Factor-Analytic Structures in the English and Japanese Versions of the Objective Measure of Ego-Identity Status (OMEIS)

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This research describes an exploratory factor analysis for the purposes of factorial validation for both the English and Japanese versions of the Objective Measure of Ego-Identity Status (OMEIS)—Ideological version (Adams, Bennion, & Huh, 1989). The Japanese OMEIS is a direct translation of the English OMEIS (Ohnishi, 1998). The study reports the factor structure of the OMEIS—Ideological version in English and Japanese. A principal factor analysis (PFA) with both oblique and orthogonal solutions was performed. Alpha reliabilities for the factors are presented. The present research compares and contrasts the factor structures of OMEIS—Ideological version, derived from a U.S. sample and a Japanese sample, comprising women from late adulthood to middle age. Cultural differences between the two sample populations are explored.

Over the decades, a number of Western psychological instruments have been translated into several languages for assessing individuals from different cultures. These instruments have included the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1983), Beck's Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979), and the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) (e.g., Cheung, Song, & Zang, 1996; Kwan 1999; Rogler, 1999). However, there has been limited research on psychological instruments in cross-cultural studies. It is critical that translated instruments are culturally sensitive and valid for the cultural groups in question (Rogler, 1999).

Accurate assessment of individual identity is important in understanding human behavior and psychology (Erickson, 1959, 1968; Marcia, 1993). Currently, Adams, Bennion, and Huh's (1989) Objective Measure of Ego-Identity Status (OMEIS) is the only quantitative instrument available to measure ego identity. This research describes an independent examination of psychometric properties of both the original English version and the translated Japanese version (Ohnishi, 1998) of the Objective Measure

of Ego-Identity Status (OMEIS)—Ideological version (Adams et al., 1989). An explor-atory factor analysis for the purposes of factorial validation of the English and Japa-nese versions of the OMEIS was conducted. The Japanese version of the OMEIS is a translation from the original English version using a back translation method. The back translation method is appropriate for research on psychological instruments (e.g., Burnam, Karno, Hough, Escobar, & Forsythe; 1983; Rogler, 1999).

Previous research on the psychometric qualities of the OMEIS—Ideological version was conducted on samples of college populations (e.g., Adams et al., 1989; Bennion and Adams, 1986; Adams, Shea, & Fitch, 1979). The ideological version of the OMEIS is appropriate for any age and for married or single participants (Adams et al., 1989). According to Erikson (1959), identity formation is a continuous and unconscious developmental process during one's lifetime, and it does not end at late adolescence, as assumed earlier. The present research compares and contrasts the factor structures of OMEIS—Ideological version, derived from a U.S. sample and a Japanese sample of middle-aged women.

The OMEIS, which is based on Marcia's concept of ego-identity status, is used to classify the four categories of identity statuses; Identity Achievement, Moratorium, Foreclosure, and Diffusion (Adams et al., 1989; Adams et al., 1979; Bennion & Adams, 1986; Grotevant & Adams, 1984). Using Erikson's (1959, 1968) theoretical model of identity development, Marcia (1966) operationalized the identity formation process and defined four identity statuses. Identity Achievement is the most advanced identity status, preceded by Moratorium, Foreclosure, and Diffusion. These identity statuses are based on the presence or absence of crisis exploration and commitment to identity elements. Crisis exploration refers to a period of struggle or active questioning in arriving at identity decisions regarding goals, values, and beliefs. Commitment involves making firm choices regarding identity elements and engaging in significant activity directed toward the implementation of those choices (Marcia, 1966, 1980; Waterman, 1993). In Marcia's identity status approach, identity formation underlines the process of separation (giving up known comforts) and individuation (establishing an internal self) that is based on North American psychological perspectives.

The ideological version of the OMEIS contains 32 items, designed to measure four identity statuses (i.e., Identity Achievement, Moratorium, Foreclosure, and Diffusion). Each of the four categories is measured by eight items, which includes subscales representing the ideological domains (occupation, politics, religion, and philosophical lifestyle). The ideological version of the OMEIS is appropriate for any age range, and for married or single status population (Adams et al., 1989). The OMEIS is a 6–point Likert scale (e.g., 1 = strongly agree, 6 = strongly disagree). Adams et al. (1989) stated that estimates of reliability show acceptable consistency for the ideological version of the OMEIS in the English version. In previous research, Bennion and Adams (1986) calculated internal consistency coefficients of .62 for Identity Achievement, .75 for Moratorium, .75 for Identity Foreclosure and .62 for Identity Diffusion. Adams et al. (1979) found stability estimates of .71 to .93 for the ideological version of the OMEIS. For the Japanese sample, five English-Japanese bilinguals who had lived in both the USA and Japan translated the ideological version of the OMEIS into Japanese. Each of

the bilinguals back-translated the items serially to ensure that misconceptions or idioms did not subvert the items in the scale.

METHOD

Subjects

Data were collected on 469 single and married Euro-American women from Connecticut, Massachusetts, and New York in the USA and single and married Japanese women from Tokyo and Osaka in Japan. Two hundred and eleven (45%) Euro-American women (89 single and 122 married) and 258 (55%) Japanese women (113 single and 245 married) participated in the study. The participants included 2.9 percent Euro-American and 17 percent Japanese women who identified themselves as not working outside the home (e.g., homemakers). All participants selected were between the ages of 30 and 50. Ethnically, they were Euro-American or Japanese, and all participants were drawn from convenience samples in middle class neighborhoods.

Statistical Analysis

Data were screened to assess if the assumptions of the statistical analyses were met and for multivariate outliers. Within each ethnic sample, exploratory principal factor analyses with both oblique and orthogonal solutions were performed. Alpha reliabilities for the factors obtained were estimated.

RESULTS

Preliminary Analysis and Data Screening

The analysis was conducted and limited to participants who had provided complete data and met the demographic categories (e.g., ages between 30 and 50, ethnicity of Euro-American/Caucasian or Japanese). This reduced the original number from 469 to 432 (7.9 attrition due to missing or unmatched data; eight single and seven married American respondents and six single and 16 married Japanese respondents). Tabachnick and Fidell (1996) recommended that data be screened for accuracy in data entry and for violations of statistical assumptions. Prior to a factor analysis, the data were examined for multivariate outliers, defined as any individuals whose location in the factor space was substantially distant from the centroid of the OMEIS factors. These analyses were run for each group (i.e., single Euro-American, married Euro-American, single Japanese, and married Japanese). Participant distances from the each group's factor centroid were measured by Mahalanobis D^2 values. The outlier criteria were significant beyond $p = .006$ for single Euro-American, $p = .005$ for married Euro-American, $p = .005$ for single Japanese, and $p = .004$ for married Japanese. From the outlier analysis, four additional respondents (0.9% of the original sample: 2 single Euro-Americans, 1 single Japanese, and 1 married Japanese) were deleted, leaving the final

TABLE 1
Factor Loadings for the English OMEIS (Idealogical version) Dimensions

Factor	Item	Loading	
Factor 1	23 (F-Ph)	.74	
	15 (F-Ph)	.74	
	32 (F-Po)	.71	Foreclosure
	26 (F-Re)	.67	Alpha = .86
	30 (F-Re)	.65	
	21 (F-Oc)	.59	
	12 (F-Po)	.59	
	9 (F-Oc)	.43	
Factor 2	29 (M-Oc)	.91	Moratorium-Diffusion
	1 (D-Oc)	.70	(Occupation)
	5 (M-Oc)	.65	Alpha = .82
Factor 3	11 (A-Ph)	.67	Achievement
	31 (A-Ph)	.59	Alpha = .73
	10 (A-Re)	.59	
	22 (A-Re)	.59	
Factor 4	6 (D-Re)	.90	Diffusion
	2 (D-Re)	.85	Alpha = .74
	27 (D-Ph)	.42	
Factor 5	28 (D-Po)	.92	Moratorium-Diffusion
	8 (D-Po)	.65	(Politics)
	24 (M-Po)	.46	Alpha = .74
	16 (M-Po)	.41	
Factor 6	25 (A-Oc)	.68	Achievement-Moratorium
	17 (A-Oc)	.65	Alpha = .63
	19 (M-Ph)	.45	

Loadings less than .40 are omitted. Alpha values are reliability estimates. A=Identity Achievement, M = Moratorium, F=Foreclosure, D=Diffusion, Oc=Occupation, Ph=Philosophical Lifestyle, Po = Politics and Re=Religion

sample at 428 (115 married Euro-Americans, 79 single Euro-Americans, 128 married Japanese, and 106 single Japanese).

Main Analysis

A principal factor analysis (PFA) was used to explore the factorial validity of the 32 items of the Japanese and English OMEIS-Ideological version by using BMDP's 4M program. Both oblique and orthogonal solutions were obtained.

For the Euro-American sample, an oblique (direct quartimin) solution gave the most interpretable results, and confirmed modest correlations among factors, ranging from .01 to .27. Using an eigenvalue = 1 criterion, a six-factor solution was obtained,

TABLE 2
Factor Loadings for the Japanese OMEIS (Idealogical version) Dimensions

Factor	Item	Loading	
Factor 1	25 (A-Oc)	.66	
	31 (A-Ph)	.66	
	10 (A-Re)	.63	Achievement
	17 (A-Oc)	.61	Alpha = .79
	22 (A-Re)	.57	
	11 (A-Ph)	.49	
Factor 2	23 (F-Ph)	.69	
	15 (F-Ph)	.68	
	9 (F-Oc)	.63	
	30 (F-Re)	.51	Foreclosure
	21 (F-Oc)	.51	Alpha = .79
	13 (D-Oc)	.49	
	12 (F-Po)	.48	
	32 (F-Po)	.49	
Factor 3	6 (D-Re)	.86	Diffusion-Religion
	2 (D-Re)	.80	Alpha = .83
Factor 4	24 (M-Po)	.56	Moratorium
	5 (M-Oc)	.55	Alpha = .57
	19 (M-Ph)	.53	
Factor 5	28 (D-Po)	.68	Diffusion-Politics
	8 (D-Po)	.50	Alpha = .53

Loadings less than .40 are omitted. Alpha values are reliability estimates. A=Identity Achievement, M = Moratorium, F=Foreclosure, D=Diffusion, Oc=Occupation, Ph=Philosophical Lifestyle, Po = Politics and Re=Religion

accounting for 85 percent of the item covariation. With a loading criterion of .40, a total of 25 of the original 32 items were used to interpret the factors (see Table 1). The factors were named Foreclosure (8 items), Moratorium-Diffusion-occupation (3 items), Achievement (4 items), Diffusion (3 items), Diffusion-Moratorium-politics (4 items) and Achievement-Moratorium (3 items). Alpha reliability estimates for scale scores derived from the factors ranged from .63 to .86.

For the Japanese sample, an oblique (direct quartimin) solution gave the most interpretable results, and also showed modest correlations among factors, ranging from .06 to .16. Using an eigenvalue = 1 criterion, a five-factor solution was obtained, accounting for 79 percent of the item covariation. With a loading criterion of .40, a total of 22 of the original 32 items were used to interpret the factors (see Table 2). The factors were named Identity Achievement (6 items), Foreclosure (8 items), Diffusion-religion (2 items), Moratorium (3 items), and Diffusion-politics (2 items). Alpha reliability estimates for scale scores derived from the factors ranged from .53 to .79. The factors were named based on the representative items that were in a specific category.

DISCUSSION

The English OMEIS—Ideological version

In the original English version of the OMEIS—Ideological version, Factor I (Foreclosure) had eight items with an alpha internal consistency of .86. All the items were drawn from the original Foreclosure category. Factor I was named Foreclosure. This alpha reliability estimate indicates that the Foreclosure Factor for the middle aged Euro-American women sample is acceptable.

Factor II (Moratorium-Diffusion-occupation) had three items with an alpha internal consistency of .82. All of the three items are from the Occupation subscales of the Moratorium and Diffusion categories. The acceptable alpha reliability estimate (.82) of this factor may be influenced by the content of these three items. All of the items had statements addressing uncertainly about choosing a career direction (e.g., item 29: "I just can't decide what to do for an occupation. There are so many that have possibilities"; item 1: "I haven't chosen the occupation I really want to get into, and I'm just working at whatever is available until something better comes along"; and item 5: "I'm still trying to decide how capable I am as a person and what jobs will be right for me"). The questions in the Occupation subscale in the Moratorium and Diffusion categories are appropriate for the middle aged Euro-American women. Both the Moratorium and Diffusion categories shared factor II.

Factor III (Achievement) had four items with an alpha internal consistency of .73. All of the items were drawn from the Identity Achievement category. Four items that were excluded from the factor were in the Politics and Occupation subscales. Two items of the Occupation subscale in the Identity Achievement category included in Factor VI that will be discussed later. The questions in the Politics subscale in the Identity Achievement category may not be suitable for the middle aged Euro-American women as indicated by the result. One of the possible reasons is that mostly men dominate the political arena in the United States. In order to increase the alpha reliability level from .73 to .80, factor III needs four additional appropriate items. The Spearman-Brown equation (Gable & Wolfe, 1993) was used to estimate number of items to increase to yield desired reliability, as follows:

$$K = \frac{rel_{DES}\,(1 - rel_{EX})}{rel_{EX}\,(1 - rel_{DES})}$$

rel_{DES} = Desired reliability
rel_{EX} = Existing level of reliability, and
$K*$ = Number of items the scale needs to be increased to yield rel_{DES}.

Note. K is the factor by which the original number of items should be multiplied to lengthen the original scale.

Factor IV (Diffusion) had three items with the alpha internal consistency of .74. All of the items were drawn from the Diffusion category. Two items were from the

Religion subscale and one item (item 27) was from the Philosophical Lifestyle subscale. Item 27 ("1 guess I just kind of enjoy life in general, and I don't see myself living by any particular viewpoint to life") had a relatively low loading of .42 that decreased the alpha estimate for this factor. This factor requires three additional appropriate items in order to improve the alpha reliability level from .74 to .80.

Factor V (Moratorium-Diffusion-politics) had four items with the alpha internal consistency of .74. All of the items in factor V were drawn from the Politics subscale of the Diffusion and Moratorium categories. Two of the items from the Moratorium category (i.e., item 24 "I'm not sure about my political beliefs, but I'm trying to figure out what I can truly believe in"; and item 16 "There are so many different political parties and ideals. I can't decide which to follow until I figure it all out.") had relatively low loadings of .46 and .42 that decreased the alpha estimate for this factor. This factor requires four additional appropriate items in order to improve the alpha reliability level from .74 to .80. Both Factor II and Factor V were derived from items in both Diffusion and Moratorium categories. The results indicate that the Diffusion and Moratorium categories share common factors. This seems to create some difficulty for the Euro-American respondents to distinguish between these two categories.

Factor VI (Achievement-Moratorium) had three items with the alpha internal consistency of .63. Two items were drawn from the Occupation subscale of the Identity Achievement category, and one item (item 19) was drawn from the Philosophical Lifestyle subscale of the Moratorium category. Item 19 ("In finding an acceptable view point to life itself, I find myself engaging in a lot of discussions with others and some self-exploration ") had a relatively low loading of .45 that decreased the alpha estimate for this factor. This factor requires six additional appropriate items in order to improve the alpha reliability level from .63 to .80. Factor VI needs further research in order to increase its usefulness.

The Japanese OMEIS—Ideological Version

In the Japanese version of the OMEIS—Ideological version, Factor I (Achievement) had six items with an alpha internal consistency of .79. All the items were drawn from the Identity Achievement category. Factor I was named Identity Achievement. Two items that were excluded from the factor were in the Politics subscale of Identity Achievement category. The questions in the Politics subscale of Identity Achievement category are not suitable for Japanese women as indicated by the results. This result was similar to that of the Euro-American sample. One of the possible reasons is that women do not actively participate in Japanese politics, which is run predominantly by men.

Factor II (Foreclosure) had eight items with an alpha internal consistency of .79. Seven items were drawn from the Foreclosure category and one item was drawn from the Diffusion category. Factor II was named Foreclosure. One item that was excluded from the original factor was in the Religion subscale of the Foreclosure category. Item 26 ("I attend the same church as my family has always attended. I've never really questioned why",) in the Religion subscale of the Foreclosure category lacks relevance

for Japanese women. In Japan, there is a plurality of religious traditions that are grounded in the overall unity of a common cultural and religious context (Smith, 1959). The meaning, practice, and concept of religion are very different from those of Western cultures. For example, common Japanese rituals such as wedding ceremonies take place in Shinto shrines, while funerals are held in Buddhist temples.

Although factor II had the highest number of items, the alpha reliability estimate (.79) was just below the acceptable limit of .80. This may be due to items 21 and 13 with poor inter-item correlations within the factor. The inter-item correlation between item 21 and item 13 was .16, between item 21 and 30 was. 18, and item 13 and 32 was .12. Item 21 ("My parents decided a long time ago what I should go into for employment, and I am following their plans.") is on the Occupation subscale of the Foreclosure category. Item 21 may not be suitable for middle-aged Japanese women, because in Japanese society, parents encourage sons, but not daughters, to have professional careers. According to Iwao (1993), culturally and socially, the ideal for Japanese women is to be good wives and wise mothers, "Ryousaikenbo," rather than pursue careers. Similarly, questions regarding parental influence on career decision may not be appropriate for middle-aged Japanese women. Item 13 ("I'm really not interested in finding the right job, any job will do. I just seem to flow with what is available.") is from the Occupation subscale of the Diffusion category. Participants in this study included 17 percent Japanese and 2.9 percent Euro-American women who identified themselves as not working outside the home (e.g., homemakers) who might have influenced this result. Item 13 may also not be suitable for middle aged Japanese women who chose to be homemakers. The alpha reliability of this factor could be improved by rewriting item 21 and item 13 to create items that are relevant from a culture, gender, and age perspective for this population.

Factor III (Diffusion-religion) had two items with the highest alpha internal consistency of .83. Both items were drawn from the Religion subscale of the Diffusion category. The factor was named Diffusion-religion. The acceptable alpha reliability estimate (. 83) of this factor may be influenced by the content of these two items. Both the items had statements addressing a lack of interest about religion (e.g., item 2: "When it comes to religion, I just haven't found anything that appeals and I don't really feel the need to look"; and item 6: "I don't give religion much thought and it doesn't bother me one way or the other."). The questions in the Religion subscale in the Diffusion category are appropriate for middle-aged Japanese women.

Factor IV (Moratorium) had three items and Factor V (Diffusion-politics) had two items. Both these factors had lower loadings than found with the rest of the factors. This resulted in a low alpha internal consistency estimate of .57 for Factor IV and .53 for Factor V. All three items in Factor IV were drawn from the Moratorium category. This factor requires six additional appropriate items in order to improve the alpha reliability level from .57 to .80. In Factor V, two items were drawn from the Politics subscale of the Diffusion category. Factor V requires six additional appropriate items in order to improve the alpha reliability level from .53 to. 80. Both Factor IV and Factor V need further research in terms of adding items that meet culturally relevant Moratorium and Diffusion categories to increase their usefulness.

CONCLUSIONS

Results of the PFAs showed differences in factor solutions between the Euro-American sample and the Japanese sample, and did not support the equivalence of the factors. The exceptions were the Foreclosure and some parts of Identity Achievement factors. The results indicated that the questions in the politics subscales of Identity Achievement were not suitable for both Euro-American and Japanese samples of women. Unlike the Japanese sample, the Euro-American sample had difficulty distinguishing the Diffusion and Moratorium categories. Further investigation of the construct validity of the instrument with both samples is needed. It appears that culture, gender, and generation biases that existed in the English version were translated into the Japanese version of the OMEIS. Rogler (1999) stated that a back-translation method, which insists on a standardized instrument to be kept exactly as presented in the original-language version, could be a structural source of cultural bias. It is necessary to reexamine how an instrument can be translated without including culturally biasing information.

The OMEIS was developed for North American populations and is based on North American concepts of identity development that may not be completely relevant to the Japanese context. One explanation is that each society has its own conception of the highest to lowest level of identity development in terms of social-cultural roles and the social requirements for people. The overt nature of these constructs has not been researched in the psychological literature. Further research is necessary to develop a true measure of ego identity status for middle-aged Euro-American and Japanese women. It is necessary to consider not only the cultural aspect but also the gender and generational aspects when developing or translating psychological instruments. Each society also has different gender and age norms that create unique ways of functioning that must be incorporated in psychological measures to accurately assess the constructs under study.

NOTES

REFERENCES

Adams, G. R., Bennion, L., & Huh, K. (1989). *Objective measure of ego identity status: A reference manual,* Unpublished manuscript. Department of Family Studies, University of Guelph, Guelph, Ontario, Canada N1G2W1.

Adams, G. R., Shea, J., & Fitch, S. A. (1979). Toward the development of an objective assessment of ego-identity status. *Journal of Youth and Adolescence, 8,* 223–237.

Beek, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression.* New York: Guilford Press.

Bennion, L. D., & Adams, G. R. (1986). A revision of the Extended Version of the Objective Measure of Ego-identity Status: An identity instrument for use with late adolescents. Journal *of Adolescent Research, 1,* 183–198.

Burnam, M. A., Karno, M., Hough, R. L., Escobar, J. I., & Forsythe, A. B. (1983). The Spanish diagnostic interview schedule: reliability and comparison with clinical diagnoses. *Archives of General Psychiatry, 40,* 1189–1196.

Cheung, F. M., Song, W., & Zhang, J. (1996). The Chinese MMPI-2: Research and applications in Hong Kong and the People's Republic of China. In J. B. Butcher (Ed.) *International adoptions of the MMPI-2* (pp. 137–161). Minneapolis: University of Minnesota Press.

Erikson, E. H. (1959). *Identity and the life cycle.* New York: International University Press, Inc.

Erikson, E. H. (1968). *Identity, youth and crisis.* New York: W. W. Norton & Company.

Gable, R. K., & Wolf, M. B. (1993). *Instrument development in the affective domain* (2nd ed.). Boston, MA: Kluwer Academic Publishers.

Grotevant, H. D., & Adams, G. R. (1984). Development of an objective measure to assess ego identity in adolescence: Validation and replication. *Journal of Youth and Adolescence, 13,* 419–438.

Hathaway, S. R., & McKinley, J. C. (1983). *The Minnesota multiphasic personality inventory* manual. New York: Psychological Corporation.

Iwao, S. (1993). *The Japanese women.* New York: Free Press.

Kwan, K.-L.K. (1999). MMPI and MMPI-2 performance of the Chinese: Cross-cultural applicability. *Professional Psychology: Research and practice, 30,* 260–268.

Marcia, J. E. (1966). Development and validation of ego identity status. *Journal of Personality and Social Psychology, 3,* 551–558.

Marcia, J. E. (1980). Identity in adolescence. In J. Adelson (Ed.), *Handbook of adolescent psychology.* New York: Wiley.

Marcia, J. E. (1993). Epilogue. In J. E. Marcia, A. S. Waterman, D. R. Matterson, S. L. Archer, & J. L. Orlofsky (Eds.), *Ego identity: A handbook for psychosocial research* (pp. 273–28 1). New York: Springer-Verlag.

Ohnishi, H. (1998). Women in Japan and the United States of America: Identity status and its relationship to depression (Doctoral dissertation, the University of Connecticut, 1998). *Dissertation Abstracts International, 60–02A,* AAG9918089.

Rogler, L. H. (1999). Methodological sources of cultural insensitivity in mental health research. *American Psychologist, 54,* 424–433.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). New York, NY: Harper/Collins Publishers.

Waterman, A. S. (1993). Finding something to do or someone to be: A eudaemonist perspective on identity formation. In J. Kroger (Ed.), *Discussion on ego identity* (pp. 147–168). Hillsdale, New Jersey: Lawrence Erlbaum Associates, Publishers.