

MEASURING COLLECTIVISM AND INDIVIDUALISM IN THE THIRD MILLENNIUM

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The aim in this study was to validate the Auckland Individualism-Collectivism Scale (AICS) across populations from 5 different countries and identify better ways to interpret the scores. Data were collected from New Zealand, Portugal, China, Italy, and Romania. The results indicate that the AICS is not only valid but also highly reliable ($\alpha > .70$). Cluster analysis identified 4 clusters: low collectivism – high individualism; high collectivism – midlevel individualism; high collectivism – high individualism; and low collectivism – low individualism. Each group included individuals from all 4 clusters. The advantages of the AICS, the use of cluster analysis in cross-cultural measures, and the importance of these measures within the psychoeducational context are discussed.

Keywords: individualism, collectivism, cross-cultural.

In a major recent review and meta-analysis of 83 studies, Oyserman, Coon, and Kemmelmeier (2002) identified seven major domains relating to individualism (independence, goals, competition, uniqueness, private, self-knowing, and direct communication) and eight major domains relating to collectivism (relatedness, belonging, duty, harmony, advice seeking, context dependent, hierarchical, and group oriented). They argued that the most salient feature of individualism, as defined in the majority of the studies, was valuing personal independence. Other domains, considered as subcomponents of personal independence, such as self-knowledge, uniqueness, privacy, clear communication, personal responsibility, freedom of choice, and competition were employed in less than a third of the studies. It was also suggested that individualists are more likely to prioritize their own goals over those of the group and are more likely to belong to more “in-groups” in comparison to collectivists (Chiou, 2001; Singelis, Triandis, Bhawuk, & Gelfand, 1995; Triandis, 1995, 1996; Triandis & Gelfand, 1998).

The majority of the studies related to collectivism are concerned with a sense of duty to a group, relatedness to others, seeking others’ advice, harmony, and working with a group. To a lesser extent, collectivism is related to a sense of belonging to a group, one’s contextual self and hierarchical value. Collectivists are more likely to internalize the group’s goals and values and give these higher priority. It has also been suggested that collectivists tend to use an indirect communication style and seek to maintain harmony and “save face” within the group (Markus & Kitayama, 1991; Oyserman et al., 2002).

With the growth of the international education market these cross-cultural differences have become particularly important. Educational institutions need to be increasingly aware of them if they are to address students’ cultural needs (Tan & Goh, 2006; Wang, 2007). Therefore, enhancing methodologies that measure cross-cultural attributes, particularly collectivism and individualism, may help educational institutions to address the challenges of the globalizing educational markets, particularly in relation to the design and analysis of psychoeducational assessments.

ASSESSMENT OF INDIVIDUALISM AND COLLECTIVISM

In 2002 Oyserman and colleagues argued that there was currently no measurement tool to assess all the critical attributes of individualism and collectivism. Their review did, however, identify three measurement tools that went part way to measuring all attributes (Hui, 1988; Singelis, 1994; Singelis et al., 1995). Although these tools have been widely used they are vulnerable to some criticisms. For example, although Hui's Individualism-Collectivism Scale (INDCOL; 1988) was validated by experts, the INDCOL scale does not have high estimates of reliability ($\alpha \sim .60$); nor has it been tested across a wide range of cultures or populations within cultures.

The validity of Singelis' (1994) Self-Construal Scale (SCS), which was developed using university students from a variety of cultures in Hawaii (European Americans, Japanese, Koreans, Hawaiians, Filipinos, and mixed), was based mostly on nationality. However, despite the initial SCS study achieving results indicating high reliability, this level of reliability was not replicated in results of the majority of the other studies that applied the measure (Oyserman et al., 2002). In 1995 Singelis and colleagues developed a 32-item measure of individualism and collectivism, crossed with horizontal and vertical domains relating to the concept of hierarchy within society. However, although this tool has been widely used, very few of the studies that applied it reported an acceptable level of reliability ($\alpha > .70$) (Oyserman et al.).

One major problem with these measurements is that respondents are asked to indicate their level of agreement with items relating to their attitudes, values, and beliefs. Using agreement scales within a cross-cultural context can be problematic since collectivists and individualists may interpret the agreement scales differently (Schwarz & Oyserman, 2001).

One possible remedy is to ask the respondents to react to frequency rather than intensity of beliefs. People have a range of beliefs and values, but they may not always exercise them so that one can be intense about a belief in some situations but not in others. Thus, it has been suggested that the use of a frequency scale that relates to a prevalence of behavior or thought (Brown, 2004) provides a more accurate indication of people's behaviors than do reports on the intensity of beliefs that relate to perceived importance of values or beliefs.

Based on the major dimensions outlined in the meta-analysis carried out by Oyserman et al. (2002), Shulruf, Hattie, and Dixon (2007) developed the Auckland Individualism and Collectivism Scale (AICS) to address these measurement issues and to minimize the major problems identified in previously developed scales, such as the confounding influence of familialism (Oyserman et al.) and reference-group effect bias (Heine, Lehman, Peng, & Greenholtz, 2002). Because the assessment is of frequency rather than agreement, use of the AICS also reduces acquiescence biases.

The final version of the AICS (Shulruf, 2008) consists of 26 items, of which 11 (seven advice and four harmony) relate to collectivistic attributes and 15 (seven competition, four uniqueness, and four responsibility) relate to individualistic attributes. The items are phrased in a manner that fits frequency scales (i.e., from *never* or *almost never* to *always*); for example, “I like to be accurate when I communicate” or “Before I make a major decision I seek advice from people close to me”.

When structural equation modeling was used to fit the five dimensions (competition, responsibility, uniqueness, harmony, and advice) to the two higher order factors of individualism and collectivism, a high level of reliability was achieved with the AICS (.78 for both collectivism and individualism) as well as an adequate level of goodness of fit (RMSEA = .069). The scales also dependably discriminated between different ethnicities within New Zealand (Shulruf et al., 2007), as well as between Portuguese and Romanians (Ciochină & Faria, 2006). Hence, the purpose in this study was firstly to validate the AICS across different countries and secondly to identify better ways of interpreting the scores of individualism and collectivism.

METHOD

Data from a total of 1,166 students aged from 15 to 45+ years were collected from five countries: New Zealand (368), Portugal (200), the People’s Republic of China (181), Italy (222), and Romania (195). The countries sampled for this study were of particular interest because none of them had been included in a study on collectivism and individualism before, apart from international comparisons using Hofstede’s measures (Hofstede, 1980), which have attracted some significant criticisms (Baskerville, 2003; Oyserman et al., 2002). In addition, most of these countries have experienced major political and social changes since Hofstede’s (1980) study was conducted. For example, Romania and Portugal have moved from dictatorships to democracies, China has become more open to the western world, and New Zealand has shifted from being a highly regulated economy to become one of the most deregulated in the world. Considering the inconclusive and dated findings in relation to collectivism and individualism in these countries and among these people, as well as, with the exception of China, the scarcity of such research on these countries, this sample is a valuable contribution to the literature.

The majority of the students were aged between 15 and 20 years (81%); 8% were aged from 21 to 25; and the rest 25 to 45+ years of age. The majority of

the sample (61%) was female. All participants took part voluntarily, following the American Psychological Association protocol (2002). The slightly higher proportion of females and the use of student volunteers is very common (Oishi, 2000; Oyserman et al., 2002), hence the data are comparable with data previously reported in the literature. The AICS was translated from English into the native language of all participants and was validated by iterative forward- and back-translation to reach an optimal level of translation (Maneesriwongul & Dixon, 2004).

Confirmatory factor analysis (CFA) using AMOS (Arbuckle, 2003) was undertaken to verify the factor structure of the AICS, as determined by Shulruf et al. (2007). The estimates of reliability were measured for the entire sample and for each subgroup. Further, k-mean cluster analysis was used to compare the proportion of similar subgroups (in terms of collectivism and individualism) across the different cultural groups. The clusters were established from the scores of the five domains (competition, responsibility, uniqueness, harmony, and advice).

RESULTS

The results from the structural equation modeling (Figure 1) using AMOS version 5 (Arbuckle, 2003) indicated that the AICS structure was stable for the entire sample. Moreover, to check the effect of the response bias on the factor model across nations, the CFA was calculated in two ways: (1) raw scores and (2) z-scores (calculated within each nation across all items). It appeared that the differences were minor and an adequate level of goodness of fit was achieved with the AICS (for raw scores: RMSEA = .068, $X^2/df = 2.46$; for standardized scores: RMSEA = .065, $X^2/df = 2.41$), which is appropriate given the benchmark of RMSEA < .08, set up by Browne and Cudeck (1993), for an acceptable CFA model. However, group analysis (raw scores), yielded better fit (RMSEA = .028, $X^2/df = 1.87$). Multigroups comparison was conducted to measure whether or not the model structure was invariant across all groups. When all groups were included the difference was significant. However, when the Chinese group was excluded from that comparison, no significant difference was found across the groups and the model fit was good (RMSEA = .032, $X^2/df = 1.95$).

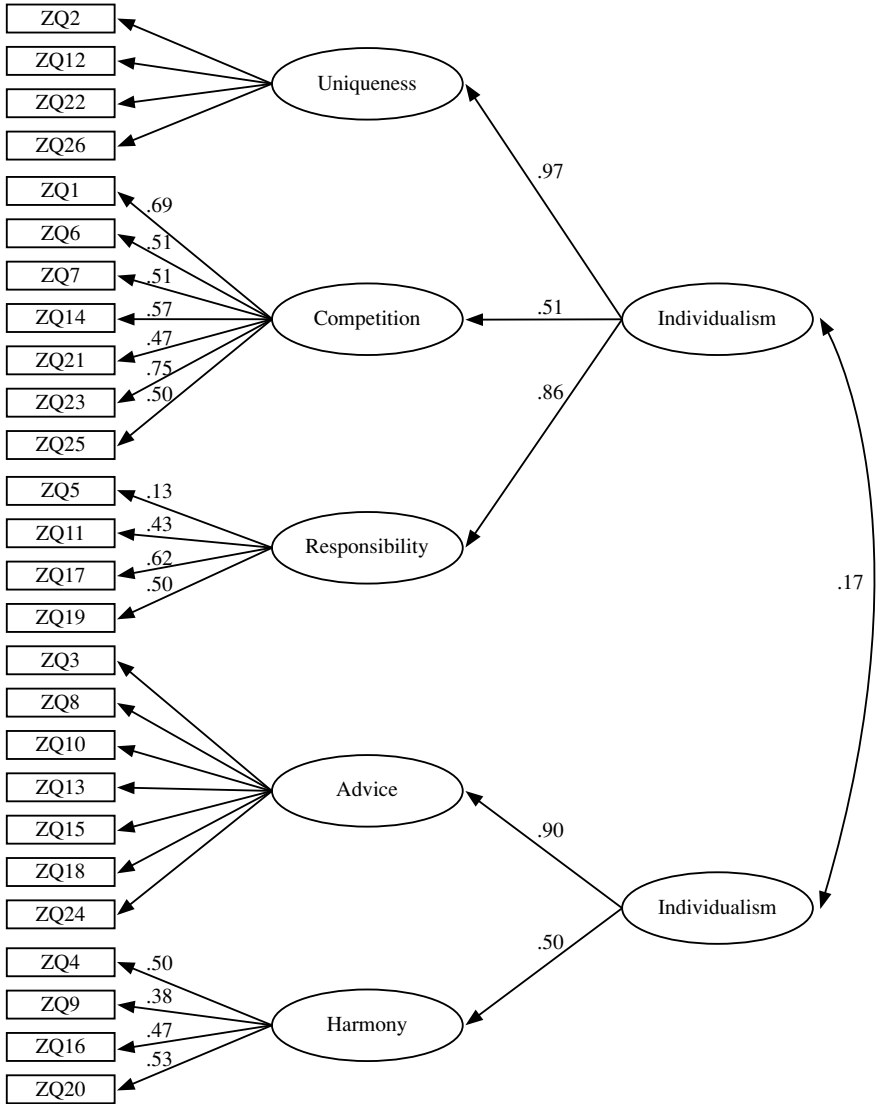


Figure 1. CFA of AICS standardized scores.

TABLE 1
**RELIABILITY (CRONBACH'S ALPHA) FOR COLLECTIVISM AND INDIVIDUALISM ACROSS COUNTRIES/
 ETHNICITIES BY AGE**

Country/ Ethnicity	Collectivism	All ages			Age 15-20			
		<i>n</i>	Individualism	<i>n</i>	Collectivism	<i>n</i>	Individualism	<i>n</i>
All	.76	1110	.80	1087	.75	874	.80	856
China	.77	143	.77	124	.77	136	.78	118
Italy	.72	219	.78	221	.72	219	.78	221
Portugal	.74	192	.82	189	.74	177	.83	175
Romania	.74	195	.76	195	.74	195	.76	195
New Zealand (Other)	.79	361	.82	358	.79	147	.81	147
NZ European	.80	64	.83	64	.79	33	.84	33
NZ Maori	.77	60	.77	60	.84	16	.75	16
NZ Pacific	.78	107	.83	107	.80	42	.82	42
NZ Asian	.69	71	.82	71	.71	36	.82	36

It was found that the estimates of reliability for the AICS was high for the entire sample ($\alpha > .75$), and across different subgroups (Table 1). We noted that the reliability remained high within the youngest age group (15 to 20) (Table 1), as well as across genders (Table 2).

TABLE 2
**RELIABILITY (CRONBACH'S ALPHA) FOR COLLECTIVISM AND INDIVIDUALISM ACROSS COUNTRIES
 BY GENDER**

Country	Collectivism	Males			Females			
		<i>n</i>	Individualism	<i>n</i>	Collectivism	<i>n</i>	Individualism	<i>n</i>
All	.74	403	.80	393	.75	662	.80	650
China	.72	98	.76	88	.83	44	.82	35
Italy	.72	111	.78	112	.70	108	.76	109
Portugal	.63	66	.83	67	.77	126	.81	122
Romania	.80	61	.79	61	.67	134	.74	134
New Zealand	.80	67	.77	65	.79	250	.82	250

Nonetheless, it was important to validate the results obtained using the AICS by comparing the AICS scores of collectivism and individualism with results measured by other scales for similar populations. The New Zealand (NZ) population represents many ethnicities compared with that of the other countries in the study and therefore was split into five subgroups comprising: NZ European ($n = 64$), NZ Maori ($n = 60$), NZ Pacific Islanders ($n = 107$), NZ Asian ($n = 71$), and NZ Other ($n = 66$). The NZ Other subgroup was excluded from

further analysis since the individuals of whom this subgroup was composed did not belong to a single broad ethnic group.

TABLE 3
SCORES OF COLLECTIVISM AND INDIVIDUALISM BY COUNTRY/ETHNICITY

Country/Ethnicity	<i>n</i>	Collectivism	<i>SD</i>	Individualism	<i>SD</i>
China	180	3.43	.65	3.59	.59
Italy	222	3.52	.77	3.99	.75
Portugal	200	3.76	.70	4.03	.75
Romania	195	3.47	.76	4.28	.66
NZ European	64	3.72	.78	4.21	.72
NZ Maori	60	3.62	.78	4.22	.61
NZ Pacific	107	4.00	.82	4.44	.75
NZ Asian	71	4.13	.67	4.30	.73
Total	1165	3.66	.78	4.09	.75

The means and standard deviations for collectivism and individualism scores across the cultural group samples are presented in Table 3. NZ Pacific Islanders and NZ Asians had the highest means on collectivism and individualism, whereas Chinese were low on both. The low scores of the Chinese may be related to specific language issues in relation to interpretation of the scale's anchors. It was also found that females scored higher on collectivism than did males (3.79 and 3.43, respectively, $p < .001$), but there were no statistically significant differences for the individualism scale. Correlations between age and scores of collectivism and individualism were negligible (.06 and .11 respectively).

Previous researchers have argued that it is unreasonable to assume that any individual from any of the above countries can necessarily be profiled by the overall mean for that country because there may be many individualists in a collectivist society, as well as many collectivists in an individualist society (e.g., Baskerville, 2003; Heine et al., 2002; Voronov & Singer, 2002). Hence, describing groups of people by using means and standard deviations may not be appropriate as a means of representing culturally heterogeneous groups. It has therefore been suggested that cluster analysis is a better way to describe and compare culturally heterogeneous groups (Freeman & Bordia, 2001; Georgas & Berry, 1995).

The k-means cluster analysis across all individuals identified four distinct clusters (Figure 2) that were clearly identified by collectivism and individualism scores as: Low Collectivism and High Individualism (L-C, H-I); High Collectivism and Midlevel Individualism (H-C, Mid-I); High Collectivism and High Individualism (H-C H-I); and Low Collectivism and Low Individualism (L-C L-I). We noted with interest that each culture included individuals from all four clusters (Figure 3).

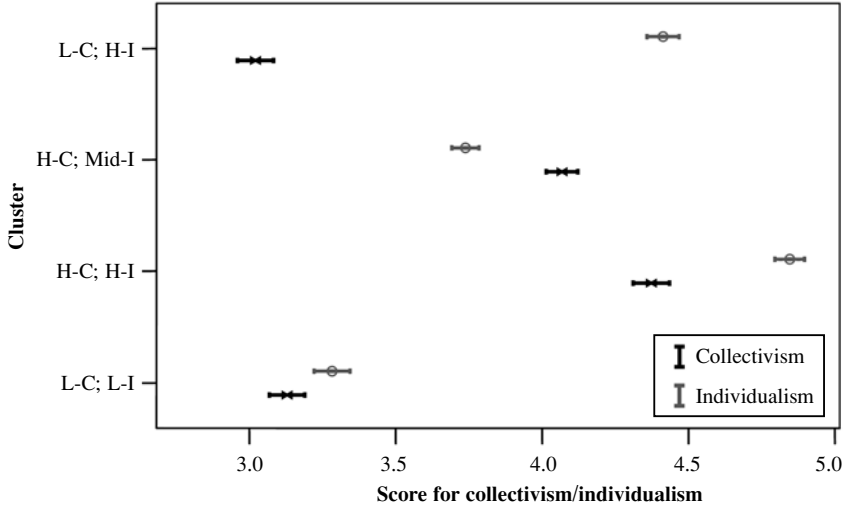


Figure 2. Means and 95% CI of collectivism and individualism scores by clusters.

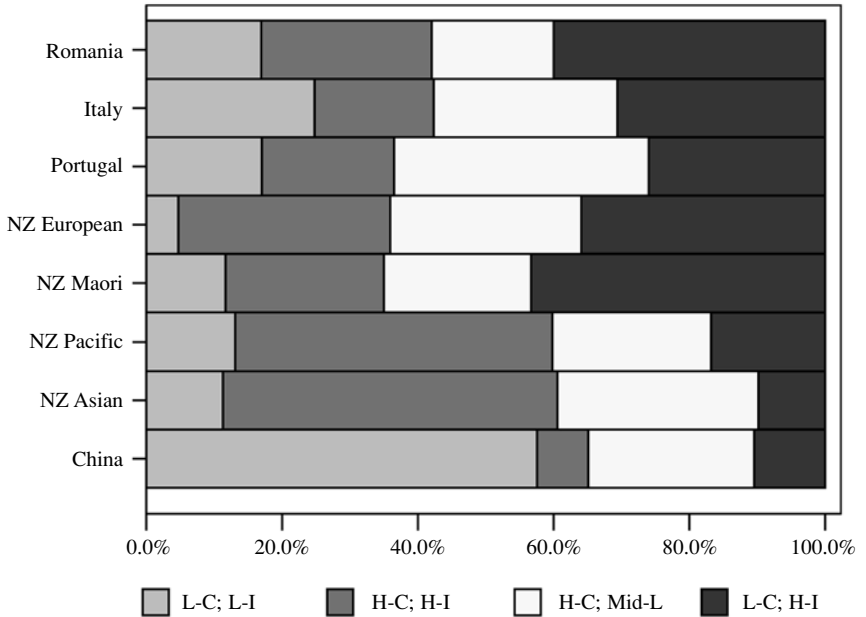


Figure 3. Distribution of participants by clusters according to ethnicity.

It was found that the distribution of the clusters was quite similar across the three cultures from the European continent (Portuguese, Italian, and Romanian), the NZ European and the NZ Maori (henceforth the *European group*). The NZ Pacific and the NZ Asian groups were found to be similar to each other (henceforth the *Asian-Pacific group*). The Chinese was unlike any other (henceforth the *Chinese group*) (see Figure 3). In particular, it was found that within the European, the Asian-Pacific, and the Chinese groups, not only was the distribution of collectivism and individualism similar, but there was also a tendency toward similar use by respondents of the upper or the lower scores on the frequency scale. We found it interesting that, rather than inclining towards collectivism, as would have been expected from the literature (Oyserman et al., 2002), most Chinese groups used the lower frequency scale scores (cluster L-C; L-I). Nonetheless, among those who did incline towards either collectivism or individualism, the majority was collectivist. Similarly, most of the respondents in the Asian-Pacific group did not provide a clear indication of collectivist or individualist tendencies. However, unlike the Chinese group, they tended to use the high frequency scores on both the individualist and collectivist scales. Notwithstanding, among those who did identify themselves as either collectivist or individualist, the majority was collectivist. The European group was found to be different from the Chinese and Asian-Pacific groups in two ways. Firstly, the majority of the people in the European group provided an indication that they were either collectivist or individualist (and the majority identified themselves as individualists). Secondly although about 40% of the European group did not incline towards either collectivism or individualism, most tended to use the high scores on the psychological scale. Thus, we concluded that the k-mean cluster analysis was a useful tool both in terms of identifying groups by their collectivist and individualist attributes, and by their tendency to use either high or low scores on the psychological scale (AICS).

DISCUSSION

The AICS (Shulruf et al., 2007) was developed in an attempt to address major methodological issues that had been identified when using previous scales for collectivism and individualism (Baskerville, 2003; Heine et al., 2002; Oyserman et al., 2002; Voronov & Singer, 2002). We argue that the AICS is superior to other individualism and collectivism measures; in particular, respondents are asked about the frequency of their behavior or thoughts concerning a particular issue, rather than the importance of certain individual values. This difference is important: the answers recorded are the respondents' perception of their own behavior rather than those they regard as optimal or desired behavior. Hence, the AICS provides more accurate information on people's behaviors. That this is

so is supported by the high reliability achieved across all groups in the current study.

The validity of the AICS is based on two measures. The first is face validity (Abramson, 2001), which is clearly evident from the source of the items in the AICS. Most of the items were derived from well-established measures for collectivism and individualism, although some minor rephrasing may have been done so that the wording is better suited to the frequency scale (for details see Shulruf et al., 2007). However, all the items in the AICS remained within their initial dimensions; that is the construct of collectivism and individualism. Although face validity is sufficient when supported by high reliability (Abramson & Abramson, 2001), in our study further support for validity was sought by comparing the AICS scores of collectivism and individualism with results of collectivism and individualism as measured by other scales for similar populations. Since no other study was found in which these groups have been compared to findings from studies in which up to four of the cultures were compared these were included in the current study and provided further support for the validity of the AICS.

The meta-analysis carried out by Oyserman et al. (2002), including data from 83 studies, provides the most contemporary comprehensive review of collectivism and individualism studies. However, it provides only limited information for comparison purposes since no clear single comparative benchmark was available. Nonetheless, on the collectivism scale, the meta-analysis of Oyserman et al. suggested that the differences between Romanians, Portuguese, and Italians are minor. These findings are in line with those of the current study and have been echoed by several more recent international comparisons (Green, Deschamps, & Páez, 2005; Hofstede, 2001). On the individualistic scale, the findings of the current study about similarities across the European group are also in line with work by Oyserman et al., Pepi, Faria, and Alesi (2006; Italy, Portugal), and Hofstede (2001; Romania, Portugal). Similarities between New Zealanders (all ethnicities) and Europeans were also suggested by Hofstede (2001) and Merrit (2000; in a comparison with Italian) and by Spector et al. (2001). Within New Zealand, in previous studies (Hewson, 2002; Shulruf, Hattie, & Dixon, 2006) it has been suggested that Maoris and NZ Europeans did not differ significantly on collectivist and individualist scales. Unfortunately, no previous study could be found in which collectivist and individualist attributes of either NZ Asians or NZ Pacific people have been measured.

In the multigroups comparison we found that, with the exception of the Chinese sample, the model structure did not differ across the groups. Since cross-national comparison usually involves different languages, and given the Chinese group's low scores on both collectivism and individualism, it is possible that translation may have affected the Chinese group's results (Bontempo, 1993). An independent

replication of the back translation from Chinese to English reconfirmed the accuracy of the translation, particularly the anchors, which were identical to the original, but it should be noted that linguistic analysis was not within the scope of this study, nor is it a common practice in such studies (Oyserman et al., 2002). We, therefore, suggest that further research into the linguistic differences would be worthwhile. However, in this study we used score standardization within each sample (Fischer, 2004) because we rated this as the second best methodology to ensure compatibility of the AICS across groups. However, even with the standardization the result for the Chinese sample was different. The explanation for that is that within the Chinese sample the L-C L-I group was dominant (58%) particularly in comparison to the H-C H-I, (8%). This significantly reduced the variance between the two groups, which was then likely to make the Chinese group different to the others. Thus, we concluded that this difference did not indicate lack of validity but rather a different cultural characteristic.

Most of the research on collectivism and individualism (for example, Gudykunst et al., 1996; Hui, 1988; Oyserman et al., 2002; Singelis et al., 1995) has been focused on comparison between Westerners (mostly North American) and Asians (mostly East Asian). These researchers have suggested that Asians, particularly the Chinese, are more collectivist and less individualist than are people from Western countries. However, these comparisons have also been challenged (Brewer & Chen, 2007; Heine & Lehman, 1995; Heine et al., 2002; Voronov & Singer, 2002). Critics suggest that there is confusion around the meaning of collectivism and individualism (Brewer & Chen, 2007; Green et al., 2005), and also suggest that there are some methodological flaws in the measures used (Heine et al.; Voronov & Singer). Most importantly, there is a growing number of studies in which it has been shown that Westerners are not always more individualist and less collectivist than Asians (Brewer & Chen; Green et al.; Heine et al.; Oyserman et al.). This suggests a need for a better tool to identify collectivists and individualists across and within societies. By using cluster analysis, in this study we have shown that the AICS can provide reliable discrimination across ethnic groups, can identify the proportion of individualists, and can also identify collectivists within groups, and the proportion of those individuals who are neither. In their study of people using cluster analysis, Green et al. demonstrated that a large proportion of their study population identified as neither collectivist nor individualist. For example, within the Chinese sample 55% were either “self-reliant non-competitive” or “interdependent competitive”; and among the Portuguese and Italian samples about 50% belonged to these two groups. The similarity between the results of Green et al. and the current researchers emphasizes the importance of cluster analysis in research on this topic.

Since all populations across different cultures comprise the full range from very collectivist to very individualist (Triandis, 1995), we suggest that the mean scores of collectivism and individualism for any given population provide only limited information on the actual ethnic composition of these groups. Hence, the AICS appears to be a highly reliable and valid measure of collectivism and individualism not only because of its scale based on frequency rather than agreement, but also because of the way in which results are analyzed (by cluster analysis) and interpreted. Furthermore, as Oyserman et al. (2002) have pointed out, a range of cultures have been found to be either high or low on both collectivism and individualism, which indicates that the use of the mean scores of collectivism and individualism for analysis is insufficient to identify differences or similarities across cultures.

Therefore, we suggest that using the AICS for measuring collectivism and individualism and identifying clusters of individuals within each ethnic group is more insightful than simply measuring mean scores. For example, determining who, and how many, in a group are collectivist, individualist, or neither may determine the extent to which the group would be more or less affected by individualist and collectivist behaviors. Such behaviors could be the tendency towards acquiescence, extreme response styles (Harzing, 2006), or other communication styles (Gudykunst et al., 1996). A change in the group's overall scores cannot indicate whether this was a small change across most of the group, or a large change within a (identified) small subgroup.

In conclusion, the results of this study make two major contributions to the literature on collectivism and individualism. The first is that our results confirm that the AICS is a reliable and valid measure for collectivism and individualism using the AICS a high level of reliability was achieved across all subgroups and we were able to identify similarities and dissimilarities across cultures in line with previous studies. The second and most important finding is that we extended the scope of the use of cluster analysis in cross-cultural psychology research by suggesting a shift away from using mean scores of scales to identify distributions of subgroups within each given group. This additional information could be very useful in cross-cultural research, particularly in the interpretation of behaviors that are likely to be affected by cross-cultural attributes.

Nonetheless, it appeared that little, if any, research has been done with groups who were found to be high or low on both collectivism and individualism. Further research in this area is much needed.

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