Examining the Cross-National Equivalence of the Question Items in the AsiaBarometer Survey:
Focusing on Question Items on “Well-Being” and “Trust”*

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I. Introduction

This paper addresses a methodological issue in the social researches by looking at the 5th AsiaBarometer (AB) Survey. This survey was conducted from June to July 2007 in seven countries: Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, and Thailand.

The methodological issue examined in this paper relates to the cross-national equivalence of the question items in the AsiaBarometer Survey. When conducting cross-national comparative surveys, it is extremely important to try to formulate individual question items that will have the same meaning for all respondents in every country studied. There are two methods of doing this. One is to try to make all of the question items as similar as possible, including the use of similar wording. No matter how similar the question items appear, however, they will not have exactly the same meanings across cultures. The other method is to formulate question items that, though they may use differing rhetorical expressions, have “functional equivalence” in terms of their meaning. These two approaches must be viewed as M. Weber’s “ideal types,” as in reality the two are often intertwined. There is no “pure type” of either. In the AsiaBarometer Survey, efforts informed by these two approaches have been taken in the countries of Asia to formulate question items that are as equivalent as possible. Nonetheless, it is possible for the respondents in a particular country to understand the meaning of a question item in a completely different way than was intended.

How can this issue be examined? Smallest Space Analysis (SSA), a method of Facet Analysis developed by L. Guttman, provides useful clues for examining the “equivalence of measurement” of question items in cross-national comparative surveys.

As a unique intellectual construct developed by L. Guttman, Facet Approach is a well-established methodological approach in the field of empirical science (Shye 1978, Canter 1985, Levy 1994). However, there is not enough space here to provide a detailed explanation of the fundamentals of this approach. For more on this topic, see my previous works (Manabe 1993, Manabe 2001, and Manabe 2002). The Facet Approach has in recent years been proposed as a possible method of developing equivalent question items (Borg 1996). It is an approach that focuses less on the “shared stimulus” of the question items and more on “shared meaning” of the question items, and has been shown to be an effective means of confirming dimensions of meaning, or facets — and the elements that comprise each facet — across cultures and nations.

I. Borg (1996) described the advantages and disadvantages of this approach as follows. On the one hand, it facilitates the systematic categorization and classification of question items used in cross-cultural and cross-national comparative surveys, and can be used to create models of the conceptual structures of the relationships between question items. Its disadvantages are the complexity, specialized technical nature, and abstractness of the facet concept, and the fact that a full understanding of the method is needed in order to employ the approach — a matter not easily solved.

Borg therefore suggested introducing the concept of facets during the “question item development

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*Key words: cross-national equivalence, well-being, trust, Smallest Space Analysis (SSA)

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stage” of the development of cross-cultural and cross-national comparative surveys. In and of itself, this is a very attractive methodological proposal. In the case of the AsiaBarometer Survey, however, the questionnaires have already been developed, the survey has already been conducted, and a data set already exists. Thus, in this paper, I propose that Facet Analysis, and more specifically Smallest Space Analysis, be used in the “data analysis stage” of the survey process.

As a type of multidimensional scaling, SSA is a method of expressing the relationship between \( n \) number of question items shown in a correlation matrix by the size of the distance between \( n \) points in an \( m \)-dimensional \((m < n)\) space. The higher the correlation between two items, the smaller the distance between them on the map, and the lower the correlation, the greater the distance. Usually a 2-dimensional (plane) or 3-dimensional (cube) space is used to visually depict the structure of relationships between question items. Unlike factor analysis, the output axis has no particular meaning in SSA.

As a result, SSA is based on the so-called “contiguity hypothesis.” The questionnaire survey originally is a method of empirically measuring the meaning of the words used on the questionnaire form, and thus, the data analysis would explore the “space of meanings” and the “linkage of meanings” of both the surveyor and the respondent. According to Guttman’s approach, if the question items used in the survey are similar in meaning, they will be positioned close to one another (spatial distance) on the SSA map. This is the “contiguity hypothesis.”

The ideas described above have even greater implications in the context of a cross-national comparative survey. That is, if a cross-national comparative survey that uses the same wording for the same question items can yield an SSA map showing the same spatial partition (constellation), it is highly likely that “uniformity of meaning” has been achieved in those countries. Thus, it is also highly likely that “equivalence of measurement” has been achieved. This is an important methodological basis for using SSA in this context.

II. Smallest Space Analysis of Question Items on “Well-Being” and “Trust”

1. Well-Being

The 19 question items compiled under the heading of “well-being” include one item related to feelings of happiness (Q5), one item related to feelings of life enjoyment (Q6), one item related to feelings of accomplishment (Q7), and 16 items related to life satisfaction (Q8 a-p).

I prepared a correlation matrix showing the relationships between the question items related to well-being for the seven countries of Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, and Thailand. The following seven 2D maps were then obtained by applying SSA to these matrices (Figure 1). The circles drawn in these maps are the result of efforts to interpret the spatial partition (constellation) of the question items based on the empirical law of L. Guttman’s Facet Theory. The SSA map can be interpreted to mean that the question items are scattered throughout the space in accordance with the level of content-relevance of each question to “happiness.” This kind of analysis makes it possible to visually discern how close a relationship there is in each country between people’s “happiness” and “life satisfaction” — in other words, to discern the various aspects involved in the relationship between “happiness” and “life satisfaction.”

When examining the SSA map for these seven countries, one can focus on either (i) the commonalities evident in all of the countries’ SSA maps, or (ii) the differences evident in all of the countries’ SSA maps. When analyzing the data from a cross-national survey, the question is not which one of these two focal points is more important. Both are extremely important. However, my interest lies in examining the cross-national equivalence of the structure of the relationship — that is, the structure of the linkage of meanings — between question items. For this reason, this analysis will focus on the former aspects described in item (i).

There are several commonalities evident in the SSA maps of the seven countries examined, three of
which are discussed below.

(1) The first commonality is the positions of four items: public safety, the environment, social welfare system, and the democratic system. Among the questions asked regarding life satisfaction, these four were slightly different in terms of their content than the others. While the other question items tend to address more “personal issues,” these four tend to address more “institutional issues.” In a sense, the difference between these two categories corresponds to the conceptual distinction between “small happiness” and “great happiness” proposed by T. Aoki (2003.) If we turn our attention again to the SSA maps for these question items, we find that, based on this examination of their meanings, these four items comprise a single independent space in all of the countries. This can therefore be identified as a commonality evident in each country.

(2) Another commonality is that there are two types of character-defining question items that belong in the “personal issues” category: instrumental items, such as household income, standard of living, housing, job, and education, and consummatory items, such as marriage, family life, friendship, neighbors, health, leisure, and spiritual life. If we look at the SSA map for each country again with this distinction as one of the standards, we can see the instrumental item cluster on the one hand, and the consummatory item cluster on the other.

(3) Finally, the questions “Would you say that you are happy?” “How often do you feel you are really enjoying life?” and “How much do you feel you are accomplishing what you want out of your life?” are located in a separate zone set apart from the 16 items regarding “life satisfaction” for each country.

What are the differences between the countries? As is shown in the three findings above, the 19 question items addressed in this analysis could be divided into three major groupings in each country examined (this leads to the generalizable proposition about the equivalence of the “space of meanings” and “linkage of meanings” with regard to these items), but there were clear differences in each country with regard to the spatial partition (constellation) of the items within those groupings (the details with regard to this point are omitted here). To determine where these national differences come from would require an investigation of the various economic, political, social, and cultural conditions in each country.

![Figure 1-1 Smallest Space Analysis of the Interrelations among Well-being Items: Cambodia](image-url)
Figure 1-2 Smallest Space Analysis of the Interrelations among Well-being Items: Indonesia

Figure 1-3 Smallest Space Analysis of the Interrelations among Well-being Items: Laos
Figure 1-4  Smallest Space Analysis of the Interrelations among Well-being Items: Malaysia

Figure 1-5  Smallest Space Analysis of the Interrelations among Well-being Items: Myanmar
Figure 1-6  Smallest Space Analysis of the Interrelations among Well-being Items: the Philippines

Figure 1-7  Smallest Space Analysis of the Interrelations among Well-being Items: Thailand
2. Trust

The 21-question item cluster addressed in this analysis is divided into three items on “interpersonal trust” (Q12, Q13, and Q14) and 19 question items on “institutional trust” (Q30 a-s). The items regarding interpersonal trust ask “Generally, do you think people can be trusted or do you think that you can’t be too careful in dealing with people?” (Q12), “Do you think that people generally try to be helpful or do you think that they mostly look out for themselves?” (Q13), and “If you saw somebody on the street looking lost, would you stop to help?” (Q14). The items regarding institutional trust ask if the respondent trusts 19 institutions, systems, and organizations, such as “the central government,” “the local government,” “the army,” “the legal system,” “the police,” and “the parliament” and so on (Q29).

Here again, I have prepared a correlation matrix showing the relationships between these question items for the seven countries being examined, and have obtained the following six 2D maps using SSA (Figure 2).

The commonalities between the countries are quite remarkable. The question items related to people’s social trust are shown in concentric circles in all of the countries, and question items 1, 2, and 3 on interpersonal trust are located in the inner concentric circle, while question items 4-22 on institutional trust are positioned in the outer concentric circle. In other words, there tends to be a consistent discrepancy between interpersonal trust and institutional trust (specifically, for example, the attitudinal tendency to say “I trust people,” but “I don’t trust institutions”) across all of the countries.

This is not to say that there are no differences between the countries. While the discrepancy between the two types of trust is common across all countries, the size of that discrepancy varies in different nations. A closer inspection of the SSA maps of each of the countries shows that the position of each question item within the zone is slightly different. Here, again, the maps serve two purposes. On the one hand, they facilitate the establishment of generalizable propositions — the discrepancy between interpersonal trust and institutional trust — while on the other they suggest the exploration of individual conditions of each of the countries.

Figure 2-1 Smallest Space Analysis of the Interrelations among Trust: Cambodia
Figure 2-2 Smallest Space Analysis of the Interrelations among Trust: Indonesia

Figure 2-3 Smallest Space Analysis of the Interrelations among Trust: Laos
Figure 2-4  Smallest Space Analysis of the Interrelations among Trust: Malaysia

Figure 2-5  Smallest Space Analysis of the Interrelations among Trust: Myanmar
Figure 2-6  Smallest Space Analysis of the Interrelations among Trust: the Philippines

Figure 2-7  Smallest Space Analysis of the Interrelations among Trust: Thailand
Conclusion

In this paper, I attempted to perform Smallest Space Analysis on question items on well-being and trust using survey data from the 5th AsiaBarometer Survey. The goal was to examine the cross-national equivalence of the question items contained in the AsiaBarometer Survey. The methodological premise behind the examination was as follows. If the SSA maps depicting the structures of the relationships between question items in each of the seven countries examined reveal the same patterns, it is highly likely that “uniformity of meaning” has been achieved in those countries, and it is thus also highly likely that “equivalence of measurement” has been achieved.

The results showed that the SSA maps for each country generally revealed the same patterns for the question items on well-being and trust. The clarifier “generally” is used because even though the spatial locations of the question items on well-being followed the exact same patterns across every country in terms of the division into (1) question items on happiness and question items on life satisfaction, and (2) personal questions items and institutional question items related to life satisfaction, there were some differences at the subordinate level of the personal question items. That is, the dimensions are further specified at levels labeled “instrumental items” and “consummatory items,” and there was one exception each at this level in Cambodia, Laos, Myanmar, and Thailand. Up to a certain dimensional level, this case study shows that it is highly likely that the cross-national “uniformity of meaning” (equivalence of measurement) has been achieved for the question items on well-being and trust. Given the generalization of the notion of “Asian diversity” that has developed in recent years, focus has had to be placed on examining the “uniformity of spaces and linkages of meaning” in Asia.

So-called “review papers” on methods of conducting cross-national comparative surveys have suggested that the use of various techniques of multivariate analysis would be effective in examining the equivalence of question items used in such surveys (Alwin et al., 1994). However, there are very few studies that have specifically examined the cross-national similarities and differences between question items using data from cross-national comparative surveys. This lends an even greater sense of significance to the examination conducted here.

The challenge for the future is to try to examine the “equivalence of measurement” based on a variety of pluralistic methods.

REFERENCES


Appendix ①: Question Items on Well-being

(Ask all respondents) (Show card)
Q5 All things considered, would you say that you are happy these days? (SA)

1 Very happy
2 Quite happy
3 Neither happy nor unhappy
4 Not too happy
5 Very unhappy
9 Don't know

(Ask all respondents) (Show card)
Q6 How often do you feel you are really enjoying life these days? (SA)

1 Often
2 Sometimes
3 Rarely
4 Never
9 Don't know

(Ask all respondents) (Show card)
Q7 How much do you feel you are accomplishing what you want out of your life? (SA)

1 A great deal
2 Some
3 Very little
4 None
9 Don't know

(Ask all respondents) (Show card)
Q8 Please tell me how satisfied or dissatisfied you are with the following aspects of your life. (SA for each)

[Note: Q8-i was omitted in Myanmar. Q8-m was omitted in Myanmar & Laos.]

<table>
<thead>
<tr>
<th></th>
<th>Very satisfied</th>
<th>Somewhat satisfied</th>
<th>Neither satisfied nor dissatisfied</th>
<th>Somewhat dissatisfied</th>
<th>Very dissatisfied</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q8a</td>
<td>Housing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8b</td>
<td>Friendship</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8c</td>
<td>Marriage</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8d</td>
<td>Standard of living</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8e</td>
<td>Household Income</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8f</td>
<td>Health</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8g</td>
<td>Education</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8h</td>
<td>Job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8i</td>
<td>Neighbors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8j</td>
<td>Public safety</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8k</td>
<td>The condition of the environment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8l</td>
<td>Social welfare system</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8m</td>
<td>The democratic system</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8n</td>
<td>Family life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8o</td>
<td>Leisure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q8p</td>
<td>Spiritual life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Aprendix ②: Question Items on Trust

Q12 Generally, do you think people can be trusted or do you think that you can’t be too careful in dealing with people (that it pays to be wary of people)? (SA)

1. Most people can be trusted
2. Can’t be too careful in dealing with people
9. Don’t know

(Ask all respondents) (Show card)

Q13 Do you think that people generally try to be helpful or do you think that they mostly look out for themselves? (SA)

1. People generally try to be helpful
2. People mostly look out for themselves
9. Don’t know

(Ask all respondents) (Show card)

Q14 If you saw somebody on the street looking lost, would you stop to help? (SA)

1. I would always stop to help.
2. I would help if nobody else did.
3. It is highly likely that I wouldn’t stop to help.
9. Don’t know

(Ask all respondents) (Show card)

Q30 Please indicate to what extent you trust the following institutions to operate in the best interests of society. If you don’t know what to reply or have no particular opinion, please say so. (SA for each institution)

[Note: Q30a–g was omitted in Myanmar & Laos. Q30h–i was omitted in Myanmar.]

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Institution/Category</th>
<th>Trust a lot</th>
<th>Trust to a degree</th>
<th>Don’t really trust</th>
<th>Don’t trust at all</th>
<th>Haven’t thought about it</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q30a</td>
<td>a. The central government</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q30b</td>
<td>b. Your local government</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q30c</td>
<td>c. The army</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q30d</td>
<td>d. The legal system</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q30e</td>
<td>e. The police</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q30f</td>
<td>f. Parliament, Congress</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Q30g</td>
<td>g. The political party</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Q30h</td>
<td>h. The public education system, operating in YOUR COUNTRY</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Q30i</td>
<td>i. The public health system</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>Q30j</td>
<td>j. Large domestic companies</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>Q30k</td>
<td>k. Multinational companies</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Q30l</td>
<td>l. Trade unions/labor unions</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>Q30m</td>
<td>m. The media</td>
<td>→</td>
<td>1</td>
<td>2</td>
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<td>5</td>
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<tr>
<td>Q30n</td>
<td>n. Non-governmental organizations (e.g. environmental, social advocacy groups or other non-profit organizations)</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Q30o</td>
<td>o. Religious organizations</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
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<td>Q30p</td>
<td>p. The United Nations</td>
<td>→</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
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<tr>
<td>Q30q</td>
<td>q. The World Trade Organization</td>
<td>→</td>
<td>1</td>
<td>2</td>
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<td>5</td>
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<tr>
<td>Q30r</td>
<td>r. The World Bank</td>
<td>→</td>
<td>1</td>
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The methodological issue examined in this paper relates to the cross-national equivalence of the question items on the AsiaBarometer Survey. How can this issue be examined? Smallest Space Analysis (SSA), a method of Facet Analysis developed by L. Guttman, provides useful clues for examining the “equivalence of measurement” of question items in cross-national comparative surveys. In this paper, I attempted to perform Smallest Space Analysis on question items on well-being and trust using survey data from the 5th AsiaBarometer Survey. The goal was to examine the cross-national equivalence of the question items contained in the AsiaBarometer Survey. The methodological premise behind the examination was as follows. If the SSA maps depicting the structures of the relationships between question items in each of the seven countries examined reveal the same patterns, it is highly likely that “uniformity of meaning” has been achieved in those countries, and it is thus also highly likely that “equivalence of measurement” has been achieved.

The results showed that the SSA maps for each country generally revealed the same patterns for the question items on well-being and trust. This case study shows that it is highly likely that the cross-national “uniformity of meaning” (equivalence of measurement) has been achieved for the question items on well-being and trust. Given the generalization of the notion of “Asian diversity” that has developed in recent years, focus has had to be placed on examining the “uniformity of spaces and linkages of meaning” in Asia.

Key Words: cross-national equivalence, well-being, trust, Smallest Space Analysis (SSA)