

## A Family Level Measure of Acculturation for Chinese Immigrants

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### **Abstract:**

Acculturation refers to changes in cultural attitudes, values, and behaviors that take place as a result of continuous direct or indirect contacts of groups having different cultures (Broom and Selznick 1963). Consecutive waves of ethnic groups arriving in North America over the last century have adopted some values and behaviors of the mainstream culture (Silverstein and Chen 1999). In a particular cohort of immigrant families, the acculturation process is typically intensified in succeeding generations by their prolonged and direct contacts with the predominant North American culture (Redfield, Linton and Herskovits 1936).

**Keywords:** acculturation | Chinese immigrant families | Canada

### **Article:**

#### **Introduction**

Acculturation refers to changes in cultural attitudes, values, and behaviors that take place as a result of continuous direct or indirect contacts of groups having different cultures (Broom and Selznick 1963). Consecutive waves of ethnic groups arriving in North America over the last century have adopted some values and behaviors of the mainstream culture (Silverstein and Chen 1999). In a particular cohort of immigrant families, the acculturation process is typically intensified in succeeding generations by their prolonged and direct contacts with the predominant North American culture (Redfield, Linton and Herskovits 1936).

The family is crucial in examining acculturation and its consequences because parenting practices and family relationships have much impact on intergenerational relationships (Silverstein and Chen 1999), children's purchase influence (Corfman 1991), cultural transmission (Phalet and Schönplflug 2001), and acculturation. All past studies related to family members' acculturation assessment (e.g., Tang and Dion 1999) have revealed a lack of convergence in multiple reports because gender, age and education levels have significant impacts on individuals' adaptation processes. This will cause a serious threat to the validity of

family studies when using multiple respondents in depicting the relative level of acculturation. According to Kim and Lee (1997), multiple respondent data are of central significance in evaluating the qualities of family measures. Therefore, it is necessary to develop a valid and reliable family triadic acculturation scale using multiple respondents, multiple-item data. Family triadic reports enable researchers to not only examine the systematic and random measurement errors, as well as the construct of interest (Bagozzi, Yi and Phillips 1991), but also to correct for potential bias in estimating structural relationships among constructs (Cote and Buckley 1988). Despite the importance of family as a socialization agent (Moschis 1978), there has been a relative dearth of research that examines the acculturation patterns of immigrant families in North America. And no research has been found to investigate the proposed family triadic measures of acculturation. This paucity is somewhat surprising given that a large proportion of immigrant families comprise many foreign-born children whose mainstream and heritage cultures differ significantly.

Even worse, an examination of the extant literature reveals muddled thinking (Keefe and Padilla 1987) and a lack of coherence (Kim 1988) on the definition of acculturation, causing some apprehension concerning the validity of past research (Nguyen et al. 1999). This phenomenon is mainly due to the lack of consensus on the conceptual representation of the immigrant adaptation process as well as a multiplicity of operational approaches to key concepts characterizing the different facets of this process (Kim, Laroche and Tomiuk 2001). As a result, the examination of the relationship between acculturation and adjustment reveals divergent and often contradictory findings (Nguyen et al. 1999). This lack of theoretical coherence and integration of key aspects of immigrant ethnic change is further augmented by the diversity of construct measurement attempts. Much diversity has been found in measurement approaches of acculturation in terms of subjective vs. objective indices, single-item vs. multi-item scales, nominal vs. continuous measurement, and unipolar vs. bipolar dimensions (Kim, Laroche and Tomiuk 2001).

The purpose of this chapter is twofold: (1) to provide a conceptual framework for Chinese acculturation and (2) to develop a family level Chinese acculturation measure with acceptable validity and reliability.

## **Background**

The consequences of migration are enormous. In line with Ryder, Alden and Paulhus (2001), when an immigrant moves to a new environment, many aspects of self-identity are modified to accommodate information about and experiences within the mainstream culture. Such changes may be observed in various categories such as attitudes, behaviors, values, and a sense of cultural identity (Ryder, Alden and Paulhus 2001). At a fundamental level, then, acculturation has an important impact on shaping family lifestyles (Tang and Dion 1999), psychological well-being of individual family members (e.g., Jayasuriya, Sang and Fielding 1992), and family consumption behavior (Webster 1992).

Of various explanations of what is meant by 'acculturation', two schools of thought can be found in the psychology literature. One is very broad and used interchangeably with assimilation, adaptation and ethnic change. Specifically, attached to the unidimensional approach of immigrant adaptation process, acculturation is considered as a linear bipolar process by which

acculturating individuals are relinquishing the attitudes, values and behaviors of their heritage culture while simultaneously acquiring those of the mainstream culture (Gordon 1964). This definition confounds acquisition of mainstream cultural traits with loss of heritage cultural traits (Kim, Laroche and Tomiuk 2001). From a theoretical viewpoint, this unidimensional perspective fails to consider alternatives to assimilation, such as integrated or bicultural identities (Dion and Dion 1996).

The other definition relies on a bidimensional perspective and characterizes acculturation in a narrower way. Here, proponents of the 2-D approach maintain that when heritage and mainstream cultural identities are seen as being relatively independent of one another, the immigrant adaptation process can be more completely understood (Berry 1997). Congruent with this point of view, recent studies of various ethnic groups in the United States and Canada have found that the adaptation process does not necessarily cause the loss of one's original ethnic identity (Lambert, Mermigis and Taylor 1986). A primary reason for this may be the countries multicultural policies. According to Berry (1991), countries with official multicultural policies and public acceptance of ethnic cultures and identities allow for higher degrees of culture maintenance across generations of immigrants. Therefore, there should be two dimensions underlying the immigrant adaptation process: 1) *acculturation* refers to the learning of the traits of the mainstream society, and 2) *ethnic identification* represents maintenance of the original ethnic identity (Laroche et al. 1996).

The Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASLA; Suinn et al. 1987), under the assumption that acculturation is unidimensional and ranges from 'low acculturation' (i.e., Asian identification), through 'bicultural' identification at a midpoint, to 'high acculturation' (i.e., North American identification), is the most widely used measure of acculturation among Asian North Americans. SL-ASLA has yielded increasing attention (Iwamasa 1996); however, it has been increasingly criticized because it does not measure a range of acculturation behaviors and situations (Iwamasa 1996), or distinguish bicultural individuals who strongly identify with both cultures from the immigrants who have difficulty fitting into mainstream and heritage cultures (Barry 2001).

Derived from the bidimensional perspective to immigrant adaptation process, a growing group of researchers (e.g., Laroche et al. 1996) have taken a different approach by measuring the two dimensions (i.e., acculturation and ethnic identity) separately. Acculturation, as a part of immigration adaptation process, has been widely believed to be multidimensional in recent research (see Rogler et al. 1991 for a review of acculturation measures), implying that the adaptation process is likely to occur at different rates in different sociocultural spheres. The various indicators of acculturation have been classified into such categories as behavioral, attitudinal, linguistic, psychological, and socioeconomic (Olmedo, Martinez and Martinez 1978).

As in some early studies of family research, conclusions are drawn based solely on the self-reported responses of just one family member, usually the mother or wife (Atkin 1978). Fathers are included in recent studies because of the recognition of their important roles in the child rearing process and their significance as members of the family system. Besides, in immigrant families, fathers are more likely to be exposed, through their workplace, to values held by other

groups in the new country. Researchers (e.g., Hearst 1985) find that their shift towards the new cultural values might not be shared by their wives. Moreover, younger members of immigrant families are found to be more likely than their elders to adopt the values and behavior of the predominant culture (Piere, Clark and Kaufman 1978). Therefore, it will be not surprising to see frequent disagreements among family members when assessing acculturation levels.

Statistically, such observed discrepancies are believed to be caused by both systematic errors, such as reporting bias (Davis and Rigaux 1974), and random errors, especially those associated with a lack of communication among family members, and ambiguities in measurement items (Olson 1969). A methodology that combines the measure purification approach, confirmatory factor analyses (CFA), multitrait-multimethod (MTMM) data analysis, and the correlated uniqueness (CU) model enables researchers to evaluate and/or diminish these measurement errors by using multiple-informant, multiple-item data in the scale development and validation process.

## **Methodology**

### **The Sample**

The family data used in this study were collected through the cooperation of a Chinese language school and a Chinese church located in a Northeastern metropolitan area. Initially, 300 sets of questionnaires were distributed to the teachers of the school with the consent of their principal and supervisor. Additionally, 35 sets were distributed in a church. Out of the 335 sets of questionnaires distributed, a total of 108 family triadic sets were returned. 13 sets with missing variables were further deleted to keep the data authentic and complete, yielding a sample size of 95 family triads, which accounted for 28.4% of the total families that had been contacted initially.

### **Measures**

The questionnaire contained 22 randomly arranged subjective acculturation measures covering three underlying dimensions: E-C Identification and Attachment (3 items), English Language Use (9 items), and E-C Social Interaction (10 items). Responses to each item were made on 5-point scales, which ranged from 1=disagree strongly to 5=agree strongly (see Table 9.1).

The average age of the children in the sample was 15.2 years, ranging from 13 to 19. Male children accounted for 41.3% and female 58.7%. The children had resided in North America for an average of 6.3 years. About 60.6% of the fathers and 71.6% mothers of the mothers were in the 41-50 age group. The average years of marriage for the parents were 20 years. The number of years resided in North America was 11.4 years for the mothers and 12.6 years for the fathers, respectively. 38.5% of the fathers and 29.3% of the mothers had completed above high school level. 85.3% of the fathers and 82.6% of the mothers felt most comfortable speaking Chinese. The mean household income, as reported by both the fathers and mothers, was about US\$20,000-\$30,000.

**Table 9.1. Results of the Measure Purification Process**

Factors/Measures <sup>a</sup>	Loadings <sup>d</sup>			Cronbach $\alpha$ <sup>d</sup>		
	FA	MA	CA	FA	MA	CA
E-C Identification and Attachment				.80	.82	.78
I consider myself to be Canadian	.901	.920	.875			
I would like to be known as 'Canadian'	.901	.908	.875			
I feel very attached to all aspects of the English-Canadian culture						
English Language Use				.89	.91	.81
I speak English to my children <sup>b</sup>	.877	.871	.904			
I speak English to my spouse <sup>c</sup>	.887	.916	.668			
I speak English at family gatherings	.825	.896	.875			
The newspaper / magazines I read are mostly in English						
The movies / video tapes I see are mostly in English						
In general, I speak English to family members						
I speak English when I am angry						
I use English when talking about a personal or emotional problem with family members						
I speak English with most of my friends						
E-C Social Interaction				.87	.87	.85
Most of the people at the places I go to have fun and relax are English-Canadians	.798	.786	.809			
Of all the people I come in contact with on a day to day basis most are English-Canadians	.846	.875	.865			
Socially, I feel at ease with English-Canadians	.819	.841	.649			
I get together with English-Canadians very often	.804	.812	.878			
Most of my friends are English-Canadian						
I participate in activities of an English-Canadian church or association						
My closest friends are English-Canadian						
Most of the people who visit me are English-Canadian						
Most people I visit are English-Canadian						
I am very comfortable dealing with English-Canadian						

a. These scales were measured on a 5-point Likert-type scale (disagree strongly to agree strongly).

b. In children's questionnaire, this item was changed to 'I speak English to my parents'.

c. In children's questionnaire, this item was changed to 'I speak English to my brothers & sisters'.

d. FA=Fathers' Assessments; MA=Mothers' Assessments; CA=Children's Assessments. The items with factor loadings were remained after the measure purification process.

## Analysis and Results

### Measure Purification

A measure purification process (Bohrnstedt 1983) as in an individual-level measurement analysis was first performed to reduce systematic measurement errors. The purification process for the 22 items designed to assess acculturation involves two tasks: 1) to elicit a reliable item composite for each dimension of acculturation, and 2) to obtain a similar factor pattern across the three subgroups (i.e., fathers, mothers, and children). This process calls for exhaustive efforts in an iterative procedure involving exploratory factor analyses (EFA) and CFA. The final purification step yielded 9 reliable items with three factors (see Table 9.1), whose pattern was highly similar across the three subgroups. All the three extracted factors showed strong reliabilities, with all

Cronbach's alphas above 0.70. The three-factor structure obtained from the purification process was confirmed with first-order CFA analyses for all subsamples. Estimation displayed equally desirable goodness of fit statistics for the three groups, as indicated by  $\chi^2(24)=30.4$ ,  $p=.17$ , and  $CFI=0.99$  for the fathers' data,  $\chi^2(25)=24.7$ ,  $p=.48$ , and  $CFI=1.00$  for the mothers' data, and  $\chi^2(24)=26.6$ ,  $p=.32$ , and  $CFI=0.99$  for the children's data, respectively.

### Structural Equivalence Test: Multisample CFA

The three-factor measurement model was further subjected to a more rigorous test of structural equivalence across the three subsamples. Specifically, measurement-level constraints (i.e., configural invariance, metric invariance, factor covariance invariance, and error variance invariance) were introduced to test their equality simultaneously in the seven models shown in Table 9.2 by a set of multisample confirmatory factor analyses using covariance matrices (Byrne, 1994). Given that Model 1 was the least restrictive among the seven, Models 2-7 which contained different sets of constraints were nested in Model 1, the baseline model. As indicated in Table 9.2, Model 2, 3, and 5 were not significantly different from the baseline:  $\chi^2_d(12)=18.65$ ,  $p=.10$ ,  $\chi^2_d(6)=4.65$ ,  $p=.59$ ,  $\chi^2_d(18)=21.55$ ,  $p=.25$ .

**Table 9.2.** Results of Multisample CFA

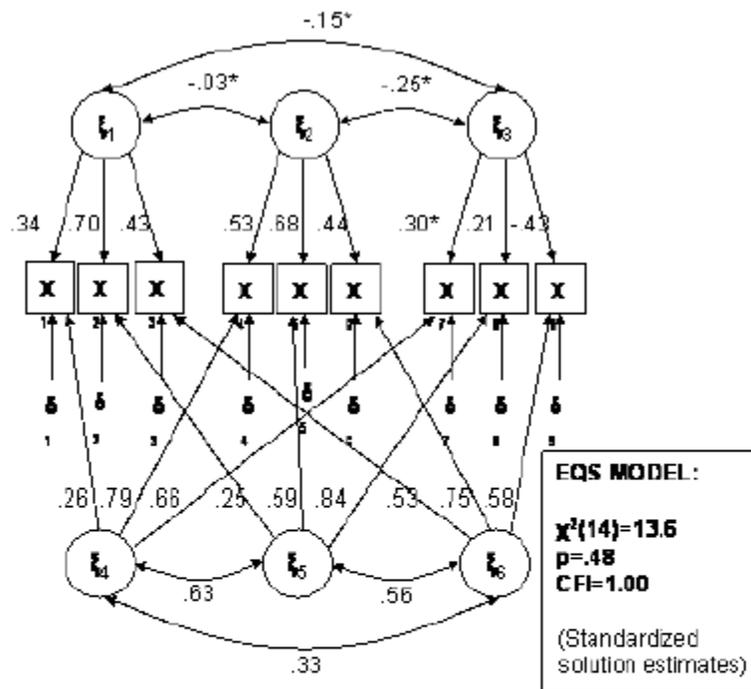
Models	Goodness-of-Fit Indices			
	$\chi^2$	df	p-value	CFI
M1: Configural Invariance	81.65	73	.23	.99
M2: $\Lambda(\text{fathers})= \Lambda(\text{mothers})= \Lambda(\text{children})$	100.30	85	.12	.99
M3: $\Phi(\text{fathers})= \Phi(\text{mothers})= \Phi(\text{children})$	86.30	79	.27	.99
M4: $\Theta(\text{fathers})= \Theta(\text{mothers})= \Theta(\text{children})$	171.07	89	.00	.94
M5: $\Lambda(\text{fathers})= \Lambda(\text{mothers})= \Lambda(\text{children})$ $\Phi(\text{fathers})= \Phi(\text{mothers})= \Phi(\text{children})$	103.20	91	.18	.99
M6: $\Lambda(\text{fathers})= \Lambda(\text{mothers})= \Lambda(\text{children})$ $\Theta(\text{fathers})= \Theta(\text{mothers})= \Theta(\text{children})$	186.90	101	.00	.93
M7: $\Lambda(\text{fathers})= \Lambda(\text{mothers})= \Lambda(\text{children})$ $\Phi(\text{fathers})= \Phi(\text{mothers})= \Phi(\text{children})$ $\Theta(\text{fathers})= \Theta(\text{mothers})= \Theta(\text{children})$	189.30	107	.00	.94
Model Comparisons	Difference in			
	$\chi^2$	df	p-value	
M2 vs. M1	18.65	12	.10	
M3 vs. M1	4.65	6	.59	
M5 vs. M1	21.55	18	.25	

Additional model comparisons presented no significant  $\chi^2$  difference between Model 2 and Model 5 ( $\chi^2_d(6)=2.9$ ,  $p=.82$ ), or between Model 3 and Model 5 ( $\chi^2_d(12)=16.9$ ,  $p=.15$ ). Model 5, which hypothesized both metric invariance and factor covariance invariance, best represented the common measurement properties for the three groups. These results of the multisample CFA analyses indicate that these 9 acculturation items had at least the same factor patterns, factor structure, and factor covariances across three subsamples.

### Construct Validation of the Triadic Measures: MTMM Analysis

The most popular procedure for the assessment of construct validity of multiple-responses, multiple-item data is the MTMM model (Campbell and Fiske 1959). The three dimensions of acculturation correspond to ‘traits’, while the independent responses of fathers, mothers, and children on the measures of acculturation correspond to ‘methods’. Responses of individual family members on each of the three multiple-item acculturation measures were averaged so that each trait had three indicators: the fathers’, mothers’, and children’s assessments.

Convergent validity refers to the extent to which the three methods of the same trait are statistically significantly correlated (Campbell and Fiske 1959). It was tested, based on Widaman’s (1995) paradigm, by comparing a model in which traits were specified with one in which they were not. Based on our analysis, the  $\Delta\chi^2$  between these two models was highly significant ( $\chi^2(11)=46.4, p<.00$ ), thus supporting the convergent validity of the proposed acculturation measure.



Notes:

$\xi_1$  = Trait 1 (E-C Identification and Attachment);  $\xi_2$  = Trait 2 (English Language Use At Home);  $\xi_3$  = Trait 3 (E-C Social Interaction).  $\xi_4$  = Method 1 (Fathers’ assessments);  $\xi_5$  = Method 2 (Mothers’ assessments);  $\xi_6$  = Method 3 (Children’s assessments).

$x_1, x_2, x_3$  = Fathers’, mothers’, and children’s assessments of E-C Identification and Attachment.

$x_4, x_5, x_6$  = Fathers’, mothers’, and children’s assessments of English Language Use At Home.

$x_7, x_8, x_9$  = Fathers’, mothers’, and children’s assessments of E-C Social Interaction.

\* Not statistically significant at .05 level.

**Figure 9.1.** The Hypothesized MTMM Model of Acculturation

Discriminant validity, represented by the extent of the correlations among the independent measures of different traits, is typically assessed in terms of both traits and methods (Byrne 1994). Based on Byrne’s (1994) method, evidence of discriminant validity among traits can be

supported if a model in which traits correlate freely is significantly different from one in which they are perfectly correlated, while proof of discriminant validity related to method effects can be established by a significant difference between a model in which method factors are freely correlated and one in which the method factor correlations are specified as unity. Results showed strong support for discriminant validity for both methods and traits by the significant  $\Delta\chi^2$  values in these two pairs, indicated by  $\chi^2(4)=21.9, p=.00$ , and  $\chi^2(1)=16.7, p=.00$ , respectively.

A more precise evidence of construct validity, according to Byrne (1994), is provided by the factor loadings and factor correlations of the hypothesized model (see Figure 9.1). Results revealed that all but two trait loadings were significant, showing strong evidence of convergent validity.

Moreover, the correlations among traits were all not statistically significant ( $p>.05$ ); therefore, discriminant validity among traits were satisfactorily supported. Of the three method correlations, we estimated a nested model in which the inter-method correlations were set simultaneously to unity. The  $\chi^2$  difference was then tested between this nested model and our hypothesized model. The difference was highly significant ( $\chi^2(1)=16.7, p=.00$ ), providing a strong support that the methods were discriminant of each other.

#### Correlated Uniqueness (CU) Model

A possible ill-solution might exist in the MTMM analysis as all three correlations among traits in the hypothesized model were found to be insignificant. Conceptually, insignificance of all inter-trait correlations is a strong evidence of discriminant validity; however, such findings may be questionable since the three traits represent the same construct. This problem called for an alternative model specification, which could supply extra evidence to substantiate the validity of our proposed scale. To this end, the CU model was applied to examine our multiple-informant, multiple-item data since it included method effects as correlations among error terms.

Estimation of the CU model generated an excellent fit:  $\chi^2(15)=19.0, p=.21$ , and  $CFI=0.98$ . All but one factor loadings were significant ( $t>1.96$ ), ranging from .37 to .95. Accordingly, convergent validity for our multiple-responder measures was supported. Moreover, the average amount of trait variance (42%) was much higher than that found in the MTMM results (23%), showing a more favorable degree of convergence. Estimates revealed that two out of three of the uniqueness correlations for the fathers' assessments were significant (.27 and .53, respectively), while three correlations (.34, .40, and .42, respectively) for the children's were found significant. Therefore, method effects in both fathers' and children's assessments were in a moderate level. No significant uniqueness correlation was generated by the mothers' assessments, indicating that method effects in the mothers' data were negligible.

As estimated, the inter-trait correlation between the dimensions of English Language Use and E-C Social Interaction was statistically significant (.58,  $t>2.0$ ). As the 95% confidence intervals (computed as: parameter estimate  $\pm 1.96$ \*[std. error]) for this value was [.41, .75], which did not include unity, we concluded that the traits were indeed separate and distinct.

## Summary and Conclusion

The present research fills a void in family studies by the development and validation of an empirical family triadic self-report instrument, which examines the acculturation levels of Chinese immigrant families in North America. Different from the SL-ASIA, our family-level scale conceptualizes acculturation as a part of the immigrant adaptation process with multidimensional measures, which enable researchers to assess attitudes and behaviors in a variety of situations.

Unlike previous studies, the present research developed and validated an acculturation measure through multiple-respondent, multiple-item data from fathers, mothers, and children triads. The use of multiple respondents as multiple methods required a strict measure purification process, in which both internal consistency and intergroup agreement had to be taken into account. Of the 22 initial items, this process produced 9 items that measured three distinct facets of acculturation.

The test of construct validity entailed applying CFA to MTMM matrix data, regarding three dimensions of acculturation as 'traits', and the average scores from different respondents on the multiple-item measures as 'methods'. Since the MTMM generated an improper estimate, we performed the CU model, another CFA including the remedial measure. Although the underlying assumptions of the CU and MTMM models were different, the analyses of these two models yielded consistent evidence of the convergent and discriminant validity of the triadic measures. Therefore, our family-level scale can be asserted as a reliable measure in assessing the relative acculturation levels incorporating views of all family members for Chinese immigrant families.

Several potential limitations to this study should be noted. First of all, the sample size of 95 family triads is less than optimal for CFA analyses. A cross-validation study with a larger sample is needed. However, given difficulties in recruiting adequate families from this population, and the theoretical coherence of the three dimensions, our proposed scale may be theoretically and practically useful in family studies. Another issue is about acculturation measurement. Media consumption embedded in the category of English Language Use in the questionnaire of our study neither showed up as a distinct dimension of acculturation nor revealed significant loadings in factor analyses. This finding was surprising since media exposure has been found to relate significantly to immigrants' acculturation of the new social norms (Lee and Tse 1994). According to Douglas and Macquin (1977), the differences in lifestyles of consumers from different countries may lead to different effectiveness for different media. Given the distinctness of Chinese ethnic groups, further studies should extend media exposure measures to the exposure of TV and radio programs to investigate its role in acculturation assessment for family triads.

Overall, as an exploratory research, the results were encouraging. Although further studies are required with a larger sample and revised measures of mass communication, initial findings propose that the family-level acculturation scale may exhibit satisfactory validity and reliability, and shows promise as a useful tool for researchers working with Chinese immigrant families.

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