

## **Work-Family Balance and Psychosocial Adjustment of Married International Students**

Gökçe Bulgan

*MEF University, Turkey*

Ayşe Çiftçi

*Purdue University, USA*

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### **ABSTRACT**

*The authors investigated how work-family balance mediated the relationship between personality traits, gender roles, social support, and psychosocial adjustment. Data were collected from 243 married international graduate students (MIGSs) studying in the United States. Results of structural equation modeling indicated that personality traits influence the psychosocial adjustment process. In addition, being extraverted, agreeable, and conscientious contributed to balancing academic and family life, whereas having neurotic tendencies such as experiencing depression and anxiety diminished work-family balance. Work-family balance did not mediate the relationship between personality traits, gender roles, social support, and psychosocial adjustment. The authors discussed the findings by considering clinical implications and making suggestions for future research.*

**Keywords:** work-family balance, psychological well-being, sociocultural adaptation, international students, university

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**T**he United States hosts more international students than any other country in the world. There was a record high of 1,043,839 international students enrolled in U.S. colleges and universities in the 2015-2016 academic year

(Institute of International Education, 2016). The report indicated that the total number of international students increased by 7.1% from the previous academic year. Among these students, 40.9% were undergraduate students, 36.8% were graduate students, 14.1% were students in optional practical training, and 8.2% were non-degree students (IIE, 2016). Considering the high number of international students in the U.S., which continues to increase each year, we believe that it is important to study international student adjustment.

Oropeza, Fitzgibbon, and Baron (1991) stated that the adjustment process for international students acculturating with spouses and family can be more complicated than that of single students. In addition to psychological and sociocultural changes, married international graduate students (MIGSs) have unique challenges in terms of balancing work and family, due to the differential workloads of undergraduate and graduate students. More specifically, graduate students have additional work responsibilities. Depending on the appointment, many graduate students serve as research or teaching assistants (Poyrazlı & Kavanaugh, 2006). Because work responsibilities are an integral part of graduate studies and because of the difficulty of differentiating one's work and private life, MIGSs need to find a way to deal with work and family responsibilities simultaneously. Considering the influence of personality traits, gender roles, and social support on work-family issues (Grzywacz & Marks, 2000; Gudmunson, Danes, Werbel, & Loy, 2009; Wayne, Musisca, & Fleeson, 2004) and psychological well-being (Sandhu, 1995; Saunders & Kashubeck-West, 2006; Searle & Ward, 1990; September, McCarrey, Baranowsky, Parent, & Schindler, 2001; Ward, Leong, & Low, 2004), we expected that MIGSs' personality traits, gender roles, and social support will influence how they deal with work-family responsibilities, which in turn could influence their cross-cultural adjustment process.

## **LITERATURE REVIEW**

### **Psychosocial Adjustment**

Searle and Ward (1990) distinguish between psychological and sociocultural adjustment during the cross-cultural transition process. According to this perspective, cross-cultural adjustment consists of a psychological dimension related to stress and coping and a sociocultural dimension based on social learning. Psychological adjustment refers to an

emotional/affective component such as feelings of well-being and satisfaction, whereas sociocultural adjustment refers to a behavioral component such as the ability to fit in and negotiate interactive aspects of the new culture during cross-cultural adaptation. According to this approach, psychological adjustment is strongly influenced by personality, life changes, and social support and sociocultural adjustment is more dependent on cultural distance, length of stay in a new culture, and quantity of interactions with host nationals (Searle & Ward, 1990; Ward & Kennedy, 1993; 1994). Psychosocial adjustment in this study is measured by psychological well-being and sociocultural adaptation scores.

### **Work-Family Balance**

Married graduate students deal with academic demands and family responsibilities throughout their studies. Graduate school can be anxiety provoking due to the number and intensity of program demands. When one's job cannot be finished at the office and has to be taken home, which is common for graduate students, feelings of tiredness, stress, and burn out are experienced (Lippe, Jager, & Kops, 2006). From this perspective, juggling with school/work and family responsibilities comprise graduate students' multiple demands. Therefore, focusing on work-family balance is important. Work-family balance in this study refers to the extent to which an individual's effectiveness and satisfaction in work demands and family roles are compatible with the individual's life priorities (Greenhaus & Allen, 2011).

### **Personality Traits**

Personality traits refer to Big Five dimensions of personality, which represent consensus of a general taxonomy of personality attributes (John, Donahue, & Kentle, 1991). The Big Five dimensions are extraversion, agreeableness, conscientiousness, neuroticism, and openness.

Personality traits and psychosocial adjustment. Research on various student and adult samples has indicated positive relationships between extraversion, agreeableness, conscientiousness, openness and psychosocial adjustment; and a negative relationship between neuroticism and psychosocial adjustment (Gutierrez, Jimenez, Hernandez, & Puente, 2004; Ponterotto et al., 2007; Searle & Ward, 1990; Swagler & Jome, 2005; Ward, Leong, & Low, 2004). For example, studies conducted on Singaporean and Australian student and expatriate samples indicated positive relationships

between extraversion and psychological and sociocultural adaptation (Ward et al., 2004). Similar results were found on North Americans living in Taiwan (Swagler & Jome, 2005) and university students in the U.S. (Ponterotto et al., 2007). Researchers also found that higher levels of agreeableness were related to greater psychological adjustment (Swagler & Jome, 2005). In addition, Ward and colleagues (2004) found positive relationships between agreeableness and psychological well-being in the Australian and Singaporean samples and sociocultural adaptation in the Singaporean sample. Furthermore, similar positive relationships were found for conscientiousness and (a) psychological adjustment (Swagler & Jome, 2005), (b) psychological well-being, and (c) sociocultural adaptation (Ward et al., 2004) in different sojourning groups. In addition, a study investigating the relation of personality factors and acculturation in a sample of 125 North Americans sojourning in Taiwan found that greater psychological adjustment was related to lower levels of neuroticism (Swagler & Jome, 2005). Research on international students also supports the positive relationship between openness and cross-cultural adjustment (Ponterotto et al., 2007).

### ***Personality Traits and Work-Family Balance***

Individuals with certain personality traits may be more effective in integrating work and family demands. Michel and Clark (2009) found that positive affect was significantly related to work-family enrichment and negative affect was related to work-family conflict. Wayne and colleagues (2004) used a national, random sample of 2130 individuals to investigate the association between Big Five personality traits and facilitation and conflict between work and family roles. The results indicated a relationship between: (a) extraversion and greater work-family facilitation; (b) neuroticism and greater conflict; and (c) conscientiousness and less conflict. Furthermore, a study on 267 employed parents working full time in organizations in five major cities in India found that optimism was related to job satisfaction and organizational commitment, whereas neuroticism was related to organizational support (Aryee, Srinivas, & Tan, 2005). The same study also supported the positive association between neuroticism and work-family conflict.

## **Gender Roles**

Gender is a socially constructed concept that prescribes roles for socially appropriate male and female behavior. However, there is a great degree of variability and individuals do not necessarily take on the prescribed role for their biological sex (September et al., 2001).

### ***Gender Roles and Psychosocial Adjustment***

Studies indicate the direct and indirect effects of gender roles on psychosocial adjustment (Kreiger & Dumka, 2006; September et al., 2001). For example, September and colleagues (2001) studied the relationship between psychological well-being and endorsement of stereotypic gender roles in a sample of 379 Canadian university students. They found that instrumental (masculine) scores had a stronger relationship with overall well-being than expressive (feminine) scores. Similarly, research on the connection between gender roles and psychological well-being suggest that masculinity is positively associated with adjustment; however, femininity compared to masculinity has not been consistently related to psychological well-being (Kreiger & Dumka, 2006).

### ***Gender Roles and Work-Family Balance***

Zimmerman and colleagues (2003) shared that the social context treated work-family balance as largely a “women’s issue” (p. 120). While graduate studies are often difficult for both men and women, women are likely to be more stressed than men because of factors such as increased role strain, gender role socialization, and gender-based discrimination (Mallinckrodt & Leong, 1992). In many relationships women, unlike men, are expected to accommodate the new role of graduate student or working spouse without a major decrease of their spousal or parental responsibilities (Mallinckrodt & Leong, 1992). On the other hand, some researchers who compared work-family conflict among men and women found more similarities than differences (Frone, 2003). Findings of a study on 149 Dutch dual earner couples with young children showed that the endorsement of traits traditionally associated with the opposite sex, that is masculine traits for women and feminine traits for men, appeared to be beneficial in balancing work and family life (Wierda-Boer, Gerris, & Vermulst, 2008).

## **Social Support**

Social support, in this study, refers to the social support one receives from family, friends, and his or her significant other during the psychosocial adjustment process.

### ***Social Support and Psychosocial Adjustment***

Social support buffers the psychological influences of stress during the adjustment process (Searle & Ward, 1990). For example, Crockett and colleagues (2007), in a study on Latino college students, found that parental support and active coping buffered the effects of high acculturative stress on participants' anxiety and depressive symptoms. Peer support was also found to moderate the relation between acculturative stress and anxiety symptoms in the study. The results indicated that getting support from family and friends helped reduce one's stress level and therefore, had a positive influence in the acculturation process (Crockett et al., 2007). Researchers have also found a positive relationship between social support and psychological well-being for international students (Sandhu, 1995). For instance, social support explained international student acculturative stress (Poyrazlı et al., 2004) during adjustment to the U.S.

### ***Social Support and Work-Family Balance***

Having social support could help one feel that there are people whom one can rely on. A study, using a sample of Australian families with at least one child aged five or under, revealed that mothers who reported having an unmet need for support reported higher levels of work-to-family strain (Baxter & Alexander, 2008). A study on 109 family business owners and their spouses indicated the influence of emotional support on business owners' perceived work-family balance while launching a family business (Gudmunson, Danes, Werbel, & Loy, 2009). Another study emphasizing the positive relationships between social support and work-family balance was conducted with employed parents (226 fathers and 264 mothers) in Canada (Lee & Duxbury, 1998). Results of semi-structured interviews pointed out that participants who received tangible and emotional support from their partners were better able to balance the dual responsibilities of work and family. Participants also highlighted the importance of friends providing emotional and practical support in balancing work and family demands.

## **The Present Study**

Cross-cultural adaptation for international students involves adjusting to a new country, new university, new people, new program, and new work responsibilities and demands. The adjustment process is further complicated for MIGSs, because they need to deal with both academic and immediate family issues. Work-family balance appears to be important because of relating to two important domains in an individual's life, that is, how to keep work and family functioning go smoothly. Researchers have emphasized the relation of work-family balance to well-being (Bourne, Wilson, Lester, & Kickul, 2009; Gröpel & Kuhl, 2009; Marks & MacDermid, 1996) and demonstrated that the absence of work-family balance may harm well-being (Frone, 2000; Grzywacz & Bass, 2003). Therefore, in the presented study we test a model that is based on the international student adjustment literature and Searle and Ward's (1990) perspective on psychosocial adjustment.

## **Hypotheses**

The overarching hypothesis is: Work-family balance will mediate the relationship between personality traits, gender roles, social support, and psychosocial adjustment. Specific hypotheses are as follows:

- H1: Work-family balance will mediate the relationship between personality traits and psychosocial adjustment.
- H2: Work-family balance will mediate the relationship between gender roles and psychosocial adjustment.
- H3: Work-family balance will mediate the relationship between social support and psychosocial adjustment.

## **RESEARCH METHOD**

### **Respondents**

Respondents were 243 MIGSs attending several universities in the U.S., who voluntarily participated in the study (Table 1). Among the respondents who reported their gender, 131 (53.9%) were men and 110 (45.3%) were women. Respondent age ranged from 21 to 47, with an average of 29.43 (SD = 4.25). The average length of time in the U.S. was 44.31 months (SD = 35.18; Range = 3-240 months). Most of the

respondents came to the U.S. for education purposes ( $n = 226$ ; 93.0%), followed by those who came to accompany their spouses ( $n = 11$ ; 4.5%) or who came for work purposes ( $n = 6$ ; 2.5%). One hundred and seventy-four (71.6%) were doctoral students, 63 (25.9%) were master's students, and six (2.4%) were postdoctoral students or students in training for a graduate certificate.

Respondents were from 48 different countries and identified their nationalities as Chinese ( $n = 46$ ; 18.9%), Indian ( $n = 43$ ; 17.7%), Turkish ( $n = 24$ ; 9.9%), Korean ( $n = 13$ ; 5.3%), Canadian ( $n = 8$ ; 3.3%), Colombian ( $n = 8$ ; 3.3%), Chilean ( $n = 6$ ; 2.5%), Pakistani ( $n = 6$ ; 2.5%), Polish ( $n = 6$ ; 2.5%), Brazilian ( $n = 5$ ; 2.1%), and Taiwanese ( $n = 5$ ; 2.1%). One hundred and forty-six (60.1%) were not working in addition to their graduate studies, whereas 97 (39.9%) held positions such as graduate assistantships, projects managers, food service positions, et cetera. Most of the respondents ( $n = 206$ ; 84.8%) were married to internationals and did not have children ( $n = 174$ ; 71.6%).

*Table 1.* Respondents' Demographic Characteristics (N = 243)

Variables	<i>n</i>	%
Gender		
Women	110	45.3
Men	131	53.9
Program Level		
Master's	63	25.9
Doctoral	174	71.6
Postdoctoral or Certificate	6	2.4
Spouse Nationality		
International	206	84.8
U.S. Citizen	29	11.9
Living Arrangement		
With Spouse	185	76.1
Without Spouse	56	23.0
Parental Status		
Have Children	69	28.4
No Children	174	71.6
Work Condition		
Working	97	39.9
Not Working	146	60.1

## **Measures**

### ***Demographic Information***

Questions about respondent age, gender, program level, field of study, nationality, spouse nationality, and length of residence in the U.S. were collected.

### ***Psychological Adjustment***

Psychological adjustment was measured with the 54-item Scales of Psychological Well-Being (SPWB; Ryff, 1989). The measure has six dimensions, which are autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Participants respond using a 6-point Likert scale. Twenty-eight items are reverse coded. Higher scores indicate higher levels of each dimension.

Confirmatory factor analytic study supported the six-factor model of the scale (Ryff & Keyes, 1995). The dimension scores correlated positively with measures of positive functioning such as self-esteem, life satisfaction and negatively with measures of depression and external control indicating adequate convergent and discriminant validity (Ryff, 1989). The internal consistency coefficients for the subscale scores ranged from .86 to .93. Test-retest reliability over a 6-week period ranged from .81 to .88. The internal consistency coefficient for the total scale was .94 for the current study.

### ***Sociocultural Adjustment***

Sociocultural adjustment was measured with the 29-item Sociocultural Adaptation Scale (SCAS; Ward & Kennedy, 1999). Respondents rate items on a 5-point Likert scale. Higher scores indicate self-ratings of more difficulty experienced during the sociocultural adaptation process. All the items were reverse coded before data analysis so that higher scores would indicate better sociocultural adjustment.

Scale development has been conducted with sojourning samples from New Zealand and Singapore, using cross-sectional and longitudinal designs (Ward & Kennedy, 1999). Construct validity was indicated by significant correlations between the scale and measures of psychological adjustment (Ward & Kennedy, 1999). From multiple sojourning samples, the internal consistency of the scores ranged from .75 to .91 ( $M = .85$ ). The internal consistency coefficient for the scores was .93 for the current study.

### ***Work-Family Balance***

Work-family was measured with the 5-item Work-Family Balance Scale (WFBS; Hill et al., 2001). The items on the WFBS are rated on a 5-point Likert scale. The scale has one item that is reverse scored. Higher scores indicate higher work-family balance.

Normative data for the WFBS were gathered from a large-scale study on work-life issues of 6,451 International Business Machines (IBM) employees in the U.S. Internal consistency of the scale was reported as .83 (Hill et al., 2001). The internal consistency coefficient of the scale was .80 for the current study.

### ***Personality Traits***

Personality traits were measured with the 44-item Big Five Inventory (BFI; John et al., 1991). The BFI measures five dimensions, which are extraversion, agreeableness, conscientiousness, neuroticism, and openness. Items are rated on a 5-point Likert scale. Sixteen items are reverse coded. Higher scores indicate higher ratings of the dimensions.

Confirmatory factor analysis (CFA) with varimax rotation provided support for the five-factor model (John, Naumann, & Soto, 2008). In addition, reliability of the BFI scores ranged from .75 to .90 with an average above .80 in U.S. and Canadian samples (John & Srivastava, 1999). Three-month test-retest reliability scores ranged from .80 to .90 with a mean of .85. The internal consistency for the current study was .80 for extraversion, .74 for agreeableness, .76 for conscientiousness, .80 for neuroticism, and .77 for openness scores.

### ***Gender Roles***

The feminine and masculine subscales (20 items each) of the Bem Sex Role Inventory (BSRI; Bem, 1974) were used to measure gender roles. Items are rated on a 7-point Likert scale. Higher scores indicate higher femininity and masculinity.

The normative sample for the BSRI consisted of 444 male and 279 female university students in an introductory psychology course, and 117 male and 77 female students at a junior college. The internal consistency of the scale was calculated as Femininity  $r = .80$ , Masculinity  $r = .86$ , Neutral  $r = .75$  in the university sample and .82, .86, and .70 respectively for the three subscale scores in the junior college sample (Bem, 1974). A four-week test-retest yield reliability of scores as: Femininity  $r = .90$ , Masculinity  $r = .90$ ,

and Neutral  $r = .93$ . The internal consistency for the current study was .83 for the femininity and .89 for the masculinity subscale.

### ***Social Support***

Social support was measured with the 12-item Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) consisting of family, friends, and significant other subscales. The items are rated on a 7-point Likert scale. Higher ratings indicate higher social support on each subscale.

Construct validity for the scores was demonstrated with correlations between the MSPSS subscale scores and the Depression and Anxiety subscale scores of the Hopkins Symptom Checklist, which showed significant negative correlations. Moreover, CFA extracted the three expected factors for MSPSS family, friends, and significant other support (Zimet et al., 1988). Internal consistency was .88 for the total scale and .87, and .85, and .91 for the family, friends, and significant other subscale scores respectively. Test-retest reliability over two to three months period was .85 for the total scale, with .85, .75, and .72 for the family, friends, and significant other subscale scores respectively. The internal consistency coefficient for the current study was .93 for the total scale and .89 for family, .91 for friends, and .91 for significant other subscales.

### **Research Design**

This is a quantitative study using correlational design. Specifically, we used Structural Equation Modeling (SEM) to test our hypotheses. Personality traits, gender roles and social support were the independent variables; work-family balance was the mediator variable; and psychological well-being and sociocultural adaptation were the outcome variables of the study.

### **Procedure**

After receiving approval from Purdue University's Institutional Review Board for this exempt research, respondents were recruited through the Office of Registrar at Purdue University and International Student Organization Offices such as African Students Association, Indian Student Association, Korean Student Association of several U.S. universities. Data were collected by online surveys administered in English. Convenience and snowball sampling techniques were used to collect the data. Specifically, an

email including a brief description of the study and the link to the survey was sent to the international student organization offices asking them to forward the email to the students on their list serves. As the respondents clicked on the link to the survey, they reached a page explaining the aim of the study and asking for their voluntary participation. If they decided to respond to the survey, they were asked to check a box stating that they were informed of the study and had given their consent to participate in it. A reminder email was sent one week later. Participants could enter to a drawing to receive one of the two \$50.00 Amazon.com gift certificates, with odds of winning being not less than 1:150. Those participants who wish to be entered into the drawing provided their email address in a separate web page that could not be connected to their responses.

## **RESULTS**

### **Preliminary Analyses**

Assumptions of independence, normality, and heteroscedasticity were met. More specifically, skewness and kurtosis coefficients were less than +/- 2.00, indicating the data were normally distributed. In addition, there no cases exceeding the critical value point for Mahalanobis distance statistic with  $p < .001$ , which indicated no multivariate outliers in the data. Furthermore, the P-P Plots indicated that residuals were normally distributed. Cronbach's alpha coefficients of the total and subscale scores ranged from .74 to .94, as shown in Table 2.

Next, zero-order correlation coefficients for the study variables were computed (Table 3). None of the relationships exceeded .80; which indicated no multicollinearity problems. Furthermore, variable inflation factors were below 2.0 and tolerance values were above .50, which also implied no multicollinearity problems in the data. There were significant positive correlations between work-family balance and psychological adjustment ( $r = .37$ ;  $p < .001$ ) and work-family balance and sociocultural adjustment ( $r = .23$ ;  $p < .001$ ) scores, meaning that as MIGSs' work-family balance increased so did their psychological and sociocultural adjustment.

*Table 2. Descriptive Statistics and Internal Consistency Coefficients*

Variable	M	SD	Range		$\alpha$
			Possible	Actual	
SPWB	238.63	33.80	54-324	153-306	.94
SCAS	117.59	16.84	29-145	58-145	.93
WFBS	15.65	3.47	5-25	5-25	.80
BFI	149.71	13.75	44-220	117-192	.79
BFI-Ext	25.65	5.25	8-40	11-40	.80
BFI-Agr	33.63	4.83	9-45	21-45	.74
BFI-Con	31.90	5.20	9-45	18-45	.76
BFI-Neu	22.65	5.52	8-40	10-37	.80
BFI-Ope	35.88	5.52	10-50	18-49	.77
BSRI	196.13	22.01	40-280	136-252	.86
BSRI-Fem	97.43	13.34	20-140	61-131	.83
BSRI-Mas	98.70	15.63	20-140	52-140	.89
MSPSS	70.45	11.45	12-84	39-84	.93
MSPSS-Fam	23.80	4.29	4-28	10-28	.89
MSPSS-Fri	22.48	4.46	4-28	4-28	.91
MSPSS-SO	24.17	4.68	4-28	8-28	.91

*Note:* SPWB: Scales of Psychological Well-Being, SCAS: Sociocultural Adaptation Scale, WFBS: Work-Family Balance Scale, BFI: Big Five Inventory, BFI-Ext: BFI Extraversion, BFI-Agr: BFI Agreeableness, BFI-Con: BFI Conscientiousness, BFI-Neu: BFI Neuroticism, BFI-Ope: BFI Openness, BSRI: Bem Sex Role Inventory, BSRI-Fem: BSRI Femininity, BSRI-Mas: BSRI Masculinity, MSPSS: Multidimensional Scale of Perceived Social Support, MSPSS-Fam: MSPSS Family, MSPSS-Fri: MSPSS Friends, MSPSS-SO: MSPSS Significant Other.

In addition, there were positive relationships between extraversion ( $r = .41$ ,  $p < .001$ ;  $r = .34$ ;  $p < .001$ ), agreeableness ( $r = .53$ ,  $p < .001$ ;  $r = .30$ ;  $p < .001$ ), conscientiousness ( $r = .56$ ,  $p < .001$ ;  $r = .29$ ;  $p < .001$ ), and openness ( $r = .49$ ,  $p < .001$ ;  $r = .29$ ;  $p < .001$ ) scores and psychological and sociocultural adjustment respectively, which meant that the more MIGSs were extraverted, agreeable, conscientious and open, the easier they adjusted psychologically and socio-culturally to life in the U.S. Moreover, there were negative relationships between neuroticism ( $r = -.53$ ,  $p < .001$ ;  $r = -.25$ ;  $p < .001$ ) scores and psychological and sociocultural adjustment respectively, which indicated that as MIGSs' neurotic tendencies increased, their psychological and sociocultural adjustment to the U.S. became more difficult. Furthermore, work-family balance was positively related to extraversion ( $r = .17$ ,  $p < .01$ ), agreeableness ( $r = .24$ ,  $p < .001$ ), and

conscientiousness ( $r = .21, p < .01$ ) indicating that as MIGSs were more extraverted, agreeable, and conscientious the easier it was for them to maintain work-family balance. On the other hand, neuroticism was negatively related to work-family balance ( $r = -.34, p < .001$ ). In other words, as MIGSs' neurotic tendencies increased, it was more difficult for these students to maintain work-family balance in their life.

Table 3: Zero-Order Correlations among Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. SPWB	1.00	.48	.37	.54	.41	.53	.56	-.53	.49	.54	.32	.49	.53	.44	.46	.45
2. SCAS		1.00	.23	.36	.34	.30	.29	-.25	.29	.36	.23	.31	.35	.24	.36	.30
3. WFBS			1.00	.12	.17	.24	.21	-.34	.09	.26	.21	.18	.23	.17	.23	.20
4. BFI				1.00	.69	.55	.64	-.02	.77	.61	.42	.49	.39	.32	.37	.30
5. BFI-Ext					1.00	.16	.30	-.20	.53	.44	.20	.45	.31	.24	.32	.24
6. BFI-Agr						1.00	.42	-.35	.31	.41	.50	.14	.39	.38	.32	.31
7. BFI-Con							1.00	-.36	.35	.43	.22	.43	.28	.27	.18	.25
8. BFI-Neu								1.00	-.20	-.29	-.09	-.32	-.16	-.17	-.09	-.16
9. BFI-Opel									1.00	.61	.31	.60	.23	.17	.25	.17
10. BSRI										1.00	.71	.80	.40	.33	.38	.33
11. BSRI-Fem											1.00	.15	.43	.38	.36	.35
12. BSRI-Mas												1.00	.20	.13	.23	.17
13. MSPSS													1.00	.88	.81	.87
14. MSPSS-Fam														1.00	.70	.52
15. MSPSS-Fri															1.00	.56
16. MSPSS-SO																1.00

Moreover, there were significant positive relationships between gender roles and psychological adjustment ( $r = .54; p < .001$ ), sociocultural adjustment ( $r = .36; p < .001$ ), and work-family balance ( $r = .26; p < .001$ ). Particularly, there were significant positive correlations between femininity and psychological adjustment ( $r = .32, p < .001$ ), femininity and sociocultural adjustment ( $r = .23; p < .001$ ), and femininity and work-family balance ( $r = .21; p < .001$ ) scores. Similarly, there were significant positive correlations between masculinity and psychological adjustment ( $r = .49, p < .001$ ), masculinity and sociocultural adjustment ( $r = .31; p < .001$ ), and masculinity and work-family balance ( $r = .18; p < .01$ ) scores. In other words, as MIGSs displayed more feminine and masculine gender roles, the easier is was for them to adjust psychosocially to the U.S. and maintain work-family balance.

Next, significant positive relationships were also found between social support and psychological adjustment ( $r = .53; p < .001$ ), between

social support and sociocultural adjustment ( $r = .35$ ;  $p < .001$ ), and between social support and work-family balance ( $r = .23$ ;  $p < .01$ ) scores. Specifically, there were significant positive relationships between family social support and psychological adjustment, sociocultural adjustment, and work-family balance ( $r = .44$ ,  $p < .001$ ;  $r = .24$ ;  $p < .001$ ;  $r = .17$ ;  $p < .01$ ) scores respectively. In addition, there were significant positive links between friend social support and psychological adjustment, sociocultural adjustment, and work-family balance ( $r = .46$ ,  $p < .001$ ;  $r = .36$ ;  $p < .001$ ;  $r = .23$ ;  $p < .001$ ) scores respectively. Moreover, there were significant positive associations between significant other social support and psychological adjustment, sociocultural adjustment, and work-family balance ( $r = .45$ ,  $p < .001$ ;  $r = .30$ ;  $p < .001$ ;  $r = .20$ ;  $p < .01$ ) scores respectively. In other words, the more support MIGSs had from their family, friends, and significant other, the easier it was for them to psychologically and socio-culturally adjust to the U.S. and form work-family balance in their life.

Finally, a five one-way Multivariate Analysis of Variances (MANOVA) was conducted to examine whether significant mean differences existed between the groups using gender (i.e., women vs. men), spouse nationality (i.e., international vs. U.S. citizen), living arrangements (i.e., with or without spouse), parental status (i.e., having or not having children), and work condition (i.e., working or not working) as independent variables and psychological adjustment and sociocultural adjustment as dependent variables. Results indicated that there were no significant mean differences between the groups based on gender, spouse nationality, living arrangements, parental status, and work condition. In addition, the effect sizes were low (i.e., below .20; Meltzoff, 1998). Therefore, we did not control for any of the demographic variables in further analyses.

### **Analyses of Hypotheses**

We used structural equation modeling (SEM) to analyze the hypotheses (Byrne, 2010; Kline, 2010). The use of SEM is suggested for hypotheses predicting relationships among multiple independent and dependent variables (Kline, 2010). We proposed the following hypothesized model (Figure 1).

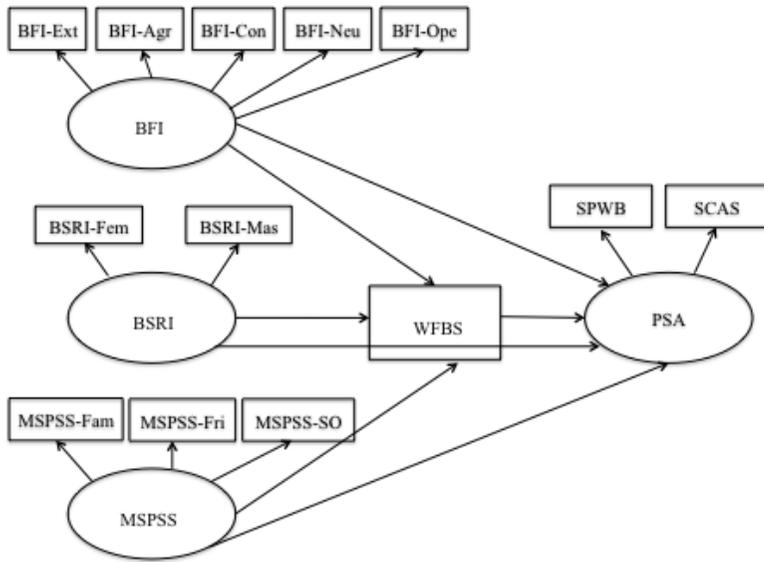


Figure 1. The Hypothesized Model. Note. BFI: Big Five Inventory, BFI-Ext: BFI Extraversion, BFI-Agr: BFI Agreeableness, BFI-Con: BFI Conscientiousness, BFI-Neu: BFI Neuroticism, BFI-Ope: BFI Openness, BSRI: Bem Sex Role Inventory, BSRI-Fem: BSRI Femininity, BSRI-Mas: BSRI Masculinity, MSPSS: Multidimensional Scale of Perceived Social Support, MSPSS-Fam: MSPSS Family, MSPSS-Fri: MSPSS Friends, MSPSS-SO: MSPSS Significant Other, WFBS: Work-Family Balance Scale, SPWB: Scales of Psychological Well-Being, SCAS: Sociocultural Adaptation Scale.

### Identifying the Model

In order to test the hypothesized model, we first modified it based on the preliminary analysis outcome. Afterwards, we tested the measurement model and the structural model respectively.

### Revising the Model

In revising the originally proposed model, we deleted one of the observed variables (i.e., openness) due to it not being significantly linked to work-family balance, which is the hypothesized mediator. Next, we created five parcels for work-family balance by placing each item into a parcel (Little, Cunningham, Shahar, & Widaman, 2002), because parceling is

suggested for unidimensional structures. As a result, the revised model consisted of five latent variables and 16 observed variables. We let the independent variables (i.e., personality traits, gender roles, and social support) covary.

Kline (2010) reports 200 cases to be a “typical” (p. 12) sample size for SEM. According to MacCallum and colleagues (1996), a sample size of 132 provides the minimum N required to achieve power of .80 for the RMSEA tests of close fit ( $RMSEA < .05$ ) and 178 for not-close fit ( $RMSEA > .10$ ) for a model with 100 degrees of freedom. Therefore, the current sample of 243 participants provided sufficient power for the analysis.

### ***Testing the Measurement Model***

We tested the measurement model by conducting a confirmatory factor analysis using Maximum likelihood estimation. The goodness of fit statistic values were:  $\chi^2$  (94,  $N = 243$ ) = 276.8,  $p < .001$ ; CFI = .87; IFI = .87; and RMSEA = .09 (90% confidence interval [CI] = .08, .10). The results indicated that the model was a mediocre fit to the sample data. We examined the standardized regression weights and modification indices for possible adjustments to the measurement model (Byrne, 2010). We deleted observed variables with path coefficients from the latent variable that were below .40. Specifically, we deleted BSRI femininity as a latent gender role variable due to a path coefficient of .35.

After deletion of the observed femininity variable, the latent gender role variable had one observed variable, masculinity. Therefore, we created four parcels for BSRI masculinity using the item-to-construct balance method (Little et al., 2002). To do so, we conducted an exploratory factor analysis using Maximum likelihood extraction method and oblique rotation, and assigned items to parcels, which resulted in four 5-item BSRI masculinity parcels. The goodness of fit statistic values for the modified measurement model without BSRI femininity and with additional parcels for the latent BSRI masculinity variable were:  $\chi^2$  (125,  $N = 243$ ) = 290.7,  $p = .001$ ; CFI = .91; IFI = .91; and RMSEA = .07 (90% confidence interval [CI] = .06, .09). The results indicated that the modified measurement model was an adequate fit to the sample data. In other words, the modified model was improved significantly from the original measurement model,  $\Delta \chi^2$  (31,  $N = 243$ ) = 13.9,  $p = .001$ .

**Testing the Structural Model**

Following identification of the best model fit for the measurement model, we treated the hypothesized structural model (Figure 2).

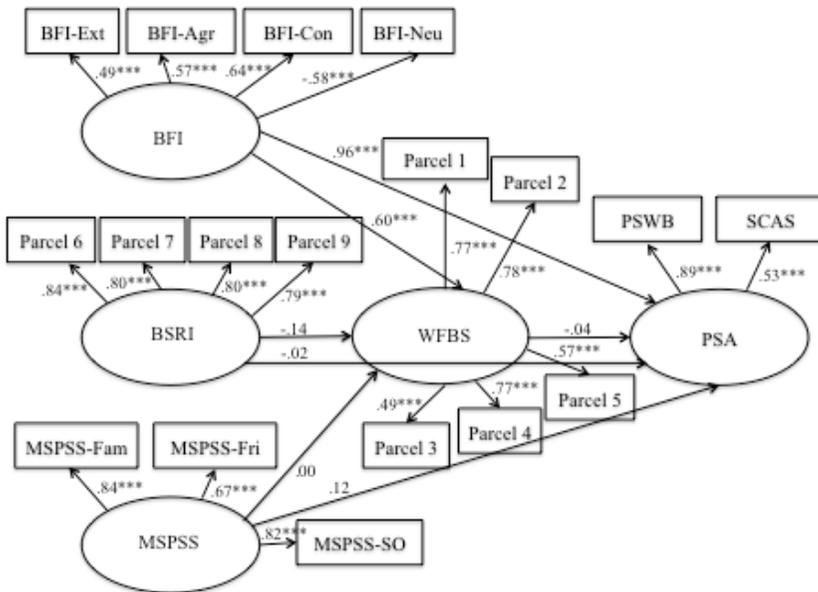


Figure 2. SEM Results for the Hypothesized Structural Model.

Figure 2 demonstrates the proposed mediating relationships between the latent constructs of personality traits, gender roles, social support, work-family balance, and psychosocial adjustment. The goodness of fit statistic values for the hypothesized structural model were:  $\chi^2$  (124, N = 243) = 285.1,  $p = .001$ ; CFI = .91; IFI = .91; and RMSEA = .07 (90% CI = .06, .08). The results indicated that the model was an adequate fit to the data.

*Table 4.* Goodness of Fit Indices for the Revised Hypothesized Structural Model

	$\chi^2$	df	CFI	IFI	RMSEA
Model	285.1	124	.913	.914	.073 (.062-.084)

In this revised proposed model, some of the pathways were significant and in expected directions. Specifically, the pathways from personality traits to work-family balance ( $r = .96$ ) and from personality traits to psychosocial adjustment ( $r = .60$ ) were significant. However, we detected several problems with this model. Contrary to our expectations, the pathways from gender roles to work-family balance and from gender roles to psychosocial adjustment were not significant. In addition, the pathways from social support to work-family balance and from social support to psychosocial adjustment were not significant. More importantly, the pathway from work-family balance to psychosocial adjustment was non-significant.

### **Evaluation of the Hypotheses**

#### ***H1***

The first hypothesis was that work-family balance would mediate the relationship between personality traits and psychosocial adjustment. As indicated in Figure 2, the relationship between BFI and WFBS was significant and the relationship between BFI and PSA was significant. However, the relationship between WFBS and PSA was non-significant. Therefore, H1 was partially supported.

#### ***H2***

The second hypothesis was that work-family balance would mediate the relationship between gender roles and psychosocial adjustment. However, work-family balance did not mediate the relationship between gender roles and psychosocial adjustment. Therefore, H2 was not supported.

#### ***H3***

The third hypothesis was that work-family balance would mediate the relationship between social support and psychosocial adjustment. Nonetheless, work-family balance did not mediate the relationship between

social support and psychosocial adjustment. Therefore, H3 was not supported.

### ***Main Hypothesis***

The main hypothesis was that work-family balance would mediate the relationship between personality traits, gender roles, social support, and psychosocial adjustment. Taking into account that H1 was partially supported and H2 and H3 were not supported, we concluded that the main hypothesis was not support.

## **DISCUSSION**

Based on the SEM results, we can infer that MIGS personality traits (specifically, extraversion, agreeableness, conscientiousness, and neuroticism) significantly influence psychological and sociocultural adaptation to the U.S. First, in terms of the supported hypothesis, that is, personality traits predicting psychosocial adjustment, the current study's findings were in line with previous research indicating positive associations between extraversion and psychological well-being (Ponterotto et al., 2007; Searle & Ward, 1990; Ward et al., 2004), sociocultural adaptation (Swagler & Jome, 2005; Ward et al., 2004), and subjective well-being (Gutierrez et al., 2004). In other words, being sociable, assertive, warm and enthusiastic (John & Srivastava, 1999) appears to contribute positively to one's psychological well-being and sociocultural adaptation to a new environment. Similarly, the results showed positive relationships between conscientiousness and psychological adjustment (Swagler & Jome, 2005), as well as conscientiousness and psychosocial adjustment as supported by previous studies (Chen & Piedmont, 1999; Ward et al., 2004). Being competent, dutiful, achievement striving, and self-disciplined (John & Srivastava, 1999) seems to be helpful personality traits to have during psychosocial adjustment. Moreover, results indicated that agreeableness also positively predicted psychological well-being and sociocultural adjustment during the cross-cultural adaptation process as supported by empirical research on different sojourner samples (Swagler & Jome, 2005; Ward et al., 2004). In other words, personality traits such as trustworthiness, straightforwardness, altruism, compliance, modesty, and tender-mindedness (John & Srivastava, 1999) appear to be helpful in MIGS psychosocial adjustment. On the other hand, neuroticism as a personality trait negatively predicted psychosocial adjustment to the U.S. This finding was also in line

with research showing positive relationships between neuroticism and greater psychological adjustment problems (Furukawa & Shibayama, 1993; Ward et al., 2004) indicated by depression and social difficulty in student and expatriate samples. Married international graduate students who display features of anxiety, hostility, depression, impulsiveness and vulnerability (Costa & McCrae, 1992) could be at higher risk for experiencing psychosocial problems during their adjustment to the U.S.

Second, in terms of personality traits predicting work-family balance, results showed that MIGSs who were more extraverted, agreeable, and conscientious were better in balancing work and family responsibilities; whereas those who had neurotic tendencies (e.g., depressed, anxious, hostile, vulnerable etc.) had more difficulty in balancing work and family life. The results are consistent with research findings indicating significant relationships between positive affect and work-family enrichment (Michel & Clark, 2009) and negative affect and work-family conflict (Carlson, 1999; Michel & Clark, 2009). Researchers also found that extraversion contributed to work-family facilitation (Wayne et al., 2004) and more positive spillover (Grzywacz & Marks, 2000), conscientiousness contributed to less work-family conflict (Wayne et al., 2004), and neuroticism contributed to more work-family conflict (Wayne et al., 2004) and more negative spillover between work and family (Grzywacz & Marks, 2000).

Contrary to our expectations, work-family balance did not mediate the relationship among personality traits, gender roles, social support, and psychosocial adjustment in the current study. However, previous studies supported a positive relationship between work-family balance and well-being (Bourne et al., 2009; Gröpel & Kuhl, 2009; Marks & MacDermid, 1996). Possible explanations to our findings may be that the work-family balance measure used in this study was not entirely suitable for the MIGS population. Hill and colleagues' (2001) work-family balance scale was originally developed with IBM employees. Therefore, the measure was not tested on a student population or a sojourning group. We chose the measure after discussions with prominent researchers in the field and to avoid using a one-item measure, which is the general trend in work-family balance studies (e.g., Wierda-Boer et al., 2008). Moreover, taking into consideration that work-family researchers actually examine conflict rather than balance, it could be that the influence of work-family conflict on psychosocial adjustment is more recognized than the influence of the lack of conflict and more of balance. In other words, measuring the conflict between work and

family spheres may have yielded different results, perhaps even in this study.

Another possible explanation for our main hypothesis not being confirmed might be our sample's characteristics. For example, some of the non-significant pathways in this study could be due to MIGS protective factors. If work-family balance is positively related to psychological well-being and sociocultural adaptation as indicated in the preliminary analyses but does not mediate the relationship between the predictors and psychosocial adjustment, then it could be that student coping mechanisms are influencing the relationships among these variables. In other words, the MIGS sample in our study could have some protective factors that prevent the influences of work-family issues to their psychological well-being and sociocultural adaptation. For instance, because graduate studies are time limited, MIGSs in our sample might be prioritizing graduate school during the time they are in school. Having discussions and understanding around graduate studies and how to balance work and family life during graduate school with their spouses could be protecting these issues from being a problem. Next, work-family balance can be more salient when children are involved. Because most of the respondents in this study did not have children, the results could have been different on a sample with at least one child. Furthermore, most of the respondents in our study did not work in addition to their graduate studies. Having a sample of people who had graduate school, work, and family responsibilities all together may have given different outcomes.

## **IMPLICATIONS**

Because personality traits were the only predictor that contributed to MIGS work-family balance and psychosocial adjustment, it seems important to think about how higher education personnel and mental health professionals could make use of this particular finding. First, university counseling centers could offer psycho-educational or support groups focusing on increasing the range and flexibility of social skills (i.e., extraversion); problem solving skills (i.e., agreeableness); goal orientation (i.e., conscientiousness); and managing stress or coping with anxiety and depression (i.e., neuroticism). These and similar groups could help MIGSs better deal with work and family demands, and help them better adjust to the U.S. by helping improve certain skill sets. For example, social skills training would help MIGSs learn

and practice how to be more comfortable in their interactions with others, which could ease the process of getting used to the U.S. culture and asking for help when they need it. Similarly, learning problem solving skills would help them find effective ways to deal with problems, learn to negotiate and agree on matters with others. Improving goal orientation skills would help MIGSs be more organized and dutiful, which would help them effectively balance work and family responsibilities. Lastly, learning to effectively deal with stress and anxiety could increase MIGS psychological well-being and help focus on work and family responsibilities more effectively. In psycho-educational groups, students would be able to share their experiences, learn from each other's experiences, and feel that they are not alone in the process; they could also learn and practice the aforementioned skills, which would increase psychosocial adjustment and work-family balance.

Second, mental health professionals working at university counseling centers could take into account the role of personality traits, while working with work-family issues or psychosocial adaptation difficulties. Assessing the client's personality traits could lead mental health professionals to consider how to make use of the strengths (e.g., extraversion) and ameliorate weaknesses (e.g., neuroticism) in order to enhance adjustment interventions. For example, if a client is extraverted, focusing on using strong interpersonal skills to make new friends in the U.S., getting connected with useful resources easily, and expressing needs directly could be some of the ways to help increase his/her psychosocial adjustment.

### **Limitations**

First, the data were collected by an online survey. We paid attention to ethical considerations such as anonymity and confidentiality. However, security limitations of online surveys apply to this study as well. Second, the study was correlational in nature. Therefore, no causal conclusions can be made. Next, the current study did not compare married and single students. Being able to compare students based on marital status would have given more information. Last, most of the respondents (60.1%) in our study indicated that they did not work in addition to their graduate studies. This point may have contributed to our main hypothesis not being confirmed.

## **Directions for Future Research**

This study contributes to the literature by focusing on the MIGS population and their unique needs. However, the current study did not compare married and single students. It would be important to conduct a quasi-experimental study investigating married and single international and domestic students' personality traits, gender roles, social support, work-family balance, and psychological well-being in order to observe the associations in these student groups. It would also be important to conduct a qualitative study and get more in-depth information regarding the influence of these factors on MIGS psychosocial adjustment to the U.S. Interviewing would give MIGSs more flexibility in their answers and share additional information, which would help understand their experiences more in-depth. Having a deeper understanding of MIGSs' experiences would help higher education personnel and mental health professionals in providing more effective treatment as well as preventative measures to possible challenges. Lastly, future studies could also focus on the influence of coping skills during international students' cross-cultural adaptation in order to better understand the possible protective factors involved.

## **CONCLUSION**

In this study, by focusing on MIGSs studying in the U.S., we tested a psychosocial adjustment model derived from Searle and Ward's (1990) psychosocial adaptation approach. The findings did not support the main hypothesis, which predicted that work-family balance would mediate the relationship between personality traits, gender roles, social support, and psychosocial adjustment. However, results indicated that having certain personality characteristics, such as extraversion, agreeableness, and conscientiousness, eases the psychosocial adjustment process. In addition, having personality traits such as neuroticism makes the process more difficult. Furthermore, having similar personality traits (i.e., extraversion, agreeableness, and conscientiousness) help balance one's academic and family life. Therefore, we suggest that future researchers consider personality traits in relation to both cross-cultural adaptation and work-family issues.

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**GÖKÇE BULGAN**, PhD, is an assistant professor of psychological counseling and guidance at MEF University in Istanbul, Turkey. Dr. Bulgan's research interests include well-being, couples and family relationships, and work-family issues. Email: bulgang@mef.edu.tr

**AYŞE ÇİFTÇİ**, PhD, is an associate professor of counseling psychology at Purdue University in Indiana, USA. Dr. Çiftçi's research interests include multicultural issues, cross cultural psychology, immigration (specifically Muslim immigrants), international students, and psychological well being. Email: ayse@purdue.edu

*Manuscript submitted: December 12, 2016*

*Manuscript revised: August 3, 2017*

*Accepted for publication: April 20, 2018*