

CULTURE AND CRISIS: CULTURAL ADAPTATION IN UNIVERISTY STUDENTS IN
SPAIN AND THE UNITED STATES

by

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(Under the Direction of Pedro Portes)

ABSTRACT

Cultural Adaptation is the process by which a dominant culture group interacts among non-dominant culture groups in society and groups' behaviors change as a result. This process often results in inter-cultural stress, but also results in positive inter-cultural adaptation. Historical and current literature are reviewed theoretically in which this process is situated in terms of Eriksonian psychosocial development. This paper describes the Cultural Adaptation Development Inventory (CADI) measure and three studies which use data from the CADI: an attempt to create a multilevel model using CADI and GPA of an American data set, an exploratory factor analysis study of a Spanish data set, and a Rasch modeling study of both groups. Implications for understanding cultural adaptation and university learning are discussed.

INDEX WORDS: cultural adaptation, multilevel modeling, factor analysis, Rasch modeling, university learning

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DEDICATION

This thesis is dedicated to my wife, Anna Mendoza, my mom, Carol Henry, and my brother, Tyler Henry. I love you all.

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CHAPTER 1

IDENTITY AND CULTURAL ADAPTATION

Erik Erikson proposed the psychosocial theory of development which governs the development of identity across the lifespan. It involves people experiencing several challenges during their lives which result in goal mastery. Sometimes these challenges are referred to as developmental crises. Through the resolution of these crises, people learn to master important goals resulting in identity maturation (Erikson, 1968). It is particularly interesting to see these changes happen in different contexts within cultures.

This study will review literature related to three important concepts: Erikson's psychosocial theory of identity development, cultural adaptation, and university learning. It will then describe the Cultural Adaptation Development Inventory (CADI) measure which attempts to ascertain a person's cultural adaptation while learning at university and was recently used to collect data from university students. It will be argued that the data show identity development in process. Data were collected in several locations in the US as well as two universities in Spain. Three studies were conducted with the data. The first was an attempt to create a multilevel model with CADI as an input, an exploratory factor analysis with the Spanish data. This was compared to the US data, which also resulted in a four-factor model with significant similarities and differences. Lastly, a Rasch model was conducted in order to assess the latent unidimensionality within the multi-factor model.

In short, data from both countries show identity development in process, and while this does not necessarily look like a developmental *crisis* in terms of the popular definition connoting imminent catastrophe, but data do show different ways in which these students are developing and learning about themselves. Lastly, implications are discussed regarding the extent to which we are able to quantify cultural adaptation and identity development in an early adulthood educational context.

Identity

Identity is a broad concept governing people's general sense of themselves. It includes "...all their beliefs, emotions, values, commitments, and attitudes. Identity integrates all the different aspects and roles of the self...occupation, gender roles, politics, and religion." (Woolfolk 2015, p. 94) In Erikson's (1970) own words, identity is

"...a subjective sense as well as an observable quality of personal sameness and continuity, paired with some belief in the sameness and continuity of some shared world image. As a quality of unself-conscious living, this can be gloriously obvious in a young person who has found himself as he has found his communality. In him we see emerge a unique unification of what is irreversibly given--that is, body type and temperament, giftedness and vulnerability, infantile models and acquired ideals..." (Erikson, 1970, p. 20)

This also involves self-concept, how a person sees themselves, and self-worth, or their overall judgement of themselves (Wigfield, Byrnes & Eccels, 2006). These words are not necessarily used consistently throughout psychological literature (Roeser, Peck & Nasir, 2006), but are important aspects of identity, as a person may see themselves as very good at interpreting art, for example, but not see that skill as very important. This

person would be seen to have a high self-concept but low self-worth in regards to art interpretation.

This is part of Erikson's foundational theory of identity development, now known as his psychosocial theory, which helps account for human beings' search for the answer to the question "Who am I?" and conception of the self. Development of the self is an emergent process, conceived as passage through several interdependent stages with particular goals such as trust, autonomy, initiative, intimacy and generativity (Woolfolk, 2015). These stages, according to Erikson, are typified as encounters with difficulties at particular points in life. For example, during the ages of three to six, many children will be encountering a developmental stage called *initiative versus guilt* (Lefton, 1994). During this stage, autonomy, a concept which the child encountered earlier, increases in terms of the number and complexity of tasks as well as enlarging the proximity of these tasks. For example, a child can now be expected to move around the house without assistance, dress themselves in sequence, and decide what they would like to do during free time. This "...adds to autonomy the quality of undertaking, planning, and attacking a task for the sake of being active and on the move." (Erikson, 1963, p. 22). Mastering this challenge does not mean that the child must always be active, but rather that the child must balance impulses to want to move with the necessity that some tasks (learning to tie their shoes, for example) will require patience.

Current research emphasizes the similarities in different stages and that, while Erikson's stages represent legitimate goals of human development, lifespan development may also be seen as developing similar skills over a longer period of time. For example, McAdams & Zapata-Gietl (2015) argue that three strands are woven throughout childhood and early adulthood. Firstly, people strive to develop traits and

roles in order to establish themselves as a well-known social actor. Secondly, an individual's theory of mind, or their understanding that other people also have their own perceptions, thoughts and feelings in addition to observable behaviors, and that development is an increase in nuance of that theory. Lastly, McAdams & Zapata-Gietl (2015) argue that, from childhood to adulthood, autobiographical reasoning improves, in which individuals come to understand that their own reconstructed past as well as their emergent future are part of an evolving narrative in which people increasingly view themselves as an autobiographical author.

McAdams & Zapata-Gietl (2015) offer a legitimate reading of Erikson in arguing that identity development is largely a unified process rather than separate stages. It is not the purpose of this paper to argue for a reading of largely similar or largely different challenges during age ranges. Perhaps it is merely perspective. However, one important characteristic of Erikson's stages is that they are often seen as bookended by important life events such as the beginning of elementary school often seen as a bookend to the beginning of the *industry versus inferiority* stage, in which the child learns new skills or risks a sense of failure and incompetence, or retirement serving to begin the *ego integrity versus despair* stage of reflection and, hopefully, a sense of fulfillment in a life well-lived. It is important to note that it is these transitions which make such Eriksonian challenges thinkable. Inferiority is not a risk until the child begins school, often the first place in which the child's performance may cause feelings of inferiority, or retirement paving the way for reflection not only because more free time is available, but that reflection is more meaningful since employment has been completed.

Identity and Crisis

The idea that individuals must master particular goals has been referred to as a developmental crisis. Crisis is not a belief in impending catastrophe (Erikson, 1968). Rather, it designates "...a necessary turning point, a crucial moment, when development must move one way or another, marshaling resources of growth, recovery, and further differentiation." (Erikson, 1968, p. 16) Growth is often seen as a wholly beneficial process, but this is only when taken from a long-term perspective. Human developmental growth often involves awkward physical changes, entering into a period of ambivalence in which one might question previously-held beliefs, sexual maturity, integrating ideas of self and what peers think, ultimately changing for the better but not without difficulty. Idea integration is also necessary in multiple contexts. A student may have an academic identity as well as an identity within their family. In summation, Erikson argued that identity development is a struggle, with the idea of an "identity crisis" probably being a somewhat overused term, as he himself comments (Erikson, 1968).

Identity Cohesion versus Role Confusion

The present study attempts to assess cultural adaptation within university learners. Erikson's theory of psychosocial development suggests that the young adult will typically experience a period of questioning in which they will explore their identity in an attempt to continue to ascertain who they are. James Marcia (1966) theorized that the resolution of ego-identity status results in one of four stages, which can be applied to Erikson's framework of identity crises. Identity foreclosure is an identity status which results from an individual developing an identity without a large amount of exploration, possibly because of social pressures like family or other commitments solidifying a

persons' identity without them having much choice in the matter. In this scenario, crisis results if these norms suddenly stop working. An example might be a person who is expected to work to support their family rather than fully exploring their identity and other skills.

Identity diffusion is a state of apathy which involves a person refusing to undertake identity exploration (Marcia, 1966), perhaps because they face changes that they do not wish to adapt to, such as an American expatriate making a large salary in a new country choosing to socialize with mostly other Westerners.

Identity moratorium is a state of open-minded thoughtfulness in which individuals suspend the idea that they are a unified whole in order to actively explore alternatives to a previous identified self or selves. This status may be the longest and most complicated stage in which the individual is most accepting of multiple descriptions of the self (Marcia, 1966). This does not mean that crisis is avoided, nor does the idea of crisis mean that only negative emotions arise. As will be expanded upon later, universities often attempt to engineer experiences in which students are asked to question themselves. College students who are Undecided in their major choice or who change majors often may hold this status. Lastly, *identity achievement* is the resolution to an identity crises, involving a fulfilling exploration and, finally, a commitment to certain identity aspects (Marcia, 1966). College students who question their religious beliefs when taking a philosophy or comparative religions class may reach identity achievement when they decide to adopt a particular religious belief. Note that this may not always result in a shift in religious identification. Oftentimes, the student questioning their religious identity comes to reaffirm it after a period of questioning, which would still be an achievement of identity.

Cultural Adaptation

Identity crisis is an important framework which is useful for viewing the exposure to a new culture. When a person encounters a new culture, their identity is almost certain to change due to their exposure to a new language, customs, and cultural priorities. Opportunities are ripe for questioning one's beliefs or the extent to which one tolerates different thoughts or behaviors. A new culture can trigger a readjustment of self-worth. Later in this paper, data will be used to measure the extent to which this can be understood as a crisis.

There are several specific processes which take place when a person interacts with the dominant group of a new culture. *Acculturation* is the process by which a person from a minority group will, over time, shift their behaviors in order to become more similar to the dominant group. This happens linearly over time and is mediated by variables like gender and age (Szapocznik, Scopetta, Kurtines, & Aranalde, 1978). Usually, the non-dominant group becomes more like the dominant group, but this is a mutual process in which the dominant group may also change (Portes, González-Canché, Boada, Mira, Sandhu & Salas, 2016). This process involves both groups examining their identity, and depending on the dominant group's attitudes toward the non-dominant group, this process may progress smoothly or it may involve what Erikson calls crisis, especially in the non-dominant group as they may become anxious in the changes they must make. This may result in non-dominant group members seeking out peers in order to find camaraderie regarding the shared experience of stress (DeVos, 1980).

This reveals the duality of stress: it is an important influence in pushing people to adapt to a new situation, but this is accomplished through the experience of discomfort.

The ability to deal with stress is known as *adjustment* and the inability to cope is known as *distress*. (Anderson, 1991). Adjustment involves adaptive strategies and behavior change, which helps explain why the non-dominant group usually changes to match the dominant group rather than the reverse. This is a complicated process involving at least four different aspects, which are described in detail in the next chapter.

CHAPTER 2

MEASURE: CULTURAL ADAPTATION DEVELOPMENT INVENTORY (CADI)

The Cultural Adaptation Development Inventory (CADI) is a 30-question Likert-type item set developed by Portes et al (2016) which attempts to measure the process that happens when one person from one particular culture moves to live in a new culture. This process involves taking on inter-cultural stress and their intercultural sensitivity, but also engages in effort-optimism and inter-cultural adaptation (Portes et al., 2016).

Intercultural Stress

Intercultural stress is the perception that one is facing discrimination. Non-dominant group members may experience this form of stress as a result of the conflict of values with dominant culture members (Anderson, 1991). Many issues may give rise to intercultural stress, including whether or not to acculturate, to what extent one should acculturate, and the extent to which acculturation is a threat to the self-concept and identity which they previously valued (Schwartz, Montgomery, & Briones, 2006). In a previous study (Nixon, 2008) this factor was identified as *pain*, and this is accurate, but the items in the CADI (see Appendix A) which load onto this factor refer to being treated differently than others. For example, if a person endorses the item “I am often looked down upon by some people”, then they are experiencing pain, but a specific type of pain which results from someone, most likely from a dominant culture group, contrasting their perceived value or situation with the respondent. This cultural difference takes the form of stress.

Effort Optimism

Effort optimism contrasts with the process of learned helplessness, the belief that a person's effort does not pay off for them, which arises when they show a lack of confidence (Woolfolk, 2015). This experience often follows intercultural stress since people are most likely to note that, for example, being "looked down upon by some people" results from a difference in identity, and oftentimes, a person may not perceive that they are able to change others' perception of them. When an individual goes to live in a new context, these experiences are very likely to occur. Learned helplessness is significantly correlated with depression (Miler & Seligman, 1975). On the opposite end of the spectrum, some display high resilience which could be seen as a motivational tool in academic settings.

Positive Inter-cultural Adaptation

Positive Inter-cultural Adaptation is the factor which indicates successful adjustment in cultural exchange. This is the extent to which a person feels that they have successfully fit into the culture and feels a sense of belonging. This is in many ways the opposite of learned helplessness since the person notices that their efforts have paid off. An example item is "I feel I have a clear identity in this culture." Endorsing this item most likely demonstrates identity achievement (Marcia, 1966).

Inter-cultural Insensitivity

The final factor, inter-cultural insensitivity, reflects significant attitudes toward people from other cultures. Irritation and intolerance towards those with different accents or willingness to appreciate jokes about another culture lend themselves to demonstrating inter-cultural insensitivity. One example item is "I feel it is fair to blame some ethnic groups for their plight."

These four factors together represent the extent to which a person is adapting to the culture that is represented by their particular context. Some items directly address ethnicity, but many do not, meaning that the idea that a person who endorses the item “I feel a sense of community with others around me” does involve a resolution of one’s ethnic identity but also different aspects of community, possibly including social, occupational and/or academic identities.

Learning at University

Universities present a focal point for the examination of these different aspects of social, occupational and academic identity. It is often said that the purpose of university is to find oneself, a phrase often also used when discussing Erikson’s psychosocial development. Continuing with the theme that stress is productive but also uncomfortable, academic environments attempt to set up difficult yet achievable tasks for students to complete and grow in the process. One of the most popular models which outline this progression is Benjamin Bloom’s taxonomy of learning objectives (Bloom, 1956; Krathwohl, 2002). The idea is that better teaching and learning results from doing tasks that place a higher cognitive demand on students, such as the critical evaluation of a text is more cognitively demanding than remembering information from a text. The importance placed on student action and attributes is paralleled by Biggs’s definition of good teaching: “...getting most students to use the level of cognitive processes needed to achieve the intended outcomes that the more academic students use spontaneously” (Biggs & Tang, 2007, p. 11). This involves the notion that some students are more suited to the academic culture of a classroom, but also includes the notions of motivation and self-regulation reflective of a crafted academic identity (Woolfolk, 2015). Thus, the culture participants are responding to is entangled with the transition to university, as

learning about oneself is also a purpose of university through completing course readings, questioning previously-held beliefs, and discussing with other students who come from different cultures.

One worry when examining teaching and learning from a cultural perspective is that academics may assume that their students already have critical thinking skills, as if they develop naturally, and then, upon finding out that many international students are unable to perform to already-made standards, then go on to assume that these students are incapable of thinking critically. Non-native speakers may also be unfairly criticized for poor English skills, as the estrangement a student feels may simply be the effects of a new learning environment. As the world becomes increasingly more globalized, universities continue to look further into supporting students from diverse cultures.

CHAPTER 3

STUDY 1: MULTILEVEL MODELING

Universities which are better able to support students who come from other cultures, and to evidence this using widely-conceptualized measures of academic success such as grade-point average and graduation rates are able to present themselves as more marketable, safer investments of a family's time and resources. This involves examining data from students who are nested in universities, thus making hierarchical linear modeling a viable method for analysis.

The most complicated of these factors is the construct of cultural adaptation, or exactly how students who come from a different culture adapt to a new culture. This may involve undertaking inter-cultural stress, or discomfort due to experiencing a new culture. Ultimately, it is hypothesized that those who have higher inter-cultural adaptation will have more success in university. However, the 'culture' of a university comes into play as well, including the support systems within the university, but also factors around the university, like whether or not the university is public or private and whether it is located in an urban or sub-urban area. Lastly, students affect the results of other students, as education is a product which is both produced by *and* consumed by the people who make it up. Thus, how many dominant and non-dominant students attend the university should also help researchers understand the extent to which students in a university adapt, possibly helping each other, but also how the university notices and creates support systems for the students who need assistance. For example,

this may look differently in Hispanic-serving Institutions (HSIs) than those which have a majority of dominant (Caucasian) students.

This study attempts to create a multilevel model using CADI is a collection of 30 Likert-type items measuring the extent to which a person from a different culture is adapting to a new, target culture. Items are listed in Appendix 1. Three items were reverse-coded (Items 20, 23 and 28), which were recoded in the dataset before import into SAS software (SAS Institute Inc., 2013). These items were then all summed to determine a student's total score for cultural adaptation.

College GPA

Students invited to take the CADI were also asked to self-report their GPA on a continuous scale from 0.0 to 4.0. While self-reporting GPA does lead to data collection issues such as students misremembering or misrepresenting themselves, this measure did in fact have wide representation in all levels, spanning from 0.0 to 4.0 with a mean of 3.45 and a standard deviation of 0.473, so this wide distribution of scores was deemed suitable for the present study.

University-level data

University-level data were collected using the College Scorecard (US Department of Education, 2017). Variables collected included the percentage of non-dominant (non-Caucasian) students attended the university, whether the university was in an urban or suburban environment, and whether the university was public or private.

Procedure

Student-level data were collected by inviting students from ten different universities to participate for undergraduate-level educational psychology credit. While the sample was not random because students had the choice to participate in this study

or other studies, the sample size is large and robust enough to conduct hierarchical linear modeling. Students who chose not to participate in studies were given the alternate assignment of writing summaries of current articles in educational psychology so as to avoid unnecessary compulsion to take part in research. Not every student answered every question, so those who had missing data were excluded.

University-level data was collected through a secondary data set of colleges and universities maintained by the US Department of Education (2017), so it was deemed reputable and credible for the purposes of this study.

Table 1

Means and standard deviations for all continuous variables

Variable	N	Mean	Std Dev	Minimum	Maximum	Range	Variance	Sum
GPA_College	2925	3.4524622	0.4738700	0	4.0000000	4.0000000	0.2245527	10098.45
NonDom	2925	0.3707111	0.2029574	0.2200000	0.9100000	0.6900000	0.0411917	1084.33
TotalCADI	2579	94.9228383	17.4757467	42.0000000	134.0000000	92.0000000	305.4017241	244806.00
GradRate	2925	0.8091248	0.1018531	0.4400000	0.8500000	0.4100000	0.0103741	2366.69

Table 2

Covariance matrix for all continuous variables

Variances and Covariances						
Covariance / Row Var Variance / Col Var Variance / DF						
	GPA_College	CitySub	PubPriv	NonDom	TotalCADI	GradRate
GPA_College	0.2245527	-0.0154716	0.0000618	-0.0091548	-0.0362371	0.0051250
	0.2245527	0.2245527	0.2245527	0.2245527	0.2288469	0.2245527

	0.2245527	0.1066739	0.0148215	0.0411917	305.4017241	0.0103741
	2924	2924	2924	2924	2578	2924
CitySub	-0.0154716	0.1066739	-0.0018263	0.0627249	-0.4488309	-0.0303691
	0.1066739	0.1066739	0.1066739	0.1066739	0.0980318	0.1066739
	0.2245527	0.1066739	0.0148215	0.0411917	305.4017241	0.0103741
	2924	2924	2924	2924	2578	2924
PubPriv	0.0000618	-0.0018263	0.0148215	0.0034503	-0.2089247	0.0000679
	0.0148215	0.0148215	0.0148215	0.0148215	0.0118803	0.0148215
	0.2245527	0.1066739	0.0148215	0.0411917	305.4017241	0.0103741
	2924	2924	2924	2924	2578	2924
NonDom	-0.0091548	0.0627249	0.0034503	0.0411917	-0.3454900	-0.0182274
	0.0411917	0.0411917	0.0411917	0.0411917	0.0377410	0.0411917
	0.2245527	0.1066739	0.0148215	0.0411917	305.4017241	0.0103741
	2924	2924	2924	2924	2578	2924
TotalCADI	-0.0362371	-0.4488309	-0.2089247	-0.3454900	305.4017241	0.1950850
	305.4017241	305.4017241	305.4017241	305.4017241	305.4017241	305.4017241
	0.2288469	0.0980318	0.0118803	0.0377410	305.4017241	0.0094387
	2578	2578	2578	2578	2578	2578
GradRate	0.0051250	-0.0303691	0.0000679	-0.0182274	0.1950850	0.0103741
	0.0103741	0.0103741	0.0103741	0.0103741	0.0094387	0.0103741
	0.2245527	0.1066739	0.0148215	0.0411917	305.4017241	0.0103741

Table 3**Frequency tables for Categorical variables**

	N	Frequency
City	2,608	.8916
Suburb	317	.1084
Public	2,882	.999853
Private	43	.0147

Methods**Analytic Rationale**

This study purports to model student-level variables, including their CADI scores and their GPA along with university-level variables like whether the university is located in a city or suburb, whether it is public or private, the level of non-dominant students present (non-Causasian), and the university's Graduation Rate.

Level-1 models

It is hypothesized that a student's level of adaptation, operationalized as their total CADI score, will be a significant predictor for their academic success, operationalized as their GPA on a continuous scale from 0.0 to 4.0.

Level 1 Equation:

$$\text{Level 1: } GPA_{ij} = B_{0j} + B_{1j}TotalCADI_{ij} + r_{ij}$$

Level-2 models

It is hypothesized that university variables will also affect GPA. Given that cultural adaptation is a factor, the student non-dominance rate (how many non-Caucasian students attend the university, by percentage) is also hypothesized to affect GPA. Of course, using graduation rate as a university-level covariate would also be hypothesized to shed light into GPA based on the success of the university overall.

The categorical variables of city-or-suburb and public-or-private were discarded from the model since, based on the frequency charts, they were off-balance, including the vast majority of universities being public and located in cities, so since these data would be offset by unequal sample sizes, these variables were not entered into the model.

Results

Unconditional Models

Intra-class correlation was quite high, at $.00138 / (.00138 + .000189) = .87954$. This means that the model does not differentiate very well between classes. This could further evidence that concept refinement needs to take place, for example, by a further literature review regarding the extent to which cultural adaptation and academic success are different.

The final unconditional model is:

Level 1: $GPA_{ij} = .01092 + -.00041(TotalCADI_{ij}) + .2949$

Table 4**Parameter estimates for unconditional model****Estimated G Matrix**

Row	Effect	StudentID	Col1	Col2
1	Intercept	1	0.01092	-0.00041
2	TotalCADI	1	-0.00041	

Covariance Parameter Estimates

Cov Parm	Subject	Estimate	Standard Error	Z Value	Pr > Z
UN(1,1)	StudentID	0.01092	0.03718	0.29	0.3845
UN(2,1)	StudentID	-0.00041	0.000189	-2.15	0.0319
UN(2,2)	StudentID	0	.	.	.
Residual		0.2949	0	.	.

Unfortunately, the Total CADI estimate is significant, but the intercept was not. Also, the parameter themselves were rather low, making the graph of the unconditional model very flat with a very low slope.

Conditional Models

Predictors for Student GPA (on a continuous scale from 0.0-4.0) were student's Total CADI score (30 items added up along a Likert-type scale, with three items reverse-coded), along with two university-level variables, the percentage of non-dominant

students as well as the percentage graduation rate of the university. This was merely a cross-sectional analysis between students and universities, not a longitudinal analysis.

Hypotheses

Hypotheses were that each of these variables would account for a significant amount of variance, along with the two-part interaction terms (Total CADI X Non-Dominant, Total CADI X Graduation Rate, Non-Dominant X Graduation Rate) and one three-part interaction term (Total CADI X Non-Dominant X Graduation Rate).

Initial Models and Decision-making Process

Since the inventory of cultural adaptation is most salient in the conceptualization of predictors for GPA, Total CADI score was incorporated into all of the models. A random intercept model was first attempted, co-varying graduation rate with CADI scores in order to predict GPA. This takes into account the idea that the university's support systems would be employed in order to fuel cultural adaptation at a given university, resulting in success seen on the student level as well as the university level. However, only the intercept was significant. Then, a similar model was conducted with only the intercept being random.

Next, non-dominant percentage was incorporated into the model, including student diversity as an important parameter when estimating how cultural adaptation and university support systems work together to create successful students. Firstly, a random intercept-only model was conducted, with -2 Log Likelihood being equal to 3518, the smallest value seen thus far.

However, the final model incorporated Total CADI, co-varying dominance with university graduation rate, randomly varying both the intercept and non-dominance. The rationale is that all universities are probably trying to maximize their graduation

rate, so that this variable can be fixed. However, universities may wish to accept a greater amount of diversity in order to create a more inclusive campus, perhaps leading to greater student success for those who are attempting to do more cultural adaptation. The final model yielded the lowest -2 log likelihood of all the models, 3503.1.

Final Model Equations

$$\text{Level 1: GPA}_{ij} = B_{0j} + B_{1j}\text{TotalCADI}_{ij} + r_{ij}$$

$$\text{Level 2: } B_{0j} = y_{00} + y_{01}(\text{NonDom})_j + u_{0j}$$

$$B_{1j} = y_{10} + y_{11}(\text{NonDom})_j + u_{1j}$$

Table 5

Final Model Parameter Estimates

Covariance Parameter Estimates					
Cov Parm	Subject	Estimate	Standard Error	Z Value	Pr Z
r_{ij}	StudentID	0.000221	0.05520	0.00	0.4984
B_{0j}	StudentID	-0.8450	0.1218	-6.94	<.0001
B_{1j}	StudentID	1.3436	0.2101	6.40	<.0001
u_{0j}		0.6116	0	.	.

Interpretation of Parameters

While the model ran with significant results, the model variances were very low, with a high residual, meaning that the variables in the model does not account for a large amount of the variance itself. Also, Total CADI score by student does not significantly influence GPA. However, the university-level variance was significant and

negative, meaning that as non-dominance increases, Student GPA decreases slightly. This means that, as more people from more cultures arrive at university, some of them will have a difficult time, not being able to achieve as well as their neighbors from the same culture. Also, the slope accounting for non-dominant students is also significant and positive, meaning that if the rate of increase in non-dominant students is higher for a university, GPA tends to increase as well. This might be because universities who have wide variance in student achievement tend to try to remedy this, oftentimes by noticing sections of the student population which are not doing as well and taking steps to support these particular populations of low-achieving students.

Conclusion

Multilevel modeling can shed light into how things like diversity and university-wide achievement can work together to inform individual achievement. It was particularly interesting to see that, while the intercept for the model was significant and negative, meaning that universities with larger non-dominant student populations' lowest-achieving students tend to have lower GPA than their more dominant counterparts, the slope was significant and positive for university-level graduation rate. It seems that, by increasing the diversity of their student population, universities will, on average, be able to increase their graduation rates. This will prove important for research on nurturing student success.

Data were used from the University Scorecard (2017), including a proxy for race rather than *dominance*. Results reveal that this was a problematic approach, and literature would support this, since dominance may not necessarily be equated with whiteness in America. For example, at Florida International University, an Hispanic-Serving Institution (HSI), in which 67% of the student body identifies Hispanic with

only 9% identifying as Caucasian. The model reveals that cultural history does not equate to dominance if there is a larger group culture present, and this is one example which problematizes the notion that race/ethnicity covaries with dominance.

Another implication for these results involves *how* students become successful at university. According to the model, students are less successful if the intercept is lower, meaning the students with the lowest CADI scores, or those who are culturally adapting the least. This is another parallel with dominance. For example, a white male who grew up in Georgia that goes to attend the University of Georgia would probably not have a high CADI score, since he does not have to adapt culturally due to learning in the same culture as he grew up. If there are too many students of a dominant group, then GPA will tend to be higher. However, if there are sharp contrasts between CADI scores, then students will have higher GPAs on average. This is another way to understand diversity; if there are lots of people who need to adapt a lot, and also lots of people who do not need to adapt much, then GPAs will tend to be higher.

This research seems to demonstrate that students do not adapt or achieve completely on their own, but that the variance *between* universities is much greater than the variance *within* universities. For example, 18-year olds at the University of Georgia might not be very different than 18-year olds at Florida International University, for example, but UGA is very different from FIU.

One aspect of the constructs which need to be further explored is exactly how similar cultural adaptation is to academic success. It was revealed that the CADI scores did not account for a significant amount of the variance of student GPA. This is perhaps because the idea of adapting to a new culture is necessarily intertwined with succeeding academically, such that these things may actually be measuring similar

things. This would also explain why the ICC was so high; actually, both things might have been measuring *success-within-context*. In effect, coming to a university means taking on an ‘academic culture’ in which certain skills and practices are valued, such as speaking and writing to an academic audience, time management, and other skills related to good communication, all of which would also be involved with adapting culturally.

While GPA did not vary significantly with total CADI score, Graduation Rate was significant with CADI, meaning that people who are able to successfully adapt to the culture in context are more likely to graduate from school. This may mean that, conceptually, cultural adaptation to a greater extent may not be linked to higher grades, at least not directly. One possible methodological error was that total CADI scores have not yet been proven to be additive, thus it may have been inappropriate to sum them into an aggregate variable. Future factorial research will reveal factor loadings which will require the multilevel models to be redone.

Another confound in the study is that it is probable that cultural adaptation significantly differs due to the ethnicity of the student. If a student is Caucasian, then they most likely have to do less cultural adaptation than if they are from a non-dominant group. However, this was absent in the current study, and if another study were to be done, then student-level ethnicity data should also be included. In terms of validating literature, this study shows that dominance cannot simply be associated with whiteness, with it possibly confounding in a Hispanic-serving institutiotn (HSI) such as Florida International University, demonstrating that the specific context of a university is necessary for understanding how dominance works in that context.

CHAPTER 4

STUDY 2: EXPLORATORY FACTOR ANALYSIS

Background and Participants

Nixon (2008) conducted a confirmatory factor analysis (CFA) on CADI data from data collected prior to 2008 ($N = 374$) African American and White participants from a public university in the southeast. The model did not fit well for African Americans and/or males, but as previously discussed, ethnicity may not be the best way to operationalize dominance. Nixon (2008; Portes et al, 2016) proposed a four-factor model previously elaborated on in the Measure chapter. New data have been collected during the last two years from two universities in Spain ($N = 416$).

Method

A similar principal components analysis was conducted to see if the factor structure holds for the four factors found in American universities using SPSS software (IBM Corp., 2013). While Nixon's (2008) study used promax rotation, this study used varimax rotation as it has been noted to often result in higher factor loadings (Muliak, 2010). Other variables were kept the same, such as the critical eigenvalue (1.00).

Results

Initially, the model showed 7 factors, but it was found to not be productive in keeping factors which accounted for less than 5% of the total variance, so these were discounted. The resulting model is also a four-factor model like the results of the American CADI analysis. Results are presented in Appendix 3.

Intercultural Stress/Depression was one large part, overwhelmingly the biggest factor, into which seventeen of the items loaded. All of these were in the previously-found *intercultural stress* factor, with many from the *effort/optimism* factor loading here as well. In terms of Spanish universities, it seems that stress is more heavily entangled with learned helplessness even than the American sample. To put it a different way, the extent to which Spanish students are experiencing being looked down upon at university also relates to the extent to which one's self-worth is such that these students thought they could triumph over challenges.

The second factor was closest to *positive inter-cultural adaptation* with eight items loading into it, such as "I feel adequate functioning in this society" and "I feel a sense of community with those around me." Both the Spanish and American samples of undergraduates presented a duality when responding to the CADI, showing both aspects of stress *and* successful adaptation.

The third factor only saw one item loading into it, "I feel I have a clear identity in this culture." In the American sample, this item loads in the positive inter-cultural adaptation component, but it can be seen as a separate concept according to Spanish students. Perhaps Erikson would agree, in that identity is a concept evaluated by the self, which is not necessarily the same as adapting to a different culture. Another way to understand this is that adaptation governs mainly behaviors, whereas identity is not only behavioral but also cognitive and emotional as well.

The final factor loaded the last four items and is similar to the American component of *intercultural insensitivity*, loading items like "I'm not bothered when people use ethnic/racial slurs" and "I feel it is fair to blame some ethnic groups for their

plight.” This factor seems most similar to the intercultural insensitivity factor seen in the American sample.

Conclusion

In conclusion, the four-factor structure seen in Nixon (2008) holds with several key differences, the most important of which is that many aspects of learned helplessness are more closely tied with the notion of cultural differences. These were seen to correlate in the American sample, but show a much more entangled in terms of component structure in the Spanish samples.

CHAPTER 5

STUDY 3: RASCH MODELING

Rationale

Returning to the theme of Erikson (1968) presenting early adulthood as one stage of development, and knowing that there are four principal components which load into the model from a factor analysis perspective, the question may remain as to whether or not the scale as a whole demonstrates latent unidimensionality, that is to say, are the four parts presented in the last section fit together as part of a whole. If so, is it productive to see them all together, or is the CADI scale *only* distinct factors which are better understood separately? To what extent does Erikson's concept of identity hold as a singular feature which weaves together the threads of the CADI? Item Response Theory may be used in order to assess the latent unidimensionality of the construct (Baker & Kim, 2004). Item response theory also allows for scaling parameters to be constructed for the data.

Method

This study used partial-credit Rasch modelling (Wright, 1968) and the *Facets* program (Linacre, 2017) in order to examine the extent to which a single latent dimension was present throughout the inventory. The total CADI data set ($N = 2,636$) was used for this assessment, including respondents from ten American universities and two Spanish universities.

Results

Persons

Results are summarized in Table 6 (next page). Person measurement ($N = 2,636$) raw scores ranged from a total CADI score of 42 to 134 with a mean of 95.0 ($SD\ 17.4$). Results were reliable with an index of .86 and a fixed chi-square of 16,458.4 (2,534 *df*), which is highly significant at $p < .001$. With an infit of 1.04 for dichotomous responses, data followed a Guttman pattern, and an outfit of 1.09 indicated predictable outliers.

Items

Item measurement ($N = 30$) demonstrated a mean of 3.2, $SD\ .3$ and a high reliability index of near 1.00. A fixed chi-square test resulted in 6,784.4 (29 *df*), which is highly significant at $p < .001$. Infit was .99 which had almost no deviation from a Guttman pattern and an outfit of 1.10 which would be productive for measurement.

Table 6*Rasch Analysis Results Table*

Measures	Person	Item
<i>M</i>	3.2	3.2
<i>SD</i>	.6	.3
<i>N</i>	2,636	30
Infit		
<i>M</i>	1.04	.99
<i>SD</i>	.68	.46
Outfit		
<i>M</i>	1.09	1.10
<i>SD</i>	.83	.66
Reliability of Separation	1.00	1.00
χ^2 statistic	16,458.5*	6,784.4*
Degrees of freedom	2,533	29

Note: * $p < .001$

This allows a Wright map (Wright, 1968) to be constructed with the singular measure of cultural adaptation, seen in an Eriksonian framework as *identity development through crisis*, as can be seen below:

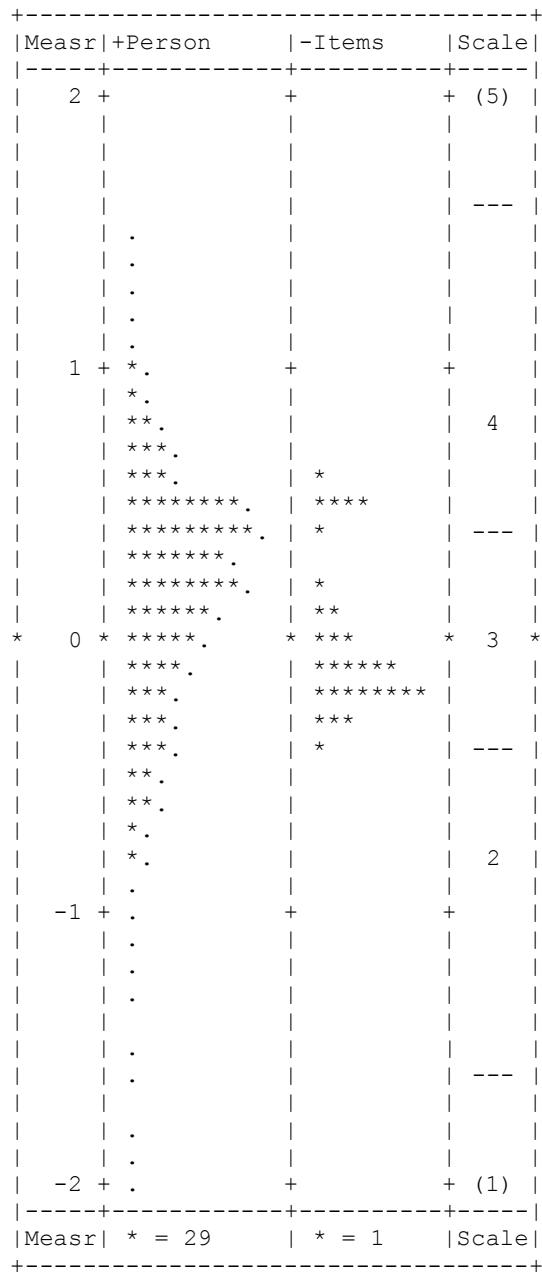


Figure 1

Wright Map of Cultural Adaptaiton

Conclusion

Results indicated that the Rasch model accounted for 27.89% of the variance, indicating that the data show the model, despite showing four distinct factors, also carries within it a latent unidimensionality (Reckase, 1979). This means that, while factors such as intercultural stress account for negative aspects of the experience of cultural adaptivity, positive intercultural adaptation accounts for a different experience with different characteristics, but both involve movement in a particular direction conceptualized below:

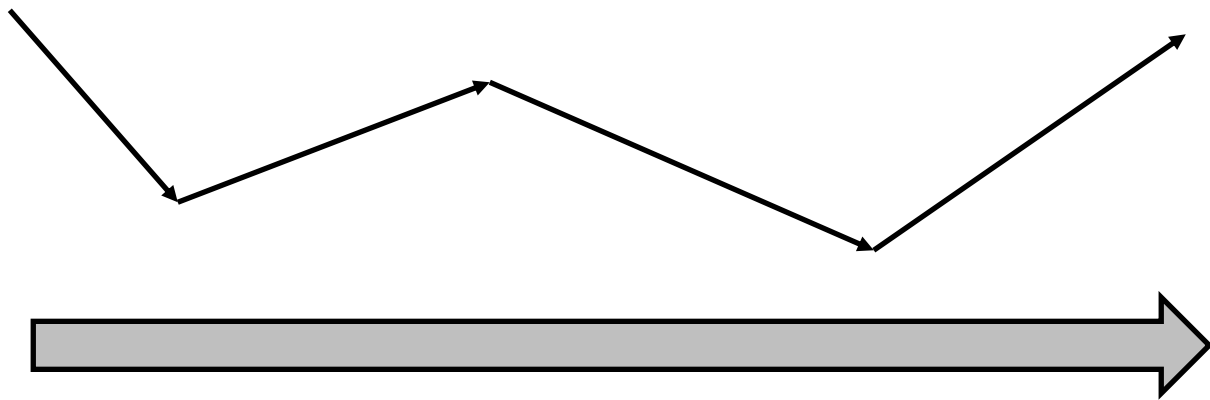


Figure 2

Four factors working in one overall direction

CHAPTER 6

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The most important finding from this paper was in the attempted multilevel model which problematized the operationalization of dominance as ethnicity, which in American society was assumed to be whiteness. Properly understood, this is also the paper's chief limitation that is also present in the field of undergraduate data collection, namely, healthy data sets exist which document student ethnicity, but few if any exist which document the extent to which students are part of a dominant/non-dominant culture group. Further attempts to theoretically define dominance may assist this work, but this may be a difficult task, since a dominant culture group both constructs and is constructed by their environment, and each dominance is only understandable in its particular context. Perhaps more qualitative methods such as semi-structured interview in response to the CADI inventory may yield deeper understanding in the connection between culture, ethnicity and dominance.

This paper has illustrated that the idea of identity as perseverance through stress leading to adaptive behavior can be shown cross-culturally. This is further refined in four-factor models for both American and Spanish undergraduates, but shows latent unidimensionality due to Rasch analysis. However, the specific way that cultural adaptation affects the learning process remains to be seen. How does this process affect the learning experience? Finally, what can teachers do to recognize and support those with a high degree of intercultural stress and/or learned helplessness?

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APPENDICES

Appendix A: Cultural Adaptation Development Inventory (CADI)

THE CULTURAL ADAPTATION AND DEVELOPMENT INVENTORY – REVISED

Directions: Please answer the following questions based on how you have felt recently in the past twelve months. There are no right or wrong answers. However, for the results to be meaningful, you must answer these statements as honestly as possible. Thank you.

Circle or mark each item that holds true for you. Please respond to all items.

1. Marital Status: A. Single B. Married C. Divorced/Separated
 D. Widow(er)
2. Ethnicity:
 - a. White (not of Spanish descent)
 - b. African American
 - c. Native American
 - d. Latin/Hispanic American
 - e. Asian American / Pacific Islander
 - f. Arab American
 - g. Other (write in the cultural background that best describes you;
e.g. Cajun, Punjab, Korean, Bosnian etc.)
3. Number of years you have lived in the U. S. a. Always b. # of years
4. Family Income

Below \$12,000.00 a year
\$12,000.00 to 20,000.00
\$20,000 to 35,000.00
\$35,000 to 50,000.00
\$50,000 to 100,000.00
Above \$100,000.00

(If you are a student, go by your parents' income.)
5. Languages you are fluent in:

6. Gender: Male Female
7. Nationality U.S. Citizen U.S. Permanent Resident Other (list which)
8. Your age
9. Years of Education Completed by You:
- Years of Education Completed by Your Father: Mother:
10. Approximate GPA in College:
- a. 3.5 or above b. 3.0-3.4
- c. 2.5-2.9 d. 2.0-2.4 e. below 2.0

Optional: Religion _____

Please circle the option that most accurately describes your current state on the following items.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
In general, (I feel that):					
1. Many opportunities are denied to me.	5	4	3	2	1
2. My choices for success in life are limited.	5	4	3	2	1
3. I am looked down upon by some people.	5	4	3	2	1
4. I am often not taken seriously.	5	4	3	2	1
5. I am ostracized (shunned) by some people.	5	4	3	2	1
6. I am often considered less capable than I really am.	5	4	3	2	1
7. Others try to make me feel different.	5	4	3	2	1
8. I have been denied opportunities I deserve.	5	4	3	2	1
9. I suffer from prejudice and unequal treatment.	5	4	3	2	1
10. I am required to do more than others to prove my abilities.	5	4	3	2	1
11. I feel I have a clear identity in this culture.	5	4	3	2	1

12. I don't have as many choices as others around me.	5	4	3	2	1
13. Trying hard to get ahead doesn't work for people like me.	5	4	3	2	1
14. I feel adequate functioning in this society.	5	4	3	2	1
15. I don't have much control over my life generally.	5	4	3	2	1
16. I feel I don't have as much support as others.	5	4	3	2	1
17. I feel a sense of community with others around me.	5	4	3	2	1
18. I feel I belong in the present culture.	5	4	3	2	1
19. I'm treated as a second rate citizen some of the time.	5	4	3	2	1
20. I feel I can get ahead in life as well as anyone else.	5	4	3	2	1
21. I feel uncomfortable with people's cultural values in this society.	5	4	3	2	1
22. I feel a sense of helplessness and hopelessness.	5	4	3	2	1
23. Others act as if they are better than I am.	5	4	3	2	1
24. I feel it is fair to blame some ethnic groups for their plight.	5	4	3	2	1
25. I feel irritated when people are insensitive to the cultural values of others.	5	4	3	2	1
26. I feel amused when people make fun of cultural stereotypes.	5	4	3	2	1
27. I'm not bothered when people use ethnic/racial slurs.	5	4	3	2	1
28. I get impatient when I can't understand a different accent.	5	4	3	2	1
29. I feel that despite all my efforts I will not be able to succeed in this society.	5	4	3	2	1
30. I feel that if I try to work hard, I'll have a good future.	5	4	3	2	1

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Appendix B: Factor Analysis Correlation Matrix

Correlation Matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CADI Item	1. Many opportunities are denied to me.	1.000	.442	.213	.300	.224	.227	.233	.493	.175	.267	.031	.367	.320	-.052	.167
	2. My choices for success in life are limited.	.442	1.000	.323	.383	.326	.336	.300	.397	.204	.297	-.047	.521	.433	-.075	.375
	3. I am looked down upon by some people.	.213	.323	1.000	.420	.860	.550	.533	.338	.578	.338	-.136	.360	.338	-.146	.266
	4. I am often not taken seriously.	.300	.383	.420	1.000	.440	.440	.362	.344	.322	.368	-.059	.432	.349	-.141	.282
	5. I am ostracized (shunned) by some people.	.224	.326	.860	.440	1.000	.563	.544	.400	.600	.376	-.149	.381	.348	-.154	.289
	6. I am often considered less capable than I really am.	.227	.336	.550	.440	.563	1.000	.477	.333	.428	.405	-.104	.422	.308	-.173	.353
	7. Others try to make me feel different.	.233	.300	.533	.362	.544	.477	1.000	.421	.448	.294	-.089	.355	.316	-.092	.292
	8. I have been denied opportunities I deserve.	.493	.397	.338	.344	.400	.333	.421	1.000	.320	.363	.020	.420	.328	-.124	.214
	9. I suffer from prejudice and unequal treatment.	.175	.204	.578	.322	.600	.428	.448	.320	1.000	.278	-.139	.329	.177	-.058	.225

10. I am required to do more than others to prove my abilities.	.267	.297	.338	.368	.376	.405	.294	.363	.278	1.000	-.046	.415	.274	-.054	.205
11. I feel I have a clear identity in this culture.	.031	-.047	-.136	-.059	-.149	-.104	-.089	.020	-.139	-.046	1.000	-.005	-.050	.333	-.166
12. I don't have as many choices as others around me.	.367	.521	.360	.432	.381	.422	.355	.420	.329	.415	-.005	1.000	.452	-.107	.312
13. Trying hard to get ahead doesn't work for people like me.	.320	.433	.338	.349	.348	.308	.316	.328	.177	.274	-.050	.452	1.000	-.167	.344
14. I feel adequate functioning in this society.	-.052	-.075	-.146	-.141	-.154	-.173	-.092	-.124	-.058	-.054	.333	-.107	-.167	1.000	-.202
15. I don't have much control over my life generally.	.167	.375	.266	.282	.289	.353	.292	.214	.225	.205	-.166	.312	.344	-.202	1.000
16. I feel I don't have as much support as others.	.283	.392	.463	.310	.437	.419	.407	.406	.411	.339	-.168	.423	.381	-.147	.351
17. I feel a sense of community with others around me.	-.161	-.167	-.258	-.152	-.263	-.156	-.193	-.192	-.182	-.169	.266	-.206	-.171	.229	-.198
18. I feel I belong in the present culture.	-.101	-.123	-.250	-.167	-.227	-.241	-.238	-.139	-.238	-.085	.446	-.128	-.151	.336	-.232

19. I'm treated as a second rate citizen some of the time.	.264	.299	.440	.290	.446	.381	.364	.336	.403	.268	-.081	.363	.329	-.090	.274
20. I feel I can get ahead in life as well as anyone else.	-.190	-.338	-.170	-.133	-.165	-.148	-.128	-.155	-.091	-.123	.057	-.305	-.321	.311	-.271
21. Others act as if they are better than I am.	.216	.333	.405	.452	.432	.451	.406	.369	.322	.344	-.083	.371	.327	-.163	.249
22. I feel it is fair to blame some ethnic groups for their plight.	.036	.035	.071	-.008	.056	.048	.064	.057	-.055	-.025	.057	-.044	.165	-.093	.124
23. I feel irritated when people are insensitive to the cultural values of other	-.042	-.090	-.061	.006	-.083	.029	-.020	-.042	.051	-.016	.069	.002	-.092	.116	-.042
24. I feel amused when people make fun of cultural stereotypes.	.020	.034	.037	.032	.016	.067	.074	.002	.049	.045	.087	.043	.041	.077	.073
25. I'm not bothered when people use ethnic/racial slurs.	.034	.005	.116	.026	.083	.062	.095	.059	.036	.011	-.064	-.010	.098	-.060	.096

26. I get impatient when I can't understand a different accent.	-.017	.024	.051	.087	.075	.024	.121	.052	.036	.093	.060	.101	.148	-.084	.144
27. I feel that despite all my efforts I will not be able to succeed in this soc	.318	.444	.249	.287	.239	.336	.235	.247	.132	.257	-.092	.368	.367	-.256	.380
28. I feel that if I try to work hard, I'll have a good future.	-.243	-.315	-.190	-.092	-.182	-.169	-.195	-.244	-.124	-.163	.123	-.270	-.378	.263	-.296
29. It is useful to have high hopes in this society.	-.251	-.261	-.214	-.192	-.244	-.171	-.171	-.201	-.143	-.164	.190	-.218	-.360	.210	-.212
30. I feel I have deep roots in this country.	-.083	-.168	-.137	-.062	-.120	-.169	-.115	-.082	-.130	-.092	.409	-.092	-.085	.349	-.170

		16	17.	18	19	20	21.	22	23	24.	25	26	27	28	29	30
CADI	1. Many opportunities	.283	-.161	-.101	.264	-.190	.216	.036	-.042	.020	.034	-.017	.318	-.243	-.251	-.083
Item	are denied to me.															
	2. My choices for	.392	-.167	-.123	.299	-.338	.333	.035	-.090	.034	.005	.024	.444	-.315	-.261	-.168
	success in life are															
	limited.															
	3. I am looked down	.463	-.258	-.250	.440	-.170	.405	.071	-.061	.037	.116	.051	.249	-.190	-.214	-.137
	upon by some people.															
	4. I am often not	.310	-.152	-.167	.290	-.133	.452	-.008	.006	.032	.026	.087	.287	-.092	-.192	-.062
	taken seriously.															
	5. I am ostracized	.437	-.263	-.227	.446	-.165	.432	.056	-.083	.016	.083	.075	.239	-.182	-.244	-.120
	(shunned) by some															
	people.															
	6. I am often	.419	-.156	-.241	.381	-.148	.451	.048	.029	.067	.062	.024	.336	-.169	-.171	-.169
	considered less															
	capable than I really															
	am.															
	7. Others try to make	.407	-.193	-.238	.364	-.128	.406	.064	-.020	.074	.095	.121	.235	-.195	-.171	-.115
	me feel different.															
	8. I have been denied	.406	-.192	-.139	.336	-.155	.369	.057	-.042	.002	.059	.052	.247	-.244	-.201	-.082
	opportunities I															
	deserve.															
	9. I suffer from	.411	-.182	-.238	.403	-.091	.322	-.055	.051	.049	.036	.036	.132	-.124	-.143	-.130
	prejudice and unequal															
	treatment.															
	10. I am required to	.339	-.169	-.085	.268	-.123	.344	-.025	-.016	.045	.011	.093	.257	-.163	-.164	-.092
	do more than others															
	to prove my abilities.															

11. I feel I have a clear identity in this culture.	-.168	.266	.446	-.081	.057	-.083	.057	.069	.087	-.064	.060	-.092	.123	.190	.409
12. I don't have as many choices as others around me.	.423	-.206	-.128	.363	-.305	.371	-.044	.002	.043	-.010	.101	.368	-.270	-.218	-.092
13. Trying hard to get ahead doesn't work for people like me.	.381	-.171	-.151	.329	-.321	.327	.165	-.092	.041	.098	.148	.367	-.378	-.360	-.085
14. I feel adequate functioning in this society.	-.147	.229	.336	-.090	.311	-.163	-.093	.116	.077	-.060	-.084	-.256	.263	.210	.349
15. I don't have much control over my life generally.	.351	-.198	-.232	.274	-.271	.249	.124	-.042	.073	.096	.144	.380	-.296	-.212	-.170
16. I feel I don't have as much support as others.	1.000	-.292	-.299	.449	-.163	.346	.068	-.051	-.003	.084	.012	.335	-.176	-.272	-.207
17. I feel a sense of community with others around me.	-.292	1.000	.496	-.232	.241	-.238	.012	.138	.060	-.110	-.078	-.159	.205	.202	.361
18. I feel I belong in the present culture.	-.299	.496	1.000	-.205	.251	-.155	.008	.142	.082	-.057	-.044	-.264	.212	.279	.574
19. I'm treated as a second rate citizen some of the time.	.449	-.232	-.205	1.000	-.191	.423	.082	.096	.031	.092	.053	.329	-.214	-.256	-.232

20. I feel I can get ahead in life as well as anyone else.	-.163	.241	.251	-.191	1.000	-.154	-.061	.196	.008	-.068	-.050	-.400	.443	.272	.261
21. Others act as if they are better than I am.	.346	-.238	-.155	.423	-.154	1.000	.027	.064	.009	.035	.159	.293	-.167	-.178	-.093
22. I feel it is fair to blame some ethnic groups for their plight.	.068	.012	.008	.082	-.061	.027	1.000	-.193	.187	.285	.134	.053	-.010	-.063	.063
23. I feel irritated when people are insensitive to the cultural values of other	-.051	.138	.142	.096	.196	.064	-.193	1.000	-.068	-.110	-.008	-.084	.094	.146	.070
24. I feel amused when people make fun of cultural stereotypes.	-.003	.060	.082	.031	.008	.009	.187	-.068	1.000	.164	.027	.023	-.032	.016	.051
25. I'm not bothered when people use ethnic/racial slurs.	.084	-.110	-.057	.092	-.068	.035	.285	-.110	.164	1.000	-.017	.049	-.040	-.023	-.023
26. I get impatient when I can't understand a different accent.	.012	-.078	-.044	.053	-.050	.159	.134	-.008	.027	-.017	1.000	.139	-.043	.000	.010

27. I feel that despite all my efforts I will not be able to succeed in this soc	.335	-.159	-.264	.329	-.400	.293	.053	-.084	.023	.049	.139	1.000	-.427	-.261	-.308
28. I feel that if I try to work hard, I'll have a good future.	-.176	.205	.212	-.214	.443	-.167	-.010	.094	-.032	-.040	-.043	-.427	1.000	.329	.228
29. It is useful to have high hopes in this society.	-.272	.202	.279	-.256	.272	-.178	-.063	.146	.016	-.023	.000	-.261	.329	1.000	.305
30. I feel I have deep roots in this country.	-.207	.361	.574	-.232	.261	-.093	.063	.070	.051	-.023	.010	-.308	.228	.305	1.000

Appendix C: Component Matrix

Pattern Component Matrix

	ICS	EO	PICA	ICI
1. Many opportunities are denied to me.	.483	.109	.347	-.203
2. My choices for success in life are limited.	.621	.057	.370	-.183
3. I am looked down upon by some people.	.710	.227	-.337	.186
4. I am often not taken seriously.	.593	.248	-.018	-.086
5. I am ostracized (shunned) by some people.	.728	.247	-.331	.158
6. I am often considered less capable than I really am.	.670	.214	-.189	.039
7. Others try to make me feel different.	.633	.229	-.189	.137
8. I have been denied opportunities I deserve.	.596	.218	.134	-.094
9. I suffer from prejudice and unequal treatment.	.570	.244	-.420	.033
10. I am required to do more than others to prove my abilities.	.528	.235	.020	-.127
11. I feel I have a clear identity in this culture.	-.236	.527	.418	.007
12. I don't have as many choices as others around me.	.655	.190	.225	-.217
13. Trying hard to get ahead doesn't work for people like me.	.606	.008	.362	.062
14. I feel adequate functioning in this society.	-.326	.517	.046	-.068
15. I don't have much control over my life generally.	.534	-.114	.150	.113
16. I feel I don't have as much support as others.	.667	.051	-.103	.006
17. I feel a sense of community with others around me.	-.431	.390	.218	-.017
18. I feel I belong in the present culture.	-.445	.582	.341	.001
19. I'm treated as a second rate citizen some of the time.	.615	.110	-.097	.005
20. I feel I can get ahead in life as well as anyone else.	-.429	.388	-.376	.024
21. Others act as if they are better than I am.	.606	.206	-.079	-.046
22. I feel it is fair to blame some ethnic groups for their plight.	.088	-.012	.252	.713
23. I feel irritated when people are insensitive to the cultural values of other	-.099	.286	-.186	-.378
24. I feel amused when people make fun of cultural stereotypes.	.042	.156	.177	.463

25. I'm not bothered when people use ethnic/racial slurs.	.122	-.063	.041	.624
26. I get impatient when I can't understand a different accent.	.135	.031	.126	.174
27. I feel that despite all my efforts, I will not be able to succeed in this soc	.575	-.216	.341	-.103
28. I feel that if I try to work hard, I'll have a good future.	-.456	.327	-.366	.088
29. It is useful to have high hopes in this society.	-.450	.311	-.143	.044
30. I feel I have deep roots in this country.	-.358	.634	.225	.126