

Using Resilience Characteristics and Traditional Background Factors to Study
Adjustment of International Graduate Students in U.S.

Jing Wang

Florida State University, Tallahassee, FL

Jing Wang, Department of Educational Leadership and Policy Studies, Florida State University.

Jing Wang is now at the Department of Modern and Classical Languages, Allegheny College, Meadville.

Jing Wang wishes to express thanks to Dr. Dale W. Lick, Dr. Terrence Russell, Dr. Sande Milton, Dr. Robert Schwartz, all the students completing the surveys, Roberta Christie, Mafe Brooks, Dr. Linda Hoopes, Amanda Gettler, and Alice Bailey, Dr. John Porter, Dr. William Fritz, and Heather Housley-Fabritius. This paper is based on part of Jing Wang's doctoral dissertation.

Correspondence concerning this article should be addressed to Jing Wang, Allegheny College, 520 North Main Street, Meadville, PA, 16335.

Phone: (814) 573-2359. E-mail: jwang@allegheny.edu

Using Resilience Characteristics and Traditional Background Factors to Study
Adjustment of International Graduate Students in US

Abstract

This research introduced resilience characteristics to study the adjustment of international graduate students at American universities. The purpose of the study was to explore relationships among resilience characteristics and background factors; among resilience characteristics and adjustment problem areas; and among adjustment problem areas and background factors. The Personal Resilience Questionnaire and the Michigan International Student Problem Inventory were used in this study. All together 289 unusable responses were gathered from two universities. Correlation studies, t-tests, One-way ANOVA, and Tukey analyses were used. Statistical analyses revealed that: resilience characteristics were moderately correlated with background factors, highly negatively correlated with adjustment problem areas, and better correlated with adjustment problem areas than were background factors. Hence resilience characteristics are central to adjustment.

The sheer number of international students studying in the U.S. has been increasing dramatically throughout the years, with 216,000 in 1974-1975 to 586,323 in 2002-2003. The large number and the important roles of international students warrant our attention. It is especially important to study them in today's world with the feature of globalization. The purpose of this research is to study variables that contribute to the adjustment of international graduate students studying in the United States.

Adjustment issues for international students constitute a significant area of study. Campus administrators have become more and more aware of the significance of smoothing adjustment process "due to the potential impact of adjustment problems on student attrition" (Hurtado et al as cited in Al-sharideh & Goe, 1998, p.700).

Researchers found that individuals differ greatly in adjusting to a new culture. Some individuals are at ease with adjusting while others may not be able to adjust at all. Besides background factors such as age, gender, and English proficiency level, personal variables such as interpersonal skills and flexibility also play significant roles in adjustment. The knowledge of what personal characteristics contribute to adjustment is important, as it will guide students to enhance certain characteristics to make better adjustments. Although Hannigan (1990) summarized these adjustment-related personal variances under traits, attitudes, and skills, there has been no overarching framework for these variables. In order to find a framework, it is important to identify the major elements involved in the adjustment process.

Coming from different cultures, international students may face changes in many areas, including geographical location, weather conditions, food, language, culture

behaviors, value systems, and educational systems. Hence, the major task of adjustment is to cope with these changes. The abilities to cope with change may be used as a possible overarching framework for these personal variables.

Literature Review

Although adjustment issues have been studied extensively, certain aspects of adjustment-related variables have never been included in the study. Literature review in this article tries to produce a comprehensive list of variables for the study of the adjustment of international graduate students.

Adjustment Related Background Factors

Traditional adjustment factors have been studied extensively. Lee et al. (1981) did an extensive literature review on the problems and needs of international students for a major national research project for National Association for Foreign Student Affairs (NAFSA). They generated a comprehensive list of adjustment related variables: age, sex, marital status, English language proficiency, academic level, sponsorship, major fields, length of study, region of the world and country of origin, size of school, orientation, living arrangements, employment at home, previous international experience, and national status accorded (Lee, pp.11-20).

Research seems to agree that the adjustment of international students is also influenced by their parent's educational background. Pruitt (1978) found that foreign students from prominent families were better adapted to the American society. Surdam and Collins (1984) obtained similar findings that "students from better educated families were significantly better adapted than those from less well-educated families" (p.243).

In addition, a literature review also shows that students from suburban areas adjust better than those from rural background. Hence, Urban or suburban versus Rural Background, (termed as community of origin in the following) is found to be related with adjustment. Last, adjustment is also related to students' perception of the relevance and quality of academic programs in the United States.

Gap in the Literature

Although many factors have been identified as related with adjustment, none of them deals with change, which is a core in the adjustment process. After reviewing the literature in the field, Hannigan (1990) gave the following definition of adjustment, and indicated adjustment is a change process.

Adjustment can be conceptualized as a psychosocial concept which has to do with the process of achieving harmony between the individual and the environment. Usually this harmony is achieved through changes in the individual's knowledge, attitudes, and emotions about his or her environment. This culminates with satisfaction, feeling more at home in one's new environment, improved performance, and increased interaction with host country persons. (p.91)

Pedersen (1995) also supported the idea that adjustment is change related. Coming from another culture, international students cannot escape culture shock, which is "the anxiety resulting from not knowing what to do in a new culture" (Kalvero Oberg as cited in Pedersen, 1995, p.1). Pedersen pointed out that culture shock is a normal response to change comparable to adaptations made by people in the face of radical changes in life.

Conner studied changes for many years, and established ODR, Inc. (Organizational Development Resources) to study "human resilience in organizational settings" (p.6) in

1974 in Atlanta. Conner (1992) gave a good description of the essence of change in his book *Managing at the Speed of Change*. He found that resilience was important in successfully implementing change, and defined resilience as “the capacity to absorb high levels of change while displaying minimal dysfunctional behavior” (p.6). He concluded that resilient people were positive about life and about themselves, flexible in thoughts and in social relations, focused, organized, and proactive. Resilience includes the following seven characteristics.

“**Positive: The World**” is people’s tendency to focus on the positive elements of the world (ODR, 2001). According to ODR, for people who view the world positively, they might see opportunities in a difficult situation, find solutions to a problem, and be better able to “create situations that are positive” (ODR, 2001, p.4). On the other hand, people who view the world negatively might become worried and discouraged at difficult situations and then be disenabled to find creative solutions (ODR 2001, p.4).

“**Positive: Yourself**” is that one possesses self-confidence and believes “one can influence the environment” (ODR, 2001, p.4). Positive views of oneself enable one to build a solid base to sustain strain and ambiguity and provide one with confidence to endure failure. “Positive: Yourself” also enables one to take actions rather than wait passively for things to happen (ODR, 2001, p.4).

The significance of “Positive: Yourself” on adjustment is discussed in the literature under different names. Aydin (1997) found that “Personal Control” was significant to adjustment. “Personal Control” is defined as “the degree to which individuals believe they influence the process and outcome of their life events and the extent to which they feel forces beyond their control play a role in shaping and directing their lives” (Moran &

Boyer International as cited in Aydin, p.146). It can be seen that both “Personal Control” and “Positive: Yourself” describe an individual’s self-confidence.

Focused is “having a strong sense of goals and priorities.” If one is focused on important goals, he or she can easily allocate more energy to attend to these goals (ODR, 2001, p.4). Since focused individuals would not waste resources on unimportant goals, they would have a better chance of efficiently using their resources to realize important goals. Without focused goals, for example, people might put energy into things that draw their immediate attention, making it more likely that they would use resources inefficiently (ODR, 2001, pp.4-5).

“Flexible: Thoughts” is “the person's ability and willingness to look at situations from multiple points of view, to suspend judgment while considering alternative perspectives, and to accept and live with paradoxes and contradictions as part of life” (ODR, 2001, p.5). Being open-minded, people with flexible thoughts tend to find creative solutions to problems.

Variable which is closely related with “Flexible: Thought” on adjustment was also discussed in the literature. Aydin (1997) found that “Tolerance” was significant for adjustment. “Tolerance” is defined as “the willingness to endure unfamiliar surroundings and circumstance..... It also requires an ability to withstand living conditions and surroundings that are different or less comfortable than what one is used to” (Moran & Boyer International as cited in Aydin, p.147). Comparing the concept of “Tolerance” with that of “Flexible: Thought,” one would notice that the two are closely related because “Flexible: Thoughts” enables one to adopt a “Tolerance” attitude.

“Flexible: Social” is “the ability to draw on the resources of others” (ODR, 2001, p.5). People with the characteristic of Flexible: Social realize their “interdependence with others” and are able to establish strong social bonds with others which sustain them when they are in difficulties (ODR, 2001, p.5).

Variables which are closely related with “Flexible: Social” were discussed in the literature. Aydin (1997) found that “Interpersonal Interests,” “Trust in People” and “Social Adaptability” were significant to adjustment. “Interpersonal Interests” is defined as “the extent to which individuals take interest and enjoyment in being with other people” (Moran & Boyer International as cited in Aydin, p.146). “Trust in People” is defined as “the extent to which an individual has an attitude of faith and trust in others.” “Social Adaptability” is defined as “the ability to adjust to new or unfamiliar social situations. The ability to socialize comfortably with other people in new situations, as well as the ability to form new groups of friends are the major focuses of this dimension” (Moran & Boyer International as cited in Aydin, p.147). It can be found that the three concepts in Aydin’s research “Interpersonal Interests,” “Trust in People” and “Social Adaptability” are closely related with “Flexible: Social” because the three concepts are conditions for an individual to be able to have the characteristic of “Flexible: Social.” Hence, the concepts of “Interpersonal Interests,” “Trust in People” and “Social Adaptability” are in line with “Flexible: Social.”

“Organized” is the ability to “develop structured approaches to managing ambiguity” (Conner, 1992, p.238). An organized person “quickly sorts information,” “builds structure in chaos,” “plans action for maximum efficient use of resources,” and “avoids acting on impulse” (ODR, 1995a, p.17).

“Proactive” is “the willingness to act decisively in the midst of uncertainty rather than simply reacting to circumstances” (ODR, 2001, p.5). Proactive people are willing to take some risks for valuable opportunities and “engage change rather than defend against it” (Conner, 1992, p.228). When disruption comes, they are willing to take active strategies rather than use avoidance and withdrawal strategies (ODR, 2001, p.5).

The significance of “Proactive” on adjustment is described in the literature under different terms. Aydin (1997) found that proactive traits such as “Initiative” and “Risk Taking” were significant for adjustment in the U.S. culture and related that under the U.S. proactive cultural environment, proactive abilities are rewarded. “Initiative” is defined as “the extent to which individuals are able to be the first to take charge of new or challenging situations and accomplish whatever needs to be done” (Moran & Boyer International as cited in Aydin, p.146). “Risk Taking” is defined as “the willingness to take risk, meet challenges and cope with change” (Moran & Boyer International as cited in Aydin, p.147). “Initiative” and “Risk Taking” describe similar traits as “Proactive” because the central focuses of the two sets of personal characteristics is risk-taking.

Relative to the above characteristics of resilience, it is noted that these resilience characteristics “are not independent of one another” (ODR, 1995, p.11). Further, these resilience characteristics can be applied to all change situations but different change situations may emphasize one or several of the characteristics over the others. Resilient people are strong in all of the seven areas and balanced in their resilience characteristics. They draw upon different characteristics in different situations. People who are strong in some areas yet weak in the other areas are not balanced in their resilience characteristics. They tend to excessively rely on the characteristics in which they are strongest and not to

use as much those characteristics where they are weak. They may be able to successfully cope with some forms of change but be less effective in others. In general, they tend to possess less resilience than people who are balanced and strong in all areas (ODR, 2001, p.3).

Background Factors and Resilience Characteristics

In this study, adjustment would be studied by incorporating traditional variables with resilience characteristics. Besides resilience characteristics, variables which have been identified in the literature as related with adjustment process were included except for academic level, orientation, living arrangements, and national status accorded. The reason that academic level was not included was because only graduate students were studied in this study. As to orientation, since the majority of international graduate students did not have pre-departure orientation and received the same orientation program once they arrived, this variable was not included in this study. As to living arrangements, since most of the international students in this study lived with other international students from the same ethnic background, the variable was not included. As to the variable of “prestige accorded to home country” (Lee, p.20), since Morris, the authority in the field, only found “slight support for the relationship between national status variables and adjustment variables” (Lee, p.20), the variable was excluded from the study.

Statement of Purposes

The purpose of the study was to explore relationships among resilience characteristics and background factors, determine relationships among resilience characteristics and adjustment problem areas, and evaluate relationships among adjustment problem areas and background factors. In particular, relevant to the

adjustment of international students studying in the United States, this research would study the significance of several factors on adjustment, including resilience characteristics, Age, Length of Stay, Gender, Country of Origin, Community of Origin, Marital Status, Sources of Support, Parent's Education, Perceived Relevance of Study, Previous International Experience, Previous Professional Experience at home, English proficiency Level, Major Fields of Study, and different Universities.

Research Questions and Hypotheses

Research questions and hypotheses for this study are as follows:

1. What are the relationships among resilience characteristics and background factors?

Hypotheses:

Resilience characteristics are correlated with background factors (Age, Previous International Experience, Previous Professional Work Experience, English proficiency level as demonstrated by TOEFL scores, Length of Stay, Gender, Perceived Relevance of Study, Campus, Community of Origin, Country of Origin, Marital Status, sources of support, Mother's Education, Father's Education, and Major).

2. What are the relationships among adjustment problems and resilience characteristics?

Hypotheses:

Resilience characteristics are significantly negatively correlated with the eleven problem Areas (Admission-selection problem area, orientation service problem area, academic record problem area, social-personal problem area, living-dining problem area, health service problem area, religious service problem area, English language problem area, student activity problem area, financial aid problem area, and placement service

problem area) as measured by the Michigan International Student Problem Inventory (MISPI).

3. What are the relationships among adjustment problems and background factors?

Hypotheses:

Adjustment problem areas are correlated with background factors.

Instruments

In this study, two major instruments were used. One was John Porter's MISPI. MISPI was used because it is one of the most effective and frequently used instruments to measure the adjustment of international students. Further, the questionnaire was found as a reliable instrument to identify adjustment problems of international students (Spaulding & Flack, 1976). Pedersen (1991) also commented that the MISPI had been used in many cases to identify problem areas for international students by counseling services.

A pilot study was carried out on a small group of international students. Based on their suggestions, minor modifications were made in the MISPI. Porter, the author of the MISPI was also contacted for the revision of his questionnaire. He was supportive of the modifications. In short, the minor modifications should not affect either the validity or reliability of the questionnaire. An additional reliability test was run on the modified MISPI by using the data collected from this study. Results proved that the revised MISPI was also reliable.

The second questionnaire, ODR's Personal Resilience Questionnaire (PRQ), was used to measure resilience characteristics of international students. PRQ was used because it is a reliable instrument and the only comprehensive instrument available to measure resilience characteristics. The PRQ gauges resilience from the perspective of

seven subscales: Positive: The World; Positive: Yourself; Focused; Flexible: Thoughts; Flexible: Social; Organized, and Proactive. Higher scores on the PRQ indicate stronger resilience characteristics. The validity of the PRQ was tested by ODR (1996), and the reliability of the PRQ was tested by Bryant (1995).

The above two questionnaires together with some demographic questions were put at an website to create an online survey. It took about 30 to 40 minutes to finish the online survey.

Population and Sample

This study was carried out at two places, one was at Florida State University (FSU), the other was at Georgia State University (GSU). The population at FSU included all international graduate students enrolled during the spring semester of 2003, while the population at GSU included all the international graduate students enrolled there during the spring semester of 2003.

Since it was impossible to obtain name lists and email addresses of international graduate students, all international graduate students were contacted through emails sent by the two universities. Students used the URL in the emails to browse to the survey and complete it.

There were 207 usable FSU responses for this study, and the total number of FSU international graduate students was 853. The total respondent rate was 24.3%. Comparison of the demographic characteristics of the respondents with those of the FSU population indicated that the respondents were representative of the FSU population.

From GSU 82 usable responses were collected from a total of 1,004 international graduate students. The total respondent rate was 8.2%. Comparison of the demographic

characteristics of the respondents with those of the GSU population indicated that the respondents were representative of the GSU population only in some areas.

Analyses of Data

The following steps were followed in the data analyses. At the first step, correlation studies were carried out among resilience characteristics and background factors. For interval variables, correlation studies were carried out; for dichotomous variables, t-tests were carried out; and for or categorical variable, ANOVA tests were carried out. At the second step, correlation studies were carried out among resilience characteristics and eleven adjustment problem areas. At the third step, correlation studies were carried out among adjustment problem areas and background factors.

Summary of Results

Statistical analyses were applied to both FSU and GSU data. Because FSU respondents were representative of the population while GSU respondents were not, conclusions were based on results from FSU data, while results from GSU data were used for comparison.

Relationships Among Resilience Characteristics and Background Factors

Statistical analyses were carried out to determine relationships between resilience characteristics and background factors by using two sets of international graduate student response data: FSU data, and GSU data. Table 1 summarizes the relationships among resilience characteristics and background factors for FSU student responses.

Table 1.

Summary of Relationships Among Resilience Characteristics and Background Variables for FSU Respondents

Background Variables	Positive: World	Positive: Yourself	Focused	Flexible: Thoughts	Flexible: Social	Organized	Proactive
Age			X				X
International experience							X
Work experience			X				X
TOEFL							
Length of stay at Univ.							X
Length of stay in US							
Gender							
Relevance of study							
Community of origin							
Country of origin	X	X	X	X	X		X
Marital status							
Support		X	X				X
Father's education							
Mother's education							
Major	X	X				X	

Table 1 shows that each resilience characteristic was correlated with one to four background factors from the total of fifteen. Focused and Organized were correlated with four (the largest number of) background factors. As to background factors, seven background factors were correlated with one to six resilience characteristics, while eight background factors were not correlated with any resilience characteristics. Country of origin was correlated with six (the largest number of) resilience characteristics. Among all possible correlations among resilience characteristics and background factors, correlations accounted for 17.1%.

Table 2 summarizes the relationships among resilience characteristics and background factors for GSU student responses. The statistical results are used for comparison.

Table 2.

Summary of Relationship Among Resilience Characteristics and Background Factors for GSU Respondents

Background Variables	Positive: World	Positive: Yourself	Focused	Flexible: Thoughts	Flexible: Social	Organized	Proactive
Age							
International experience							
Work experience							
TOEFL				X			
Length of stay at Univ.							
Length of stay in US							
Gender				X			
Relevance of study		X	X				
Community of origin							
Country of origin							
Marital status	X						
Sources of support		X					
Father's education				X			
Mother's education							
Major	X						

GSU data shows that four resilience characteristics were correlated with one to three background factors out of the total of fifteen, while three resilience characteristics were not correlated with any background factors. Flexible: Thoughts was correlated with three

(the largest number of) background factors. As to background factors, seven background factors were correlated with one to two resilience characteristics while eight background factors were not correlated with any resilience characteristics. Perceived relevance of study was correlated with two (the largest number of) resilience characteristics. Among all possible correlations among resilience characteristics and background factors, correlations accounted for 7.6%.

Except for the correlations between Positive: Yourself and Sources of Support; and between Positive: The World and Major, the correlations from the two sets of data are very different. The different correlations from the two sets of data may stem from inadequate responses from GSU students and from the differences of the two universities. In spite of the differences, correlations from the two sets of data are low.

Based on statistical results from FSU data, the following conclusions can be drawn. First, resilience characteristics were only moderately correlated with background factors. Since resilience characteristics were moderately correlated with background factors and background factors are closely related with personal experience, it might be concluded that resilience characteristics, as a total group, are only moderately correlated with personal experience. This conclusion is in conformity with the research of ODR that resilience characteristics are stable personal characteristics at a point in time.

Second, from the FSU data, each resilience characteristics was correlated with at least one of the background factors. The resilience characteristic which was correlated with the largest number of background factors were Focused and Organized, followed by Positive: Yourself. Hence, resilience characteristics may vary with the change of the background factors. Since background factors are closely related with one's experience, it

may be inferred that Focused, Organized, and Positive: Yourself are the most easily changed resilience characteristics if one is consciously involved in different experience to try to enhance resilience. The findings above are also in conformity with the ODR findings that resilience characteristics can be enhanced for the majority of people.

Third, from the FSU data, Country of Origin was correlated with six out of seven resilience characteristics. Analytical results of this study show that: Asian grouping of students had significantly lower scores in Focused than African grouping of students; Asian grouping of students had significantly lower scores in Flexible: Thoughts than Europeans grouping of students; Asian grouping of students had significantly lower scores in Flexible: Social than South American grouping of students; and Asian grouping of students had significantly lower scores in Proactive than European and South American grouping of students. ODR's finding is that resilience is consistent across countries except for counties in which groups act as individuals as in Asian countries. The findings are in conformity with the ODR finding that Country of Origin influences one's resilience characteristics.

Relationships Among Resilience Characteristics and Adjustment Problem Areas

Correlations were carried out among resilience characteristics and adjustment problem areas by using two sets of data—FSU and GSU international graduate student responses. Statistical conclusions were based on results from FSU data, while results from GSU data were used for comparison. Table 3 summarizes the correlation results for FSU respondents.

Table 3.

Summary of Significant Pearson Correlations Among Resilience Characteristics and Adjustment Problems for FSU Respondents

Background Variables	Positive: World	Positive: Yourself	Focused	Flexible: Thoughts	Flexible: Social	Organized	Proactive
Admission and selection	-	-	-	-	-	-	-
Orientation	-	-	-	-	-		
Academic record	-	-	-	-	-	-	-
Social-Personal	-	-	-	-	-		-
Living and dining	-	-	-	-	-		
Health service	-	-	-	-	-		
Religion service	-	-	-	-			
English language	-	-	-	-	-	-	-
Student activity	-	-	-	-	-		-
Financial aid	-			-			
Placement service	-	-	-	-			

Note: “-” indicating negative relationships

The above analyses show that each resilience characteristic was significantly negatively correlated with three to eleven of all of the eleven problem areas. Flexible: Thoughts and Positive: The worlds were negatively correlated with all of the eleven problem areas. Each adjustment problem area was significantly negatively correlated with two to seven resilience characteristics. Admission and Selection, Academic Record, and English Language were significantly negatively correlated with all seven resilience characteristics. Among all possible correlation categories ($7 \times 11 = 77$) of resilience characteristics and adjustment problem areas, correlations accounted for 75.3%, which appears to be an unusual high percentage.

Table 4 summarizes relationships among resilience characteristics and adjustment problems for GSU respondents. The statistical results are used for comparison.

Table 4.

Summary of Significant Pearson Correlations Among Resilience Characteristics and Adjustment Problems for GSU Respondents

Background Variables	Positive: world	Positive: Yourself	Focused	Flexible: Thoughts	Flexible: Social	Organized	Proactive
Admission and selection	-		-	-	-		
Orientation							-
Academic record			-				
Social-personal	-	-	-	-	-		
Living and dining	-		-	-			
Health service	-						
Religion service		-	-				
English language	-	-					
Student activity	-	-	-	-	-		
Financial aid			-	-			
Placement service	-	-	-	-			

Note: “-” indicates negative relationships

Table 4 shows that except for Organized, the other resilience characteristics were significantly negatively correlated with one to eight background factors. Focused was significantly negatively correlated with eight (the largest number of) background factors. Each adjustment problem area was significantly negatively correlated with one to five resilience characteristics. Social-personal and Student Activity were significantly negatively correlated with five (the largest number of) resilience characteristics. Among all possible correlation categories ($7 \times 11 = 77$) of resilience characteristics and adjustment problem areas, correlations accounted for 38.9%.

There were many differences in the correlations from the two sets of data. One possible reason for the difference may be that the number of GSU respondents was not large enough to be fully representative of the GSU population. With a larger number of respondents from GSU, the results from GSU might bear more resemblance to those from FSU data. Another possible reason is that there might be differences between the FSU and the GSU student populations.

In spite of differences in statistical results, there were a sizable number of overlapping correlations from the FSU and GSU data. What's more, correlations between resilience characteristics and background factors from the two sets of data were quite high.

The negative correlations between resilience characteristics and adjustment problem areas indicate that a student with high levels of resilience tends to have fewer adjustment problems. The results are in conformity with the initial hypotheses. Resilience characteristics gauge one's ability to cope with change. Adjusting to university life in the

U.S. is a major change for international students. Hence, it is natural to find that international students who are more resilient tend to adjust better, as indicated by their fewer adjustment problems. In conclusion, resilience characteristics are important variables to study the adjustment of international graduate students because they were significantly highly negatively correlated with adjustment problem areas.

Relationships Among Adjustment Problem Areas and Background Factors

This section explored the relationships among adjustment problems and background factors. Statistical analyses were carried out to determine the relationships among adjustment problem areas and background factors by using two sets of data—FSU and GSU international graduate student responses. Table 5 summarizes relationships among adjustment problems and background factors for FSU students.

Table 5.

*Relationships Among Adjustment Problem Areas and Background variables for FSU**Respondents*

Background Variables	Adm	Ori	Aca	Soc	Liv	Heal	Relig	Eng	Stud	Fin	Pla
Age											
International experience		X									
Work experience											
TOEFL								X			
Length of stay at univ											
Length of stay at US								X			
Gender						X					
Relevance of study									X		
Community of origin											
Country of origin			X					X	X		
Marital status								X			
Sources of support								X			
Mother's education											
Father's education					X					X	
Major			X								

Note: Adm refers to Admission and Selection; Ori refers to Orientation Service; Aca refers to Academic Record; Soc refers to Social-Personal; Liv refers to Living and Dining; Heal refers to Health Service; Relig refers to Religious Service; Eng refers to English Language; Stud refers to Student Activity; Fin refers to Financial Aid; Pla refers to Placement Service

Table 5 shows that seven adjustment problem areas were correlated with one to five background factors, while four adjustment problems areas were not correlated any background factors. English language problem area was correlated with five (the largest number of) background factors. Ten background factors were correlated with one to three adjustment problem areas, while five background factors were not correlated with adjustment problem areas. Country of origin was correlated with three (the largest number of) adjustment problem areas; while Father's education was correlated with two. Table 5 also shows that among all possible correlation categories ($11 \times 15 = 165$) of adjustment problem areas and background factors, correlations accounted for only 7.9 %.

Table 6 summarizes the relationships among adjustment problem areas and background factors for GSU respondents. Statistical results were used for comparison.

Table 6 indicates that seven adjustment problem areas were correlated with one to three background factors, while four adjustment problem areas were not correlated with any background factors. English language was correlated with three (the largest number of) background factors. As to background factors, six were correlated with one to four adjustment problem areas, while nine were not correlated with any adjustment problem areas. Country of origin and Father's Education were correlated with four (the largest number of) adjustment problem areas. The above table also shows that among all possible correlation categories ($11 \times 15 = 165$) of adjustment problem areas and background factors, correlations accounted for 7.9%.

In spite of the differences, results from the two data sets agree that adjustment problem areas were not correlated with many background factors; and Country of Origin were correlated with the largest number of adjustment problem areas.

Several conclusions can be drawn in this area. First, although adjustment problems were correlated to background factors, the correlations among them were not of a high percentage. This finding is in conformity with the findings from the literature review. The literature review often gave contradictory results concerning the relationship between adjustment and a certain background factor. Sometimes one can only conclude certain trends rather than definite results concerning the relationships between background factors and adjustment. Second, some adjustment problem areas, such as the English Language, were correlated with more background factors than the other problem areas. Hence, for example, it is easier to anticipate problems of the English for international students with certain background factors, and to possibly provide remedies in advance.

Third, adjustment problems were correlated much better with resilience characteristics than with background factors. Since there is no literature concerning the effects of resilience characteristics on the adjustment of international graduate students, this finding is a major new finding. Resilience characteristics are one's abilities to cope with change, and adjusting to the study life in the U.S. is a major change; hence, it is not surprising that resilience characteristics were more correlated with adjustment problem areas than any other background factors.

Summary of Conclusions

The study found that all resilience characteristics were only moderately correlated with background factors, which makes it legitimate to introduce resilience characteristics on top of the traditional background factors in the study of adjustment issues.

Resilience characteristics were highly negatively correlated with adjustment problem areas. Among all possible correlation categories for resilience characteristics and background factors, correlation categories among resilience characteristics and adjustment problem areas accounted for 75.3% (FSU data). The high correlation among resilience characteristics and adjustment merit the further study of resilience characteristics in the adjustment of international graduate students.

Adjustment problem areas were not highly correlated with background factors. Among all the possible correlation categories for adjustment problem areas and sixteen background factors, correlations accounted for only 7.9% (FSU data). The moderate correlation among adjustment problem areas and background factors explain why there may be a lot of conflicts in relationships between background factors on adjustment.

Among all the background factors, Country of Origin and Father's Education were correlated with the largest number of adjustment problem areas. Also, although Country of Origin has been extensively studied by previous studies, Father's Education is seldom touched in the adjustment study.

Recommendations to Universities

Based on statistical analyses of survey data gathered from this study, the following recommendations are made to universities to help international graduate students adjust to university life in the U.S. The knowledge of resilience characteristics is helpful.

1. Provide training for staff, who work with international students, on resilience. Their knowledge on resilience will benefit international students.
2. Ask international students to complete resilience questionnaires to help them identify their strong and weak resilience characteristics.
3. Offer lectures on resilience and provide professional advice to international students on how to enhance resilience.
4. Identify resilient students and ask them to tell of their experiences to other international students.
5. Focus on groups which tend to have low resilience scores. Statistical analyses indicated that Asian students tend to have lower resilience scores than students from other continents. It appears that it would be beneficial to help Asian students in particular to improve their resilience characteristics.

Recommendation to International Students

Based on the above statistical analyses and the problems identified by respondents, the following suggestions are made to international graduate students. Conscious knowledge of resilience characteristics of students is useful in their adjustment.

1. Start the adjustment process well before ever arriving in the U.S. For example, one can try to improve his or her English proficiency before leaving the home country. Also, one can gain knowledge about the general and academic cultures in the U.S.

2. Bear in mind that adjustment is also a growing process. A student will become stronger and more capable after going through the adjustment process.

3. Be mentally and emotionally prepared to encounter many difficulties both in life and in academic studies. Since studying in the U.S. is a major change in life, there are sure to be many difficulties. Some of the difficulties, such as these in English language may be easily anticipated, while difficulties in the academic culture may not be easily anticipated. People usually function better when they can anticipate what's coming. Consequently, being mentally prepared for all kinds of difficulties is the first step to deal with those difficulties. This is the so called "learning before change," a major principle for dealing with change. (Lick & Kaufman, 2000).

4. Understand that resilience characteristics are better correlated with adjustment than most other factors. Knowledge about resilience characteristics helps to enhance resilience.

5. Try to learn to become focused on priorities. Coming to study in the U.S. from a foreign country, a student is sure to encounter numerous new things. Learning to become focused on major goals is crucial to successful adjustment. One good way to enhance

one's abilities to focus on priorities is to work and learn from someone who is capable of setting and following priorities.

6. Students with Fathers' Education at lower levels should get mentally prepared that they may encounter more difficulties than students with Fathers' Education at higher levels.

7. Students from the Asian grouping of countries should bear in mind that they may face more difficulties than students from Europe, North America, and South America because of the following reasons. First, Asian students tend to have lower resilience scores than students from these places. Second, cultural differences are bigger for Asian students than for some other students. Third, Asian students tend to have more English problems than these students. Consequently, Asian students should pay special attention to enhance their resilience and should use their social network with other Asian students and other international students to deal with their difficulties.

8. Actively engage in all kinds of activities organized and offered by the International Center to gain cultural knowledge, set up social networks, practice English, spread culture knowledge of their own culture, and so on.

Suggestions to Campus Policy Makers

Universities should provide training to staff on resilience, ask students to fill out resilience questionnaires, and provide professional advice to students on how to enhance their resilience. Because of the close relationships between resilience and adjustment, it is worthwhile to allocate money and time to assist students to enhance their resilience. It may be beneficial to closely work with ODR Inc. to develop strategies to help enhance the resilience of international students in the most effective way.

Significance of the Study

The significance of this study is several folds. Although adjustment issues for international students have been studied quite extensively, there are still many important gaps. The major values of this study are:

1. This study introduced resilience characteristics in the study of the adjustment issues of international graduate students for the first time. The results of this study indicate that resilience characteristics are highly negatively correlated with adjustment problem areas. The study results merit further research on the effects of resilience characteristics on the adjustment of international students.

2. The relationships among resilience characteristics and adjustment, as well as among resilience and background factors, were explored in great detail. With such knowledge, it is possible to understand resilience characteristics of international students and to design ways to improve the resilience of international students to help them deal with the change they experience in international education.

Limitations of the Study

One limitation of the study is that GSU respondents may not be as representative as FSU respondents. If GSU respondents were as representative as FSU data, more conclusions might be able to be drawn on the similarities and differences of two universities. In that case, the results might have had more of a general application to other international student populations.

Another limitation is that only quantitative methods were used in this study. Qualitative interviews might have added to and deepened insights into the understanding of adjustment issues of international graduate students.

REFERENCES

- Al-Sharideh, K., & Goe, W.R. (1998). Ethnic communities within the university: An examination of factors influencing the personal adjustment of international students. *Research in Higher Education, 39*(6), 699-725.
- Aydin, F. (1997). *Intercultural adjustment as predicted by attachment and personality variables*. Unpublished doctoral dissertation, Boston University, Boston.
- Bryant, P.C. (1995). *Predictive validity and test-retest reliability of a measure of resilience*. Unpublished master's thesis, Georgia Institute of Technology.
- Conner, D.R. (1992). *Managing at the speed of change: How resilient managers succeed and prosper where others fail*. New York: Villard Books.
- Hannigan, T. P. (1990). Traits, attitudes, and skills that are related to intercultural effectiveness and their implications for cross-cultural training: A reviews of literature. *International Journal of Intercultural Relations, 14*, 89-111.
- Lick, D. W., & Kaufman, R. (2000). Change creation: The rest of the planning story. In J. V. Boettcher, M.M. Doyle, & R. W. Jensen (Eds.) *Technology-driven planning: Principles to practice*. Ann Arbor, MI : Society for College and University Planning.
- Opendoors (2003). <http://opendoorsweb.org/> Accessing date: Dec.2, 2003.
- ODR (1995). *Change resilience a cognitive resource approach*. Unpublished Report by ODR, Inc. at Atlanta, GA.
- ODR (1996). *Criterion-related validity of the personal resilience questionnaire*. Unpublished Report by ODR, Inc. at Atlanta, GA.
- ODR (2001). *ODR Personal Resilience Profile Feedback*. Unpublished Report by ODR, Inc., Atlanta, GA

- Pedersen, P. (1991). Counseling international students. *The Counseling Psychologist*, 19(1), 10-58.
- Pedersen, P. (1995). *The five stages of culture shock: Critical incidents around the world*. Westport, CT: Greenwood Press.
- Porter, J. (1966). *The manual of Michigan International Student Problem Inventory*. Unpublished Report by Urban Education Alliance, Inc. at Ann Arbor, MI.
- Spaulding, S. & Flack, M. (1976). *The world's students in the United States*. New York: Praeger publishers.