitude and behaviour with respect to trust and what they expect of others in the community. The results of this survey will serve as a baseline against which to compare results obtained at the end of our community trial. To the best of our knowledge, this is the first time such a trust survey has been conducted in an online community to establish the initial baseline members' trust. We also present the initial results obtained at the end of the trial.

Keywords: Government Support Network, Social Network, Trust Survey

1 Introduction

Online social networking sites are often seen as a place for people to obtain social, emotional and moral support from others on the site. In the health domain, for example, they have been shown to have a positive impact (e.g., [1-4]). In partnership with the Australian Government's Department of Human Services (referred hereafter as *Human Services*), we have trialled an online community to investigate whether online communities could be beneficial to provide support to welfare recipients [5,6]. Our trial targeted parents transitioning from a parental payment to another income support benefit with the requirement to find a job, a transition that occurs when their youngest child is reaching school age. The transition is a difficult one for most parents.

Our online community was called *Next Step*. It was meant to be a place for people to find support from others in a similar situation, with the hypothesis that this would be helpful in their transition process. Individuals in the community are strangers to each other – but they all share the same situation. *Next Step* is also a place for the government to target its information and support services when dealing with this specific group of welfare recipients. In a community such as ours, it is important for its members to trust each other and the community provider. This is necessary for people to participate in the community, speak freely and share their experiences.

One of our hypotheses is that building online communities serves not only to provide informational and emotional support to target groups, but also to increase social trust through interactions in the community. To this end, we first sought to understand and establish initial trust values of individual members, i.e., their trust values before they join the community. This would provide a baseline against which to evaluate the increase of social trust values at the close of the community. We did this through a survey entitled ‘Knowing you better’, conducted within the first week of people joining the community. Trust was captured through a set of questions related to their attitude, experiences and behaviour. Individual members’ behaviour is mainly driven by their attitude. Similarly, their expectations about others are built through their experience. To the best of our knowledge, this is the first time such a trust survey has been conducted in an online community. It certainly is the first of its kind for an online community for welfare recipients. In this paper, we describe the design of the survey and present the corresponding results. We also conducted an exit poll to measure the change of social trust. We present the initial results of the exit poll and our observations.

The remaining of the paper is structured as follows: Section 2 provides some background on trust issues. Section 3 presents a brief review of the design of the survey and structure of its questions. Key observations are presented in Section 4, and discussed further in Section 5. Finally, Section 6 gives some concluding remarks.

2 Background

Trust is widely accepted as a major component of human social relationships and studied in different disciplines ranging from Sociology [7-9], Psychology [10,11], Economics [12,13] to Computer Science [14] and online service provisions [15]. In general, trust is a measure of confidence that an entity will behave in an expected manner, despite the lack of ability to monitor or control the environment on which they operate [16]. Trust plays an important role in the bootstrapping and sustainability of the online communities. Recently, there has been an increasing interest on trust and its role in social networking [17]. However, the majority of research in this area has focused on the computational aspects of trust, i.e., evaluating the reputation of a node or trust between the nodes using different features (e.g., rating, like/dislike, voting, social circle, etc.) of the social networks [18]. None of this research has focused on studying the impact of social networks on human aspects of trust (i.e., social trust). Social trust implies that members of a social group act according to the expectation that other members of the group are also trustworthy [19] and expect trust from other group members. Similarly, social capital is the quantity of trust a member has to other members in the society [20].

Our aim in *Next Step* is to understand social trust and see whether the use of online communities for delivering human services can eventually increase the social capital (i.e., the social trust between members and towards governments). To this end, we first need to measure the trust of an individual before coming to the community. We

use questionnaires developed and used in social science to measure the initial trust value.

How do you measure the trust value? Trust is measured using three human characteristics: attitude, behaviour and experience. We considered the following factors:

- People's trusting *attitude* towards *people in their own surrounding* (e.g., home, office, society, etc.).
- People's trusting *behaviour* towards *known people* (e.g., friends) in their own surrounding.
- People's trusting *behaviour* towards *strangers* in their own surrounding.
- People's trust *experience* from other people in their surrounding, including strangers.

It is important to understand these factors to establish the baseline trust values so that we can measure whether online communities could improve social capital. In addition to capturing people's attitude, behaviour and experience in their surrounding, we also need to consider the reciprocal attitude, behaviour and experience expected from other members in the community, so that we can also uncover the gap between individuals' own trusting attitude and behaviour and their expected trusting attitude and behaviour from others. Various tools have been used in social and behavioural sciences to measure these factors [21-24]. To the best of our knowledge, they have not been used for measuring the initial trust values of members in online communities.

3 Research Methodology

When possible, we adapted a standard set of questions defined and used in social and behaviour sciences. We added some questions dealing with interpersonal trust, a concept central to social sciences linked to collaboration and coordination between individuals within a network [25]. These new questions were adapted from [25].

3.1 Capturing Trust Attitude

With the intent to understand members' attitude towards trust in general, we adapted the *General Social Survey* (GSS) questions which act as a primary source of evidence on trust and social capital in the United States [26]. We used this instrument because of its wide use over time and space [27]. We took the three General Social Survey (GSS) questions on Trust, Helpfulness and Fairness shown in Table 1. In addition to the answer choices indicated in the Table, users could choose to answer: "don't know" or "don't want to answer".

Table 1. GSS Questions on Trust, Helpfulness and Fairness

Questions	Answer Choices
Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?	most people can be trusted; can't be too careful about depends on the situation
Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?	try to be helpful just look out for themselves depends on the situation
Would you say that most people would try to be fair or that they try to take advantage of you if they get the chance?	would try to be fair would take advantage of you depends on the situation

3.2 Capturing Trust Experience and Behaviour

Six questions, adapted from [26], were employed to capture trust experience and behaviour. They are shown in Table 2. The first question captures the trust experience, and the others capture the trust behaviour. The answer choices to all six questions were: always, often, sometimes, rarely, never and don't want to answer.

Table 2. Questions on Trust Experience and Behaviour [26]

Have you ever benefited from a person you did not know before?
You lend personal possessions (e.g., book, car, bicycle, etc.) to your friends.
You lend money to your friends.
You leave your door unlocked.
You lend personal possessions (CDs, book, car, bicycle, etc.) to a person you hardly know.
You lend money to a person you hardly know.

3.3 Capturing Trust Expectation

We developed five questions (see Table 3) to capture members' expectations about other members in the community. The first three questions capture one's expectations about the attitude of others in the community, and the next two relate to one's expectations about the behaviour of others in the community. The members were asked to answer the following questions by considering specifically the members of the *Next Step* online community. As with the first set of questions, the answers "don't know" and "don't want to answer" were also available.

Unlike previous questions which aimed to uncover the general trust attitude and experience of members, i.e., with respect to the world at large, these questions are

specific to the other people one expects to meet (albeit virtually) in the *Next Step* on-line community.

Table 3. Questions on Trust Expectation

Question	Answer Choices
You will expect them to be	very trustworthy, somewhat trustworthy, untrustworthy
You will expect them to be	very helpful, somewhat helpful, unhelpful
You will expect them to be	very supportive, somewhat supportive, unsupportive
They will generally share their knowledge with you.	Agree, somewhat agree, disagree
They will generally share their experience with you.	Agree, somewhat agree, disagree

4 The results

The survey ‘Knowing you better’ was done as a poll in the first week of people joining the community. The community was built over a period of twelve months through four phases of recruitment. Respectively, 55, 30, 26 and 152 members joined the community during these four recruitment phases, but only 99 of these visited the community at least once. Of those, 46 completed the survey from each recruitment (about half). This means more than 8% of the total registered members have completed the survey, which is nearly equal to the proportion of highly active and active members of the 90-9-1 Jacob Nielson’s rule (a community often has 1% very active, 9% active and 90% passive members). We present some of the results here.

4.1 Trust Attitude

We grouped members in three categories based on their answers:

- “Trusting” for those who answered “Most people can be trusted”, “Most people try to be helpful” and “Most people try to be fair”;
- “Situation-dependent” for those who answered “Depends on the situation” for the three questions;
- “Cautious” for those who answered “Can’t be too careful” for the three questions; and
- “Other” for those who answered “Don’t Know” and “Don’t Want to Answer” for the three questions.

We first look at the individual questions on attitude (Fig. 1 (a)). We note that the question about fairness received the largest number of trusting responses (41%) (i.e.,

“most people try to be fair”) as compared to the questions about general trust (or trustworthiness) (13%) (i.e., “most people can be trusted”) and helpfulness (33%) (i.e., “most people try to be helpful”). There was no response in the “other” group. We now combine the results from the three individual questions by computing their mean value in different categories. Fig. 1 (b) shows the proportion of people in each category. The largest category is “situation-dependent”, i.e., people are not necessarily trustworthy, helpful and fair by default, and a situation or context plays a role.

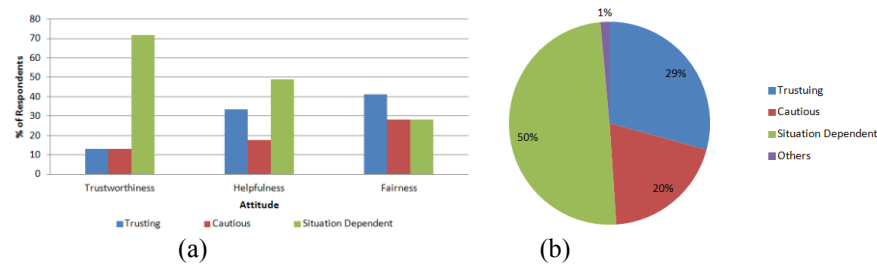


Fig. 1. (a) Responses in the individual components of attitude, (b) General Community Attitude

Interestingly, 29% of respondents had a trusting attitude towards the world around them: they thought people could be trusted, were helpful and fair. So we have, from the start, a small core of people whose attitude is trusting. According to the Australian Bureau of Statistics results in the 2010 GSS [28], 54% of people (Australians) above 18 years say that most people can be trusted. This figure is much higher than the result for the members in our community. There could be many factors that could have influenced the response, including, for example, the specific demographics involved, or the fact that our respondents are in a transition phase and thus particularly stressed, and, as a result, cautious of the world around them. This, however, is *not* a conclusion and further research is necessary to understand such influence, if any, in detail.

4.2 Trust Experience and Behaviour

As the *Next Step* community is anonymous, we want to know people’s *a priori* experience with strangers. Fig. 2 (a) presents the results. The majority (about 48%) reported having sometimes benefited from strangers, and 2.17% have often benefited from strangers. Overall, half of our community (if we combine “always” and “sometimes”) has had reasonably good experiences from unknown people in the past. We also note, however, that 19.57% of respondents have never had any experience of altruistic behaviour from strangers.

We now look at our members’ behaviour towards others, grouping the questions as follows:

- Behaviour with friends, i.e., lending personal possessions and money to friends;
- Behaviour with strangers, i.e., lending personal possessions and money to strangers; and
- General Behaviour: the question on leaving door unlocked.

Fig. 2 (b) shows the results. Unsurprisingly, the graph shows that members show more trust towards friends than towards strangers in terms of lending “things”. Interestingly, their general trust behavior in their own environment (“leaving door unlocked”) is higher than lending “things” to strangers.

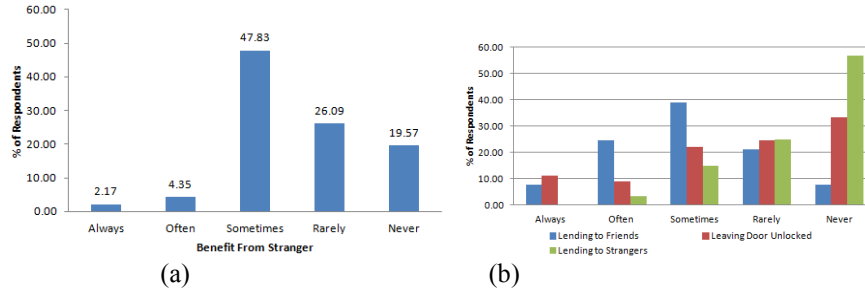


Fig. 2. (a) Trust Experience (Benefit from Strangers), (b) Trust Behaviour in Different Categories

4.3 Trust Expectations

We have so far discussed the aspects of trust that concerns someone’s attitude, experience and behaviour with respect to others. We now look at the questions of trust *of others in the community*.

We have two categories:

- Expectations about the attitude of other members’ in the community (e.g., “I expect others to be trustworthy/helpful/supportive”). We refer to this as the expectation about ‘community attitude’; and
- Expectations about behaviour: the behaviour people expect of other members in the community (e.g., “I expect others to share their knowledge and experience with me”). We refer to this as the expectation about ‘community behaviour’.

For the expectations about attitude, we first group members into the following four categories:

- “High Expectation” for those who answered “Very Trustworthy”, “Very Helpful” and “Very Supportive” for the three questions;
- “Cautious Expectation” for those who answered “Somewhat Trustworthy”, “Somewhat Helpful” and “Somewhat Supportive” for the three questions;
- “Bad Expectation” for those who answered “Untrustworthy”, “Unhelpful” and “Unsupportive” for the three questions; and
- “No Expectation” for those who answered “Don’t Know” and “Don’t Want to Answer” for the three questions.

Fig. 3 (a) shows the population distribution of the community responding to different categories. We see that a larger portion of the respondents expects at least some

amount of trust, help and support from other members in the community. (If we put together the groups with “high” and “cautious” expectations, we get 76%.) The *Bad Expectation* group represents only 4% of respondents. 20% do not know what to expect.

Fig. 3 (b) presents the individual breakdown of the responses for the expectations of trust, helpfulness and support. We see that the majority of respondents had a *Cautious Expectation* in all categories.

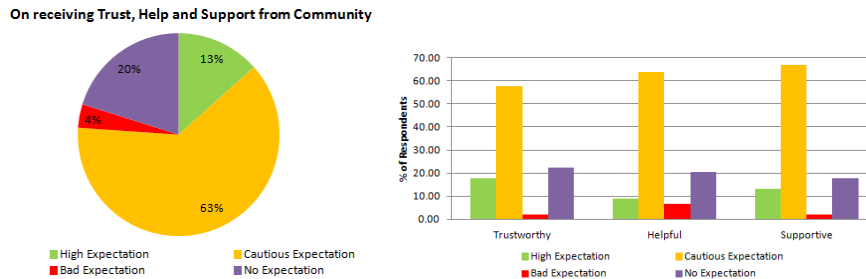


Fig. 3. (a) Responses on the trustworthiness, helpfulness and supportiveness of the community, (b) Individual break-down of community expectation: attitude

5 Discussion

The survey analysis gave us a baseline for trust attitude and behaviour. It also provided further insights into members’ trust attitude, behaviour and expectations. Our community members, as a whole, seem to have relatively low trust attitude, comparing to the Australian average, and behaviour. Yet they expect a high trusting attitude and behaviour from other members in the community. A comparatively higher behaviour and attitude expectation is potentially a very positive indication that a community like *Next Step* has a potential to have positive effects on social capital and social trust. In the ideal case, the community members would, at the end of trial, have their own attitude and behaviour match the expectations they have from others.

We further analyse the trust behaviour of members. It shows that community members have benefited from strangers more than they are willing to lend to strangers. This reinforces the gap identified between the members’ own behaviour and the expected behaviour from others.

The high expectations from other members in the community comparing to expectations from strangers (shown by attitude towards strangers) might indicate that people do not see other community members as strangers – this is a fairly typical phenomenon in online communities, where people exhibit behaviour they would not normally exhibit with total strangers (such as sharing personal stories), even though people are strangers to each other, because of the connections people feel with each other by being in the same community.

In order to gain further insights, we have examined the data from the community in the light of the survey results. We gathered the login data of all members who have responded to the survey. We grouped them into two categories: “frequent visitors” and “overall respondents”. We define “frequent visitors” as those respondents who visited the community at least 15 times or more since registration.

Our first comparison is between the overall respondents’ trust attitude to that of the frequent visitors. We observed that there is no significant difference on “trusting” attitude between frequent visitors and overall community, see Fig. 4 (a). However, different results are observed in trust attitude expectations and behaviour (see Fig. 4 (b) and (c)). In both, the frequent visitors had high expectations from other members in the community. This means frequent visitors had similar trust attitude to that of overall community when the world around them is considered, but had higher trust behaviour of themselves, and more of them also had high expectations from others in the community.

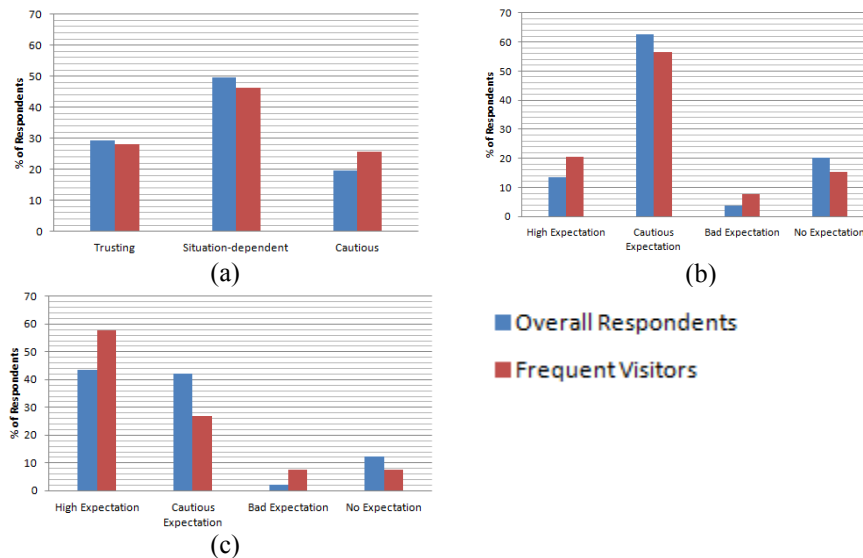


Fig. 4. (a) Trust Attitude, (b) Expectation Attitude, (c) Expectation Behaviour

In order to measure the increase in social trust, we ran an exit poll towards the end of the trial. We repeated the same set of questions that were asked in trust expectation as shown in Table 4. Purpose of the exit poll is to get an answer to the following:

- (a) Does the online community like *Next Step* help to increase the overall trust of members towards each other and moderators? The answer to this question will help to understand the role of online communities in increasing social trust.
- (b) Do members of online communities like *Next Step* value the role of the moderators? The answer to this question will help to understand and design the roles of moderator in online communities like *Next Step*.

Below we report an initial analysis of the exit poll to answer the first question.

Table 4. Exit Questions on Trust

Question	Answer Choices
Consider the members of this online community	
Would you say that most people were:	very trustworthy, somewhat trustworthy, untrustworthy
Would you say that most people were:	very helpful, somewhat helpful, unhelpful
Would you say that most people were:	very supportive, somewhat supportive, unsupportive

Exit poll was returned by 9 members, out of which 5 had also responded to the initial trust questionnaires. Out of the 15 possible answers, 2 answers remained the same as initial ones whereas 13 answers moved to a more positive value, and none of the answers move to a more negative value. Though the result is based on a small number of responses and is thus not conclusive, it shows that the overall social trust in the community has increased.

6 Conclusion and Future Work

This report presented the findings from the trust survey that was carried out at the start of an online community project. Trust attitude, experience, behaviour and expectation as well as expectations about the behaviour of others with respect to fairness, helpfulness and support were presented based on the community members' responses. The results of the analysis show that the members had overall positive expectations from the community, although they did not themselves seem to have a trusting behaviour towards strangers. There is thus a gap between members' own attitude and behaviour about trust and their expectation from others. We hoped that the *Next Step* community would help reduce this gap, and that interactions in the community would lead to an increased social capital. We repeated the survey at the end of the trial for the community. The initial results show that the overall social trust in the community had increased.

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7 References

1. Skeels MM, Unruh KT, Powell C, Pratt W Catalyzing social support for breast cancer patients. In: 28th international conference on Human factors in computing systems, Atlanta, Georgia, USA, 2010. ACM, pp 173-182
2. Ma M, Agarwal R (2006) With a Little Help from Strangers: Social Support and Smoking Cessation in Online Communities. RHS School of Business, Univeristy of Maryland. <http://www.rhsmith.umd.edu/news/releases/2006/120406.aspx>. Accessed 18th July 2012
3. Newman MW, Lauterbach D, Munson SA, Resnick P, Morris ME It's not that i don't have problems, i'm just not putting them on facebook: challenges and opportunities in using online social networks for health. In: ACM 2011 conference on Computer supported cooperative work, Hangzhou, China, 2011. ACM, pp 341-350
4. Hwang KO, Ottenbacher AJ, Green AP, Cannon-Diehl MR, Richardson O, Bernstam EV, Thomas EJ (2010) Social support in an Internet weight loss community. *International journal of medical informatics* 79 (1):5-13
5. Bista SK, Colineau N, Nepal S, Paris C The design of an online community for welfare recipients. In: Proceedings of the 24th Australian Computer-Human Interaction Conference, elbourne, Australia, 2012. ACM, pp 38-41
6. Bista SK, Colineau N, Nepal S, Paris C Next step: an online community to support parents in their transition to work. In: Proceedings of the 2013 conference on Computer supported cooperative work companion, San Antonio, Texas, February 23-27 2013 2013. ACM, pp 5-10
7. Helbing D (1994) A Mathematical Model for the Behavior of Individuals in a Social Field. *Journal of Mathematical Sociology* 19 (3):189-219
8. Mollering G (2002) The Nature of Trust: From Geog Simmel to a Theory of Expectation, Interpretation and Suspension. *Sociology* 35:403-420
9. Molm LD, Takahashi N, Peterson G (2000) Risk and trust in social exchange: An experimental test of a classical proposition. *American Journal of Sociology* 5 (105):1396-1427
10. Rotter JB (1967) A new scale for the measurement of interpersonal trust. *Journal of Personality* 35 (4):651-665
11. Cook KS, Yamagishi T, Cheshire C, Cooper R, Matsuda M, Mashima R (2005) Trust building via risk taking: A cross-societal experiment. *Social Psychology Quarterly* 2 (68):121-142
12. Granovetter M (1985) Economic Action and Social Structure: the Problem of Embeddedness. *American Journal of Sociology* 91:481-510
13. Huang F (2007) Building Social Trust: A Human-Capital Approach. *Journal of Institutional and Theoretical Economics (JITE)* 163 (4):552-573
14. Maheswaran M, Tang HC, Ghunaim A Towards a gravity-based trust model for social networking systems. In: 27th International Conference on Distributed Computing Systems Workshops, 2007. ICDCSW'07. , Toronto, Ontario, Canada, June 25-29, 2007 2007. IEEE, pp 24-24
15. Josang A, Ismail R, Boyd C (2007) A Survey of Trust and Reputation Systems for Online Service Provision *Decision Support Systems* 43 (2):618 - 644
16. Singh S, Bawa S (2007) Privacy, Trust and Policy based Authorization Framework for Services in Distributed Environments. *International Journal of Computer Science* 2 (2):85-92
17. Dwyer C, Hiltz SR, Passerini K (2007) Trust and privacy concern within social networking sites: A comparison of Facebook and MySpace. Paper presented at the Thirteenth Americas Conference on Information Systems AMCIS 2007, Keystone, Colorado, USA
18. Golbeck J (2008) *Computing with Social Trust*. Springer Publishing Company, Incorporated,
19. Lewis JD, Weigert A (1985) Trust as a Social Reality. *Social Forces* 63 (4):967-985

20. Paldam M (2000) Social Capital: One Or Many? Definition And Measurement. *Journal of Economic Surveys* 5:629-653
21. Jones GR, George JM (1998) The experience and evolution of trust: Implications for cooperation and teamwork. *Academy of Management Review*:531-546
22. Cook J, Wall T (1980) New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology* 53 (1):39-52
23. McKnight DH, Cummings LL, Chervany NL (1998) Initial trust formation in new organizational relationships. *Academy of Management Review*:473-490
24. Johnson D, Grayson K (2005) Cognitive and affective trust in service relationships. *Journal of Business research* 58 (4):500-507
25. Renno L, Castro H (2008) Assessing the Validity and Reliability of Interpersonal Trust Measures in Cross-National Surveys. University of Brasilia, Brazil.
26. Glaeser EL, Laibson DI, Scheinkman JA, Soutter CL (2000) Measuring trust. *The Quarterly Journal of Economics* 115 (3):811-846
27. Naef M, Schupp J (2009) Measuring Trust: Experiments and Surveys in Contrast and Combination. IZA Discussion Paper Series. Institute for the Study of Labor (IZA), Bonn, Germany
28. ABS (2011) General Social Survey Summary Results Australia 2010.