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Abstract

Indecisiveness is the inability to make decisions in a timely manner across situations and domains. The present research explores the construct of indecisiveness across sex and culture, given the past suggestion of group differences in mean scores (Ji, Oka, & Yates, 2000; Rassin & Muris, 2005a). Frost and Shows' (1993) Indecisiveness Scale was administered to undergraduates in the United States and China (73 men and 88 women per culture). For Americans, a two-factor model of indecisiveness (general indecisiveness and planning indecisiveness) emerged while, for Chinese, a three-factor model (with general indecisiveness split into anxiety- and confidence-related factors) better explained the data. No group differences in mean indecisiveness scores were found, but differences did exist on some factors. The results suggest caution in using the scale cross-culturally, but also point to interesting cultural variations in the nature of indecisiveness.

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1. Introduction

Indecisiveness is the inability to make decisions in a timely manner across situations and domains (Frost & Shows, 1993). This construct has received considerable research attention (Ferrari,

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Johnson, & McCown, 1995), and has been found to predict many resource-intensive decision tendencies in the general population. Individuals high on indecisiveness take more time to choose among alternatives (Frost & Shows, 1993), use less-exhaustive decision strategies (Ferrari & Dovidio, 2000, 2001), require greater cognitive effort to make decisions (Ferrari & Dovidio, 2001), are more threatened by ambiguous situations (Rassin & Muris, 2005b), and are more likely to postpone decisions (Rassin & Muris, 2005a), compared to those low on indecisiveness. In naturalistic contexts, indecisive individuals have greater difficulty choosing college majors (Gayton, Clavin, Clavin, & Broida, 1994), choosing careers (Gati, Krausz, & Osipow, 1996), and making other life decisions (Germeijs & De Boeck, 2002). Not surprisingly, these individuals report more negative health consequences resulting from this decision style (Frost & Shows, 1993).

Indecisiveness has also been found to correlate with numerous other personality measures. These include self-esteem (Burka & Yuen, 1983; Ferrari, 1991), neuroticism (Jackson, Furnham, & Lawty-Jones, 1999), behavioral procrastination (Beswick, Rothblum, & Mann, 1988; Effert & Ferrari, 1989; Ferrari, 1992), obsessive-compulsive tendencies (Frost & Shows, 1993; Gayton et al., 1994), hoarding behavior (Frost & Gross, 1993; Frost & Shows, 1993), perfectionism (Frost & Shows, 1993; Gayton et al., 1994), and distractibility (Harriott, Ferrari, & Dovidio, 1996). Because of its challenging behavioral consequences, as well as the extent to which it is associated with and compounded by a wide range of negative tendencies, indecisiveness merits further exploration.

The most comprehensive scale measure of indecisiveness is Frost and Shows' (1993) Indecisiveness Scale (see also Mann, 1982). This self-report questionnaire contains 15 items assessing difficulty, confidence, pleasure, anxiety, procrastination, and regret surrounding decision making. Nine items are worded negatively (e.g., "I try to put off making decisions"), and six positively (e.g., "I find it easy making decisions"). Responses are typically elicited on a Likert scale ranging from 1 (Highly agree) to 5 (Highly disagree), with positive statements reverse coded so that low scores indicate high indecisiveness. With American college-student samples, the internal reliability of the scale is high (alpha range = .80–.90; Frost & Gross, 1993; Frost & Shows, 1993; Gayton et al., 1994). This scale has been cited in nearly 100 articles in personality, clinical, educational, industrial and consumer psychology. However, to our knowledge, it has not yet been subject to an analysis of factor structure.

Because Frost and Shows' (1993) Indecisiveness Scale was developed and has been used in individualist Western cultural contexts, it is not known whether the scale is appropriate for more collectivist East Asian contexts (Hui & Triandis, 1985). Differences in decision making along this cultural divide have already been found for confidence judgments (Phillips & Wright, 1977; Yates, Lee, Shinotsuka, Patalano, & Sieck, 1998), risk assessment (Hsee & Weber, 1999; Weber & Hsee, 1998), and preferred decision making style (Yates & Lee, 1996). Furthermore, it is unknown whether components of indecisiveness are universal or whether cultural differences might exist, such as in the relationship between effortful decision making and negative emotion. The primary goal of the current work is to attempt cross-cultural validation of the Indecisiveness Scale by comparing factor analytic structures – using principal components analysis, given the exploratory nature of the work – for scale data collected in the United States and China.

A second goal is to explore cultural differences in indecisiveness. Self-esteem, a negative correlate of indecisiveness (e.g., Ferrari, 1991), has been found to be higher in the United States than in Japan and Hong Kong (Ip & Bond, 1995), suggesting corresponding patterns of indecisiveness.

This possibility is supported by a preliminary small-sample study in which East Asian undergraduates studying in the United States ($n = 22$) had higher average indecisiveness scores than their American counterparts (Wengrovitz & Patalano, 2004; but see Ji et al., 2000). However, given that the East Asian students were immersed in an unfamiliar culture at the time of the study, the finding is speculative at best. The question is important both for understanding cultural contributions to indecisiveness, as well as for informing intercultural context in politics, business, and other domains of public decision making.

A third and final goal is to explore sex differences in distributions of indecisiveness scores. The Indecisiveness Scale was developed using data from women (Frost & Shows, 1993), and was later validated with a small sample of male undergraduates (Gayton et al., 1994). In the only known sex comparison, Rassin and Muris (2005a) found Dutch undergraduate women ($n = 106$) to be reliably more indecisive than men ($n = 29$). The researchers anticipated these results on the grounds that women are more susceptible to anxiety disorders than men (Craske, 2003), and that anxiety is related to indecisiveness. While not the focus of our interest, it is worthwhile to consider whether this sex difference replicates with American and Chinese samples.

We administered the Indecisiveness Scale as part of a larger study of culture and decision making in which multiple scale and behavioral measures were obtained. Only the Indecisiveness Scale data are within the scope of this paper and will be analyzed here.

2. Method

2.1. Participants

Full-time undergraduate students from Capital Normal University in Beijing, China (73 men, 88 women) and from Wesleyan University in Connecticut, United States (73 men, 88 women) participated. The participants were born and lived continuously in China and the United States respectively; only non-Asian Americans who spoke English in their childhood homes were included in the latter sample. Participant ages ranged from 18 to 26 years, though only 5 participants were over 23 years old (Chinese men: $M = 20.7$, $SD = 0.9$; Chinese women: $M = 20.4$, $SD = 1.4$; American men: $M = 20.6$, $SD = 1.3$; American women: $M = 20.2$, $SD = 1.2$). They were recruited through campus advertisements and paid a token sum of 7 dollars or 20 yuan, the standard payment at each university respectively (see Yates, Lee, & Bush, 1997).

2.2. Materials

The 15 items from Frost and Shows' (1993) Indecisiveness Scale (see Table 1) were mixed with 34 items from two unrelated individual-difference scales. The resulting questionnaire was presented in a single random order across two typed pages. Participants were instructed to determine the extent to which they agreed with each statement and to respond with a Likert scale ranging from 1 (Highly agree) to 5 (Highly disagree). For Chinese participants, the questionnaire was translated from English to (Simplified) Chinese by a native Chinese speaker at Capital Normal University. All materials were then back translated (see Brislin, 1980) by a native Chinese speaker at Wesleyan University to ensure proper translation equivalence (see Berry, Poortinga, Segall, & Dasen, 2002).

Table 1
Frost and Shows' (1993) Indecisiveness Scale

1.	I try to put off making decisions
2.	I always know exactly what I want
3.	I find it easy to make decisions
4.	I have a hard time planning my free time
5.	I like to be in a position to make decisions
6.	Once I make a decision, I feel fairly confident that it is a good one
7.	When ordering from a menu, I usually find it difficult to decide what to get
8.	I usually make decisions quickly
9.	Once I make a decision, I stop worrying about it
10.	I become anxious when making a decision
11.	I often worry about making the wrong choice
12.	After I have chosen or decided something, I often believe I've made the wrong choice or decision
13.	I do not get assignments done on time because I cannot decide what to do first
14.	I have trouble completing assignments because I cannot prioritize what is most important
15.	It seems that deciding on the most trivial things takes me a long time

Note: Items 2, 3, 5, 6, 8, and 9 are reverse coded.

2.3. Procedure

Participants were run in groups of 5–15 individuals in 45-min sessions. They came to the lab knowing that they would be participating in a study sponsored by their university faculty. They completed a process-tracing decision task (see Payne, 1976), the inclusion of which has not been found in past work to influence Indecisiveness Scale scores (Wengrovitz & Patalano, 2004), followed by the questionnaire. Participants worked on all materials at their own pace.

3. Results

Positive scale items were reverse coded (so that low-numbered responses mapped onto high indecisiveness) before analysis. Individual participant scores were computed by averaging responses to the 15 items.¹ Culture (American vs. Chinese) and sex (men vs. women) were used to create four groups for analysis, except where otherwise noted.

3.1. Scale reliability analysis

Cronbach's alpha for inter-item reliability was computed for each group (see Table 2). All reliabilities ($\alpha = .83-.88$) were above the conventional acceptability level of $\alpha > .70$, and were consistent with past studies. For each group, item analyses found that no items could be removed that would result in an alpha increase of more than .002, thus none were removed.

¹ We computed indecisiveness score as the average of scale items, but it is also sometimes computed as a sum, such as in Rassin and Muris (2005a).

Table 2
Cronbach's alphas for Indecisiveness Scale scores by culture and sex

	Chinese	American
Men	.84	.85
Women	.83	.88

3.2. Scale factor analysis

Separate factor analyses were conducted for American and Chinese participants. Results were not initially broken down by sex due to the large n needed to ensure stable factor solutions, but were conducted post hoc. Principal components analyses were run using varimax (orthogonal) rotation. For each group, the number of factors extracted was determined by examination of the scree plot (see Fig. 1a and 1b), and retention of factors accounting for approximately 50% of total variance. The best solutions yielded two factors for the American group (47% of variance) and three factors for the Chinese group (51% of variance). A second run using direct oblimin (oblique) rotation yielded similar results, with factor correlations below .35, and so is not reported here.

Scale items were grouped by factor of highest loading (see Tables 3 and 4), except in one case in which two loadings were nearly the same and the second factor was conceptually more meaningful (Item 15 for Chinese sample). For the American sample, the two factors are described as General Indecisiveness (12 out of 15 items, though Item 5 did not reach our factor-loading cutoff of .40; $\alpha = .87$) and Planning Indecisiveness (Items 4, 13, and 14; $\alpha = .63$). For the Chinese sample, the three factors are described as General Indecisiveness-Anxiety (a 7-item subset of General Indecisiveness; $\alpha = .79$), Planning Indecisiveness (Items 4, 13, and 14; $\alpha = .70$), and General Indecisiveness-Confidence (a 5-item subset of General Indecisiveness using all remaining items; $\alpha = .68$). The labeling reflects the fact that the factor structures were the same for the two groups except that the General Indecisiveness factor from the American group was better explained by two factors for the Chinese group.

Additional factor analyses were also run on men and women separately within each cultural group. For Americans, the factor structure was the same for men and women, and consistent with the overall within-culture model. The only factor-loading deviations from the overall model were that Item 2 (“I always know exactly what I want”) loaded on Planning Indecisiveness for men, and Item 5 (“I like to be in a position to make decisions”) loaded on Planning Indecisiveness for women (instead of General Indecisiveness in both cases). For Chinese, the factor structure was also the same for men and women, and was consistent with the overall within-culture model. The only factor-loading deviation was that Item 2 loaded on Planning Indecisiveness (instead of General Indecisiveness-Confidence) for women.

Three-factor scores were computed for each participant by taking an average of responses to scale items associated with the factor. The factor structure for the Chinese sample was used in this situation because it subsumed American-sample factors. This procedure allowed us to compare scores across cultures even though the American group was best explained by only two factors. Within-culture factor correlations are shown in Table 5. Although the correlations between factors were .40 on average, it is interesting that the lowest correlation ($r = .28$) was between General

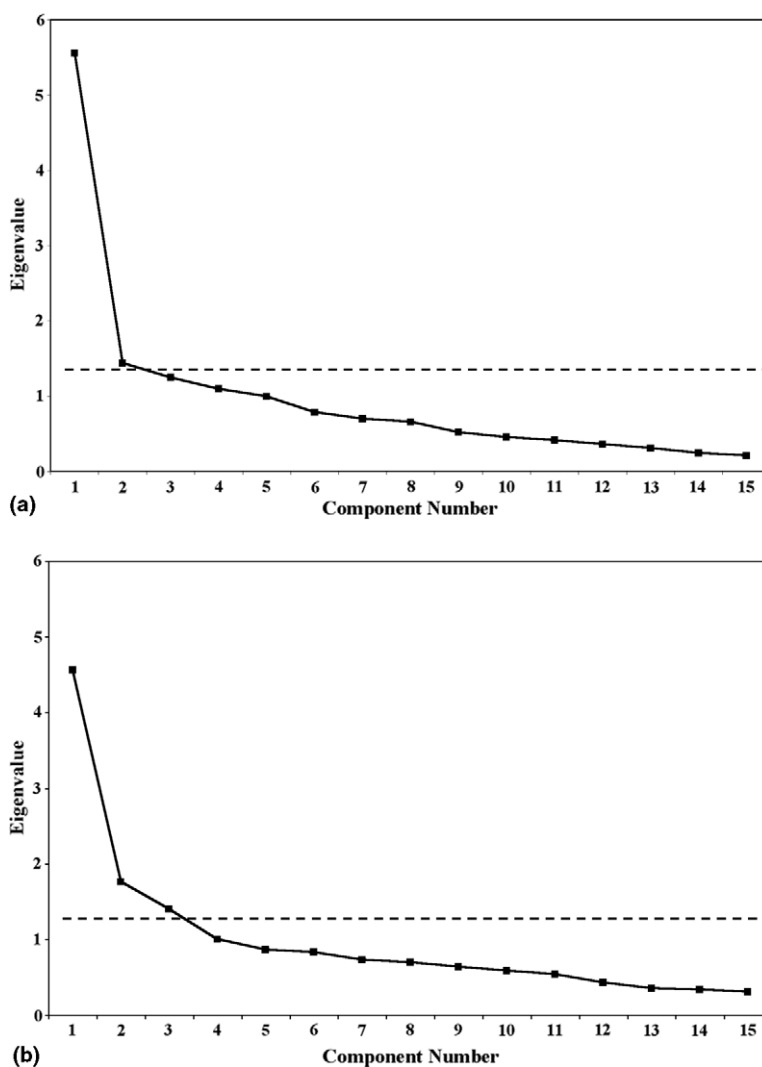


Fig. 1. Scree plot for (a) American and (b) Chinese components. The dashed line represents cutoff for factor extraction for each sample (approximately 50% of variance for each sample is accounted for by components above the lines).

Indecisiveness-Anxiety and General Indecisiveness-Confidence for the Chinese sample while, not surprisingly, these two factors were most highly correlated for the American sample ($r = .69$), consistent with the factor analyses.

3.3. Summary score comparison

Median scores for culture by sex groups are illustrated by boxplots in Fig. 2. Mean scores were 3.2 (SD = 0.61) for Chinese men, and 3.3 for Chinese women (SD = 0.54), American men (SD = 0.63), and American women (SD = 0.71). A 2×2 between-subjects ANOVA revealed no

Table 3
Principal components and loadings for American sample

	Component	
	1	2
<i>General Indecisiveness (33% of variance)</i>		
(03) I find it easy to make decisions	.84	.19
(08) I usually make decisions quickly	.79	.07
(11) I often worry about making the wrong choice	.72	.23
(10) I become anxious when making a decision	.71	.22
(15) Deciding on the most trivial things takes me a long time	.67	.21
(01) I try to put off making decisions	.64	.22
(09) Once I make a decision, I stop worrying about it	.62	.13
(12) [After choosing] I often believe I've made the wrong choice	.58	.25
(06) Once I make a decision, I feel fairly confident that it is a good one	.57	.19
(02) I always know exactly what I want	.48	−.04
(07) [With menu] I usually find it difficult to decide what to get	.47	.05
(05) I like to be in a position to make decisions	.33	.28
<i>Planning Indecisiveness (14%)</i>		
(14) I cannot prioritize what is most important [among assignments]	.08	.87
(13) I cannot decide what to do first [among assignments]	.06	.81
(04) I have a hard time planning my free time	.26	.51

Table 4
Principal components and loadings for Chinese sample

	Component		
	1	2	3
<i>General Indecisiveness-Anxiety (20% of variance)</i>			
(11) I often worry about making the wrong choice	.73	.24	.09
(12) [After choosing] I often believe I've made the wrong choice	.71	.20	.29
(07) [With menu] I usually find it difficult to decide what to get	.65	.05	−.04
(09) Once I make a decision, I stop worrying about it	.60	.01	.23
(01) I try to put off making decisions	.59	.17	.18
(10) I become anxious when making a decision	.51	.20	.16
(15) Deciding on the most trivial things takes me a long time	.52	.55	−.11
<i>Planning Indecisiveness (16%)</i>			
(14) I cannot prioritize what is most important [among assignments]	.07	.81	.11
(13) I cannot decide what to do first [among assignments]	.18	.76	.16
(04) I have a hard time planning my free time	.23	.63	−.07
<i>General Indecisiveness-Confidence (15%)</i>			
(03) I find it easy to make decisions	.18	−.06	.76
(06) Once I make a decision, I feel fairly confident that it is a good one	.08	.21	.67
(05) I like to be in a position to make decisions	.14	.03	.61
(08) I usually make decisions quickly	.50	−.05	.60
(02) I always know exactly what I want	−.04	.47	.47

Table 5

Factor correlations for three (Chinese structure) components by culture only

	General-Anxiety	Planning	General-Confidence
General-Anxiety	–	.45	.28
Planning	.40	–	.45
General-Confidence	.69	.35	–

Notes. Results for Americans are below the diagonal; results for Chinese are above it.

All correlations are significant at $p < .001$.

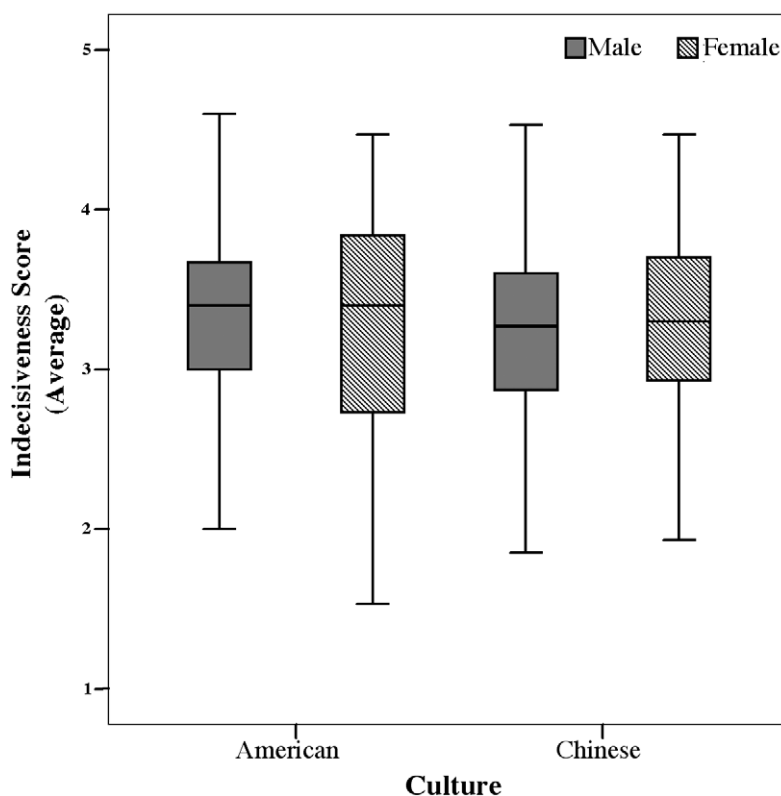


Fig. 2. Boxplots of Indecisiveness Scale scores for American and Chinese male and female samples.

reliable effect of culture ($F(1, 318) = 0.33, p = .565$), sex ($F(1, 318) = 0.02, p = .887$) or interaction ($F(1, 318) = 1.20, p = .274$).

Table 6 reports score means for each culture by sex subgroup for each of the three Chinese factors. For the first factor, General Indecisiveness-Anxiety, there were no significant differences (p 's $> .500$). For the second factor, Planning Indecisiveness, we found main effects of culture ($F(1, 318) = 33.34, p < .001$) and sex ($F(1, 318) = 11.95, p = .001$), and an interaction ($F(1, 318) = 7.90, p = .005$); Chinese participants reported greater difficulty planning than Americans (Cohen's $d = 0.79$) and this was most pronounced for Chinese men (Cohen's d for sex effect = -0.37). For the third factor, General Indecisiveness-Confidence, there was a main effect

Table 6

Means for Indecisiveness Scale three (Chinese structure) factors by culture and sex

	Component label		
	General-Anxiety	Planning	General-Confidence
<i>American</i>			
Men ($n = 73$)	3.1 (0.81)	4.2 (0.62)	3.1 (0.78)
Women ($n = 88$)	3.0 (0.85)	4.2 (0.82)	3.0 (0.81)
Combined	3.1 (0.83)	4.2 (0.73)	3.0 (0.80)
<i>Chinese</i>			
Men ($n = 73$)	3.1 (0.77)	3.4 (0.92)	3.3 (0.65)
Women ($n = 88$)	3.1 (0.69)	4.0 (0.68)	3.2 (0.67)
Combined	3.1 (0.72)	3.7 (0.84)	3.2 (0.66)

Note: Standard deviations are in parentheses.

of culture only ($F(1, 318) = 6.85$, $p = .009$; sex and interaction p 's $> .350$). Though the mean difference was small (Cohen's $d = -0.28$), Chinese participants found decision making less effortful and reported more confidence in their decisions than their American counterparts.

4. Discussion

4.1. Scale reliability summary

Across cultural and sex groups, the scale was reliable at alpha levels from .80 to .90, consistent with past work (Frost & Gross, 1993; Frost & Shows, 1993; Gayton et al., 1994). The results provide further evidence for the inter-item reliability of this scale for American men and women, and new evidence for Chinese men and women.

4.2. Cultural differences in factor structure

For American men and women, the factor analysis yielded a two-factor structure, with one factor reflecting a general belief about one's decision making skills – including anxiety, ease, pleasure, and confidence – and capturing much of what is typically meant by indecisiveness, as well as a second, narrower planning-related factor. The latter factor might have emerged because the sequencing of plans draws on additional skills (e.g., time management, deadline considerations, etc.; Hayes-Roth & Hayes-Roth, 1998) beyond those involved in simple choice. Other possibilities are that the factor reflects self-knowledge derived from episodic memories as opposed to more general self-perceptions (see Klein & Loftus, 1990); because planning decisions are more likely to be have been made more recently; or that it reflects a differentiation between less and more consequential decisions (e.g., assignment completion vs. career selection). Further research is needed to better understand this somewhat surprising second factor.

For Chinese men and women, the analysis yielded a three-factor structure, identical to the two-factor structure found in the American sample except that the “General Indecisiveness” factor divided into two narrower factors reflecting anxiety and worry surrounding decision making

vs. pleasure and confidence in decision making. There are many plausible reasons for this cultural difference. One speculation is that, for Americans, anxiety during decision making produces negative affect which gives rise to difficulty, displeasure, and low confidence. For Chinese, confidence and pleasure derive from a source other than the emotional experience, such as from reflection on the soundness on the decision process, or from the ability to generate reasons in support of the choice (Yates, Lee, & Shinotsuka, 1996). Another is that, if different cognitive strategies dominate decision making in different cultures (e.g., rule use vs. exemplar-based reasoning; Norenzayan, Smith, Kim, & Nisbett, 2002), anxiety during decision making might negatively impact choice to a greater extent for American as compared with Chinese individuals (see Ferrari & Dovidio, 2001).

4.3. *Cultural differences in scores*

We found no significant differences in the distributions of Indecisiveness Scale scores across cultures. However, we did observe cross-cultural differences on individual factors (when applying the three-factor structure to both groups). Although the groups did not differ on anxiety and worry (consistent with similarities in the big-five personality factor of neuroticism across cultures; Luk & Bond, 1993), Chinese individuals reported more difficulty planning free time, while Americans reported less pleasure and confidence in decision making. This is consistent with the fact that Chinese individuals, as part of a more collectivist culture, have to consider others to a greater extent in making plans.² As a result, planning might be more challenging, but not perceived as unpleasant or leading to poor decisions because the culture actually supports this integration of a wide range of considerations and careful deliberation in making a decision (Nisbett, Peng, Choi, & Norenzayan, 2001). Overall, these findings suggest that levels of some components of indecisiveness, such as those more directly tied to major personality traits, might be more culturally invariant than others.

Past work of Rassin and Muris (2005a) found that Dutch undergraduate women were more indecisive than men; however, there were only 29 men in the sample (and more than three times as many women). As with culture, we found no evidence of differences in the distributions of scale scores for undergraduate men vs. women in either the United States or China. For each of the three scale factors, the only observed sex difference was that Chinese men reported greater difficulty planning free time than Chinese women, possibly due to less access to free time, or a wider range of opportunities from which to choose. It is conceivable that there is a cross-cultural interaction between sex and culture, involving Dutch vs. other cultures, but we know of no obvious reason for this to be the case.

4.4. *Limitations and future work*

This work is exploratory in nature, given no prior research on factor structure in either culture. Future work might use these results as the starting point for confirmatory factor analyses with diverse individualist and collectivist cultural groups and age samples. It will be important not only to replicate the findings but also to develop additional behavioral and self-report measures that address the construct validity of the scale and the individual factors.

² We thank an anonymous reviewer for this suggestion.

5. Conclusions

This work is important in that it speaks to the nature of indecisiveness, to cultural differences in decision making, and to the relevance of the Indecisiveness Scale across two cultures. Based on it, we caution against general comparisons of indecisiveness for cross-cultural research, and instead encourage a component-based approach. Future attention should be paid to components of this construct, towards the goal of further elucidating culturally sensitive vs. invariant contributors to indecisiveness.

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