

**The Impact of International Students' Adjustment Strains on Self-esteem, Happiness, and Engagement in Compulsive Online Buying**

by

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## **ABSTRACT**

This study examined the extent to which various adjustment strains faced by international students reduce self-esteem and happiness, as well as how these factors impact engagement in compulsive online buying. The online survey was distributed to international students at Auburn University and 146 responses were used for the analysis. Among the four adjustment strains, personal and social strains significantly reduced self-esteem, and language and personal strains led to unhappiness. The social competence dimension of self-esteem positively affected happiness. Social strains directly and positively affected compulsive online buying. The social expression confidence dimension of self-esteem negatively affected compulsive online buying. This study contributes to the literature by investigating the underlying psychological mechanism of spending behavior driven by international students' adjustment strains. These findings provide implications for helping international students better adjust to the U.S. culture and for preventing any psychological impairment or compulsive spending behavior.

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## CHAPTER 1. INTRODUCTION

In this study, international students, also known as foreign students or overseas students (Smith & Khawaja, 2011), are defined as students who are attending educational institutions in foreign countries (Ward, Bochner, & Furnham, 2001). According to NAFSA (2016), there were 1.04 million international students studying at U.S. colleges and universities during the 2015-2016 academic year. Over the past 15 years, the total number of international students in the U.S. has increased by 72 % (Open Doors, 2015). The top ten sending countries are China, India, South Korea, Saudi Arabia, Canada, Japan, Vietnam, Taiwan, Mexico, and Brazil, and 76% of all international students come from Asian countries (U.S. Immigration and Customs Enforcement, 2015). International students bring great economic benefits to American society and universities. International students contribute more than three times as much to the U.S. economy than they did 15 years ago, with their spending increasing from \$9 billion to \$27 billion for tuition, housing, school supplies, travel, and other expenses (Open Doors, 2015). Because of rising costs, shrinking state support, and domestic students' resistance to tuition increases, international students have become very important to many U.S. colleges' and universities' financial balances (Jordan, 2015).

However, studies have found that international students often face adjustment problems. Such problems are mainly due to the differences in language, educational systems, and social customs and norms, as well as homesickness, financial problems, and racial discrimination for some students (Church, 1982; Gareis, Merkin, & Goldman, 2011; Wehrly, 1988). Furthermore, according to Gareis et al.'s (2011) study, around 38% of international students failed to build strong friendships with U.S. students, and 27% of them were not satisfied with the quality of the friendships they had made.

Although researchers have studied international students' adjustment problems, few have focused on different sources of adjustment strains and their psychological and behavioral consequences in a shopping and spending context. The literature suggests that a sense of social rejection, low self-esteem, unhappiness, and other negative feelings experienced during the adaptation process significantly alter consumption behavior and tend to promote spending (Baumeister, DeWall, Mead, & Vohs, 2008). Although consumers may adopt shopping as a coping strategy to temporarily relieve their negative mood and/or to cheer themselves up with self-treats (Atalay & Meloy, 2011), repetitive stress-driven consumption may promote compulsive buying, or uncontrolled and excessive buying, thus generating negative consequences in the long term (Roberts & Jones, 2001). As younger generations are increasingly exposed to diverse mobile devices, the amount of time and money spent on online shopping has been on the rise, and this increase in online shopping has in turn spurred impulsive and compulsive spending behavior online (Manchiraju, Sadachar & Ridgway, 2016).

Therefore, understanding underlying drivers and consequences of international students' adjustment strains is critical to develop programs or policies in order to facilitate better adjustment to U.S. culture and to prevent negative consumption tendencies in the early stages. To address the aforementioned gaps in the literature, this study examines (1) the extent to which international students' various adjustment strains influence self-esteem and happiness and (2) how these factors (adjustment strains, self-esteem, and happiness) affect engagement in compulsive online buying. Given the increasing consumption power, population size, and societal influence of international students in American colleges and universities (Jordan, 2015), this study focuses on international students in higher education in the U.S.

## CHAPTER 2. LITERATURE REVIEW

### **International Students' Adjustment Strains**

When an individual encounters a different culture, he or she experiences psychological changes from the acculturation or adaptation process (Berry, 1997). Individuals may perceive these changes as benign or as positive opportunities, which are easy and straightforward to understand, or alternatively perceive them as conflicts and difficulties. These conflicts or difficulties are considered as acculturative stressors (Berry, 2006). International students often experience culture shock between home and host cultures during the period of adjustment (Ward, et al., 2001). Cultural shock, a distressed feeling of loss and discomfort caused by unfamiliar experiences (Zhou, Jindal-Snape, Topping, & John, 2008), is a widespread disorientation, which does not happen instantly but rather begins with unnoticeable series of events (Oberg, 1972). When international students come from countries with a greater cultural distance from the host country, they tend to experience more difficulties in social interaction due to their needs to learn more appropriate cultural and social skills required to survive in the new environment (Furnham & Bochner, 1982). The most troublesome difficulties are mostly related to direct contact with people of the host country (Furnham & Bochner, 1982). Culture shock arising from problems in intercultural or interpersonal communication in a new environment could negatively affect the emotional well-being of the sojourner and lead to inappropriate behavior (Pedersen, 1995; Pedersen, 2004).

International students' adjustment strains (ISAS), also known as acculturative stressors, are defined as the problems or strains that international students contend with in their daily lives

when living in foreign countries (Crano & Crano, 1993). By summarizing previous studies, four major sources of adjustment strains for international students in higher education can be identified: academic strains, language strains, personal strains, and social strains (Chen, 1999; Crano & Crano, 1993; Smith & Khawaja, 2011). Furthermore, the literature suggests that international students' adjustment strains can lead to psychological impairments such as low self-esteem and unhappiness (Brown & Brown, 2013; Wang et al., 2012). The following sections discuss each adjustment strain and its impact on self-esteem and happiness. Figure 1 illustrates the proposed model of this study.

### *Academic Strains*

Academic stress, or problems related to schooling, is a significant predictor of life stress (Smith & Khawaja, 2011). Adjustment strains related to education factors come from adjusting to American education systems (e.g., differences in teaching style and thinking approach), concerns about poor academic performance, different relationship patterns between teachers and students, and so on (Crano & Crano, 1993; Smith & Khawaja, 2011). For some international students, especially for Asian students, their academic stress may also be intensified by high familial expectations for their academic achievement and success, and the pressure from academic failure affects international students' self-esteem and psychological well-being (Mori 2000). Poor academic performance may cause low self-esteem because of lack of confidence over a long period (Better Health Channel, n.d.). Academic stressors are experienced more intensely by international students than by domestic students because the academic stressors mostly result from the language barriers and difficulties in adapting to new education systems, problems which in the long term will result in lowered confidence (Smith & Khawaja, 2011).

Previous research has shown that international students with academic problems are more



likely to have depressed moods and negative experiences (Ying & Liese, 1991). People with interdependent self-construal characteristics (e.g., Asian international students) are more likely to pursue happiness by balancing self with others' social expectations and obligations, while people with independent self-construal characteristics (e.g., European international students) pursue happiness for their own sake (Lu & Gilmour, 2006). However, whether students feel that they have failed in meeting others' expectation or failed in self-enhancement, feelings of failure are related to unhappiness (Lu & Gilmour, 2006). Liao and Wei (2014) suggested that academic achievement is positively related to Chinese students' happiness because they consider academic success as a fulfillment of role obligations. Chinese students tend to integrate social expectations and obligations into their sense of overall happiness (Lu & Gilmour, 2006). Also, because most international students invest considerable effort and financial resources in studying abroad, the pressure of high expectations from self and family and a sense of academic failure will also negatively influence happiness (Liu & Winder, 2014).

### ***Language Strains***

Language is a key factor interrelated with many academic strains and sociocultural strains (Chen, 1999). Because language proficiency is an essential skill not only for academic activities but also for basic daily life, when international students' first language is not English, anxiety from the language barrier can lead to psychological distress (Chen, 1999). For instance, because of the language barrier, international students often face difficulties in finishing assignments on time, understanding lectures, and expressing their thoughts in and out of class (Smith & Khawaja, 2011). Language difficulty may also cause inconvenience and misunderstanding in daily life, and continuous communication problems will reduce students' self-esteem, making them confused and insecure and thus inhibiting social interactions with others (Chen, 1999). Worse, language

barriers create a negative cycle: the poorer the international students' English skills are, the less they want to participate in social interactions; the less they communicate with others, the less their English skills will be improved, and the more they feel adjustment strains (Chen, 1999). Thus, for international students, whose first language is not English, lack of language proficiency negatively affects self-esteem (Barratt & Huba, 1994) as well as psychosocial well-being, such as happiness and life satisfaction (Chen, 1999).

### ***Personal Strains***

Personal strains involve personal experiencing of negative feelings (Crano & Crano, 1993). As previously mentioned, the level of language proficiency influences international students' sociocultural life style (Chen, 1999). Gareis et al. (2011) found that international students tend to have less successful friendships with Americans due to the problems in communicative adaptability and language proficiency. They found that 38% of international students had no strong relationships with Americans, and 27% of them were concerned about the quality of the friendships they had made in the U.S. (Gareis et al., 2011). According to Smith and Khawaja (2011), Asian students tend to have more problems in developing good friendships than do international students from Western countries because of Asians' collectivistic cultural norms, which focus on the bonds and links among group members. Less successful friendships, in turn, contribute to international students' feelings of loneliness and homesickness (Smith & Khawaja, 2011) and further depression (Wehrly, 1988). Wang et al. (2012) found that Chinese students who are psychologically distressed during the adjustment process tend to show lower self-esteem than those students who are well-adjusted.

### ***Social Strains***

Social strains involve negative feelings experienced in social life, such as feelings of

isolation, rejection, exclusion, and discrimination (Crano & Crano, 1993). Several studies have found that many international students feel a sense of rejection and exclusion during the adaptation process (Edwards-Joseph & Baker, 2012; Searle & Ward, 1990). According to social identity theory, an individual's identity derives from knowledge of his/her belonging and identifying with a certain social category (Tajfel, 1978). In terms of social categorization, international students can be considered a minority group. However, because most international students were not regarded as a member of a minority group before coming to the U.S., most of them have little experience in minority group identification (Schmitt, Spears, & Branscombe, 2003). As a result, after coming to the U.S., they often experience identity conflicts. Such conflicts are a key source of culture shock during the adaptation process and can trigger feelings of sadness, low self-esteem, anger, and defensiveness (Kim, 2001). Perception of devalued identity further affects happiness by lowering collective self-esteem (Roccas, Horenczyk, & Schwartz, 2000). Perceived discrimination is another social stressor among international students. Poyrazli and Lopez (2007) found that international students perceived greater discrimination than did U.S. students. Perceived discrimination from host countries negatively influences happiness (Schmitt et al., 2003).

Another major social concern among international students is strains from dating practices and dealing with breakups in male/female relationships (Yi, Lin, & Kishimoto, 2003). In a similar vein, Poyrazli and Kavanaugh (2006) found that single international students experience higher social strains than married international students because married students have social support from the family or their partners, which works as a buffer during the adjustment process (Hayes & Lin, 1994). International students are likely to have lower confidence in their self-esteem and to experience unhappiness with their life in the U.S. when

they struggle with social relations with their partners or significant others, when they feel uncomfortable with social interactions, or when they are confused about morals and sexual customs in the U.S.

### **Self-Esteem and Happiness**

Self-esteem can be global or domain specific. Global self-esteem refers to the positive or negative attitudes that people have about their own value and worth as a person (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). The term “self-esteem” in the literature generally refers to global self-esteem (Rosenberg et al., 1995). Rosenberg et al.’s (1995) study found that global self-esteem, associated with affective components, is more strongly related to aspects of psychological well-being such as happiness; while specific domains of self-esteem (e.g. academic self-esteem), associated with cognitive components, are more strongly related to behavior outcomes (e.g. academic performance). This study focuses on global self-esteem and examines how international students’ specific adjustment strains influence self-esteem in general (e.g., global self-esteem) and how self-esteem is related to overall happiness while staying in the U.S.

Happiness has been identified as subjective well-being (Lu & Gilmour, 2006), or “an outcome of positive experiences, particularly close personal relationships” (Haller & Hadler, 2006, p. 169). In addition, happiness has been described from aspects of life satisfaction, momentary pleasures and positive subjective experiences (Flynn & MacLeod, 2015). In this study, happiness refers to subjective well-being, which reflects positive feelings gained from life satisfaction in the U.S. A considerable numbers of studies have found that self-esteem is a significant predictor of psychological well-being (Furnham & Cheng, 2000; Nesdale & Mak, 2003; Rosenberg et al., 1995). In particular, Furnham and Cheng (2000) found that self-esteem

was the most dominant and powerful predictor of happiness among young consumers in their late teens and early 20s. Therefore, it is expected that when international students have impaired self-esteem from particular strains or a combination of strains, they are likely to experience less happiness in the U.S.

### **Compulsive Online Buying Behavior**

Compulsiveness has been generally regarded as a psychiatric disorder (McElroy, Keck Jr, Pope Jr, Smith, & Strakowski, 1994; O'Guinn & Faber, 1989) or as a lack of impulse control (Billieux, Rochat, Rebetz, & Van der Linden, 2008). O'Guinn and Faber (1989) defined compulsive buying as "a response to an uncontrollable drive or desire to obtain, use or experience a feeling, substance, or activity that leads an individual to repetitively engage in a behavior that will ultimately cause harm to the individual and/or others" (p. 148). Similarly, Christenson et al. (1994) defined compulsive buying as repeated, uncontrolled and excessive impulsive buying behavior which leads to problems such as debts, family conflict, and guilty feelings.

However, later researchers combined the phenomenon of compulsive buying with more social psychological concepts, such as materialistic values (Dittmar, 2005), and viewed compulsive buying as compensatory behavior to improve self-image, self-esteem, or relationships with others (Dittmar, 2004; Woodruffe-Burton & Elliott, 2005). Gronmo (1988) argued that certain behaviors result from a general lack of satisfaction with basic human needs; lack of self-esteem or self-actualization may explain the underlying mechanism of compensatory consumption behavior. Accordingly, people who experience psychosocial deficiencies may choose to go shopping to compensate for these perceived deficiencies (Gronmo, 1988; Kang & Johnson, 2011). Furthermore, Valence, d'Astous and Fortier (1988) pointed out that for

compulsive buyers, their psychological tension is reduced not by possession of products but by the act of buying itself. Compulsive buyers are typically involved with buying products that affect their appearance, such as clothing, shoes, jewelry, and makeup; buying these products temporarily makes up for compulsive buyers' low self-esteem, and thus provides a short-term moods lift (Christenson et al., 1994). Compulsive buying was found to be positively related to impulsivity (Billieux et al., 2008).

Such compulsive buying tendency has been increasing globally (Neuner, Raab, & Reisch, 2005). Studies have found that younger people (Dittmar, 2005) and people with negative mood (Billieux et al., 2008) are more likely to engage in compulsive buying. Furthermore, engagement in compulsive online buying has risen among young adults along with the widespread use of mobile devices and the rise of e-commerce (Manchiraju et al., 2016). Kukar-Kinney, Ridgway, and Monroe (2009) found that consumers with higher compulsive buying tendencies were more likely to engage in online buying. Compulsive online buyers have also been found to engage in excessive Internet use (Manchiraju et al., 2016; Mueller et al., 2011).

The main underlining mechanism and consequences of compulsive online buying are similar to those of compulsive buying in physical stores. Previous research has found that the major psychological motives of compulsive online buying are alleviating negative emotion and enhancing self-identity, and that compulsive online buying is positively affected by general Internet use through psychological motives (Dittmar, Long, & Bond, 2007). Moreover, daily deals available on websites were found to urge compulsive online buying by increasing time or social pressures (Kukar-Kinney, Scheinbaum & Schaefers, 2016). Compulsive online buying has negative consequences, such as overspending or control disability (Dittmar et al., 2007). In addition, many studies have found that compulsive online buying is directly and indirectly

related to depression (Manchiraju et al., 2016; Mueller et al., 2011). As such, a large body of literature warns that compulsive online buying has many detrimental effects on one's physical and mental health, and social or financial well-being.

### **Drivers of Compulsive Buying**

Previous research has found that strains and negative mood are positively associated with compulsive buying behavior. DeSarbo and Edwards (1996) found that stress and anxiety are one of the primary motivating forces of compulsive buying. Rick, Pereira, and Burson (2014) demonstrated that sadness is associated with an individual's feeling of lack of personal control over the environment. In experimental studies, Rick et al. (2014) found that sadness was significantly alleviated through shopping because shopping restored a sense of control during the selection process.

Furthermore, previous studies have found that low self-esteem is significantly related to engagement in compulsive buying behavior (Hanley & Wilhelm, 1992; Krueger, 1988; O'Guinn & Faber, 1989). For example, O'Guinn and Faber (1989) found that people who have compulsive buying tendencies are more likely to have lower self-esteem and to have the ability to engage in fantasy, which helps them forget about personal problems caused by low self-esteem. Hanley and Wilhelm (1992) also stated that compulsive consumers have lower self-esteem than those with normal consumption behavior, and compulsive consumers tend to have a stronger belief in the symbolic ability of money to enhance self-esteem. In a similar vein, Kyrios, Frost, and Steketee (2004) found that compulsive buyers tend to believe that they can deal with negative feelings (such as low self-esteem) through purchases.

According to symbolic self-completion theory, people's activities are intended to substantiate their definition of themselves, a definition that can indicate their identity (Gollwitzer,

Wicklund, & Hilton, 1982). The self-completion process only happens when individuals have self-defining goals (Gollwitzer et al., 1982). People with low self-esteem may attempt to compensate by buying things for themselves to make themselves feel more worthy (Kukar-Kinney, Ridgway & Monroe, 2012). For example, female consumers are more likely to engage in buying clothing or accessories, which can help them enhance their self-image and improve self-esteem (Benson, 2000). Likewise, compulsive buyers tend to display high intention to buy prestige products to facilitate the goal of increasing their self-worth and self-completion (Belk, 1988; Kukar-Kinney et al., 2012). High-status products serve a compensatory purpose for people with feelings of powerlessness and low self-esteem (Rucker & Galinsky, 2008).

Therefore, in the context of international students, stress, feelings of rejection, and lack of control (Church, 1982; Crano & Crano, 1993; Fisher & Hood, 1987) are likely to lead to low self-esteem and unhappiness. Such psychological impairments are in turn likely to influence international students to use shopping to alleviate their negative moods or recover their lowered self-esteem. Along with increased exposure to the Internet and use of mobile devices among younger generations, adjustment strains, and impairment in self-esteem and happiness among international students are likely to be significant drivers of compulsive online buying.

Therefore, based on the review of the literature, the following hypotheses are proposed:

***Hypothesis 1:*** The higher the adjustment strains – a) academic strains, b) language strains, c) personal strains, and d) social strains – on international students in the U.S., the lower their self-esteem is.

***Hypothesis 2:*** The higher the adjustment strains – a) academic strains, b) language strains, c) personal strains, and d) social strains – on international students in the U.S., the lower their happiness.



**Hypothesis 3:** The lower the self-esteem of international students, the lower their happiness is.

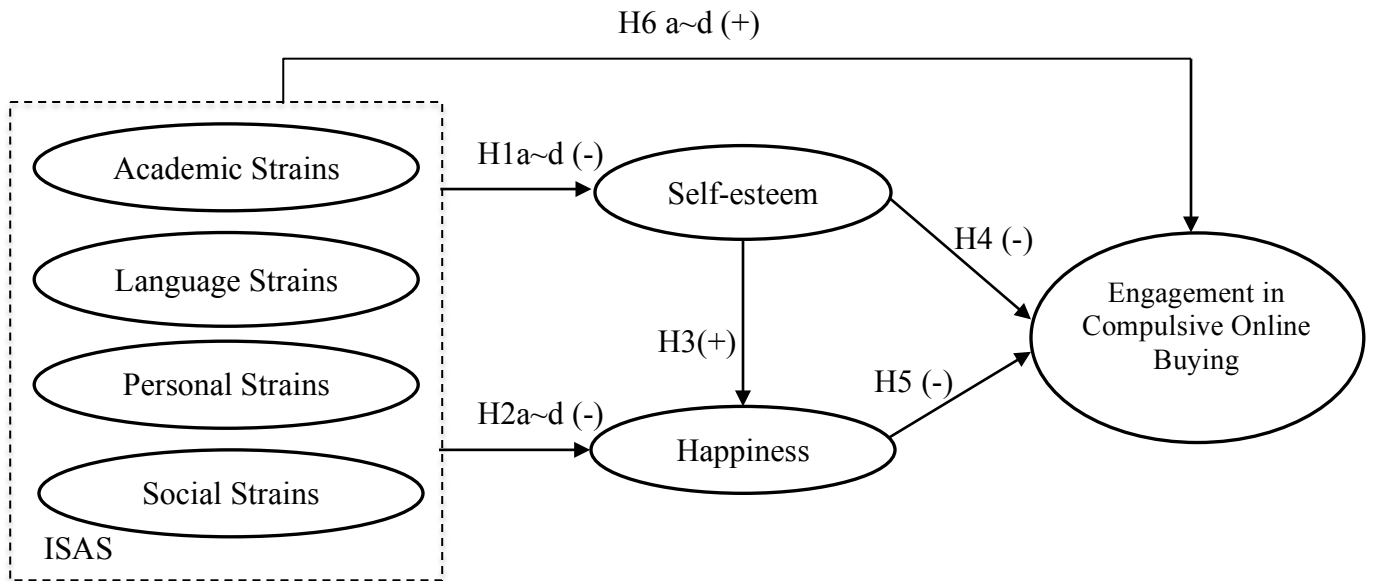
**Hypothesis 4:** The lower the self-esteem of the international students in the U.S., the higher their engagement in compulsive online buying.

**Hypothesis 5:** The lower the happiness of the international students in the U.S., the higher their engagement in compulsive online buying.

**Hypothesis 6:** The higher the adjustment strains – a) academic strains, b) language strains, c) personal strains, and d) social strains – on the international students in the U.S., the higher their engagement in compulsive online buying.

Figure 1 illustrates the proposed hypotheses in this study.

**Figure 1.** Proposed Study Model



## CHAPTER 3. METHOD

### Sample and Procedure

International students (both male and female) enrolled at Auburn University were selected as a convenience sample for this study. According to the Office of International Programs at Auburn University, as of Spring 2016, Auburn University has 1,639 international students, including 514 undergraduate students, 1,123 graduate students and two first professional students (male = 1,059, female = 580). The top eight countries that these students come from are China, India, Brazil, South Korea, Bangladesh, Saudi Arabia, Turkey, and Iran. International students in higher education are appropriate for this study not only because international college students face adjustment strains, but also because they have freedom in spending (Hayhoe, Leach, & Turner, 1999). In addition, college students have been reported to show increasing materialism, a characteristic which is related to compulsive buying (Dittmar, 2005).

The data were collected using Qualtrics, a web-based survey. The International Students Organization (ISO) electronically distributed the survey to the international students in their email list which included 1350 students. International students who were at least 19 years old and who had studied in the U.S. at least one semester were eligible for this study. Students who had studied less than one semester were excluded from this study because their self-esteem and happiness were less likely to be significantly affected by the strains experienced in a short time period. The data were collected for three weeks, and one invitation email and three reminder emails were sent. In total, 210 subjects clicked on the survey (response rate = 15.56 %). Of these

responses, one respondent was under 19 years old, 56 respondents did not complete the survey, and seven subjects had straight lining answers. After these responses were eliminated, a total of 146 responses were usable for the analysis. Twenty participants who completed the survey were randomly drawn to receive one of twenty \$25 store gift cards. The participants were asked to provide their email address at the end of the survey. However, this information was not linked to their identification information.

### **Instruments**

The survey questionnaire was developed by modifying existing scales (see Appendix A). For international students' adjustment strains, the scale developed by Crano and Crano (1993) was used. Twenty-eight out of 38 items were used. The questions about relationships with host families and concerns about food and health were not included in this study because they were not relevant to the target population of the current study. The original items were slightly modified to measure adjustment strains experienced in the U.S. In addition, the verb "trouble" was replaced with the verb "distress" to suggest the level of strains experienced. Specifically, academic strains were measured by seven items (e.g., "being unable to concentrate on my studies in the U.S. distresses me"); language strains were measured by six-items (e.g., "my difficulty in speaking English distresses me"); personal strains were measured by nine items (e.g., "being lonely in the U.S. distresses me" and "feelings of homesickness in the U.S. distress me"); and social strains were measured by six items (e.g., "the relationship between men and women in the U.S. distresses me"). The reported reliability for each scale was .69, .86, .80, and .73 respectively (Crano & Crano, 1993).

Self-esteem was measured by the Texas Social Behavior Inventory scale, which includes 16 items (e.g., "I would describe myself as self-confident" or "I am not likely to speak to people

until they speak to me”) (Helmreich & Stapp, 1974). The reliability of the original scale was reported as .82 in a recent study by Robins, Hendin, and Trzesniewski (2016).

Happiness was measured by the five-item life satisfaction scale (e.g., “in most ways, my life in the U.S. is close to my ideal” or “I am not likely to speak to people until they speak to me”) (Diener, Emmons, Larsen, & Griffin, 1985). Life satisfaction scale was adopted because the study was focused on examining the overall happiness (i.e. subjective well-being, which is a positive feelings gained from life satisfaction) of international students during the time they study in the U.S. The reported reliability of this scale was .87. The happiness scale was slightly modified to include “in the U.S.” in each item in order to measure the participants’ levels of happiness experienced while studying in the U.S.

To measure engagement in compulsive online buying, the compulsive buying scale developed by d’Astous, Maltais and Roberge (1990) was used for this study. The original scale has 11 items with the reported reliability of .78. The scale was modified to reflect the context of online shopping. For example, the original item “when I had money, I could not help but spend part or all of it” was modified to “when I had money, I had to spend part or all of it for online shopping.” In addition, the items were modified from the present tense to the past tense to measure the participants’ actual engagement behavior, rather than a motivation or behavioral tendency.

In addition, given their correlation with compulsive buying, materialism (Dittmar, 2005) and impulsive buying tendency (Billieux et al., 2008) were measured and tested as covariates of compulsive buying. A new, shorter version of the 16-item materialism scale, developed by Trinh and Phau (2012) was adopted. The scale measures four components of materialism: material success (four items), material happiness (four items), material essentiality (four items), and

material distinctiveness (four items). This study adopted the scales of material success (e.g., “I like to own things that make people think highly of me”) and material happiness (e.g., “material possessions are important because they contribute a lot to my happiness”) because these two dimensions are more closely related to compulsive buying than are the other dimensions. The reported reliability ranged from .86 to .93 for material success and .81 to .86 for material happiness in a series of studies by Trinh and Phau (2012). Impulsive buying tendency was measured by the nine-items of buying impulsiveness scale developed by Rook and Fisher (1995) (e.g., “I often buy things spontaneously”). The reported Cronbach *alpha* was .88 (Rook & Fisher, 1995). For all the scales above, seven-point Likert-type scales were used (1 = Strongly disagree and 7 = Strongly agree; 1 = Never and 7 = Always for engagement in compulsive online buying).

The survey began with two screening questions about age and the length of time spent in the U.S. Those who were under 19 years old or had studied less than one semester in the U.S. were excluded from this study. A part of the screening questions, participants were also asked what year they came to study in the U.S. On the last page of the survey, participants were asked to indicate how much time they spent in online shopping each day, approximately how much money they spent online each month, and what types of products they bought online. In addition, they were asked questions about demographic characteristics including gender, nationality, class standing, and monthly income, which included allowances from their family and assistantships.

Because international students’ lack of English proficiency could make it difficult for them to understand some of the questions in the survey, a pretest was first conducted with non-native English speakers who exhibited difficulties in understanding the written English. The samples were recruited using a personal network of the primary investigator. Seven international students (two undergraduate students and five graduate students) from China, South Korea, and

Iran agreed to review the questionnaire. They were asked to indicate any questions that were confusing or hard to understand. Any problematic questions were revised with easier words or expressions. For example, several participants indicated a problem in understanding the word “treatment” in the question “the treatment I receive in the U.S. at social functions distresses me.” Therefore, the wording was changed to “I am distressed because of the way other people speak to me and act toward me at social functions in the U.S.” In addition, the participants in the pretest frequently identified four items in the self-esteem scale as confusing: “I am a good mixer;” “I would describe myself as one who attempts to master situations;” “other people look up to me;” and “I make a point of looking other people in the eye.” These items were revised to “I am good at approaching other people at social functions;” “I would describe myself as one who tries to feel in control of a situation;” “other people respect and admire me;” and “I always try to look straight at people when I talk to them.”

To further test the respondents’ understanding of the survey questions, in the main test, a response box was provided on every page of the online survey where respondents could indicate any words or questions that confused them. Moreover, the instructions for the survey informed participants that they could use a dictionary to look up any word or expression with which they were not familiar.

## CHAPTER 4. DATA ANALYSIS AND RESULTS

### Sample Profile

Table 4.1 shows the sample characteristics of this study. The age of the respondents ranged from 19 to 40, and the average age was 28.17. The year in which they came to the U.S. ranged from 2002 to 2016 (Spring) and the mode year was 2014 (25.3%). Around 80.8% had been in the U.S. less than five years. In addition, 55.5% were male and 44.5% were female. The majority of the respondents (85.6%) were graduate students. About 78.8% of the respondents were from Asian countries, including 39% from China, 14.4% from India, 4.8% from South Korea, 4.8% from Bangladesh, and 14.3% from other Asian countries including Indonesia, Japan, Nepal, Singapore, Sri Lanka and Vietnam. The remaining respondents came from the Middle East (6.2%), Europe (5.5%), Latin America (4.1%), Africa (3.4%), and Oceania (1.4%). About 24.7% had a monthly income (including assistantship and allowances from their family) of \$501 to \$1000; 34.9% respondents had a monthly income of \$1001 to \$1500; and 22.6% respondents had \$1501 to \$2000.

Regarding the number of hours spent on online shopping each day, 24.0% respondents spent about 30 minutes and 28.8% spent about an hour. About 19.9% indicated that they never spent time on online shopping. About 39% respondents indicated that they spent less than \$50 each month for online shopping; 21.2% spent \$50 to \$100; 20.5% respondents spent \$100 to \$200; and 17.8% respondents spent more than \$200 each month on online shopping. The most frequently mentioned categories of products purchased online were apparel and accessories ( $n = 59$ ), electronic products ( $n = 50$ ), and household products ( $n = 31$ ) (Table 4.2).

Table 4.1

*Descriptive Statistics of the Sample Characteristics*

Sample Characteristics	Frequency	Percent
<i>Age (n=146, mean = 28.17)</i>		
19~20	10	6.8%
21~25	34	23.3%
26~30	56	38.4%
31~35	36	24.7%
36~40	10	6.8%
Total	146	100%
<i>Year arrived in the US</i>		
2016	2	1.4%
2015	24	16.4%
2014	37	25.3%
2013	35	24.0%
2012	20	13.7%
2011	9	6.2%
2010	7	4.8%
2009	4	2.7%
2008	4	2.7%
Before 2008	4	2.7%
Total	146	100%
<i>Gender</i>		
Male	81	55.5%
Female	65	44.5%
Total	146	100%
<i>Nationality</i>		
China	61	41.8%
India	21	14.4%
South Korea	7	4.8%
Bangladesh	7	4.8%
Other Asian countries (Nepal, Indonesia, Japan, Singapore, Sri Lanka, Vietnam, Iran)	17	11.6%
Middle Eastern countries (Bahrain, Jordan, Saudi Arabia)	9	6.2%
European countries (Britain, France, Germany, Netherland, Poland)	8	5.5%
Latin American countries (Belize, Costa Rica, El Salvador, Argentina)	6	4.1%
African countries (Ethiopia, Ghana, Kenya, Nigeria, Venezuela)	5	3.4%
Oceanian countries (Australia, New Zealand)	2	1.4%



Missing	3	2.1%
Total	146	100%
<i>Class standing</i>		
Undergraduate student	21	14.4%
Graduate student	125	85.6%
Total	146	100%
<i>Monthly income</i>		
\$500 and below	9	6.2%
\$501 to \$1000	36	24.7%
\$1001 to \$1500	51	34.9%
\$1501 to \$2000	33	22.6%
More than \$2000	17	11.6%
Total	146	100%

Table 4.2

*Descriptive Statistics of Online Shopping Hours and Products Purchased*

<i>Hours spent each day for online shopping</i>	Frequency	Percent
Never	29	19.8%
Less than 15 minutes	29	19.8%
15 ~ 30 minutes	35	23.9%
30 minutes ~ 1 hour	42	28.8%
More than 1 hour	9	6.2%
Not sure	2	1.4%
Total	146	100%
<i>Money spent monthly for online shopping</i>		
Less than \$50	57	39.0%
\$50 to \$100	31	21.2%
\$100 to \$200	30	20.5%
\$200 to \$400	15	10.3%
More than \$400	11	7.5%
Not sure	2	1.4%
Total	146	100%
<i>Product Types Purchased Online</i>		Frequency
Clothes, accessories, shoes, handbags, costumes		59
Electronics, software		50
Household products (bedding, decorations, kitchenware, utilities, tools, car products, baby products, pet products)		31
Books, textbooks, school/office supplies		17
Cosmetics, personal care		16
Food, beverage, snacks, supplements, groceries		12
Toys, games, DVDs, video games		6
Gift cards, gifts		3

In addition, few respondents left comments about confusing words or questions at the end of each page on the online survey. For the comments left, no critical comment was identified; some of the responses were unrelated. Therefore, all items were used for the next analysis.

### **Factor Analysis and Reliability**

Exploratory factor analysis (EFA) was performed to explore the underlying structure of ISAS, self-esteem, happiness, engagement in compulsive online buying, and materialism, and impulsive buying tendency. The last two variables were used as covariates. Principal components analysis (PCA) with varimax rotation was used (Tabachnik & Fidell, 1996). Cronbach's *alphas* were calculated to measure the internal consistency of each set of items (Cronbach & Shavelson, 2004). A Cronbach *alpha* value of .70 or higher is considered to show good reliability of the scale (Nunnally & Bernstein, 1994).

First, EFA was run for ISAS. Items with cross loading issues and items that were below .6 in the factor loadings were eliminated one by one. In total, nine items were dropped from the original 28 items. Nineteen items were submitted to the next analysis: four items for academic strains, six items for language strains, four items for personal strains, and five items for social strains. As shown in Table 4.3, 19 items from adjustment strains confirmed the four dimensions. The Cronbach's *alpha* was .78, .93, .86, and .88 respectively for academic strains, language strains, personal strains, and social strains, showing the internal consistency of the items (Cronbach & Shavelson, 2004). The Eigenvalues ranged from 1.35 to 7.33 and the four adjustment strains explained around 70.05% of the total variance. Among these, language strains accounted for the highest variance, 38.59%.

Table 4.3

*Exploratory Factor Analysis Results for ISAS*

Measurement Item	Factor Loading
<i>Academic strains</i>	
1. Being unable to concentrate on my studies in the U.S. distresses me.	.83
2. Feeling uninterested in the university I am attending in the U.S. distresses me.	.84
3. My concern with grades in the U.S. distresses me.	.61
4. Relationships between teachers and students in the U.S. distress me.	.62
Eigenvalue	1.36
Variance explained	7.13%
Cronbach's <i>alpha</i>	.78
<i>Language strains</i>	
1. My difficulties in speaking English distress me.	.84
2. I am distressed when I attend classes and lectures in English because I don't understand English very well.	.83
3. I am distressed when I read textbooks and novels written in English because I don't understand them well.	.87
4. Not being able to understand slang phrases in the U.S. distresses me.	.74
5. My limited English vocabulary distresses me.	.88
6. Knowing that I need help with English distresses me.	.82
Eigenvalue	7.33
Variance explained	38.59%
Cronbach's <i>alpha</i>	.93
<i>Personal strains</i>	
1. Being lonely in the U.S. distresses me.	.74
2. Feelings of homesickness in the U.S. distress me.	.87
3. Frequently crying or feeling depressed in the U.S. distresses me.	.69
4. Feeling that I would prefer to go home immediately distresses me.	.75
Eigenvalue	1.64
Variance explained	8.63%
Cronbach's <i>alpha</i>	.86
<i>Social strains</i>	
1. The relationship between men and women in the U.S. distresses me.	.78
2. The dating practices of people in the U.S. distresses me.	.83
3. Sexual customs in the U.S. distresses me.	.86
4. I am distressed because I feel uncomfortable among groups of people in the U.S.	.70
5. I am distressed because I feel confused about morals in the U.S.	.76
Eigenvalue	2.98
Variance explained	15.69%
Cronbach's <i>alpha</i>	.88

Another set of EFA analysis with varimax rotation was conducted for self-esteem and happiness. Table 4.4 shows the result of EFA. Happiness was uni-dimensional as expected (Eigenvalue = 2.35, total variance explained = 13.85%, Cronbach's  $\alpha = .87$ ).

The 5-item happiness scale confirmed to be uni-dimensional and explained 13.85 % of the total variance. However, the 16-item self-esteem scale, which was reported to be uni-dimensional in the original study, showed three underlying dimensions in this study.

Accordingly, each dimension was named based on the items loaded in each dimension. The first factor was named "social competence" and had six items (e.g., I am good at approaching other people at social functions), which explained 32.195% of the total variance. The second factor was named "social expression confidence" and had four items (e.g., I am not likely to speak to people until they speak to me), which explained 12.273% of the total variance. The third factor was named "social dominance" and had 2 items (e.g., when I'm in a disagreement with other people, my opinion usually prevails), which explained 6.80 % of the total variance. The Eigenvalues ranged from 2.09 to 5.47. In total, the self-esteem and happiness scales explained 65.11% of the variance. The Cronbach's  $\alpha$ s were above .70, except for social dominance, which was .62. Because the self-esteem scale was multi-dimensional, Hypotheses 1, 3, and 4 were revised as follows:

**Hypothesis 1-1:** The higher the adjustment strains – a) academic strains, b) language strains, c) personal strains, and d) social strains – on international students in the U.S., the lower their social competence.

**Hypothesis 1-2:** The higher the adjustment strains – a) academic strains, b) language strains, c) personal strains, and d) social strains – on international students in the U.S., the lower their social expression confidence.

Table 4.4

*Exploratory Factor Analysis Results for Self-esteem and Happiness*

Measurement Item	Factor Loading
<i>Self-esteem</i>	
<i>Social competence</i>	
1. I would describe myself as self-confident.	.66
2. I feel confident of my appearance.	.76
3. I am good at approaching other people at social functions.	.70
4. I enjoy social gatherings just to be with people.	.78
5. I always try to look straight at people when I talk to them.	.73
6. I have no doubts about my social competence.	.76
Eigenvalue	5.47
Variance explained	32.20%
Cronbach's <i>alpha</i>	.87
<i>Social expression confidence</i>	
1. I am not likely to speak to people until they speak to me. ®	.75
2. When in a group of people, I have trouble thinking of the right things to say. ®	.82
3. When in a group of people, I usually do what the others want rather than make my own suggestions. ®	.78
4. I cannot seem to get others to notice me. ®	.74
Eigenvalue	2.09
Variance explained	12.27%
Cronbach's <i>alpha</i>	.79
<i>Social dominance</i>	
1. When I'm in a disagreement with other people, my opinion usually prevails.	.79
2. I would describe myself as one who tries to feel in control of a situation.	.87
Eigenvalue	1.16
Variance explained	6.80%
Cronbach's <i>alpha</i>	.62
<i>Happiness</i>	
1. In most ways my life in the U.S. is close to my ideal.	.77
2. The conditions of my life in the U.S. are excellent.	.84
3. I am satisfied with my life in the U.S.	.85
4. So far I have gotten the important things I want in life in the U.S.	.79
5. If I could live my life over, I would change almost nothing.	.71
Eigenvalue	2.35
Variance explained	13.85%
Cronbach's <i>alpha</i>	.87

® Reverse coded

**Hypothesis 1-3:** The higher the adjustment strains – a) academic strains, b) language strains, c) personal strains, and d) social strains – on international students in the U.S., the lower their social dominance.

**Hypothesis 3:** The lower the self-esteem – a) social competence, b) social expression confidence, and c) social dominance – of international students, the lower their happiness.

**Hypothesis 4:** The lower the self-esteem – a) social competence, b) social expression confidence, and c) social dominance – of the international students in the U.S., the higher their engagement in compulsive online buying.

Table 4.5

*Exploratory Factor Analysis Results for Engagement in Compulsive Online Buying (n=146)*

Measurement Item	Factor Loading
<i>Compulsive online buying</i>	
1. When I had money, I had to spend part or all of it for online shopping.	.82
2. I bought something I saw in an online store without planning, just because I got to have it.	.83
3. I shopped online to relax and forget my problems.	.88
4. I felt that something inside pushed me to go shopping online.	.87
5. There were times when I had a strong urge to buy online.	.82
6. I felt guilty after buying something online because it seemed unreasonable.	.73
7. There were some things I bought online that I did not show to anybody because I feared people would think I did a foolish expense or I wasted my money.	.75
8. I had a real desire to go shopping and buy something online.	.77
9. As soon as I visited a website, I wished to buy something online.	.82
10. I bought a product online that I did not need even when I knew I had very little money left.	.83
11. I enjoyed spending money online.	.75
Eigenvalue	7.13
Variance explained	64.79%
Cronbach's <i>alpha</i>	.94

Next, EFA with varimax rotation was run for the 11 items of engagement in the

compulsive online buying scale. The results confirmed the uni-dimensionality of the scale (Eigenvalue = 7.13, Total variance explained = 64.79%). All factor loadings were above .70 and Cronbach's *alpha* was .94 (see Table 4.5).

Lastly, EFA was run for materialism and impulsive buying tendency which were used as covariates for engagement in compulsive online buying. The eight items from the two sub-dimensions of materialism turned out to be one dimension in this study (Eigenvalue = 5.57, Total variance explained = 69.61%, Cronbach's *alpha* = .94). Out of the nine items for impulsive buying tendency, one item which was reverse coded turned out to be in a different factor. Therefore, this item was dropped. The final eight items confirmed the uni-dimensionality of the scale (Eigenvalue = 5.50, Total variance explained = 61.04%, Cronbach's *alpha* = .93).

### **Hypothesis Testing**

All hypotheses except for H2 and H3 were tested by conducting hierarchical multiple regression analysis in order to control for the effects of respective covariates. Multiple linear regression analysis was run for H2 and H3 because there was no covariate entered for happiness. Means from each scale were calculated and used in the analysis.

H1-1 ~ H1-3 proposed the negative effects of four adjustment strains on the three dimensions of self-esteem (i.e., social competence, social expression confidence, and social dominance). Two-stage hierarchical multiple regression analysis was conducted with the four adjustment strains – a) academic strains, b) language strains, c) personal strains, and d) social strains – as independent variables and social competence, social expression confidence, and social dominance as dependent variables. In addition, previous studies have shown that men are slightly more positive in global self-esteem than women are (Kling, Hyde, Showers & Buswell, 1999). Therefore, gender was entered as a covariate in order to control for the gender influence

on self-esteem.

Regarding H1-1, the result of hierarchical multiple regression revealed that the overall model with gender and four adjustment strains was statistically significant ( $F = 3.141, p < .05$ ) and explained 10.1% of variability in social competence. Specifically, gender had no significant effect on social competence ( $\beta = .043, p = .601$ ). Among the four strains, social strains showed a negative effect on social competence ( $\beta = -.309, p < .01$ ) (Table 4.6). Therefore, H1-1d was supported, while H1-1a ~ H1-1c were rejected.

Table 4.6

*Result of Hierarchical Regression Analysis for the Effect of ISAS on Social Competence*

Variable	$\beta$	$t$	$R$	$R^2$	$\Delta R^2$
Model 1 (Covariate)			.026	.001	.001
Gender	.026	.315			
Model 2 (Overall)			.318	<b>.101</b>	.100
Gender	.043	.525			
Academic strains	.073	.749			
Language Strains	-.145	-1.623			
Personal Strains	.069	.653			
<b>Social Strains</b>	<b>-.309</b>	<b>-3.152**</b>			

*Note.* \*\* $p < .01$

Regarding H1-2, the result of hierarchical multiple regression analysis revealed that the overall model with gender and four adjustment strains was significant ( $F = 17.150, p < .001$ ) and explained 38% of variability in social expression confidence. Specifically, gender had no significant effect on social expression confidence ( $\beta = .083, p = .942$ ). Social strains ( $\beta = -.385, p < .001$ ) and personal strains ( $\beta = -.241, p < .01$ ) showed significant negative effects on social expression confidence (Table 4.7). Therefore, H1-2c and H1-2d were supported, while H1-2a and H1-2b were rejected.

Regarding H1-3, the result of hierarchical multiple regression analysis revealed that the



overall model with gender and four adjustment strains was not significant ( $F = .881, p = .495$ ) and explained only 3.10% of variability in social dominance. None of these variables significantly influenced social dominance (Table 4.8). Therefore, H1-3 was not supported.

Table 4.7

*Result of Hierarchical Regression Analysis for the Effect of ISAS on Social Expression Confidence*

Variable	$\beta$	$t$	$R$	$R^2$	$\Delta R^2$
Model 1 (Covariate)			.006	.000	.000
Gender	-.006	-.072			
Model 2 (Overall)			.616	<b>.380</b>	.380
Gender	.083	1.211			
Academic strains	-.038	-.476			
Language Strains	-.106	-1.432			
<b>Personal Strains</b>	<b>-.241</b>	<b>-2.759**</b>			
<b>Social Strains</b>	<b>-.385</b>	<b>-4.175***</b>			

Note. \*\* $p < .01$ , \*\*\* $p < .001$

Table 4.8

*Result of Hierarchical Regression Analysis for the Effect of ISAS on Social Dominance*

Variable	$\beta$	$t$	$R$	$R^2$	$\Delta R^2$
Model 1 (Covariate)			.119	.014	.014
Gender	-.119	-1.441			
Model 2 (Overall)			.175	<b>.031</b>	.016
Gender	-.141	-1.645			
Academic strains	.039	.384			
Language Strains	-.009	-.101			
Personal Strains	.090	.824			
Social Strains	.030	.291			

H2 proposed the negative effects of four adjustment strains on happiness. Multiple linear regression analysis was conducted with four adjustment strains as independent variables and happiness as a dependent variable. The result revealed that the overall model with four adjustment strains was statistically significant ( $F = 6.168, p < .001$ ) and explained 14.9% of the

variability in happiness. Specifically, language strains ( $\beta = -.190, p < .05$ ) and personal strains ( $\beta = -.240, p < .05$ ) showed significant negative effects on happiness (Table 4.9). Therefore, H2b and H2c were supported, while H2a and H2d were rejected.

Table 4.9

*Result of Multiple Regression Analysis for the Effect of ISAS on Happiness*

Variable	$\beta$	$t$	B	$R^2$
				<b>.149</b>
Academic strains	-.083	-.880	-.079	
<b>Language Strains</b>	<b>-.190</b>	<b>-2.190*</b>	-.160	
<b>Personal Strains</b>	<b>-.240</b>	<b>-2.412*</b>	-.196	
Social Strains	-.045	.469	.044	

Note. \* $p < .05$

H3 proposed the positive effects of three dimensions of self-esteem on happiness. Multiple linear regression analysis was conducted with three dimensions of self-esteem as independent variables and happiness as a dependent variable. The result revealed that the overall model with three dimensions of self-esteem was significant ( $F = 13.809, p < .001$ ) and explained 22.6% of variability in happiness. Specifically, social competence showed a significant positive effect on happiness ( $\beta = .475, p < .001$ ), whereas the other two dimensions were not significant (Table 4.10). Therefore, H3a was supported, while H3b and H3c were rejected.

Table 4.10

*Result of Multiple Regression Analysis for the Effect of Self-esteem on Happiness*

Variable	$\beta$	$t$	B	$R^2$
				<b>.226</b>
<b>Social Competence</b>	<b>.475</b>	<b>5.895***</b>	.513	
Social Expression Confidence	.049	.633	.050	
Social Dominance	-.107	-1.376	-.121	

Note. \*\*\* $p < .001$

H4 and H5 proposed the negative effects of self-esteem and happiness on engagement in

compulsive online buying. Hierarchical multiple regression analysis was conducted with three dimensions of self-esteem and happiness as independent variables and engagement in online compulsive buying as a dependent variable. Gender, income, materialism, and impulsive buying tendency were entered as covariates. The prior literature has shown that women and people with a higher income are more likely to engage in compulsive buying than men and people with a lower income (Dittmar, 2005). In addition, previous studies have found that materialism and impulsive buying tendency are positively related to compulsive buying (Billieux et al., 2008; Dittmar, 2005).

The result of hierarchical multiple regression analysis showed that the model with the four covariates was significant ( $F = 20.105, p < .001$ ) and accounted for 36.3% of variability in engagement in compulsive online buying. The overall model with three self-esteem dimensions, happiness, and four covariates was significant ( $F = 10.680, p < .001$ ) and explained 38.4% of variability in engagement in compulsive online buying. This overall model showed 2.1% improvement in variability. Specifically, impulsivity was a significant covariate ( $\beta = .541, p < .001$ ). Social expression confidence was marginally significant at the 90% confidence level and negatively affected engagement in compulsive online buying ( $\beta = -.130, p = .072$ ). Social competence ( $\beta = -.037, p = .660$ ) and social dominance ( $\beta = -.020, p = .785$ ), and happiness ( $\beta = .087, p = .264$ ) were not statistically significant (Table 4.11). Therefore, H4 and H5 were rejected, except for H4b, which was marginally significant.

H6 proposed the positive effects of four adjustment strains on engagement in compulsive online buying. Hierarchical multiple regression analysis was conducted with four adjustment strains as independent variables and engagement in compulsive online buying as a dependent variable. Gender, income, materialism and impulsivity were entered as covariates.

The results showed that the model with four covariate variables was significant ( $F = 20.105, p < .001$ ) and accounted for 36.3% of variability in engagement in compulsive online buying. The overall model with four adjustment strains and four covariates was significant ( $F = 11.911, p < .001$ ) and explained 41.0% of variability in engagement in compulsive online buying. The overall model showed improvement in variability by 4.7%. Specifically, impulsivity was a significant covariate ( $\beta = .523, p < .001$ ) and income was marginally significant at the 90% confidence level ( $\beta = -.115, p = .088$ ).

Table 4.11

*Result of Hierarchical Regression Analysis for the Effect of Self-esteem and Happiness on Engagement in Compulsive Online Buying*

Variable	$\beta$	$t$	$R$	$R^2$	$\Delta R^2$
Model 1 (Covariates)			.603	<b>.363</b>	.363
Gender	.104	1.552			
Income	-.103	-1.526			
Materialism	.040	.408			
Impulsivity	.566	5.747			
Model 2 (Overall)			.620	<b>.384</b>	.021
Gender	.107	1.571			
Income	-.112	-1.656			
Materialism	.062	.625			
<b>Impulsivity</b>	<b>.541</b>	<b>5.436***</b>			
Social Competence	-.037	-.441			
<b>Social Expression Confidence</b>	<b>-.130</b>	<b>-1.816<sup>†</sup></b>			
Social Dominance	-.020	-.273			
Happiness	.087	1.122			

Note. <sup>†</sup> $p < .10$ , \*\*\* $p < .001$

However, in contrast with previous findings, income negatively affected engagement in compulsive online buying. Namely, respondents with a lower income tended to show slightly higher engagement in compulsive online buying. When the significant effects of impulsivity and income were controlled for, social strains still had a significant positive effect on engagement in

compulsive online buying ( $\beta = .182, p < .05$ ) (Table 4.12). Therefore, H6a ~ H6c were rejected and H6d was supported.

Table 4.12

*Result of Hierarchical Regression Analysis for the Effect of ISAS on Engagement in Compulsive Online Buying*

Variable	$\beta$	$t$	$R$	$R^2$	$\Delta R^2$
Model 1 (Covariates)			.603	<b>.363</b>	.363
Gender	.104	-.672			
Income	-.103				
Materialism	.040				
Impulsivity	.566				
Model 2 (Overall)			.640	<b>.410</b>	.047
Gender	.073	1.078			
<b>Income</b>	<b>-.115</b>	<b>-1.716<sup>†</sup></b>			
Materialism	.020	.202			
<b>Impulsivity</b>	<b>.523</b>	<b>5.319***</b>			
Academic Strains	-.014	-.169			
Language Strains	-.006	-.077			
<b>Social Strains</b>	<b>.182</b>	<b>2.195*</b>			
Personal Strains	.082	.938			

Note. <sup>†</sup> $p < .10$ , \* $p < .05$ , \*\*\* $p < .001$

### Correlations among ISAS

Pearson correlation was additionally run for ISAS to examine the relationships among the four adjustment strains (Table 4.13). Academic strains were positively correlated with language strains ( $r = .379, p < .01$ ), personal strains ( $r = .488, p < .01$ ), and social strains ( $r = .440, p < .01$ ). Language strains were positively correlated with personal strains ( $r = .381, p < .01$ ) and social strains ( $r = .300, p < .01$ ). Lastly, personal and social strains were positively correlated ( $r = .537, p < .01$ ) and showed the highest correlation. Therefore, an increase or decrease in one dimension of the adjustment strains significantly increased or decreased other dimensions of the adjustment strains.

Table 4.13

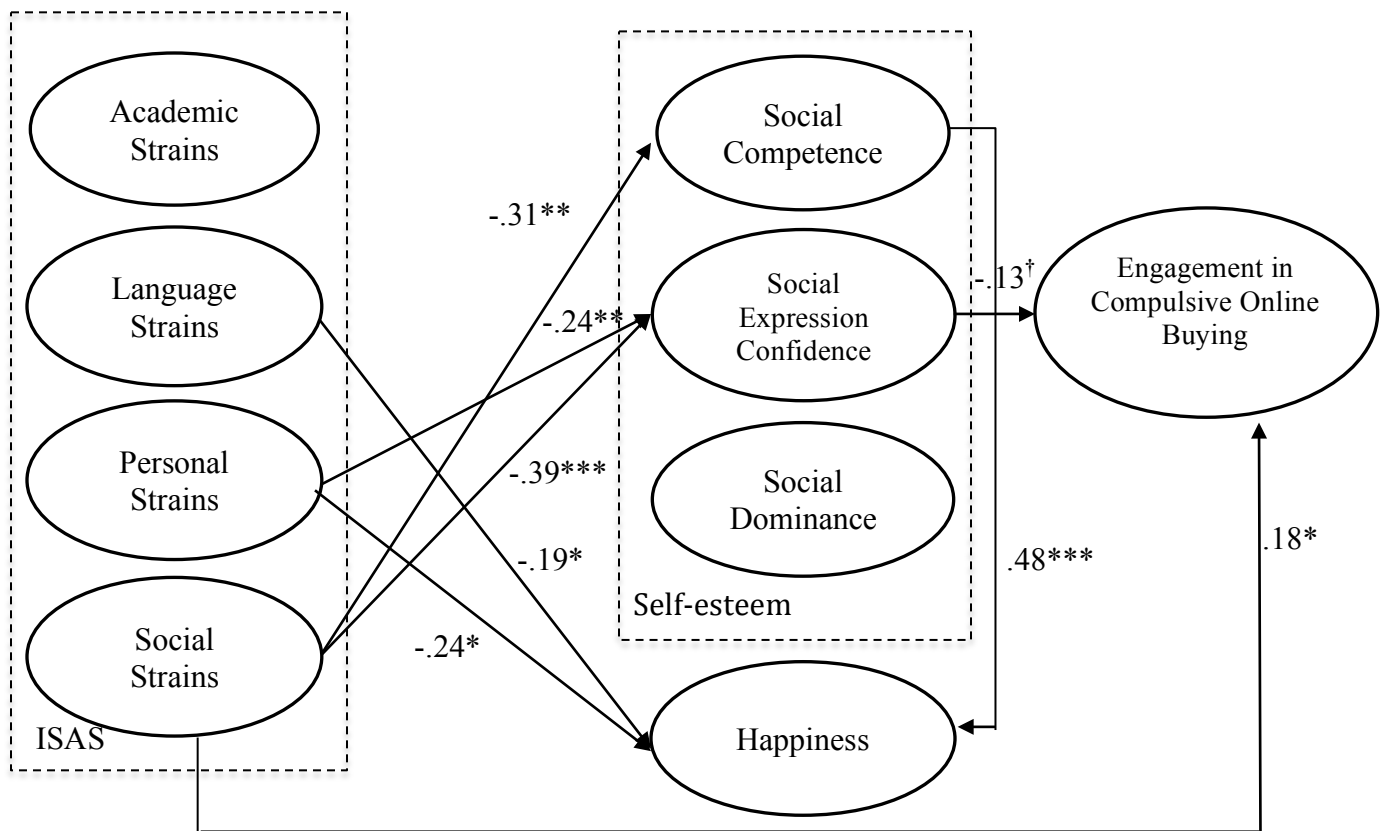
Result of Correlations among ISAS

	Academic strains	Language strains	Personal strains	Social strains
Academic strains	1			
Language strains	.379**	1		
Personal strains	.488**	.381**	1	
Social strains	.440**	.300**	.537**	1

Note. \*\* $p < .01$

Figure 2 demonstrates the results of the hypothesis testing. Only the significant relationships are presented in this figure. Relationships are shown with solid arrows.

Figure 2. Results of Hypotheses Testing



Note.  $^\dagger p < .10$ ,  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$

## **CHAPTER 5. DISCUSSION AND CONCLUSIONS**

The purpose of this study was to understand underlying psychological mechanisms of stress-driven consumption related to international students' adjustment strains. By focusing on international students in higher education in the U.S., this study examined the extent to which various adjustment strains faced by international students reduced self-esteem and happiness, as well as how these factors impacted engagement in compulsive online buying. This section summarizes the major findings of this study.

First, this study found that several of the international students' adjustment strains had significantly detrimental effects on their self-esteem. Among the four adjustment strains, social strains significantly reduced international students' social competence and social expression confidence, two major underlying dimensions of self-esteem. Social strains arise from trouble with interacting with groups of people and with understanding morals and male/female relationships, such as sexual customs and dating practices in the U.S. This result is similar to those of previous studies, which found that international graduate students tend to have great concerns about male/female relationships and that single students who do not have close family support tend to experience more social strains than married students do (Poyrazli & Kavanaugh, 2006; Yi et al., 2003). Furthermore, international students' social strains from troubles with meeting groups of people may indicate their lack of confidence as a minority group in the U.S. Studies have shown that these students tend to experience culture shock due to identity conflict while adjusting to the U.S. because they are used to being a member of the majority group in

their home country (Schmitt et al., 2003). Such devalued identity among international students in turn triggers negative experiences such as feelings of sadness and low self-esteem (Kim, 2001). This study implies that social strains experienced in a foreign culture reduce international students' social interactions with others by creating social anxiety, which significantly weakens competence in their social circles and confidence in expressing their opinions in public or groups.

In addition to social strains, international students' personal strains significantly reduced social expression confidence, a dimension of self-esteem. This study found that international students' personal strains, which arise from feelings of loneliness, homesickness, or depression during the adjustment process, were positively correlated with academic, language, and social strains, mostly with language strains. Personal strains associated with language barriers and difficulties with academics and social relationships contributed to weakening international students' social expression confidence in public or groups. This finding indirectly supports Yang, Noels, and Saumure's (2006) study, which found that self-confidence in language plays an important role in predicting the psychological adjustment and sociocultural difficulty that international students encounter when they try to "fit in" and interact with the host country.

Second, this study found that among the four adjustment strains, language strains and personal strains negatively impacted international students' happiness. Namely, those with greater language strains and personal strains experienced significantly less happiness with their life in the U.S. This finding supports previous studies which showed that language influences international students' sociocultural stressors and social interactions, which in turn affect their well-being and happiness (Chen, 1999; Smith & Khawaja, 2011). Similarly, Hendrickson, Rosen, and Aune (2010) found that international students with more successful friendships (i.e., social



interaction) had lower levels of homesickness and loneliness and higher levels of satisfaction and contentment.

Third, among the three dimensions of self-esteem identified in this study, only the social competence dimension was positively related to international students' happiness with their life in the U.S. In other words, international students' low self-esteem, which results from their lack of social competence, significantly contributed to the experience of unhappiness with their life in the U.S. This finding generally supports previous studies which found that self-esteem positively affects aspects of psychological well-being such as the feeling of happiness (Furnham & Cheng, 2000; Nesdale & Mak's, 2003; Rosenberg et al., 1995). Specifically, this finding is in line with previous studies which showed that international students with less successful relationships in their social circles (i.e., those with less social competence) tended to experience more loneliness and homesickness (Smith & Khawaja, 2011) as well as more depression than did those with more successful relationships (Wehrly, 1988), which can lead to unhappiness with their lives in the U.S. Therefore, developing positive self-esteem through strong social competence is critical for international students' happiness in a foreign culture.

Fourth, even after controlling for the highly significant influence of impulsive buying tendency (covariate) on engagement in compulsive online buying, this study found a marginally significant relationship between social expression confidence and compulsive online buying. Namely, when international students have lower self-esteem due to the lack of social expression confidence, they tend to more frequently engage in online compulsive buying. This finding implies that international students who are troubled with social expression confidence tend to compensate for their low self-esteem by heavily engaging in online buying.

Lastly, this study found that after controlling for the significant impacts of impulsivity

and the marginal influence of income, international students' social strains directly and positively influenced engagement in compulsive online buying. This finding is in line with previous studies which found social exclusion tends to encourage people to spend and consume more, particularly symbolic products displaying a group membership or social status (Mead, Baumeister, Stillman, Rawn & Vohs, 2011).

### **Theoretical and Practical Implications**

The findings of this study provide a number of theoretical and practical implications. This study contributes to the higher education and compulsive buying literature by empirically investigating the underlying psychological mechanism of international students' spending behavior driven by adjustment strains in the U.S. This study demonstrated that certain strains or a combination of strains faced by international students are related to low self-esteem, unhappiness, and engagement in compulsive online buying.

Academic, language, personal, and social strains were significantly correlated with each other, and language, personal, and social adjustment strains were positively related to experiencing psychological impairments such as low self-esteem and less happiness. In a similar study, Yang et al. (2006) found that international students' language self-confidence mediated the relationship between host cultural interaction and psychological and sociocultural adjustment. Namely, when international students interacted more with the host country, their language confidence increased, which in turn made their sociocultural adjustment more successful. These findings suggest that one of the most fundamental ways to solve many problems related to academic performance, personal problems, social relations, and self-esteem and happiness is to enhance international students' language skills. International students' language barriers tend to create social anxiety (Yang et al., 2006), which in turn limits opportunities to improve language

skills. At the same time, social interactions are one of the most effective ways to improve international students' language and social communication skills, as well as to reduce personal strains, such as feelings of loneliness, homesickness, and depression. Improving these skills will further enhance their self-esteem and happiness during the adjustment process in a foreign culture.

In addition, this study found that international students' lack of social expression confidence in public or in a group significantly increased compulsive online buying, even after controlling for the significant influence of impulsive buying tendency and the marginal influence of income. Moreover, social strains had a direct, positive impact on engagement in compulsive online buying. These findings imply that low social expression confidence and high social strains directly signal rising problems with international students' spending behavior.

The findings of this study show the need for universities and colleges to develop programs or policies to help international students better adjust to the U.S. academic and social systems, and to identify and reduce any negative consequences such as psychological impairment and compulsive consumption behavior in the early stages. Given that younger consumers tend to have easier and more frequent access to the Internet and mobile devices with which they can easily engage in negative consumption behavior (Manchiraju et al., 2016), the development of early interruption programs is strongly recommended. For example, higher education institutions may use the scales used in this study to periodically measure international students' adjustment strains, self-esteem, and happiness and to identify any decreases in the scores. Comparing these scores with scores of domestic students could also provide some meaningful implications about differences in different students' perceptions and problems. In addition, organizations supporting the success of international students could provide free

conversation partners or tutoring services on an individual or small group basis to help the students improve English skills and social skills. It would also be helpful to develop social activities or cultural events to get international students actively involved in social interactions with domestic students and residents. Furthermore, educators can promote cultural diversity in group assignments to naturally encourage international students to participate in social interaction with students of other nationalities. If teachers and academic advisors pay close attention to international students' academic performance and social relationships, they can help students better adjust to the new cultural environment in the U.S.

From a managerial perspective, while it seems that retailers' best interest is to increase sales by stimulating consumers' impulsivity, the negative consequence for consumers' happiness and well-being might eventually harm retailers' long-term benefits. Therefore, retailers may also provide a healthy and supportive environment to ease international students' adjustment strains and negative feelings during the adjustment process. For example, if local retailers' main customers include university or college students, the retailers could sponsor community engagements or events supporting gatherings with international students to help the students feel engaged in social interactions. Most importantly, international students should realize the importance of social interaction and the negative consequences of social isolation when studying in a foreign culture, and should learn how to actively cope with cultural shock and diverse adjustment strains with a positive attitude. International students are highly encouraged to take advantage of supporting programs, events, or activities offered to them by the university or community by actively participating in them and interacting with diverse cultural groups including Americans.

### **Limitation of the Study and Directions for Future Research**

This study was the first, to our knowledge, to explore the relationship between various adjustment strains faced by international students and spending behavior driven by these strains. However, this study has several limitations. First, due to the relatively small sample size, the statistical power was small, possibly causing some of the relationships to appear marginally significant or non-significant. In addition, this study used a convenience sample of students at a single university. Therefore, the generalizability of the findings of the study is limited to the sample of this study. In addition, the majority of the respondents in this study were from Asia, particularly China. This fact is not surprising because the number of Asian students studying in the U.S. is continuously increasing, and China is the largest student population studying in the U.S. (Open Doors, 2015). However, the generalizability of the study findings is limited because of the limited number of non-Asian respondents. Future studies may test the proposed relationships with students with more diverse nationalities and more balanced groups of respondents. Also, the samples were mainly graduate students. Future studies may target undergraduate students and investigate whether there are any differences in perceptions between undergraduate and graduate students. Lastly, international students' engagement of compulsive online buying was predicted by social strains, the social expression confidence dimension of self-esteem, and impulsive buying tendency and income as covariates. Excluding the significant influence of covariates, the variance explained by social strains and social expression confidence were significant but relatively small. This result may suggest that in comparison to the norm, the respondents of this study had a relatively lower level of adjustment strains or fewer psychological problems (i.e., low self-esteem and unhappiness). Therefore, future studies may consider different data collection methods to include more diverse and representative samples, thus reducing a non-response bias.

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## APPENDIX A

### Survey Questionnaire

#### Screening questions

1. Are you **at least 19 years old**? \_\_\_ Yes \_\_\_ No
2. **What year** were you born? \_\_\_\_\_
3. **In what year** did you come to the U.S. for studying?
  - \_\_\_2016
  - \_\_\_2015
  - \_\_\_2014
  - \_\_\_2013
  - \_\_\_2012
  - \_\_\_2011
  - \_\_\_2010
  - \_\_\_Others (please specify)\_\_\_

Direction: Please indicate your level of agreement with **each of the following statements** regarding **your experience in the U.S.** (You can use a dictionary for any words/phrases that you do not understand.)

#### Academic strains

	1=Strongly Disagree			7=Strongly Agree			
Being unable to concentrate on my studies in the U.S. distresses me.	1	2	3	4	5	6	7
Feeling uninterested in the university I am attending in the U.S. distresses me.	1	2	3	4	5	6	7
My concerns with grades in the U.S. distress me.	1	2	3	4	5	6	7
Relationships between teachers and students in the U.S. distress me.	1	2	3	4	5	6	7

#### Language strains

	1=Strongly Disagree			7=Strongly Agree			
My difficulties in speaking English distress me.	1	2	3	4	5	6	7



I am distressed when I attend classes and lectures in English because I don't understand English very well.	1	2	3	4	5	6	7
I am distressed when I read textbooks and novels written in English because I don't understand them well.	1	2	3	4	5	6	7
Not being able to understand slang phrases in the U.S. distresses me.	1	2	3	4	5	6	7
My limited English vocabulary distresses me.	1	2	3	4	5	6	7
Knowing that I need help with English distresses me.	1	2	3	4	5	6	7

In answering the questions above, please write down any questions that were hard to understand.\*

(\*This text box was added at the end of each page on the online survey.)

#### Personal strains

	1=Strongly Disagree				7=Strongly Agree			
Being lonely in the U.S. distresses me.	1	2	3	4	5	6	7	
Feelings of homesickness in the U.S. distress me.	1	2	3	4	5	6	7	
Frequently crying or feeling depressed in the U.S. distresses me.	1	2	3	4	5	6	7	
Feeling that I would prefer to go home immediately distresses me.	1	2	3	4	5	6	7	

#### Social strains

	1=Strongly Disagree				7=Strongly Agree			
The relationship between men and women in the U.S. distresses me.	1	2	3	4	5	6	7	
The dating practices of people in the U.S. distresses me.	1	2	3	4	5	6	7	
Sexual customs in the U.S. distresses me.	1	2	3	4	5	6	7	
I am distressed because I feel uncomfortable among groups of people in the U.S.	1	2	3	4	5	6	7	
I am distressed because I feel confused about morals in the U.S.	1	2	3	4	5	6	7	

#### Self-esteem

	1=Strongly Disagree				7=Strongly Agree			
I am not likely to speak to people until they speak to me.	1	2	3	4	5	6	7	
I would describe myself as self-confident.	1	2	3	4	5	6	7	

I feel confident of my appearance.	1	2	3	4	5	6	7
I am good at approaching other people at social functions.	1	2	3	4	5	6	7
When in a group of people, I have trouble thinking of the right things to say.	1	2	3	4	5	6	7
When in a group of people, I usually do what the others want rather than make my own suggestions.	1	2	3	4	5	6	7
When I'm in a disagreement with other people, my opinion usually prevails.	1	2	3	4	5	6	7
I would describe myself as one who tries to feel in control of a situation.	1	2	3	4	5	6	7
I enjoy social gatherings just to be with people.	1	2	3	4	5	6	7
I always try to look straight at people when I talk to them.	1	2	3	4	5	6	7
I cannot seem to get others to notice me.	1	2	3	4	5	6	7
I have no doubts about my social competence.	1	2	3	4	5	6	7

### Happiness

	1=Strongly Disagree				7=Strongly Agree		
In most ways my life in the U.S. is close to my ideal.	1	2	3	4	5	6	7
The conditions of my life in the U.S. are excellent.	1	2	3	4	5	6	7
I am satisfied with my life in the U.S.	1	2	3	4	5	6	7
So far I have gotten the important things I want in life in the U.S.	1	2	3	4	5	6	7
If I could live my life over, I would change almost nothing.	1	2	3	4	5	6	7

Direction: Please indicate **how frequently you experienced each of the following while studying in the U.S.**

### Compulsive online buying

	1=Never				7=Always		
When I had money, I had to spend part or all of it for online shopping.	1	2	3	4	5	6	7
I bought something I saw in an online store without planning, just because I got to have it.	1	2	3	4	5	6	7
I shopped online to relax and forget my problems.	1	2	3	4	5	6	7
I felt that something inside pushed me to go shopping online.	1	2	3	4	5	6	7
There were times when I had a strong urge to buy online.	1	2	3	4	5	6	7
I felt guilty after buying something online because it seemed unreasonable.	1	2	3	4	5	6	7
There were some things I bought online that I did not	1	2	3	4	5	6	7

show to anybody because I feared people would think I did a foolish expense or I wasted my money.							
I had a real desire to go shopping and buy something online.	1	2	3	4	5	6	7
As soon as I visited a website, I wished to buy something online.	1	2	3	4	5	6	7
I bought a product online that I did not need even when I knew I had very little money left.	1	2	3	4	5	6	7
I enjoyed spending money online.	1	2	3	4	5	6	7

Direction: Please answer the following questions regarding **your experience with online shopping in the U.S.**

On average, how many hours do you spend each day on shopping online?	
On average, how much money (in US Dollar) do you spend each month on shopping online?	
What types of products or services do you usually buy online?	

Direction: Please indicate your level of agreement with **each of the following statements.**

#### Materialism

	1=Strongly Disagree				7=Strongly Agree			
I like to own things that make people think highly of me.	1	2	3	4	5	6	7	
I like to own expensive things compare to most people because this is a sign of success.	1	2	3	4	5	6	7	
The only way to let everyone know about my high status is to show it.	1	2	3	4	5	6	7	
I feel good when I buy expensive things. People think of me as a success.	1	2	3	4	5	6	7	
Material possessions are important because they contribute a lot to my happiness.	1	2	3	4	5	6	7	
When friends have things I cannot afford, it bothers me.	1	2	3	4	5	6	7	
Acquiring valuable things is important for my happiness.	1	2	3	4	5	6	7	
To me, it is important to have expensive homes, cars, clothes, and other things. Having these expensive items make me happy.	1	2	3	4	5	6	7	



4. Which of the following ranges includes **your monthly income in the U.S. (including allowances from your family and assistantship)?**

- \$500 and below
- \$501 to \$1000
- \$1001 to \$1500
- \$1501 to \$2000
- \$2001 to \$2500
- \$2501 to \$3000
- \$3001 to \$3500
- \$3501 to \$4000
- \$4001 and more

APPENDIX B

IRB Approval for Protocol #16-228 EX 1608

AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMAN SUBJECTS
REQUEST FOR EXEMPT CATEGORY RESEARCH

For Information or help completing this form, contact: THE OFFICE OF RESEARCH COMPLIANCE, 115 Ramsay Hall
Phone: 334-844-5966 e-mail: IRBAdmin@auburn.edu Web Address: http://www.auburn.edu/research/vpr/ohs/index.htm

Revised 2/1/2014 Submit completed form to IRBsubmit@auburn.edu or 115 Ramsay Hall, Auburn University 36849.

Form must be populated using Adobe Acrobat / Pro 9 or greater standalone program (do not fill out in browser). Hand written forms will not be accepted.

Project activities may not begin until you have received approval from the Auburn University IRB.

1. PROJECT PERSONNEL & TRAINING

PRINCIPAL INVESTIGATOR (PI):

Name Yana Lou Title Marster student Dept./School CADS

Address 308 Spidle Hall, Auburn University, Auburn AU Email yzl0095@auburn.edu

Phone 334-524-1962 Dept. Head Dr. Carol Warfield

FACULTY ADVISOR (if applicable):

Name Sang-Eun Byun, PhD Title Assoc. Professor Dept./School CADS

Address 308 Spidle Hall, Auburn University, Auburn, AL. 36849

Phone 334-703-5917 AU Email Seb0002@auburn.edu

KEY PERSONNEL: List Key Personnel (other than PI and FA). Additional personnel may be listed in an attachment.

Table with 4 columns: Name, Title, Institution, Responsibilities. Includes empty rows for data entry.

KEY PERSONNEL TRAINING: Have all Key Personnel completed CITI Human Research Training (including elective modules related to this research) within the last 3 years? [X] YES [ ] NO

TRAINING CERTIFICATES: Please attach CITI completion certificates for all Key Personnel.

2. PROJECT INFORMATION

Title: International Students' Perceptions and Consumption Behavior

Source of Funding: [X] Investigator [ ] Internal [ ] External

List External Agency & Grant Number:

List any contractors, sub-contractors, or other entities associate with this project.

List any other IRBs associated with this project (including those involved with reviewing, deferring, or determinations).

FOR ORC OFFICE USE ONLY

DATE APPROVA
DATE APPROVA
DATE INTERVA
DATE
COMMENTS:

Add this approval information in sentence form to your electronic information letter!

The Auburn University Institutional Review Board has approved this Document for use from 08/18/2016 to 08/17/2019 Protocol # 16-228 EX 1608

3. **PROJECT SUMMARY**

a. Does the research involve any special populations?

- YES  NO Minors (under age 19)  
 YES  NO Pregnant women, fetuses, or any products of conception  
 YES  NO Prisoners or Wards  
 YES  NO Individuals with compromised autonomy and/or decisional capacity

b. Does the research pose more than minimal risk to participants?  YES  NO

*Minimal risk means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. 42 CFR 46.102(i)*

c. Does the study involve any of the following?

- YES  NO Procedures subject to FDA Regulation Ex. Drugs, biological products, medical devices, etc.  
 YES  NO Use of school records of identifiable students or information from instructors about specific students  
 YES  NO Protected health or medical information when there is a direct or indirect link that could identify the participant  
 YES  NO Collection of sensitive aspects of the participant's own behavior, such as illegal conduct, drug use, sexual behavior or use of alcohol  
 YES  NO Deception of participants

*If you checked "YES" to any response in Question #3 STOP. It is likely that your study does not meet the "EXEMPT" requirements. Please complete a PROTOCOL FORM for Expedited or Full Board Review. You may contact IRB Administration for more information. (Phone: 334-844-5966 or Email: [IRBAdmin@auburn.edu](mailto:IRBAdmin@auburn.edu))*

4. **PROJECT DESCRIPTION**

a. **Subject Population** (Describe, include age, special population characteristics, etc.)

International students enrolled at Auburn University are the target population, and participants should be at least 19 years old and has been studying in the U.S. for one or more semesters. The expected sample size is 200.

b. Describe, step by step, all procedures and methods that will be used to consent participants.

- N/A (Existing data will be used)

The data will be collected using Qualtrics. An invitation email containing the survey link will be sent to international students' AU email addresses by International Students Organization. An information letter (see Appendix A) will appear on the first page of the online questionnaire. The information letter will provide introduction about the study and state that having read the information provided, the respondents must decide if they want to participate in this research project or not. If they do, the data they provide will serve as their agreement.

- c. **Brief summary of project.** (Include the research question(s) and a brief description of the methodology, including recruitment and how data will be collected and protected.)

The study will examine the extent to which international students' various adjustment strains influence self-esteem, happiness, and shopping and spending behavior (i.e., engagement in retail therapy and compulsive buying behavior.)

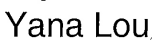

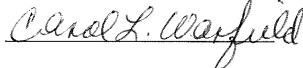
1. International students at Auburn University will be recruited through the International Students Organization (ISO), which has a email list of international students at Auburn University and manages survey distributions among international students.
2. Upon the permission from ISO, the principle investigator will send an email to the subjects (international students) of the opportunity to participate in the survey research. The email will include information regarding the purpose of the study, expected time to complete the survey, protection of confidentiality, voluntary participation, contact information of the researchers, and the survey link.
3. Data will be collected over several weeks, depending on when the expected sample size (n=200) is obtained. A maximum of two email reminders will be sent to the potential participants. Once the sample size is achieved, the survey will be closed.
4. The participants who completed in this study will have a chance to win one of twenty \$25 store gift cards (Kroger or Wal-Mart). The chance of winning is 10%. To participate in drawing, students will be asked to provide their name and email address at the end of the survey. However, this information will be saved in a separate file in the survey website and therefore participants' responses will not be linked to their identification information (i.e., name and email address).
5. The data will be stored as an electronic Microsoft Excel file and an electronic SPSS file. Data will be anonymous and will include no identifying information about the respondents. The electronic file will be saved on the principal investigators' desktop and laptop, both of which can only be accessed through the personal investigator's unique login.

- d. **Waivers.** Check any waivers that apply and describe how the project meets the criteria for the waiver.

- Waiver of Consent (Including existing de-identified data)
- Waiver of Documentation of Consent (Use of Information Letter)
- Waiver of Parental Permission (for college students)

The information letter will provide introduction about the study and state that having read the information provided, the respondents must decide if they want to participate in this research project or not. If they decide to participate, the data they provide will serve as their agreement to do so.

- e. **Attachments.** Please attach Informed Consents, Information Letters, data collection instrument(s), advertisements/recruiting materials, or permission letters/site authorizations as appropriate.

Signature of Investigator	 <small>Digitally signed by Yana Lou DN: cn=Yana Lou, o, ou, email=yz20955@auburn.edu, c=US Date: 2016.08.13 15:47:18 -0400</small>	Date	8/13/2016
Signature of Faculty Advisor	 <small>Digitally signed by Sang-Eun Byun DN: cn=Sang-Eun Byun, ou=Auburn University, ou=Department of Consumer and Design Sciences, email=sb00058@auburn.edu, c=US Date: 2016.08.12 14:31:24 -0400</small>	Date	8/12/2016
Signature of Department Head		Date	8/16/16



## APPENDIX C

### Information Letter

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

**INFORMATION LETTER  
for a Research Study entitled  
*“International Students’ Perceptions and Consumption Behavior”***

**You are invited to participate in a research study** to examine international students’ perceptions of adjustment strains and consumption behavior while studying in the United States. The study is being conducted by Yana Lou, Graduate student, under the direction of Dr. Sang-Eun Byun, Associate Professor in the Auburn University Department of Consumer and Design Sciences. You are invited to participate because you are an international student enrolled at Auburn University, are at least 19 years old, and have studied in the U.S. at least for one semester.

**What will be involved if you participate?** Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete an online questionnaire. Your total time commitment will be approximately 20 minutes.

**Are there any risks or discomforts?** The risks associated with participating in this study are none other than the minimal inconvenience of completing a questionnaire.

**Are there any benefits to yourself or others?** If you participate in this study, you can expect to receive no direct benefits. However, if you participate in this study, you can be a potential contributor to help better understand international students’ perceptions and consumption tendencies and help develop better programs or policies for international students.

**Will you receive compensation for participating?** To thank you for your time you will be offered a chance to win one of twenty \$25 store gift cards (Kroger or Wal-Mart). The chance of winning is 10%.

**Are there any costs?** If you decide to participate, you will not incur any cost.

**If you change your mind about participating,** you can withdraw at any time by closing your browser window. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Once you’ve submitted anonymous data, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University or Department of Consumer and Design Sciences.

**Any data obtained in connection with this study will remain anonymous.** We will protect your privacy. The data you provided will never be linked to your personal information. At the end of the survey, you will be asked to enter your email address to participate in the drawing in this study. However, this information will not be linked to your survey responses.

**Add this approval information in sentence form to your electronic information letter!**

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Protocol # 16-228 EX 1608

Information collected through your participation may be published in professional journals and/or presented at professional meetings with no inclusion of your identifiable information.

**If you have questions about this study**, please contact Yana Lou at yzl0095@auburn.edu or Dr. Sang-Eun Byun (faculty advisor) at seb0002@auburn.edu.

**If you have questions about your rights as a research participant**, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or e-mail at [IRBAdmin@auburn.edu](mailto:IRBAdmin@auburn.edu) or [IRBChair@auburn.edu](mailto:IRBChair@auburn.edu).

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. PLEASE CLICK ON THE LINK BELOW TO PARTICIPATE IN THE SURVEY. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

Yana Lou \_\_\_\_\_ 8/12/2016  
Investigator Date

Sang-Eun Byun \_\_\_\_\_ 8/12/2016  
Co-Investigator Date

*The Auburn University Institutional Review Board has approved this document for use from \_\_\_\_\_ to \_\_\_\_\_. Protocol # \_\_\_\_\_*

[LINK TO SURVEY](#)

**Add this approval information in sentence form to your electronic information letter!**

The Auburn University Institutional Review Board has approved this Document for use from 08/18/2016 to 08/17/2019  
Protocol # 16-228 EX 1608

## APPENDIX D

### Email Invitation and Reminders

Dear Auburn University International Students,

I would like to invite you to participate in a research study, which examines international students' perceptions and consumption behavior. **You may participate if you are at least 19 years old and have been studying at least for one semester in the U.S.**

Your participation is completely voluntary. If you decide to participate, you will be asked to complete **an online survey**, which will take approximately 20 minutes.

The survey will open **from 8/26/2016 to 9/12/2016**.

At the end of the survey, you will be asked to enter your email address to participate in the drawing in this study. However, this information will not be linked to your survey responses. Information collected through your participation may be published in professional journals and/or presented at professional meetings with no inclusion of your identifiable information. To thank you for your time, **we offer you a chance to win one of twenty \$25 store gift cards (Kroger or Wal-Mart)**. The chance of winning is 10%. After you submit your anonymous survey, you will be directed to a new link to enter your email address. However, this information will not be linked to your survey responses.

The Auburn University Institutional Review Board has approved this document for use from **August 18, 2016 to August 17, 2019**. Protocol #16-288 EX 1608

You can participate in the online survey by clicking the following link:  
[https://auburn.qualtrics.com/jfe1/form/SV\\_87zikMRB2D31Avr](https://auburn.qualtrics.com/jfe1/form/SV_87zikMRB2D31Avr)

If you have any questions, please contact me at [yzl0095@auburn.edu](mailto:yzl0095@auburn.edu).  
Thank you in advance for your participation.

Sincerely,

Yana Lou, Master Student  
386A Spidle Hall, Department of Consumer and Design Sciences College of Human Sciences,  
Auburn University  
Dr. Sang-Eun Byun, Associate Professor  
308 Spidle Hall, Department of Consumer and Design Sciences  
College of Human Sciences, Auburn University

## Email Reminder 1

Dear Auburn University International students,

You have received emails asking you to participate in our research study about international students' perceptions and consumption behavior. If you have already taken the survey, please be informed that we appreciate your participation.

**You may participate if you are at least 19 years old and have been studying at least for one semester in the U.S.**

To thank you for your time, **we offer you a chance to win one of twenty \$25 store gift cards (Kroger or Wal-Mart).** The chance of winning is 10%. After you submit your anonymous survey, you will be directed to a new link to enter your email address. However, this information will not be linked to your survey responses. (See details in following context).

If you have yet to take the survey, please let us remind you that **the survey will open until 9/12/2016.**

Please follow the link to take the survey:

[https://auburn.qualtrics.com/SE/?SID=SV\\_87zikMRB2D31Avr](https://auburn.qualtrics.com/SE/?SID=SV_87zikMRB2D31Avr)

If you have any questions, please contact Yana Lou at [yzl0095@auburn.edu](mailto:yzl0095@auburn.edu).

We look forward to having your participation in the survey.

Sincerely,

Yana Lou, Master Student

386A Spidle Hall, Department of Consumer and Design Sciences

College of Human Sciences, Auburn University

Dr. Sang-Eun Byun, Associate Professor

308 Spidle Hall, Department of Consumer and Design Sciences

College of Human Sciences, Auburn University

## Email Reminder 2

Dear Auburn University International students,

You have received emails asking you to participate in our research study about international students' perceptions and consumption behavior. If you have already taken the survey, please be informed that we appreciate your participation.

If you have yet to take the survey, please let us inform you that **the survey will extend to 9/16/2016 (this coming Friday).**

**You may participate if you are at least 19 years old and have been studying at least for one semester in the U.S.**

To thank you for your time, **we offer you a chance to win one of twenty \$25 store gift cards (Kroger or Wal-Mart).** The chance of winning is 10%. After you submit your anonymous survey, you will be directed to a new link to enter your email address. However, this information will not be linked to your survey responses. (See details in following context).

Please follow the link to take the survey:

[https://auburn.qualtrics.com/SE/?SID=SV\\_87zikMRB2D31Avr](https://auburn.qualtrics.com/SE/?SID=SV_87zikMRB2D31Avr)

If you have any questions, please contact Yana Lou at [yzl0095@auburn.edu](mailto:yzl0095@auburn.edu).

We look forward to having your participation in the survey.

Sincerely,

Yana Lou, Master Student

386A Spidle Hall, Department of Consumer and Design Sciences College of Human Sciences,  
Auburn University

Dr. Sang-Eun Byun, Associate Professor

308 Spidle Hall, Department of Consumer and Design Sciences  
College of Human Sciences, Auburn University