

**Cross-cultural exploration of the Indecisiveness Scale:
A comparison of Chinese and American men and women**

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1. Introduction

Indecisiveness is the inability to make decisions in a timely manner across many situations and domains (Frost & Shows, 1993). This construct has received considerable research attention (Ferrari, Johnson, & McCown, 1995), and has been found to correlate with numerous other personality measures. These include self-esteem (Burka & Yuen, 1983; Ferrari, 1991; Ferrari, McCown, & Johnson, 1989), neuroticism (Jackson, Furnham, & Lawty-Jones, 1999; Milgram & Tenne, 2000), behavioral procrastination (Beswick, Rothblum, & Mann, 1988; Effert & Ferrari, 1989; Ferrari, 1992; Ferrari & Emmons, 1994), obsessive-compulsive tendencies (Frost & Shows, 1993; Gayton, Clavin, Clavin, & Broida, 1994), hoarding behavior (Frost & Gross, 1993; Frost & Shows, 1993), perfectionism (Frost & Shows, 1993; Gayton et al., 1994), and distractibility (Harriott, Ferrari, & Dovidio, 1996).

Indecisiveness has also been found to predict decision behaviors. Individuals high on indecisiveness take more time to choose among alternatives (Frost & Shows, 1993), use less-exhaustive decision strategies (Ferrari & Dovidio, 2000; Ferrari & Dovidio, 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 decision making (Rassin & Muris, 2005a; Veinott, 2002) as compared with those low on indecisiveness. Indecisive individuals also have greater difficulty choosing a college major (Gayton et al., 1994), choosing a career (Gati, Krausz, & Osipow, 1996), and making other life decisions (Frost & Shows, 1993; Germeijs & DeBoeck, 2002).

The most comprehensive scale measure of indecisiveness is Frost and Shows' (1993) Indecisiveness Scale (but 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 5-point 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 = 0.80 - 0.90; Frost & Gross, 1993; Frost & Shows, 1993; Gayton et al., 1994). Frost and Shows' Indecisiveness Scale has been cited in nearly 100 articles in personality, clinical, educational, industrial and consumer psychology.

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, or the construct meaningful, in more collectivist East Asian contexts (Hui & Triandis, 1985). Differences in decision making along this cultural divide have been already found for confidence judgments (e.g., Phillips & Wright, 1977; Yates, Lee, Shinotsuka, Patalano, & Sieck, 1998), risk assessment (Weber & Hsee, 1998; Hsee & Weber, 1999), and preferred decision-making style (Yates & Lee, 1996). Furthermore, there is no reason to assume that it is universal for components of indecisiveness, such as the relationship between effortful decision

making and negative emotion, to develop in across cultures. The primary goal of the current work is to attempt cross-cultural validation of the Indecisiveness Scale by comparing factor analytic structures 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; see also Ji, Oka, & Yates, 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 gender 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 gender 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 given that women also have higher levels of anxiety than men, which is related to indecisiveness (Craske, 2003). While not the focus of our interest, it is worthwhile to consider whether or not this gender difference replicates with American and Chinese undergraduate samples.

2. Method

2.1. Participants

Undergraduate students from Capital Normal University in Beijing, China (73 men and 88 women) and from Wesleyan University in Connecticut, United States (73 men and 88 women) participated in this study. Capital Normal University students were born and lived continuously in China, while Wesleyan students were born and lived continuously in the United States; no Asian Americans were included in this sample. Participant ages ranged from 18 to 26 years, though only 5 participants were over 23 years old (mean age of 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: $M = 20.2$, $SD = 1.2$). Participants were recruited through campus advertisements and were paid for their participation in the study.

2.2. Materials

The 15 items from Frost and Shows' (1993) Indecisiveness Scale (see Table 1) were mixed with 34 items from two unrelated scales. The resulting questionnaire was

presented in a single random order across two typed pages. Participants were instructed to respond on 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, 1986) by a native Chinese speaker at Wesleyan University to ensure proper translation equivalence of the materials (see Berry, Poortinga, Segall, & Dasen, 2002).

2.3. Procedure

Participants were run in groups of 5 - 15 individuals in 1-h sessions. Participants completed the questionnaire after a series of unrelated cognitive problems. They worked on all tasks at their own pace. Average time to complete the questionnaire was approximately 2 min.

3. Results

Positive scale items were reverse coded—so that low-numbered responses consistently mapped onto high indecisiveness—before any analyses were conducted. Individual participant scores were computed by averaging responses to the 15 items.¹ Culture (American vs. Chinese) and gender (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 separately for each group. Reliabilities ranged from $\alpha = .83 - .88$, all above the conventional acceptability level of $\alpha > .70$, and consistent with past studies. Results for each group are shown in Table 2. For each of the four groups, item analyses found that no items could be removed that would result in an alpha increase of more than .002, and so no items were candidates for removal.

3.2. Scale factor analysis

Separate factor analyses were conducted for American versus Chinese participants. Results were not initially broken down by gender due to the large n needed to ensure stable factor solutions. However, such analyses were run *post hoc* and the results are reported later. Principal components analyses were run using varimax (orthogonal) rotation. For each group, the number of factors extracted was determined by (a) an examination of the scree plot, and (b) retention of factors that accounted for approximately 50% of the total variance in the data. As illustrated by the scree plots shown in Figures 1a and b, the best solution 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.

The factor loadings for scale items are shown in Tables 3 and 4. Items were grouped by factor of highest loading, except in one case in which two loadings were nearly the same and the second factor was conceptually more meaningful (Item 15 for the Chinese sample). For the American sample, the two factors are described as General Indecisiveness (12 out of the 15 items, though Item 5 did not reach our factor loading cutoff of .40; $\alpha = .87$) and Planning Indecisiveness (remaining 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 (again 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 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 to note that the lowest correlation ($r = .28$) was between General 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.

3.4. Summary score comparison

Median scores (including interquartile range and highest and lowest scores) for culture by gender groups are illustrated by boxplots in Figure 2, and mean scores (including standard deviations) for the same groups are reported in Table 6. A 2 x 2 between-subjects ANOVA revealed no reliable effect of culture ($F(1,318) = 0.33$, p

= .565), gender ($F(1,318) = 0.02, p = .887$) or interaction ($F(1,318) = 1.20, p = .274$).

Table 7 reports score means for each culture by gender 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 gender ($F(1,318) = 11.95, p = .001$), and an interaction ($F(1,318) = 7.90, p = .005$); Chinese participants reported greater difficulty planning than Americans (Cohen's $d = .79$) and this was most pronounced for Chinese men (Cohen's d for gender effect = $-.37$). For the third factor, General Indecisiveness– Confidence, there was main effect of culture only ($F(1,318) = 6.85, p = .009$; gender and interaction p 's > .350). Specifically, though the mean difference between cultures was small (Cohen's $d = -.28$), 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 gender groups, the scale was reliable at alpha levels from .80 - .90, consistent with past work (Frost & Gross, 1993; Frost & Shows, 1993; Gayton et al., 1994), and no individual items were candidates for deletion based on alpha score with item removed. The results provide further evidence of the inter-item reliability of this scale for men and women in the United States, and new evidence for inter-item reliability for men and women in China.

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 factor. This second factor was labeled "Planning Indecisiveness" here to reflect that all three associated scale items involve planning. However, a different possibility is that the factor captures self-knowledge derived from episodic memories (see Klein & Loftus, 1990, for sources of self knowledge) as opposed to more general self-perceptions. Yet another possibility is that it reflects a differentiation between less and more consequential decisions (e.g., order of assignment completion vs. career path

selection). Future work might include developing unambiguous questionnaire items on these themes (e.g., an item clearly tapping the dimension of decision importance), as well as tapping other populations (e.g., older adults who might not have recent episodic memories of completing “assignments”) to differentiate among these possibilities.

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 versus pleasure and confidence in decision making. There are many plausible reasons for this difference between Chinese and American individuals. 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 (e.g., Yates, Lee & Shinotsuka, 1996). Another possibility is that, if different cognitive strategies dominate decision making in different cultures (e.g., rule use versus 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). Future work is needed to explore these possibilities.

4.2. Cultural differences in scores

Past preliminary work suggested that Americans and Chinese might differ in Indecisiveness Scale scores (Ji, Oka, & Yates, 2000; Wengrovitz & Patalano, 2004). We found no significant differences in the distributions of scores—neither central tendency nor variability—across cultures. However, we did observe cross-cultural differences on individual factors (when applying the three-factor structure to both groups). Although the two 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 considerably more difficulty planning free time, and while Americans reported less pleasure and confidence during decision making. 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 versus women in either the United States or China. For each of the three scale factors, the only observed gender difference was that Chinese men reported greater difficulty planning free time than Chinese women, possibly due to less access to free time among Chinese men. It is possible that there is a cross-cultural interaction between gender and culture, involving Dutch versus other cultures, but we know of no obvious reason for this to be the case.

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 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, and to their relationships with objectively measured decision behaviors, towards the goal of further elucidating culturally sensitive versus culturally invariant contributors to indecisiveness.

Author Note

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Footnote

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).

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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.

Table 2

Cronbach's Alphas for Indecisiveness Scale Scores by Culture and Gender

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

(10) I become anxious when making 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

Planning Indecisiveness

(14%)

(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

General Indecisiveness–Anxiety (20% of variance)

(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 decision.		.51	.20	.16
(15) Deciding on the most trivial things takes me a long time.			.52	.55 -.11

Planning Indecisiveness (16%)

(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						
General Indecisiveness–Confidence (15%)						
(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	1.00	.45	.28
Planning	.40	1.00	.45
General–Confidence	.69	.35	1.00

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

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

Table 6

Means for Indecisiveness Scale Scores by Culture and Gender

	American	Chinese
Men	3.3 (.63)	3.2 (.61)
Women	3.3 (.71)	3.3 (.54)

Note: Standard deviations are in parentheses.

Table 7

Means for Indecisiveness Scale Three (Chinese Structure) Factors by Culture and Gender

		Component Label		
		General–		
Anxiety	Planning	General–Confidence		
American				
Men (<i>n</i> = 73)		3.1 (.81)	4.2 (.62)	3.1 (.78)
Women (<i>n</i> = 88)		3.0 (.85)	4.2 (.82)	3.0 (.81)

Combined	3.1 (.83)	4.2 (.73)	3.0 (.80)
Chinese			
Men (<i>n</i> = 73)	3.1 (.77)	3.4 (.92)	3.3 (.65)
Women (<i>n</i> = 88)	3.1 (.69)	4.0 (.68)	3.2 (.67)
Combined	3.1 (.72)	3.7 (.84)	3.2 (.66)

Note: Standard deviations are in parentheses.

Figure Captions

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

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

*SHAPE * MERGEFORMAT*

Figure 1a

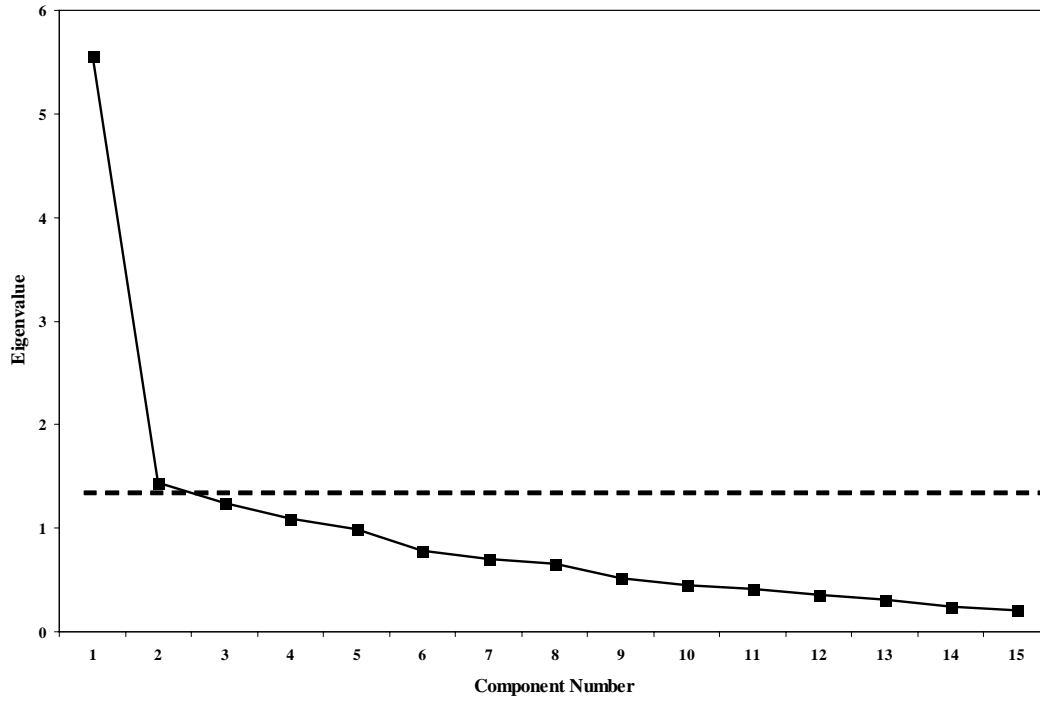


Figure 1b

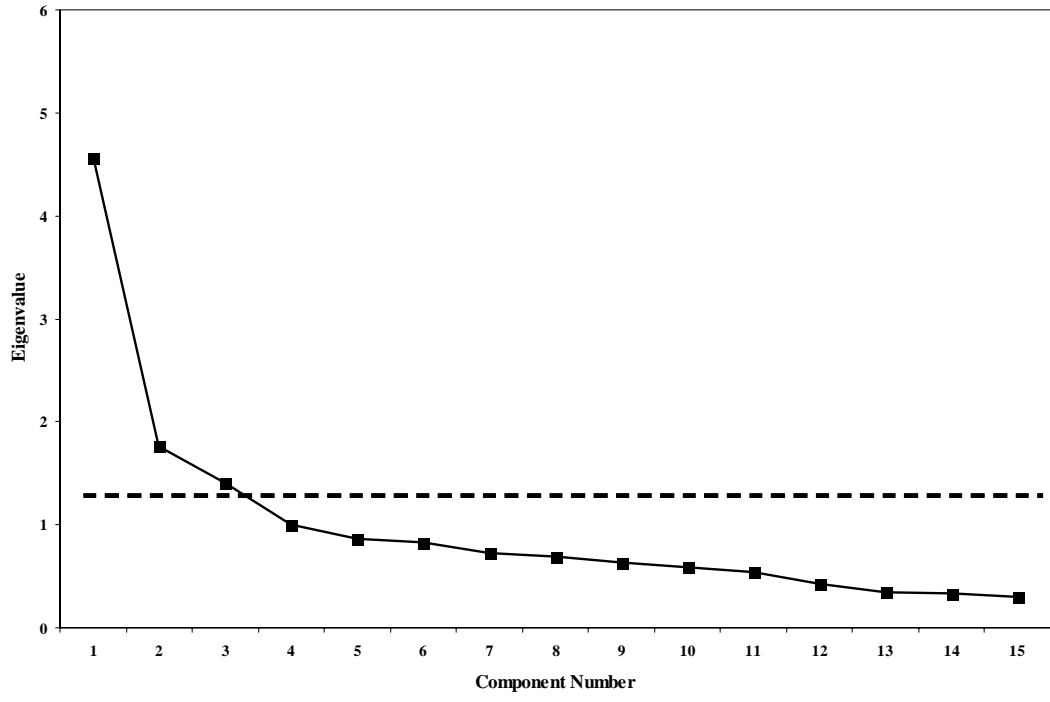


Figure 2 SHAPE * MERGEFORMAT

