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# International Faculty Perceptions of Departmental Climate and Workplace Satisfaction

Ketevan Mamiseishvili[1] · Donghun Lee[1]

**Abstract** For this study we used the 2011–2014 survey data collected by the Collaborative on Academic Careers in Higher Education (COACHE) at the Harvard Graduate School of Education to examine the degree of international faculty members' satisfaction with autonomy, interactions with colleagues, departmental climate, and recognition and the effect of these elements upon the overall workplace satisfaction of international faculty members relative to their U.S. citizen peers. This study helps identify factors that can enhance international faculty members' satisfaction in order to aid institutions in their efforts not only to recruit the best talent but also to support and retain such talent.

**Keywords** International faculty · U.S. higher education · Workplace satisfaction

At the close of the last century, Manrique and Manrique (1999) noted that foreign-born academics were becoming "highly visible symbols of the changing face of the population in higher education" (p. 103) in the United States. Without question the global competition for talent has intensified since then, and U.S. higher education institutions have made great strides in attracting the world's top talent. Although the variability in the definitions and immigration

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status of international academics makes it challenging to provide the exact number of foreign-born faculty members teaching and conducting research in U.S. postsecondary institutions, all data accounts have pointed to a steady growth in this segment of the professoriate. According to the most recent data from the Institute of International Education, in the 2015–2016 academic year there were 134,014 international scholars on non-immigrant temporary visas at U.S. college and university campuses, which marked a 7.3% increase from the previous year (Institute of International Education, 2016a). The majority of these international scholars were in Science, Technology, Engineering, and Math (STEM) disciplines (76%) with China, India, and South Korea being the leading places of origin (Institute of International Education, 2016a, b).

The National Center for Education Statistics (2014) reported that U.S. postsecondary institutions employed 38,407 full-time international faculty members classified as non-resident aliens or non-immigrant visa holders in 2013, which again constitutes a substantial increase from the reported 31,197 individuals in 2009. The impact of a foreign-born workforce has been especially noteworthy in science and engineering fields. In 2013, 17.9% (almost 5.2 million) of all scientists and engineers in the U.S. were foreign-born, compared to 15.6% (about 3.4 million) in 2003 (Lan, Hale, & Rivers, 2015). Seventeen percent of these immigrant scientists and engineers were employed at 4-year colleges and universities or other educational institutions (Lan et al., 2015), which is a testament to their growing impact on U.S. higher education.

An increase in foreign-born faculty members has been apparent at all faculty ranks, but especially among early-career academics. Kim, Twombly, and Wolf-Wendel (2012) estimated that in 2009, among the 11,599 new tenure-track faculty hires, 11.5% were non-resident aliens, compared with only 10.5% Asian Americans, .5% African Americans, and .4% Hispanics. Foreign-born individuals also make up the majority of postdoctoral fellows (Cantwell, 2012), which may be an indication that the number of foreign-born academics will continue to grow. This group is also disproportionately represented at research universities; and, thus, these faculty members make important contributions to the creation of new knowledge and the training of future generations of scholars in U.S. doctoral programs (Mamiseishvili, 2013).

Given the increased presence and impact of foreign-born academics, it is important to understand their perceptions and experiences in U.S. higher education institutions. Colleges and universities are making significant investments in recruiting and hiring international faculty members, and failure in retaining them may result in substantial financial and educational losses for these institutions (Kim et al., 2012; Lawrence, Celis, Kim, Lipson, & Tong, 2014). Faculty turnover not only disrupts the teaching and research missions of institutions but also leaves institutions with additional expenses for new searches, mentoring programs, and start-up costs. In science and engineering fields, where the majority of international faculty members are employed, it may take an institution up to 10 years to recover these costs (Callister, 2006).

Kim et al. (2012) noted that international faculty members tend to be unclear about their departure intentions, which puts them at a higher risk of leaving institutions than their U.S.-citizen peers. Therefore, it is critical to identify factors that can lead to international faculty members' satisfaction in order to aid institutions in their efforts not only to recruit the best talent but also to support and retain them. Our study addressed these issues by examining the differences in the satisfaction of international and U.S. citizen faculty members with autonomy, amount of interactions with colleagues, departmental climate, and recognition and the effect of

these factors on their overall workplace satisfaction. The following research questions guided our investigation:

- What differences existed in international and U.S. citizen faculty members' satisfaction with autonomy, amount of interactions with colleagues, departmental climate, recognition, and overall workplace?
- How did international and U.S. citizen faculty members' satisfaction with autonomy, amount of interactions with colleagues, departmental climate, and recognition affect their overall satisfaction?
- Did the relationship between overall satisfaction and satisfaction with autonomy, amount of interactions with colleagues, departmental climate, and recognition differ by the citizenship status of faculty?

## Background and Literature Review

Scholarly interest in the work experiences of international faculty members in U.S. higher education institutions has been on the rise, but research still remains limited. A majority of the studies on foreign-born academics has examined their productivity and contributions to the teaching, research, and service functions of U.S. colleges and universities. It is well established that foreign-born faculty members are more likely to be employed at research universities, spend more time on research, and are more productive in their scholarly pursuits than their U.S. native-born peers (Corley & Sabharwal, 2007; Kim et al., 2012; Kim, Wolf-Wendel, & Twombly, 2011; Mamiseishvili, 2010, 2013; Mamiseishvili & Rosser, 2010; Marvasti, 2005; Webber, 2012; Webber & Yang, 2014). Kim et al. (2011) further concluded that these differences were even more pronounced when comparing productivity levels of U.S. born academics with foreign-born faculty members who had received their undergraduate degrees from foreign institutions.

Thus, findings from the existing research overwhelmingly support the notion that foreign-born faculty members, especially in STEM areas, make significant contributions to the research functions of U.S. universities; however, the evidence is mixed for their teaching and advising roles. Some studies documented the pedagogical advantages that international faculty members bring to U.S. classrooms by incorporating diverse perspectives and integrating international content in their courses (Skachkova, 2007). At the same time, research has also revealed that international academics face challenges interacting with students and colleagues and establishing their credibility as effective teachers (Manrique & Manrique, 1999; Marvasti, 2005; Skachkova, 2007; Thomas & Johnson, 2004). Foreign-born faculty members also tend to be less involved in teaching, generating fewer credit hours and teaching fewer numbers of students than their U.S. born peers (Mamiseishvili, 2013; Webber & Yang, 2014).

In addition to productivity studies, scholars have also taken an interest in international faculty members' experiences at U.S. institutions and their attitudes towards different aspects of their work. Based on the in-depth interviews of 20 international faculty members at a single doctoral-intensive university in a rural Southwest region of the U.S., Munene (2014) found that they experienced isolation and "outsider feelings" (p. 457) in their local communities and academic departments. Similar sentiments were expressed in earlier qualitative studies that

reported exclusion of foreign-born academics from professional peer networks (Skachkova, 2007) and the U.S. faculty "ingroup" (Seagren & Wang, 1994, p. 17), experiences of prejudice and discrimination (Manrique & Manrique, 1999), and feelings of "being on the margins" (Thomas & Johnson, 2004, p. 57).

Prior research has also revealed the differences in job satisfaction between international and citizen faculty members. Data from the 1999 and 2004 administrations of the National Study of Postsecondary Faculty survey revealed that international faculty members were dissatisfied with their autonomy (Wells, Seifert, Park, Reed, & Umbach, 2007) and authority to make curricular decisions (Mamiseishvili, 2011). Using more recent COACHE data from 2005 to 2008, Kim et al. (2012) reported that pre-tenure international academics were less satisfied with their interactions with colleagues than were U.S. citizen faculty members. Using yet another data source from the 2003 Survey of Doctorate Recipients, Sabharwal (2011a, 2011b) further concluded that foreign-born academic scientists and engineers experienced lower satisfaction levels than did their native-born colleagues on all aspects of their job, including job security, advancement opportunities, degrees of independence, and salary and benefits.

From all accounts international faculty members are making significant contributions to U.S. higher education institutions, especially in areas of research; but at the same time they experience low satisfaction levels and challenges with inclusion in the workplace. Acker and Feuerverger's (1996) phrase "doing good and feeling bad" (p. 401), which they used to describe the work of female academics, may also characterize the experiences of foreign-born faculty in U.S. academia. Considering the impact of job satisfaction and morale on faculty performance and retention (Johnsrud & Rosser, 2002; Mamiseishvili & Rosser, 2010; Rosser, 2005), foreign-born faculty members' attitudes toward different aspects of their work and the workplace are worth further exploration. It is important to develop a more in-depth understanding of international faculty members' perceptions of their work environments and to shed light on the potential "push" and "pull" factors that may be at play for this segment of the professoriate.

## Conceptual Framework

We draw on Hagedorn's (2000) conceptual model of faculty job satisfaction to examine the differences in satisfaction of international and U.S. citizen faculty members with different aspects of their work. In Hagedorn's (2000) model there were two types of constructs (i.e., triggers and mediators) that affected overall faculty satisfaction. She defined triggers as changes in life or work circumstances, such as transfers to new institutions, advancements in rank, or significant life events. For international faculty members, the decision to work in an academic institution in a foreign country can by itself be considered a trigger that can lead to movement on the job satisfaction continuum. Over time this trigger may decrease in importance, but it is a significant life event that undoubtedly has an impact on an international faculty member's job outlook.

Mediators in the model represented three types of variables that shaped faculty workplace context, including motivators and hygienes, demographics, and environmental conditions. Motivators and hygienes were based on Herzberg, Mausner, and Snyderman's (1993) "two-factor" theory of job satisfaction that suggested that intrinsic factors or motivators, such as the nature of the work, recognition, responsibilities, and advancement opportunities led to

satisfaction. On the other hand, extrinsic factors or hygienes, such as salary or job security, though they did not result in increased satisfaction, still alleviated job dissatisfaction. Furthermore, Hagedorn's (2000) model included environmental conditions that were considered the most "transitory and subject to change" (p. 9) and incorporated such variables as workplace climate or quality of relationships with administration, peers, and students.

It is important to note that Hagedorn's (2000) conceptual model of faculty job satisfaction and Herzberg et al.'s (1993) two-factor theory were developed in the U.S. academic context, which may limit its applicability to the international faculty sample in this study. However, both of these models have been applied previously in faculty job satisfaction studies in comparative contexts. Lacy and Sheehan (1997) utilized Hertzberg et al.'s two-factor theory in their study of faculty job satisfaction across eight countries and concluded that "no pattern emerge[d] which offer[ed] the possibility of a challenge to the Hertzberg two factor theory as an explanatory model for the concept of job satisfaction" (p. 321). They identified perceptions of work climate and environment in which faculty members work as "umbrella concepts" (p. 320) that had an influence on job satisfaction. Similarly, Hagedorn's model was applied in Bentley, Coates, Dobson, Goedegebuure, and Meek's (2013) study of job satisfaction in a comparative context across 12 countries. Even though the study revealed considerable differences in the predictors of job satisfaction across countries, it also showed that environmental variables in Hagedorn's model had the strongest relationship with job satisfaction. Specifically, satisfaction with administration processes, including good communication, collegiality in decision-making, and supportive attitudes of administrative staff, significantly affected faculty job satisfaction. Additionally, perceptions of influence over the departmental decision-making process led to increased job satisfaction for faculty members, especially in English-speaking countries (Bentley et al., 2013).

Guided by Hagedorn's conceptual model and existing research on job satisfaction of international faculty in the U.S. and in comparative contexts, we deemed satisfaction with departmental climate, interactions with colleagues, autonomy, and recognition as significant factors in determining international faculty members' overall job satisfaction and commitment to the institution. For faculty members who are employed at large research and doctoral universities, the quality of interactions with colleagues, the recognition provided by peers, and the overall climate of inclusion and support do matter (Bozeman & Gaughan, 2011; Campbell & O'Meara, 2014; Lindholm, 2003); and the same factors seem to make a difference for international faculty (Munene, 2014). Additionally, the sense of autonomy or authority to determine the direction of research, teaching, or service responsibilities continuously emerges as significant for faculty satisfaction (Hagedorn, 2000) and is an aspect of the job with which international faculty members tend to be dissatisfied.

## Method of the Study

### Sample

We used the 2011–2014 survey data collected by the Collaborative on Academic Careers in Higher Education (COACHE) at the Harvard Graduate School of Education (Benson, Mathews, & Trower, 2014). The COACHE Job Satisfaction Survey was designed to explore faculty members' satisfaction with different aspects of their jobs (COACHE, n.d.). To ensure the validity of the instrument, the survey was developed based on the extensive review of existing research, interviews with faculty, and focus groups with senior academic administrators (COACHE, n.d.).

The sample selection for this study consisted of two steps. We first identified 1970 international faculty members who were employed in full-time tenure-track or tenured faculty positions at research universities and who had participated in the COACHE survey in 2011, 2012, and 2014. International status was determined based on the variable that asked respondents to report their citizenship status. Faculty members who identified themselves as resident or non-resident aliens were considered international. Second, to select a matching sample of 1970 U.S. citizen faculty, we used a stratified random sampling and matched international and citizen faculty samples on gender, tenure status, and research university type.

Thus, the final sample of this study included 3940 tenure-track and tenured faculty members in full-time positions at 49 research universities that had participated in the COACHE survey in 2011, 2012, and 2014. As a result of the stratified random sampling, in both international and U.S. citizen faculty groups, 53.2% of the survey respondents were on tenure-track, and 46.8% were tenured; 67.2% were male, and 32.8% were female; 72.5% came from research universities with very high research activity, 19.8% from high research activity institutions, and 7.8% from doctoral/research universities. Within the international faculty sample, 51.6% identified themselves as white (non-Hispanic); 36.5% as Asian, Asian-American, or Pacific Islander; 7.0% as Hispanic or Latino; 2.7% as Black or African-American; and 2.2% as multiracial or other. On the other hand, in the U.S. citizen faculty group, 83.8% were white (non-Hispanic); 6.5% were Asian, Asian American, or Pacific Islander; 3.3% were Hispanic or Latino; 3.2% were Black or African-American; and 3.2% were multiracial or other.

## Measures

We selected 18 items from the survey that were designed to measure satisfaction with autonomy, interactions, recognition, departmental climate, and global satisfaction. Satisfaction with autonomy included faculty members' satisfaction with the discretion they have to choose the committees on which they serve, discretion over the content of the courses they teach, and the influence they have over the focus of research/scholarly/creative work. Items related to interactions with colleagues asked participants to report how satisfied they were with the amount of professional and personal interactions they had with pre-tenure and tenured faculty members in their departments. Recognition items contained questions asking participants to report their satisfaction with the recognition they received for their teaching efforts, student advising, scholarly/creative work, and service contributions. All satisfaction items in the survey were measured using a five-point Likert scale ranging from (1) *very dissatisfied* to (5) *very satisfied*. Satisfaction with departmental climate items consisted of one satisfaction question in which faculty members were asked to indicate their satisfaction with their fit or sense of belonging in their department and three items asking participants to rate their level of agreement with the following statements, using a five-point Likert scale from (1) *strongly disagree* to (5) *strongly agree*: "My departmental colleagues pitch in when needed," "On the whole, my department is collegial," and "On the whole, my department colleagues are committed to supporting and promoting diversity and inclusion in the department." Finally, on three Global Satisfaction items, participants were asked to report their overall satisfaction with the department and the institution as a place to work and indicate their level of agreement with the following statement: "If I had to do it all over, I would again choose to work at this institution." Cronbach's alpha coefficients were .54 for Autonomy, .86 for interactions, .82 for climate, .87 for recognition, and .87 for overall satisfaction. Table 1 includes means and standard deviations for each variable included in the study.

## Data Analysis

We employed confirmatory factor analysis (CFA) and structural equation modeling (SEM) to analyze the data using AMOS 22.0 software (Bentler & Hu, 2005). Data analysis comprised the following steps. First, we conducted a baseline CFA to confirm the validity of the theoretical constructs and to evaluate the fit of the model to the data for both international and U.S. citizen faculty samples. Based on prior research and the theoretical foundation of the COACHE survey, we predetermined which observed variables loaded on which of the five satisfaction constructs or latent factors in this study. Latent factors are variables that are not directly measured or observed but are inferred from or defined by several observed variables (Hox & Bechger, 1998; Schumacker & Lomax, 2010).

After establishing the validity of the measurement model, we conducted a two-group CFA to examine the differences in the level of faculty members' satisfaction with autonomy, interactions with colleagues, recognition, departmental climate, and global satisfaction between the two groups. Although CFA cannot calculate the actual mean of the factors, it is possible to estimate group differences by testing for the equality of latent factor means. We set the latent factor means in the international faculty group at zero and estimated the differences in the factor means for the citizen sample using Maximum Likelihood (ML) estimation.

Next, we utilized a two-group structural equation modeling a) to examine the effects of faculty members' satisfaction with autonomy, amount of interactions, recognition, and departmental climate on their overall satisfaction separately for international and U.S. citizen groups and b) to determine whether or not the structural model and parameters were significantly different across the two groups. As the first step of the two-group SEM analysis, we developed a baseline structural equation model for each faculty group based on the hypothesis that satisfaction with autonomy, interactions with colleagues, departmental climate, and recognition would lead to overall satisfaction. Once we confirmed good model fits of the baseline SEMs for each faculty group, we proceeded with the two-group structural equation model. This analysis utilized a test of chi-square difference which compares an unconstrained model, where all the parameters were estimated freely, and an equality constrained model, where the corresponding parameters for each construct were constrained to be equal across each group. If the test indicates a significant difference between the two models, the conclusion is that the structural equation model of one group is significantly different from the other group's model.

We evaluated the model fit of CFA and SEM at each step using the chi-square test. However, because the chi-square test is considerably sensitive to large sample size, as was the case in this study, we also employed other goodness-of-fit measures, including the Comparative Fit Index (CFI), the Root-Mean-Square Error of Approximation (RMSEA), the Standardized Root-Mean-Square Residual (SRMR), and Tucker-Lewis Index (TLI) (Byrne, 2001).

## Results

### Baseline Confirmatory Factor Analysis

We conducted a baseline CFA to confirm the measurement models separately for international and U.S. citizen faculty groups by assessing how the observed variables linked to the latent factors. As illustrated in Table 2, the chi-square coefficients were significant for both groups, $\chi^2 (121) = 1102.22$, $p < .001$ for the international faculty group and $\chi^2 (121) = 893.48$,

**Table 1** Descriptive overview of the variables included in the study

| Factors and variables | Total (N = 3940) M (SD) | International faculty (n = 1970) M (SD) | U.S.-citizen faculty (n = 1970) M (SD) |
|---|---|---|---|
| *Satisfaction with Autonomy* | | | |
| Discretion to choose the committees | 3.41 (.96) | 3.38 (.93) | 3.45 (1.00) |
| Discretion over the content of the courses | 4.25 (.87) | 4.21 (.86) | 4.29 (.87) |
| Influence over the focus of research/scholarship work | 4.29 (.84) | 4.20 (.84) | 4.37 (.84) |
| *Satisfaction with Interactions* | | | |
| Professional interaction with pre-tenure faculty | 3.76 (.95) | 3.73 (.96) | 3.79 (.94) |
| Personal interaction with pre-tenure faculty | 3.67 (.93) | 3.65 (.93) | 3.69 (.93) |
| Professional interaction with tenured faculty | 3.63 (.99) | 3.66 (1.00) | 3.60 (.98) |
| Personal interaction with tenured faculty | 3.61 (1.09) | 3.58 (.97) | 3.64 (1.19) |
| *Satisfaction with Departmental Climate* | | | |
| My departmental colleagues "pitch in" when needed | 3.69 (1.12) | 3.72 (1.06) | 3.65 (1.18) |
| On the whole, my department is collegial | 3.91 (1.15) | 3.90 (1.13) | 3.91 (1.17) |
| On the whole, my department colleagues are committed to supporting and promoting diversity and inclusion | 3.86 (1.10) | 3.85 (1.09) | 3.87 (1.12) |
| How well you fit in your department | 3.68 (1.08) | 3.67 (1.10) | 3.69 (1.05) |
| *Satisfaction with Recognition* | | | |
| Teaching efforts | 3.31 (1.05) | 3.33 (1.02) | 3.30 (1.08) |
| Student advising | 3.14 (.97) | 3.19 (.99) | 3.10 (.96) |
| Scholarly/creative work | 3.43 (1.07) | 3.44 (1.05) | 3.42 (1.09) |
| Service contributions | 3.22 (1.02) | 3.27 (.99) | 3.18 (1.05) |
| *Global Satisfaction* | | | |
| If I had to do it all over, I would again choose to work at this institution | 3.65 (1.17) | 3.56 (1.15) | 3.74 (1.18) |
| All things considered, department as a place to work | 3.77 (1.09) | 3.75 (1.07) | 3.79 (1.11) |
| All things considered, institution as a place to work | 3.64 (1.03) | 3.61 (1.02) | 3.66 (1.03) |

**Table 2** Goodness-of-fit indices for the CFA model tests

| Models | Chi-square | df | CFI | RMSEA | SRMR | TLI |
|---|---|---|---|---|---|---|
| Baseline CFA (International faculty group) | 1102.22 | 121 | .957 | .064 | .044 | .946 |
| Baseline CFA (U.S.-citizen faculty group) | 893.48 | 121 | .962 | .057 | .041 | .952 |
| Two-group CFA | 2128.79 | 268 | .957 | .042 | .045 | .951 |

$p < .001$ for the U.S. citizen faculty group; however, other fit indices suggested that the models for both groups met the recommended level of good model fit. For the international faculty group, CFI = .957, RMSEA = .064, SRMR = .044, and TLI = .946. For the U.S. citizen faculty group, CFI = .962, RMSEA = .057, SRMR = .041, and TLI = .952.

In addition to the evaluation of the model fit, we assessed an overall construct validity. As shown in Table 3, the baseline CFA confirmed the validity of the models for both international and U.S. citizen faculty groups by revealing statistically significant factor loadings, which signified that all the observed variables loaded well on the latent factors.

The baseline CFA models also explained the relationships between the five latent factors. All factors were positively and significantly correlated with each other ($p < .05$) across the two groups. For both the international and U.S. citizen faculty groups, the correlations between satisfaction with departmental climate and global satisfaction were the highest ($r = .91, .93$);

**Table 3** Baseline CFA factor loadings

| Factors and variables | Factor Loadings | |
|---|---|---|
| | International faculty | U.S. citizen faculty |
| *Satisfaction with Autonomy* | | |
| Discretion to choose the committees | .55 | .57 |
| Discretion over the content of the courses | .52 | .47 |
| Influence over the focus of research/scholar work | .57 | .51 |
| *Satisfaction with Interactions* | | |
| Professional interaction with pre-tenure faculty | .70 | .65 |
| Personal interaction with pre-tenure faculty | .57 | .55 |
| Professional interaction with tenured faculty | .94 | .93 |
| Personal interaction with tenured faculty | .82 | .81 |
| *Satisfaction with Departmental Climate* | | |
| My departmental colleagues "pitch in" when needed | .71 | .63 |
| On the whole, my department is collegial | .82 | .78 |
| On the whole, my department colleagues are committed to supporting and promoting diversity and inclusion | .73 | .65 |
| How well you fit in your department | .81 | .81 |
| *Satisfaction with Recognition* | | |
| Teaching efforts | .80 | .80 |
| Student advising | .83 | .76 |
| Scholarly/creative work | .79 | .78 |
| Service contributions | .82 | .80 |
| *Global Satisfaction* | | |
| If I had to do it all over, I would again choose to work at this institution | .75 | .71 |
| All things considered, department as a place to work | .94 | .92 |
| All things considered, institution as a place to work | .71 | .68 |

All parameter estimates were significant *$p < .05$

**Table 4** Baseline CFA factor correlations for international and U.S.-citizen faculty groups

| International faculty | Autonomy | Interactions | Climate | Recognition | Global Satisfaction |
|---|---|---|---|---|---|
| Autonomy | – | | | | |
| Interaction | .58 | – | | | |
| Climate | .66 | .81 | – | | |
| Recognition | .65 | .55 | .68 | – | |
| Global Satisfaction | .68 | .71 | .91 | .67 | – |
| U.S.-citizen Faculty | Autonomy | Interactions | Climate | Recognition | Global Satisfaction |
| Autonomy | – | | | | |
| Interaction | .57 | – | | | |
| Climate | .70 | .82 | – | | |
| Recognition | .70 | .53 | .65 | – | |
| Global Satisfaction | .75 | .69 | .93 | .71 | – |

All parameter estimates were significant *p < .05

and the correlations between satisfaction with interactions and recognition were the lowest ($r = .55, .53$). The summary of the results from the correlational analysis is presented in Table 4.

## Two-Group Confirmatory Factor Analysis

We conducted a two-group CFA to investigate whether any differences existed in faculty members' satisfaction with autonomy, interactions with colleagues, departmental climate, recognition, and global satisfaction between the international and U.S citizen faculty groups. As summarized in Table 2, the chi-square coefficient was significant, $\chi^2 (268) = 2128.79$, $p < .001$; however, other fit indices indicated a good model fit: CFI = .957, RMSEA = .042, SRMR = .045, and TLI = .951.

Furthermore, as illustrated in Table 5, the test for the equality of latent factor means revealed that there were significant differences in faculty members' satisfaction with autonomy and satisfaction with recognition between the international and U.S. citizen faculty groups at $p < .05$; however, no significant differences existed in international and citizen faculty members' satisfaction with the amount of interactions with colleagues, climate, and overall satisfaction. The U.S. citizen faculty members' satisfaction with autonomy (.10) was significantly higher than that of international faculty members. On the other hand, the U.S. citizen faculty members were significantly less satisfied with recognition (−.06) than were their international peers.

**Table 5** Test of equality of latent factor means

| Factors | Means | |
|---|---|---|
| | International faculty | U.S.-citizen faculty |
| Satisfaction with Autonomy | 0 | .10* |
| Satisfaction with Interactions | 0 | .03 |
| Satisfaction with Climate | 0 | −.01 |
| Satisfaction with Recognition | 0 | −.06* |
| Global Satisfaction | 0 | .05 |

*p < .05

## Baseline Structural Equation Model

As presented in Table 6, the evaluation of goodness-of-fit of the baseline SEM models revealed the good model fit across the two groups (international faculty group: CFI = .957, RMSEA = .064, SRMR = .044, and TLI = .946; U.S. citizen faculty group: CFI = .962, RMSEA = .057, SRMR = .041, and TLI = .952) although chi-square coefficients were significant in both groups ($\chi^2$ (121) = 1102.22, $p < .001$; $\chi^2$ (121) = 893.48, $p < .001$).

## Two-Group Structural Equation Model (SEM)

With the confirmation of satisfactory model fit of the baseline SEMs, we proceeded with the two-group SEM analysis. The overall evaluation of goodness-of-fit (unconstrained model) confirmed a good model fit (CFI = .959, RMSEA = .043, SRMR = .048, and TLI = .949) although the chi-square was significant, $\chi^2$ (242) = 1995.70, $p < .001$ (Table 6). The chi-square difference test found that there was a significant difference in SEM models between the international and U.S. citizen faculty groups, $\Delta\chi^2$ (4) = 10.731, $p = .03$. The chi-square statistic for the equality constrained model was equal to 2006.44 ($df$ = 246). The test of chi-square difference concluded that the structural parameters were not equivalent across the two groups. Specifically, we found that the effects of faculty members' satisfaction with climate, autonomy, and interactions on global satisfaction were significant in both the international (.79, .20, and − .10) and U.S. citizen (.91, .20, and − .19) groups (Table 7). Among these variables in the two groups, faculty members' satisfaction with climate and autonomy were positively related to their global satisfaction, while their satisfaction with the amount of interactions with colleagues in the department was a negative predictor of their overall satisfaction. Furthermore, satisfaction with recognition had a significant positive effect on global satisfaction only in the U.S. citizen faculty group (.11), but it did not significantly affect international faculty members' overall satisfaction.

## Discussion

The findings of this study suggested that international faculty members were less satisfied with the discretion and influence they had to choose committees, content of their courses, and the focus of their scholarly work relative to their U.S. citizen peers. In other words, they perceived that they lacked the authority to make decisions in regard to key functions of their work related to service, teaching, and research. This finding seems consistent with much of the previous research that confirmed that international faculty members were dissatisfied with their autonomy and abilities to make decisions (Mamiseishvili, 2011; Wells et al., 2007). In her study of a nationally representative

**Table 6** Goodness-of-fit Indices for SEM Model Tests

| Models | Chi-square | df | CFI | RMSEA | SRMR | TLI |
|---|---|---|---|---|---|---|
| Baseline SEM | | | | | | |
|    International faculty group | 1102.22 | 121 | .957 | .064 | .044 | .946 |
|    U.S.-citizen faculty group | 893.48 | 121 | .962 | .057 | .041 | .952 |
| Two-group SEM | | | | | | |
|    Unconstrained Model | 1995.70 | 242 | .959 | .043 | .048 | .949 |
|    Equality Constrained Model | 2006.44 | 246 | | | | |

**Table 7**  Effects of predictors on global satisfaction

| Factors | Parameter Estimates | |
|---|---|---|
| | International faculty | U.S.-citizen Faculty |
| Satisfaction with Autonomy | .20* | .20* |
| Satisfaction with Interactions | −.10* | −.19* |
| Satisfaction with Climate | .79* | .91* |
| Satisfaction with Recognition | .05 | .11* |

*$p < .05$

sample of foreign-born academics at 4-year institutions from the 2004 National Study of Postsecondary Faculty data set, Mamiseishvili (2011) found that they were dissatisfied with the authority to make decisions on curriculum, course content, and methods of instruction. Skachkova (2007) also found that immigrant women perceived that they lacked authority to teach and investigate topics that were not multicultural in nature or not related to their national and regional backgrounds. Similarly, they also felt that they were not afforded the opportunities to participate in leadership and decision-making, not because they did not serve on committees but because they did not serve on the committees that made important decisions and had significant impact.

On the other hand, our study suggested that international faculty members were not significantly different from their U.S. peers in their perceptions of departmental climate, peer interaction, and overall satisfaction, which is different from prior research that overwhelmingly speaks to the challenges that international academics face in their interactions with colleagues, their efforts to overcome outsider feelings, and their ability to find social networks and supports (Kim et al., 2012; Munene, 2014; Skachkova, 2007; Thomas & Johnson, 2004). Furthermore, it is noteworthy that international faculty members were significantly more satisfied with the recognition that they received for their work relative to their U.S. citizen colleagues. What explains this unexpected finding in regard to satisfaction with recognition? On the one hand, it could simply mean that the work of international faculty members is objectively better rewarded and recognized by their colleagues. On the other hand, research shows that perceptions about different aspects of the work environment do not always reflect the objective reality of work conditions (Poggi, 2008). The higher the congruence between expectations and reality, the higher the job satisfaction. In other words, if international faculty members have low expectations for the levels of recognition they anticipate they will receive from their colleagues for their work efforts, they will easily meet these expectations.

Our study also found that the relationships between overall satisfaction and satisfaction with recognition, departmental climate, autonomy, and peer interactions varied by citizenship status. Satisfaction with recognition did not have a significant effect on the overall satisfaction of international faculty members, but it did significantly and positively affect the global satisfaction of the U.S. citizen faculty members. Bozeman and Gaughan (2011) noted that "the need for recognition" is central to satisfaction as well as performance (p. 163). Why is it that the international faculty members in this study diverge from the findings of earlier research that suggests that recognition from colleagues leads to satisfaction (e.g., Bozeman & Gaughan, 2011; Olsen, Maple, & Stage, 1995)? One explanation could be related to how the recognition and global satisfaction variables were measured in the study. Variables that asked respondents about their levels of satisfaction with recognition for their teaching efforts, student advising, scholarly work, and outreach did not specify where this appreciation and recognition came

from. It could be that international faculty members seek this recognition from colleagues outside of their departments or their institutions; therefore, even though they feel their work is recognized, this sense of recognition does not directly lead to their overall satisfaction within the places that they work.

Another explanation could be that the meaning of the concept of recognition itself and its impact on job satisfaction may vary across cultures. Andreassi, Lawter, Brockerhoff, and Rutigliano (2012) examined the determinants of job satisfaction across 48 nations from four regions (i.e., Asia, Latin America, North America, and Europe) and found that the level of recognition received for the job well done was more important in feminine cultures than in masculine cultures. Based on Hofstede's (1980) masculinity/femininity dimensions, the concepts of achievement, material success, or quality of life carry a different meaning across cultures, which has implications for how individuals from different cultures would value recognition as well as in what ways they would want to be recognized and rewarded. In masculine cultures success is related to a personal sense of accomplishment, material wealth, and financial rewards. In feminine cultures success is more relational and connected to others in the workplace; hence, recognition derived from others as "a social affirmation of one's performance" (Andreassi et al., 2012, p. 208) would be more highly valued.

Another surprising finding that emerged from the final SEM model was the negative relationship between satisfaction with interactions with colleagues and global satisfaction for both international and U.S. citizen faculty members, which is also contradictory to the findings from previous research. However, this finding also could be explained by how interaction variables were measured in this study. The questions specifically asked about satisfaction in terms of the amount of personal and professional interactions with colleagues and not about the quality of these interactions, which may suggest that just the amount or frequency of interactions does not directly lead to overall satisfaction if these interactions do not offer intellectual enrichment or support.

## Implications for Future Research and Practice

Two key findings emerged from the study that we believe have implications for policy and warrant future research. First, it would be worthwhile to examine further the recognition of the work contributions of international faculty members. It is encouraging that international faculty members perceive that their research, advising, teaching, and outreach efforts are appreciated and respected by their colleagues; but it is important to understand what drives their sense of recognition, where they find it, in what tangible ways they experience it, and how it can potentially affect their connection to and integration into their academic communities. A more nuanced understanding of how faculty members from different cultural backgrounds would value recognition (e.g., extrinsic rewards or social affirmation) would help higher education institutions tailor their reward systems "to optimally motivate individuals based on cultural differences" (Andreassi et al., 2012, p. 208).

Second, the fact that dissatisfaction with autonomy and authority to make decisions tends to emerge as a constant defining element of international faculty members' experiences in U.S. higher education seems to be of concern. Professional autonomy and control over the content and direction of curriculum and research have traditionally been viewed as among the most desirable aspects of faculty work. It is important for international and other faculty members to feel a sense of autonomy and control in order for them to be able to maximize their intellectual

capital and contributions to their institutions. Institutions should cultivate an environment where international faculty members feel that their ideas are welcome and heard (Munene, 2014). They should be empowered to integrate global perspectives throughout the curriculum and offer new courses or pursue research agendas that may be outside of the dominant disciplinary methods or content areas. Through mentoring, networking, and training, institutions should help international faculty members navigate complex organizational structures and allow them to make informed decisions about what committees to join and how to best utilize their expertise. As noted by Gappa, Austin, and Trice (2007), "The creativity and energy of faculty members are enhanced when the autonomy to do their work as they think best is integral to their assignments" (p. 17). Therefore, this sense of perceived lack of autonomy experienced by international faculty members is worthy of further study.

Finally, it should be noted that just a singular measure of citizenship status limits the depth of understanding and the diversity of experiences of the international professoriate in the U.S. Kim et al. (2012) have cautioned the research community against making broad generalizations about international academics based on a single-birth or citizenship status variable. These faculty members differ from one another by numerous characteristics including language, region of origin, time in the U.S., exposure to U.S. educational institutions, prior international experiences, and ties with family or home country. All of these differences uniquely shape their experiences in the U.S., which in turn lead to differences in their satisfaction levels and their perceptions of departmental or institutional climates. It is critical that future research present a more nuanced understanding of their experiences so that higher education institutions are able to provide them with more tailored support systems and work environments that are perceived as supportive and nurturing.

**Compliance with Ethical Standards**

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