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Depression among Korean Immigrants: The Influence of Acculturation and Social Support

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Depression among Korean Immigrants: The Influence of Acculturation and Social Support

by

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DISSERTATION

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in

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by

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Abstract

Introduction: Depression is prevalent among U.S. immigrants, including Korean immigrants. However, little is known about factors that may contribute to their depression. Preliminary evidence suggests that less acculturated individuals are at greater risk for depression but that social support may buffer any negative effects of less acculturation. The aims of this study were to examine the relationship between acculturation and depressive symptoms among Korean immigrants and the moderating role of social support.

Methods: A convenience sample of 132 adult Korean immigrants completed 6 self-report measures: the Center for Epidemiologic Studies Depression Scale, a Korean version of the Acculturation Rating Scale for Mexican Americans-II, the Multi-Dimensional Scale of Perceived Social Support, the Perceived Stress Scale, the MacArthur Scale of Subjective Social Status, and a demographic questionnaire. Hierarchical regression analysis was used to examine the aims, controlling for covariates.

Results: 31% of the sample met the criteria for being depressed. Greater acculturation was associated with more depressive symptoms while greater social support was a significant predictor of fewer symptoms. Social support was more strongly related to less depression among immigrants who were less acculturated than among immigrants who were more acculturated, but this difference was not significant. Perceived stress was the most significant predictor of depression. Older age at immigration and less education were also related to greater depression. Variables in the regression model accounted for 65% of the variance in predicting depression.
Conclusions: Findings indicate a high prevalence of depressive symptoms in this Korean immigrant sample. Results also suggest that acculturation per se may not play a major role in depressive symptoms but rather more specific factors associated with acculturation such as age at immigration and educational levels. These factors should be studied in future research, along with efforts to better understand the causes of stress and impaired social networks in this population. Findings point to a need for regular assessment of depression by health care providers as well as the stress and social support available in a Korean immigrant’s life. Results also suggest that community-based prevention programs to address these problems may be warranted.
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Chapter I.

INTRODUCTION
Background

In the 10 year period between 2000 and 2010, the Asian population increased more than four times faster than the total U.S. population, growing by 32% (U.S. Census Bureau, 2015). According to the U.S. Census Bureau, Koreans account for 10% of the Asian Americans and Pacific Islanders (AAPIs) in the U.S (2008). The majority of Korean-Americans are first generation immigrants and they are the 5th largest AAPI subgroup in the U.S. (Wu, Kviz, & Miller, 2009).

Migration causes sudden changes in many areas of the immigrant's life within a short period of time (Kim, et al., 2005). Studies report that immigrants deal with increased stress related to major changes in lifestyle, language barriers, cultural and ethnic differences, transportation difficulties, and cultural conflicts (Park et al., 2013). Research has demonstrated that part of the stress inherent in the acculturation process stems from a cultural gap between the original and host cultures (Berry, 1997).

Asian immigrants may be vulnerable to mental illness because of the challenges they face as they adapt and learn to navigate the new culture. First-generation Korean immigrants appear to experience particular adaptation difficulties and perceive higher levels of acculturative stress than other immigrants. This difference may result from the limited English proficiency and communication difficulties of first-generation immigrants (Kim, & Kim, 2013). In addition, they often experience discrimination, differences in gender role expectations and separation from key social supports (Sin et al, 2010).

Depression has been one of the most prevalent health problems among U.S immigrants, including Korean immigrants (Portes & Rumbaut, 2006). The prevalence of depression among
Korean immigrants has been reported to be twice as high as that of the general US population (Bernstein et al., 2011). Yet little known about factors they may contribute to depression among Korean immigrants.

**Study Purpose and Aims**

The purpose of this cross-sectional study was to examine the potential influence of acculturation and its relationship to social support as predictors of depressive symptoms among Korean immigrants. The specific aims were: 1) to examine the relationship between acculturation and depression among Korean immigrants, and 2) to determine whether social support moderates the relationship between acculturation and depression among Korean immigrants. Two hypotheses were tested: 1) Lower levels of acculturation will be associated with more depressive symptoms, and 2) Greater social support will decrease the likelihood of depressive symptoms in individuals with lower levels of acculturation.

**Rationale for the Study Aims**

**Depression among Korean Immigrants.** Depression is predicted to become the leading cause of disability worldwide, affecting 11% to 15% of the global population during their lifetime (Murray et al., 2013). In a recent United States national survey, one in five people reported having depressive symptoms, and depression is the second leading cause of disability in the United States (Shim et al., 2011).

Asian Americans (AA) are the fastest growing minority population in the US, consisting of people with ethnic origins in the Far East, Southeast Asia, or the Indian subcontinent: Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam (U.S. census, 2012). Although the prevalence of depression among AAs in some
community samples is reported to be moderately low, high levels of depressive symptoms among AA adults also have been described (Yang et al, 2007).

Koreans refer to depression as *woo-ul-jeuing*, and define it as a condition in which one’s self is out of balance (Shin et al., 2010). The majority of Koreans still follow the Chinese philosophy of *yin* and *yang*: the natural balance between diametric forces. *Woo-ul-jeuing* is perceived as a lack of balance or as disharmony among the body, mind, and environment. Koreans, like other Asian groups, tend to express depressive symptoms in somatic terms such as headache or fatigue (Lee, Moon, & Knight, 2004). As a result, it can be difficult for Korean-Americans to differentiate whether their illness is physical or mental (Choi et al., 2002; Shin, 2010).

A few studies have examined the prevalence of depression among Korean immigrants. These studies indicate that Korean immigrants score higher in depression than the general American population or other Asian immigrants populations (Oh et al., 2002; Choi, 1997). Korean immigrants have a shorter immigration history in the US, experience greater difficulty in learning a new language, and typically take lower prestige jobs than other Asians, even when their education level is comparable (Kim et al., 2010). These factors may contribute to greater depression. Korean immigrants’ more elevated symptoms of depression also may be related to their stronger adherence to Confucian culture than other Asian populations, which Korean immigrants identified in previous research as a barrier to their adaptation (Kim et al., 2010).

**Acculturation and Depression.** Acculturation is the learning process that occurs when individuals from one background are exposed to prolonged, continuous, first-hand contact with a new culture (Berry, 1992; Sam & Berry, 2006). Acculturation also deals with the phenomena of sequential psychological changes resulting from continuous and direct contact between individuals of different cultures (Berry, 2006). Berry (2006) describes acculturation as a
multidimensional process through which people alter their attitudes, beliefs, and behaviors. Acculturation may provide a powerful explanatory variable in studying depression among immigrants (Lee et al., 2004). Level of acculturation has been described as an indicator of the fit between individuals and the host culture. In case of a lack of fit, individuals may experience vulnerability and impaired mental health such as depression (Jang & Chiriboga, 2009). However, it remains unclear exactly how acculturation influences depression, though it appears likely that immigrants experience distress over their loss of connection to their native culture when immersed in a new culture.

Jang and colleagues (2005) found that acculturation was significantly associated with depressive symptoms among Korean immigrants ($r = -0.30$, $p < 0.001$). Their results suggest an increased likelihood of depressive symptoms among the less acculturated. Ayers and colleagues (2009) also found that acculturation was inversely associated with depression via mediation through immigrant stress. Lower levels of acculturation were related to higher levels of immigrant stress. In turn, higher levels of immigrant stress were related to more depressive symptoms. Tran and colleagues (2007) examined the correlations between length of residency (an indicator of acculturation) and depressive symptoms in adult Vietnamese residing in an East Coast Metropolitan area. Depression levels tended to be high during the first decade of initial resettlement ($\beta = .558$, $p < .001$) while depression levels decreased after 12.5 years ($\beta = -.461$, $p < .01$). Chen and colleagues (2014) examined the effects of acculturation on depression symptomatology among immigrants who were HIV+ Asian Pacific Islanders (API). Lower levels of acculturation were associated with greater depression in that group as well. Findings of these studies support the hypothesis that lower levels of acculturation will be associated with more depressive symptoms.
Social support as a Moderator of the Relationship between Acculturation and Depression. Social support is significant because of its potential ability to mitigate acculturative stress. Familial and informal social networks are often critical to immigrants seeking information, resources, and emotional support in order to adapt to a new environment. In their study of Korean immigrants, Park & Roh (2012) found that greater social support was inversely related to depression. Kim and colleagues (2012) examined both independent and interactive effects of acculturation and social network support on depressive symptomatology among elderly Korean immigrants. After controlling for the effects of demographic variables, a hierarchical regression model indicated that greater social support was associated with fewer depressive symptoms. Additionally, the interaction between acculturation and social network was significantly associated with lower levels of depressive symptoms. Highly acculturated elderly Korean immigrants with a strong social network support exhibited lower levels of depression compared to those who were highly acculturated but had low social network support. This research provides preliminary support for the hypothesis that greater social support will decrease the likelihood of depressive symptoms in individuals with lower levels of acculturation.

Other Factors that May Increase Depressive Symptoms. A number of other factors have been associated with depression in previous research. These factors are important to consider in examining the research aims. A few studies have reported that gender is associated with depression among Korean immigrants. One study showed that women exhibited higher levels of depressive symptoms than men (Back & Lee, 2011). Another study also reported that Korean immigrant women had a higher prevalence of depression (Choi et al, 2009). These findings are consistent with research by Oh and colleagues (2013) indicating that female Korean immigrants are more likely to have
depressive symptoms than males. However, Kim et al (2009) found that the proportion of Korean immigrant women (31%) to men (29%) who experience depression does not appear to be different. Lee and colleagues (2013) also found that there is no significant difference in depression among Asian immigrants.

A few studies have reported that age is associated with depression among Korean immigrants. A recent study found a higher prevalence of depression in older Koreans (24 - 30.3%) than in the general population of older Americans (15-20% ; Jang et al, 2014). Not only age itself but age at immigration appears to influence depression. Leu et al (2008) reported that age of immigration was associated with mental health problems such as depression among immigrants. Researchers suggested that the age when people immigrate may shape the capacity and efficiency at which they learn and use a new language, the opportunities to meet with new people, and the exposure to different environments. Lee et al (2013) also supported that age at immigration is associated with depression among Asian immigrants.

Many studies have shown that stress associated with immigration may increase depression. Ezzati and colleagues (2014) reported that depression was positively associated with higher levels of stress in a community sample. Stress also was found to mediate depression in an immigrant sample of Pacific Islanders (Chen et al, 2014). In addition, Lee and Holm (2012) found that stress was a significant predictor of depression among elderly Korean immigrants.

Kim et al (2014) showed that the likelihood of having depressive symptoms increased as subjective social status decreased. Their findings are consistent with another study by Diaz and colleagues (2014) who reported that higher subjective social status was inversely associated with psychological distress and depression. Related to social status is an individual’s education and income. Depression has been found to increase with declining educational status and lower
household income in both genders (March et al., 2014; Oh et al, 2013). Other research also has shown that the likelihood of having depressive symptoms increases as the education level decreases (Back & Lee, 2011; Kim et al, 2014). Gavin and colleagues (2010) found a significant association between a higher level of education attainment and lower risk of depression as well. Similarly, for both men and women, those who have disrupted marital status appear to have significantly higher frequencies of depressive symptoms than their counterparts (Kuo et al., 2009; Oh et al, 2013).

Lastly, research indicates that religious practice may reduce rates of depression in Korean immigrants. According to a study by Park and Roh (2012), daily spiritual experiences have been inversely related to depression. Another study indicated that, among the elderly population in general, religious involvement and practice are positively associated with a range of subjective well-being measures, including decreased depressive symptoms (Koenig et al., 2012; Levin, 1997).

**Conceptual Framework**

The research just described served as the foundation for study aims. Figure 1 shows the primary relationships that were examined in this study. As indicated by the aims, the relationship of acculturation to depression was a major focus for the research as well as the moderating role of social support. The direct relationship of social support to depression was also examined as well as the potential effects of confounding sociodemographic factors and stress.
Chapter II.

METHODS
Participants and Setting

The sample included Korean American immigrants who were recruited from Korean shopping malls, restaurants, Korean churches, Korean dental offices, Korean small businesses and Korean banks. A participant was eligible for the study if he or she met the following criteria: 1) was over 18 years old born in Korea, 2) was a Korean born American living in the San Francisco Bay area or Los Angeles, and 3) was able to communicate in English or in Korean. This study excluded participants who had a previous history of depression or substance abuse, any thyroid disorder, or severe cognitive impairment.

Procedure

A broad community-based recruitment strategy was used through mailing to Korean community centers and fliers at Korean churches, Korean shopping centers, restaurants, and direct visits to Korean businesses as well. If an individual was interested in participating, a packet of materials was distributed. A packet, including an information letter, a consent form, self-report measures, and a return envelope with a stamp, was mailed to participants who returned the measures through the mail if they decided to participate. A gift card was given for their time and efforts. Follow-up phone calls or e-mail were conducted if needed for any additional information. All procedures and forms were approved by the Committee on Human Research (CHR) of the University of California, San Francisco. Participants were reminded that participation in the study is optional. In addition to measures related to study aims, items were included that asked persons whether they had been diagnosed with or treated for depression, substance abuse or a thyroid disorder. If the participant received scores for depression indicating a level of clinical concern, the researcher provided a resource list of potential mental health clinics and encouraged the individual to make an appointment with a clinician. Participants were recruited between June 2015 and September 2015.
**Measures**

**Demographic Questionnaire.** A 14-item demographic questionnaire was used. The items considered age, gender, age at immigration, length of residence in the U.S., household income, adequacy of family income, number of people in the household, education level, marital status, employment status, and religious practice.

**Acculturation.** The acculturation measure was the Acculturation Rating Scale of Mexican–Americans II (ARSMA-II; Cuellar et al., 1995). The ARSMA-II consists of two different scales. Scale 1 measures Anglo orientation (AOS) and Mexican orientation (MOS) while scale 2 measures marginality and separation. Scale 2 is an experimental scale that has never been sufficiently validated so it was not used in this study. Scale 1 consists of 30 items which assess four factors: (1) language use and preference; (2) ethnic identity and classification; (3) cultural heritage and ethnic behaviors; and (4) ethnic interaction. These factors create two subscales which in turn measure orientation toward the Mexican culture and the Anglo culture. The MOS contains 17 items with a coefficient alpha of 0.88, while the AOS contains 13 items with a coefficient alpha of 0.83. Each item is scored on a Likert scale from 1 (not at all) to 5 (extremely often or almost always). Each subject’s mean MOS score is computed by averaging the Likert scale scores of the 17 items. Individual mean AOS scores are obtained in the same manner with the 13 AOS items. In order to produce an acculturation score representative of the individual’s place on the continuum of very Mexican oriented to very Anglo oriented, the mean MOS is subtracted from the mean AOS. Thus, lower scores are indicative of Mexican orientation while higher scores are indicative of Anglo orientation.

The English version of ARSMA-II was translated into Korean for this study and all items were evaluated for their cultural appropriateness by two bilingual Korean individuals. One of the
evaluators had expertise in education and taught high school in both Western and Southern regions of the U.S. for 15 years. She also worked as a bilingual teacher in a Korean language school. The second evaluator immigrated to the United States after she finished college in Korea. She had a Masters degree in global health and was enrolled in a PhD program. Based on their review, no essential item or wording changes were identified as being needed. As a result, the original items were retained to preserve the validity of the measure as much as possible. Cronbach’s alpha reliability for this Korean immigrant sample was 0.84 for the AOS (Anglo Orientation Scale) and 0.80 for the KOS (Korean Orientation Scale), indicating acceptable internal reliability for both scales.

**Social Support.** The Multidimensional Scale of Perceived Social Support (MSPSS) was used to measure social support. MSPSS was developed by Zimet et al. (1988). It is composed of 12 items and measures social support from three sources: family, friends, and significant others. Responses are scored on a seven-point scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”). Only the total score was used in this study. Higher scores indicate a greater perception of social support by the participant (Zimet et al., 1988). The original Cronbach’s alpha was reported as good ($\alpha = 0.85$) by Zimet el al (1988). Other studies have found reliabilities of .90 and .93 with South Asian migrants (Tonsing et al., 2012; Vaingankara et al., 2012). In this study, the alpha coefficient was .95, indicating that internal consistency reliability was very good.

Predictive validity was supported in a study by Tonsing et al. (2012) who found an inverse correlation of the MSPSS with depression, anxiety and stress. Kim (2012) also reported predictive validity of the measure in that it distinguished individuals with and without depression. Vaingankara et al. (2012) found construct validity of the MSPSS among outpatients with schizophrenia.
Stress. The Perceived Stress Scale (PSS) was used to measure stress. The PSS is a self-report instrument which evaluates the degree of an individual's perceived stress in daily life over the last month. The PSS was developed by Cohen et al. in 1983 and over time there has been strong evidence of its reliability and validity (Lee, et al, 2015). The PSS is a 10-item self-administered questionnaire in which each item is scored on a 5-point Likert scale from 0-4. The items cluster into two subscales: the negative subscale (worded negative) and the positive subscale (worded positive) to control for response bias in wording. The scores are summed and a higher score is indicative of greater perceived stress.

Studies have shown good to excellent Cronbach alpha values for the overall scores ($\alpha=0.74-0.82$), positive subscales ($\alpha=0.69-0.85$), and negative subscales ($\alpha=0.79-0.87$; Andreou et al, 2011; Ezazzi et al., 2014; Lee et al., 2015). Lee et al (2015) reported that the Korean version of the Perceived Stress Scale (PSS) was significantly correlated with the CES-D scale for its overall score as well as its positive and negative subscales. These findings supported concurrent validity of the Korean version.

Subjective Social Status. Social status was assessed with the MacArthur Scale of Subjective Social Status (SSS; Adler, 2007). The SSS visualizes social status as a symbolic ladder in which the top represents those with the most money and the best education and jobs. Participants are asked to place themselves on one of 10 rungs on this ladder to evaluate how they subjectively perceive their social status.

The predictive validity of the SSS has been supported in previous studies. It has predicted adult physical and mental health outcomes with significant accuracy in 2 separate studies that involved populations that were diverse in ethnicity, income and age (Adler, Epel, Castellazzo, and Ickovics, 2000; Leu et al., 2008). These studies found that psychological distress or
depressive symptoms increased as scores for subjective social status decreased. Diaz and her colleagues (2014) found that subjective social status (SSS) had good to excellent internal consistency. Individuals with low SSS had increased odds of depression symptoms compared to those with high SSS, supporting the measure's predictive validity as well.

**Depression.** The Center for Epidemiological Studies Depression (CES-D) Scale (Radloff, 1977) was used to measure the level of depression. CES-D is a self-reported, 20-item instrument which has been used in both clinical and general populations (Radloff & Locke, 1983). The scale consists of items related to lowered mood, hopelessness, sadness, crying spells, and alterations in sleep and appetite patterns. Each item is scored using a four point Likert scale ranging from 0 (rarely or none of the time; less than 1 day) to 3 (most or all of the time; 5–7 days). Subjects are asked to rate each item (e.g. “I felt depressed”) on a scale from 0 to 3 to indicate how often the subject felt that way over the previous week. For example, a subject's endorsement of 0 indicates that she felt that way “rarely or none of the time”, while endorsing 3 indicates that she felt that way “most or all of the time”. CES-D developers worded four of the items as positive statements to control for response bias. The positive CES-D items are: “I felt that I was as good as other people”; “I felt hopeful about the future”; “I was happy”; and “I enjoyed life”. Scoring is reversed for positive items when CES-D scores are calculated. CES-D scores range from 0 to 60, with higher scores indicating more severe depressive symptoms. A cut-off score of 16 was determined originally, and is now frequently used to identify potential clinical depression (Radloff, 1977; Radloff and Locke, 2008). Radloff (1977) reported that the CES-D has a high internal consistency and its coefficients range from 0.85 in the general population to 0.90 in a psychiatric population.
Li and Hicks (2010) examined psychometric properties of the CES-D in a sample of 168 community dwelling Chinese-American women in Boston. In this study, the CES-D had satisfactory internal consistency (Cronbach's $\alpha = 0.86$). They also found good concurrent validity, with higher CES-D scores in subjects who had a clinical diagnosis of current major depression versus those with no diagnosis of major depression. The scale has consistently demonstrated high reliability and validity across different ethnic populations, including Koreans (Jang et al., 2005; Kim et al., 2005). The alpha coefficient for the sample in this study was 0.84, suggesting acceptable internal consistency of the items.

**Data Analysis**

Data analysis was performed using SPSS 22.0. Descriptive statistics were performed initially to describe sample characteristics, including means, standard deviations, frequency and percent for age, gender, length of residence in the U.S., household income, adequacy of income, education level and marital status.

Hierarchical multiple regression analyses were used to examine the aims. Before examining the aims, assumptions for use of multiple regression were tested. Assumptions of normality and linearity were supported.

**Testing Hypothesis 1.** Preliminary relationships were computed (using correlations and ANOVAs) between Korean immigrants' depression and all demographic and psychosocial variables to identify covariates whose variance needed to be controlled for in the regression analysis. Covariates with a significant relationship to depression were entered at the first step of the regression. To test hypothesis 1, acculturation was entered at the second step and depression was regressed on all variables in the model. All covariates were examined for collinearity and were found to have excellent tolerance at 0.99.
**Testing Hypothesis 2.** Covariates that showed a significant relationship to depression in the model to test hypothesis 1 were then included as step 1 in the model to test hypothesis 2. Acculturation and social support were entered at the 2nd step and an interaction term (social support x acculturation) was entered at the final step of the model.

In addition, partial correlations were computed to examine the specific hypothesis that greater social support is associated with fewer depressive symptoms in individuals with lower levels of acculturation. For this analysis, participants in the bottom third of the sample for their acculturation score were examined separately from participants who were in the top 2/3rds on their acculturation score. For each group, partial correlations were computed to examine the relationship between social support and depression, controlling for significant covariates.
CHAPTER III.

RESULTS
Characteristics of the Sample

The sample included 132 subjects. Their demographic characteristics are shown in Table 1. Forty eight (36.4%) were males and eighty four (63.6%) were females. The mean age of the participants was 47.7 years, with a range from 20 to 87 years. Approximately 71% of participants were married and 77.3% of participants had children. 59.1% of participants worked full time, 21.2 % worked part time and 8.3 % of the participants were unemployed. Approximately 61% of participants had completed either college or graduate and professional studies. About 53% reported that "their family had enough money but no extra" and 19% of participants reported "more money than they need". The remaining 28% reported not having enough money to live or only enough for basic living expenses. Based on their annual household income, 16% (n=22) of the sample was living below the poverty threshold. On average, participants had immigrated to the U.S. at 27 years of age, with a range from 1 to 75 years.

The mean depression score for the sample was 14.45 and there were no differences between men and women in their depression means (see Table 2). 31% of participants reached the screening cut-off of 16 for potential clinical depression. Table 2 presents the means and standard deviations for other psychosocial variables as well.

Bivariate Associations between Covariates and Key Study Variables

Table 3 presents bivariate correlations between all psychosocial and demographic variables that had scores on a continuous scale. Relationships of covariates to depression, acculturation, and social support are of particular interest.

Covariates and Depression. Both current age (r=.18) and age at immigration (r=.20) were positively associated with depression at p < 0.05. Perceived stress was also positively correlated with depression (r = .75, p< 0.01). In contrast, subjective social status (r=-.347, p< 0.01) and education ( r = -.17, p< 0.05) were negatively associated with depression. Religiosity
showed a trend toward a negative relationship ($r = -0.15, p < 0.08$). No significant differences in depression were found for gender ($F (1,120) = 0.12, p = 0.727$) or marital status ($F (3,128) = 0.75, p = 0.526$).

**Covariates and Acculturation.** As shown in Table 3, age, religiosity and perceived stress were not related to acculturation. Similarly, there was no difference in acculturation based on gender ($F (3,128) = 0.39, p = 0.53$). Education showed a trend ($r = 0.16, p < 0.06$) toward a positive association and age at immigration was negatively associated with acculturation ($r = -0.50, p < 0.000$). Married and widowed participants were less acculturated than single participants ($F (3,128) = 3.44, p = 0.019$).

**Covariates and Social Support.** Social support was associated with a number of covariates (see Table 3). It was positively related to religiosity ($r = 0.21, p < 0.02$), subjective social status ($r = 0.34, p < 0.000$), and education ($r = 0.17, p < 0.05$) and was negatively related to current age ($r = -0.30, p < 0.000$), age at immigration ($r = -0.27, p < 0.002$), and perceived stress ($r = -0.44, p < 0.000$). It was not associated with either gender ($F (1,120) = 1.72, p = 0.19$) or marital status ($F (3,128) = 1.22, p = 0.31$).

**Testing of Hypothesis 1: Acculturation as a Predictor of Depression**

Because current age, age at immigration, education, subjective social status and stress were associated with depression in the preliminary analyses, they were entered in the first step of the regression model to control for their effects. Table 4 presents the initial model with all of these covariates included ($F (6,126) = 34.10, p < 0.000$). Age and subjective social status were not significant when considered with other covariates in the model. However, age at immigration and perceived stress were positively associated with greater depression while education was negatively associated with depression. After controlling for their effects, greater acculturation
was also a significant predictor of greater depression. Covariates in the first step of the model contributed to 60% of the variance in depression, with perceived stress showing the strongest effect ($\beta = .71$, $p<0.000$). Acculturation contributed an additional 2% to the variance in depression after adjusting for the covariates ($\beta = .15$, $p<0.03$).

**Testing of Hypothesis 2: The Moderating Role of Social Support**

To examine Aim 2, only those covariates that were significant in the initial model were entered at step 1 of the regression. Acculturation and social support were entered at the 2nd step and the interaction between acculturation and social support at the 3rd step. Table 5 shows the findings for this regression model. Age at immigration, education and perceived stress continued to make a significant contribution to depression, contributing to 60% of the variance in depression. In this model, acculturation lost its effect when social support was also entered in the 2nd step. However, greater social support was significantly associated with less depression ($\beta = -.15$, $p<0.01$). In step 3, when the moderating effect of social support was examined, there was no relationship between the interaction term (acculturation x social support) and depression.

Results for partial correlations between social support and depression (controlling for perceived stress, education, and age at immigration) differed for immigrants who were less acculturated than for other immigrants in the sample. For immigrants in the bottom third of the sample on their acculturation scores ($n=43$), the Pearson correlation for the relationship between social support and depression was $r=.29$, $p=0.07$. For immigrants in the top 2/3rds of the sample on their acculturation score ($n=89$), the correlation between social support and depression was $r=.08$, $p=0.47$. 
CHAPTER IV.

DISCUSSION
The overall purpose of the study was to examine the potential influence of acculturation and its relationship to social support as predictors of depressive symptoms Korean immigrants. The hypotheses were: 1) Lower levels of acculturation will be associated with more depressive symptoms, and 2) Greater social support will decrease the likelihood of depressive symptoms in individuals with lower levels of acculturation.

**Depression Status of Korean Immigrants**

Findings indicate that approximately 31% of the sample experienced depression at a level of potential clinical significance. This percent is smaller than the 40% found in Oh et al's (2002) study or the 44.8% reported by Mui et al (2001). Lower levels of depression in this study's sample may be due to differences in sociodemographic factors from samples in those studies. For instance, participants in those studies were older and from different regions of the U.S. Still, a prevalence of 31% indicates substantial depression among this group of Korean immigrants. In contrast, research indicates that the prevalence of depression in the general U.S. population is approximately 20% (Shim et al., 2011).

**Covariate Effects**

Three covariates were associated with depression including age at immigration, perceived stress and educational level.

**Age at Immigration.** The older participants were when they immigrated to the U.S., the greater was their depression. This finding is consistent with a previous study by Leu et al (2008). The age when people immigrate may shape the capacity and efficiency at which immigrants learn about the new culture and use a new language, their opportunities to meet and socialize with people, and their exposure to different environments. The social institutions that affect people's lives, such as school, families, and work places, vary by age at immigration (Fuligni,
Immigrating at older age may be a more stressful process of adjustment both linguistically and culturally since more of their lives were spent previously in the traditional Korean culture. An example of the differential effect of age at immigration can be seen in previous research regarding immigrant parents and their children. Korean immigrant parents frequently rely on their children, often resulting in a parent's perceived lack of respect and loss of identity in the household (Leu et al., 2008). Such role changes may contribute to greater depression.

**Stress.** Results indicate that perceived stress was the most significant predictor of depression among Korean immigrants in this sample. This significant effect of stress on depression has been found in previous studies (e.g., Ezatti et al., 2014; Lee & Holm, 2012) and recognized as a key contributor to depression in the general population (Ezatti et al., 2014).

In addition, while western culture and values have a great impact on the current lives of Korean immigrants, most of the participants in this study were first-generation Korean immigrants who may be greatly influenced by Confucianism-oriented Korean values. Confucianism values social harmony, conformity, and respect for hierarchy of familial or social structure rather than individuals' own belief or value systems (Cha & Kim, 2013). These more traditional values may lead individuals to compromise or sacrifice ways of handling daily stressors that help them manage stress. For instance, it has been reported that Korean families are reluctant to seek public help due to the fear that they might be perceived as weak or bring dishonor to their family or group (Cho et al., 2009). In addition, Confucianism discourages expression of feelings, ideas, and questions, resulting in greater internalization of feelings and thoughts (Ding Ding et al, 2011). Instead, Confucianism encourages acceptance, endurance of
suffering and maintenance of calm in the face of trying circumstances (Bernstein 2007). Greater internalization of feelings may limit the ability of these immigrants to manage stress.

A number of immigration-related stressors may contribute to their perceived stress. For instance, loss of family and social ties in Korea may increase stress and ultimately affect depressive symptoms. Pressure derived from the acculturation process can result in stressors associated with changes in language, gender roles, family values, and occupation. These changes may contribute to stress and in turn, lead to depression. Perceived discrimination may also be a factor that enhances stress. Immigrants may feel that they are being discriminated against on the basis of immigrant status or racial differences. Previous research has shown that lack of open expression of feelings, not seeking help from others, discrimination, and financial challenges associated with immigration may all increase depression (Kim et al., 2015).

**Education.** Individuals of higher education reported lower levels of depression. This finding has been noted in previous research across many cultures regardless of gender (Gavin et al., 2010). Oh and colleagues (2013) reported that non-educated women were 2.7 times more likely to have depressive symptoms than women with college degrees. Higher levels of education can lead to more employment opportunities, higher income, and less financial constraints. These factors may enhance life satisfaction and security that ultimately improve mood. Education might also provide content that improves cognitive skills underlying better coping and decision-making which help individuals deal with situations or feelings associated with depression.

**Acculturation and Depression**

Contrary to previous studies, findings do not support the hypothesis that lower levels of acculturation are associated with more depressive symptoms in Korean immigrants. Instead,
higher levels of acculturation predicted greater depression. This finding may be explained by recent immigration patterns and changes in demographics that differ from the context of previous research. The number of immigrants who hold professional and management positions among immigrants has increased, and Korean international students legalize themselves to permanent residents when they have completed their undergraduate or graduate education (Min, 2010). Min (2010) also reported that employment-sponsored immigration has replaced family-sponsored immigration as the dominant form of Korean immigration to the United States during recent years. These changing dynamics of immigration and sample characteristics may affect how acculturation is experienced by immigrants and its impact on their psychological well-being.

Why might more acculturated immigrants have greater depression? More acculturated immigrants may actually experience greater discrepancy between the two cultures which they are trying to straddle. For instance, alignment with western culture could create conflicts with friends and family who have more traditional values. As individuals became more aligned with the American culture, they may feel less a part of the homogeneous Korean communities that reinforce a shared cultural history. This sense of separateness or perceived cultural conflict could lead to a greater depression.

It is important to note that the effect of acculturation on depression was no longer significant when social support was entered into the model. The effect size for acculturation did not change substantially but some of the variance contributed to the model by acculturation appeared to be shared with social support and better accounted for by this variable. Social support may stem to some extent from activities within the Korean community. These ethnic-related types of social support may reduce risk for depression that could result from cultural conflicts.
Social Support and Depression

The hypothesis was not confirmed that greater social support will decrease the likelihood of depressive symptoms in individuals with lower levels of acculturation. However, partial correlations did show a stronger relationship between greater social support and less depression among individuals with lower levels of acculturation than among other immigrants in the sample. While this relationship indicated only a trend toward significance, a larger sample size may have allowed for the ability to detect a significant effect. The trend toward significance suggests that, for immigrants who were less acculturated, social support may play a role in helping them cope with the challenges of acculturation. Less acculturated immigrants with larger social networks may have greater access to other individuals who model healthy adjustment to a new environment and culture. Similarly, connection to a larger social network may help to normalize the stressors associated with acculturation, diminishing emotional distress. In contrast to results of this study, Kim et al (2012) did find a protective, moderating effect of depression for elderly Korean immigrants. However, participants in this study were much younger than those in Kim et al's study.

Results indicate that the direct effect of social support on depression was more important than any moderating role it may play (see Figure 2). Korean immigrants who had higher levels of social support reported significantly fewer depressive symptoms. This finding is consistent with those of previous studies (Kim et al, 2012; Tonsing et al, 2012). Immigration can result in changes in coping resources, such as a lack of close family members for support and difficulty in making good friends. The lack of close and trustworthy friends and family has been noted as a factor contributing to depression among Korean immigrants in other studies (Jang, Kim, & Chiriboga, 2005; Sin, Choe, Kim, Chae, & Jeon, 2010).
Recommendation for Future Research

Stress was identified in this study as the most significant predictor of depression. Yet little is known about factors contributing to perceived stress in this population. It is not known whether stress in this sample was associated with immigration-related stressors or to other life stressors that all individuals may face. It will be important in future research to examine stressors specific to Korean cultural values, beliefs and family dynamics as well as stressors associated with more general economic, social, and meaning-related stressors that are potentially experienced by people of all cultures.

In addition, the cultural validity of the acculturation measure needs to be more carefully examined. Because of traditional Confucianism, Koreans might minimize their responses to items like being “as good as other people”, "enjoyed life", or " I am happy " in the acculturation measure. Since the acculturation measure was originally designed for Mexicans who are predominantly Christian, Confucian values may not be adequately addressed in its items. In addition, several factors (such as motivation to immigrate, the immigration experience, and discrimination) may moderate acculturation. These factors were not explored and should be studied in future research.

Findings of this study indicate that Korean individuals with less social support, regardless of acculturation level, have more depressive symptoms. However, specific types of support that may be most important to Korean immigrants are not known. Some of these supports may moderate effects of acculturation more than others. For instance, many Korean immigrants experience challenges related to employment, language, health and social adjustment in American society. Social networks that assist immigrants with services in these areas or support their use of these services may enhance their psychological wellbeing by reducing adjustment
stress. To examine these issues, studies are recommended that use more culturally sensitive social support measures as well as both qualitative and quantitative assessments of social support in this population.

Education was associated with less depressive symptoms in this study. It will be important to better understand the role of education in depression and whether it is serving as a proxy for other factors. In addition, research should examine the effects of targeted educational programs that may provide resources specific to the demands of immigration and promote greater problem solving abilities. Such a program could ultimately influence other predictors of depression such as stress. If the program included opportunities for peer relations, it could also enhance social support. The effectiveness of improving education (both general and immigration-specific) as a means to reduce depression among Korean immigrants is an important focus for future research.

Studies using a longitudinal developmental design also may help in better understanding the relationship between acculturation and depression, and its moderating effects. Longitudinal studies may be especially important in mapping depression trajectories as individuals move from their country of origin to the U.S, in differentiating effects of current age versus age at immigration, and in determining causal effects of specific stressors over time.

Future studies should also be conducted in varied areas and multiple sites. The sampled subjects, who were Korean immigrants that lived in large urban areas of California, might have different levels of depression compared to that of Korean immigrants who live in rural areas. Lastly, research with a larger sample size is needed to increase the power necessary to detect any moderating effects of social support.

**Clinical Implications**
The findings have implications for assessment of depression, for identification of Korean immigrants at greater risk of depression, and for development of prevention programs targeted to Korean immigrants. Since moderate to high levels of depressive symptoms were found among participants in this study, primary care providers would be wise to screen for depression as part of the assessment in primary care settings. Based on study results, attention to less educated persons who immigrated at an older age and are experiencing life stress is particularly important. In addition, immigrants living alone with few social supports may require special assessment and referral.

The substantial prevalence of depression in study participants indicates a need for community-based prevention programs in Korean American communities. Programs can focus on awareness among families of symptoms associated with depression as well as resources for referral of individuals who may need more comprehensive assessment and treatment. Programs could also provide resources specific to the demands of immigration, promoting coping skills and problem solving abilities among new immigrants as they attempt to manage acculturation stress. Considering many Korean immigrants go to church and Korean community centers, these sites may offer good locations for delivery of these interventions (Park & Roh, 2013).

**Study Limitations**

Although the largest population of Koreans in the U.S reside in California (http://www.asiamattersforamerica.org/southkorea/data/koreanamericanpopulation ), the findings may not be generalized to Korean immigrants throughout other areas of the U.S. In particular, the results may not apply to Koreans in rural areas who are less engaged with Korean organizations and communities. The convenience sample may have not included more severely
depressed individuals who were more withdrawn and disconnected from the types of settings where individuals were recruited. This limitation is especially likely since individuals with a previous history of depression were excluded from participation.

Another limitation of the study is its cross-sectional design that does not allow for interpretation of causality. It is impossible to know from the findings whether lower levels of acculturation, less social support and higher levels of stress increase depression, or whether depression led to lower acculturation, lower social support, and higher perceived stress. Longitudinal studies are needed to determine how these variables influence one another over time.

Lastly, all measures were self-reported. Respondents may have been too embarrassed to reveal certain personal details that carry social stigma. Self-reported data is essential for understanding internally-based emotions and attitudes but responses may be adjusted to reflect what is viewed as socially desirable behavior. In addition, the person's emotional state during the time when study questions were answered may not have been a reliable estimate of their general levels of stress or depression. Inclusion of a structured clinical interview by a mental health professional would strengthen the assessment of depression.
Table 1
Demographic Characteristics of Korean Immigrants (N=132)

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>48</td>
<td>36.4</td>
</tr>
<tr>
<td>Female</td>
<td>84</td>
<td>63.6</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>23</td>
<td>17.4</td>
</tr>
<tr>
<td>Married</td>
<td>94</td>
<td>71.2</td>
</tr>
<tr>
<td>Separated/Divorced</td>
<td>12</td>
<td>9.1</td>
</tr>
<tr>
<td>Widowed</td>
<td>3</td>
<td>2.3</td>
</tr>
<tr>
<td>Work Situation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homemaker</td>
<td>13</td>
<td>9.8</td>
</tr>
<tr>
<td>Unemployed</td>
<td>11</td>
<td>8.3</td>
</tr>
<tr>
<td>Employed part time</td>
<td>28</td>
<td>21.2</td>
</tr>
<tr>
<td>Employed occasionally</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Employed fulltime</td>
<td>78</td>
<td>59.1</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade school or elementary school</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>High school or GED</td>
<td>22</td>
<td>16.7</td>
</tr>
<tr>
<td>Some college</td>
<td>10</td>
<td>7.6</td>
</tr>
<tr>
<td>2 year college degree</td>
<td>18</td>
<td>13.6</td>
</tr>
<tr>
<td>4 year college degree</td>
<td>57</td>
<td>43.2</td>
</tr>
<tr>
<td>Master’s degree</td>
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<td>15.2</td>
</tr>
<tr>
<td>Professional/Research degree</td>
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<td>3.0</td>
</tr>
<tr>
<td>(e.g. MD, JD, PhD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Household Income</td>
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<td></td>
</tr>
<tr>
<td>$15,000 or less</td>
<td>13</td>
<td>9.8</td>
</tr>
<tr>
<td>$15,001 – $29,000</td>
<td>9</td>
<td>6.8</td>
</tr>
<tr>
<td>$30,000 - $59,999</td>
<td>45</td>
<td>34.1</td>
</tr>
<tr>
<td>$60,000 - $89,000</td>
<td>23</td>
<td>17.4</td>
</tr>
<tr>
<td>$90,000 - $150,000</td>
<td>30</td>
<td>22.7</td>
</tr>
<tr>
<td>More than $150,000</td>
<td>12</td>
<td>9.1</td>
</tr>
<tr>
<td>Family Need</td>
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<td></td>
</tr>
<tr>
<td>Not enough money for food and/or a place to live</td>
<td>21</td>
<td>15.9</td>
</tr>
<tr>
<td>Enough money for basic living expenses</td>
<td>15</td>
<td>11.4</td>
</tr>
<tr>
<td>Enough money to live but no extra</td>
<td>71</td>
<td>53.8</td>
</tr>
<tr>
<td>More money than we need</td>
<td>25</td>
<td>18.9</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not religious at all</td>
<td>10</td>
<td>7.6</td>
</tr>
<tr>
<td>Somewhat religious</td>
<td>46</td>
<td>34.8</td>
</tr>
<tr>
<td>Very religious</td>
<td>42</td>
<td>31.8</td>
</tr>
<tr>
<td>Extremely religious</td>
<td>34</td>
<td>25.8</td>
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Table 2
Means and Standard Deviations for Psychosocial Variables (n=132)

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression (Total Score)</td>
<td>14.45</td>
<td>10.02</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>14.04</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>14.68</td>
</tr>
<tr>
<td>Acculturation</td>
<td>-1.63</td>
<td>1.10</td>
</tr>
<tr>
<td>Social Support</td>
<td>63.80</td>
<td>14.64</td>
</tr>
<tr>
<td>Subjective Social Status</td>
<td>5.85</td>
<td>1.70</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>18.14</td>
<td>6.14</td>
</tr>
</tbody>
</table>
Table 3

Correlations of Covariates with Dependent and Independent Variables

<table>
<thead>
<tr>
<th></th>
<th>AC</th>
<th>SS</th>
<th>SSS</th>
<th>PS</th>
<th>A</th>
<th>AI</th>
<th>E</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>-.01</td>
<td>-.55**</td>
<td>-.35**</td>
<td>.75**</td>
<td>.18*</td>
<td>.20*</td>
<td>-.17*</td>
<td>-.15</td>
</tr>
<tr>
<td>Acculturation (AC)</td>
<td>----</td>
<td>-.04</td>
<td>.23**</td>
<td>-.02</td>
<td>-.10</td>
<td>-.50**</td>
<td>.16</td>
<td>.00</td>
</tr>
<tr>
<td>Social Support (SS)</td>
<td>-.04</td>
<td>----</td>
<td>.34**</td>
<td>-.44**</td>
<td>-.30**</td>
<td>-.27**</td>
<td>.17*</td>
<td>.21*</td>
</tr>
<tr>
<td>Subjective Social Status (SSS)</td>
<td>.23**</td>
<td>.34**</td>
<td>----</td>
<td>.39**</td>
<td>.02</td>
<td>-.12</td>
<td>.20*</td>
<td>.06</td>
</tr>
<tr>
<td>Perceived Stress (PS)</td>
<td>-.02</td>
<td>.44**</td>
<td>-.39**</td>
<td>----</td>
<td>.06</td>
<td>.06</td>
<td>-.05</td>
<td>-.08</td>
</tr>
<tr>
<td>Age (A)</td>
<td>-.10</td>
<td>-.30**</td>
<td>.02</td>
<td>.06</td>
<td>----</td>
<td>.64**</td>
<td>-.08</td>
<td>-.12</td>
</tr>
<tr>
<td>Age at Immigration (AI)</td>
<td>-.50**</td>
<td>-.27**</td>
<td>-.12</td>
<td>.06</td>
<td>.64**</td>
<td>----</td>
<td>-.06</td>
<td>-.21*</td>
</tr>
<tr>
<td>Education (E)</td>
<td>.16</td>
<td>.17</td>
<td>.20*</td>
<td>-.05</td>
<td>-.08</td>
<td>-.06</td>
<td>----</td>
<td>.27**</td>
</tr>
<tr>
<td>Religiosity (R)</td>
<td>.00</td>
<td>.21*</td>
<td>.06</td>
<td>-.08</td>
<td>-.12</td>
<td>-.21*</td>
<td>----</td>
<td>----</td>
</tr>
</tbody>
</table>

Note: * p<.05, ** p<.01
### Table 4
Hierarchical Regression Model for the Relationship of Acculturation to Depression, after Controlling for Covariates

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>SE $B$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.001</td>
<td>.059</td>
<td>-.002</td>
</tr>
<tr>
<td>Age at Immigration</td>
<td>.181</td>
<td>.071</td>
<td>.224**</td>
</tr>
<tr>
<td>Education</td>
<td>-1.011</td>
<td>.407</td>
<td>-.142**</td>
</tr>
<tr>
<td>Subjective Social Status</td>
<td>-.279</td>
<td>.370</td>
<td>-.047</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>1.166</td>
<td>.098</td>
<td>.714***</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acculturation</td>
<td>1.410</td>
<td>.633</td>
<td>.154*</td>
</tr>
</tbody>
</table>

Note: $R^2$ for Step 1 = .60, $R^2$ for Step 2 = .62
*p < .05,  ** p < .01,  *** p < .001
Table 5

Final Hierarchical Regression Model for the Relationship of Acculturation, Social Support and Acculturation x Social Support to Depression, after Controlling for Covariates

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SE\ B$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at Immigration</td>
<td>.121</td>
<td>.053</td>
<td>.149*</td>
</tr>
<tr>
<td>Education</td>
<td>-.802</td>
<td>.395</td>
<td>-.113*</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>1.059</td>
<td>.097</td>
<td>.649***</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acculturation</td>
<td>1.307</td>
<td>1.651</td>
<td>.143</td>
</tr>
<tr>
<td>Social Support</td>
<td>-.148</td>
<td>.057</td>
<td>-.216**</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction Term</td>
<td>-.008</td>
<td>.026</td>
<td>-.055</td>
</tr>
</tbody>
</table>

Note: $R^2$ for Step 1 = .60, $R^2$ for Step 2 = .65, $R^2$ for Step 3 = .65  
*p < .05, ** p < .01, *** p < .001
Figure 1. Conceptual Framework for the Study

Figure 2. Modified Conceptual Framework Based on Study Findings
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Date 6/9/2015