university campuses (e.g., Altbach, 2005, 2006; Manrique & Manrique, 1999). According to Schuster and Finkelstein (2006), the number of foreign-born full-time faculty members in the U.S. had increased from 28,200 in 1969 to 74,200 in 1998. International faculty members are becoming "highly visible symbols of the changing face of the population in higher education" (Manrique & Manrique, 1999, p. 103). As the significance of international professorate increases in American higher education, it is timely to examine who these international faculty members are, what they do, how they perceive their work, how productive they are in their core functions of research, teaching, and service, and what they contribute to the excellence and scope of U.S. higher education institutions.

With the growing presence and significance of international academics in the U.S., more and more studies in higher education literature have been focusing on this group of the professoriate (Corley & Sabharwal, 2007; Manrique & Manrique, 1999; Marvasti, 2005; Skachkova, 2007; Seagren & Wang, 1994; Thomas & Johnson, 2004; Wells, Seifert, Park, Reed, & Umbach, 2007). Three most recent studies are particularly noteworthy (Corley & Sabharwal, 2007; Skachkova, 2007; Wells et al., 2007). For example, the study by Skachkova (2007) examined women foreign-born academics and concluded that their experiences in the U.S. were "immigration success stories but only a few of them were academic success stories" (Skachkova, 2007, p. 728). The study by Corley and Sabharwal (2007) compared productivity levels, work satisfaction, and career trajectories of foreign-born and U.S.-born academic scientists. Using the 2001 Survey of Doctorate Recipients (SDR), the study found that foreign-born scientists were significantly more productive in research than their U.S.-born peers, but despite their higher scholarly productivity, their salary levels and job satisfaction were significantly

lower. Another study by Wells et al. (2007) examined the differences in job satisfaction between international faculty members, based on their geographic region of origin, and their non-international colleagues. Drawing on the data from NSOPF:99, the study found that at least two groups of international faculty members, namely Asians and Middle Easterners, were significantly less satisfied with their jobs than their U.S. citizen colleagues.

These three recent studies are a good indication that higher education researchers have slowly been taking more interest in the international faculty members. However, research in international academics is still very limited. Little is known about international faculty members' job experiences, behaviors, and attitudes in comparison with their U.S. citizen counterparts. There is a clear need for a comprehensive study that addresses this gap in the literature. Given the increased emphasis on faculty performance accountability and the concern for the well-being of the professorate, international faculty members' productivity and job satisfaction require an extensive analysis. Productive and satisfied faculty is the most important resource for today's universities facing constant challenges (Gappa, Austin, & Trice, 2007). As the presence of international academics rises in the academy, it is timely to examine who these international academics are, what they do, how they perceive their work, how productive they are in their core functions of teaching, research, and service, and how they compare with their U.S. citizen counterparts. The proposed research intended to address this gap in the literature.

Conceptual Framework

The relationship between job satisfaction and job productivity/performance has been of continual interest in industrial/organizational and social psychology literature

((Judge, Bono, Thoresen, & Patton, 2001; Gruneberg, 1979). The initial interest in studying job satisfaction was undoubtedly driven by the widely held belief that job satisfaction had consequences for productivity (Gruneberg, 1979; Schultz, 1973). Early writings on the subject were based on the assumption that individuals increased their productivity as a consequence of increased job satisfaction (Herzberg, Mausner, & Snyderman, 1959). Later, some researchers reversed this hypothesized causality and suggested that performance led to job satisfaction (Judge et al., 2001). It was hypothesized that people who were better able to do their jobs had higher job satisfaction (Spector, 1997).

The theoretical rationale for productivity leading to satisfaction relationship was grounded in expectancy-based and self-determination theories of motivation in social psychology literature (Deci & Ryan, 1985; Gagner & Deci, 2005; Lawler & Porter, 1967; Lock, 1970; Vroom, 1964). Broadly speaking, these theories suggested that performance led to valued outcomes that were satisfying to individuals (Judge et al., 2001). For example, building on Vroom's expectancy theory of motivation, Lawler and Porter (1967) proposed a model in which successful performance led to satisfaction. They argued that satisfaction could be thought of as "depending on performance rather than causing it" (p. 27). According to Lawler and Porter's (1967) model, job performance was linked to job satisfaction, and the nature of this linkage was moderated by the rewards for performance and the perceived equity of these rewards. Locke (1970) also suggested that satisfaction was primarily a result of performance. He hypothesized that performance was satisfying to the extent that it led to important work values. Self-determination theorists also argued that when people performed effectively on the job, they experienced

satisfaction of the basic psychological needs and had positive attitudes towards their jobs (Deci & Ryan, 1984; Gagner & Deci, 2005). However, they also suggested that if individuals were controlled in their motivation, for example, when they were "prompted by external or introjected contingencies," effective performance was less likely to result in high levels of job satisfaction (Gagner & Deci, 2005, p. 353).

Despite the popularity of productivity leading to job satisfaction model in social and organizational psychology, there have been very few studies in higher education literature that investigated this direction of the relationship (Jacobs & Winslow, 2004; Terpstra, Olson, & Lockeman, 1982). Higher education researchers have traditionally favored attitude (i.e., job satisfaction) leading to behavior (i.e., productivity) approach when examining the relationship between these two concepts (Blackburn & Lawrence, 1995; Bland, Center, Finstad, Risbey, & Staples, 2005; McNeece, 1981). Broadly speaking, they have typically examined to what extent faculty members' attitudes affected their behavior, such as productivity, performance, turnover, and intentions to leave (Barnes, Agago, & Coombs, 1998; Blackburn & Bentley, 1993; Blackburn & Lawrence, 1996; Hagedorn, 2000; Johnsrud, 2002; Johnsrud & Rosser, 2002; Rosser, 2004, 2005; Smart, 1990). In order to better understand the interplay between faculty job satisfaction and productivity, the current study took the behavior leading to attitude approach and examined how faculty members' productivity affected their job satisfaction.

In the context of increased scrutiny of faculty work and calls for greater accountability, it is important to understand how faculty productivity affects job satisfaction. As suggested by the expectancy-based and self-determination theories of

motivation, if good performance is not rewarded and does not lead to need fulfillment, or if it is controlled or prompted by external forces, it does not lead to job satisfaction. A more thorough analysis of faculty productivity and satisfaction relationship, as conducted in this study, sheds light on important aspects of international and U.S. citizen faculty members' work in today's changing world of the academy.

Purpose of the Study

The purpose of the study was to examine what differences occurred between international and U.S. citizen faculty members' research, graduate and undergraduate teaching, and service productivity and how each group's productivity in the areas of research, teaching, and service related to their job satisfaction. To achieve this overall goal, the study compared and contrasted international and U.S. citizen faculty members' teaching, research, and service productivity and job satisfaction in Research Extensive and Research Intensive universities. In addition, the study examined the relationship between productivity in the areas of research, teaching, and service and job satisfaction across both international and U.S. citizen faculty samples.

Research Questions

The following questions guided the investigation:

1. How are the constructs of graduate and undergraduate teaching, research, and service productivity and job satisfaction defined, measured, and interrelated across international and U.S. citizen faculty samples?
2. What differences exist between international and U.S. citizen faculty members' graduate and undergraduate teaching, research, and service productivity and job

satisfaction by their selected demographic characteristics (i.e., gender, race/ethnicity, academic rank, and tenure)?

3. How does international and U.S. citizen faculty members' productivity in the areas of graduate and undergraduate teaching, research, and service affect their job satisfaction, while controlling for their selected demographic characteristics (i.e., gender, race/ethnicity, academic rank, and tenure)?

Research Design

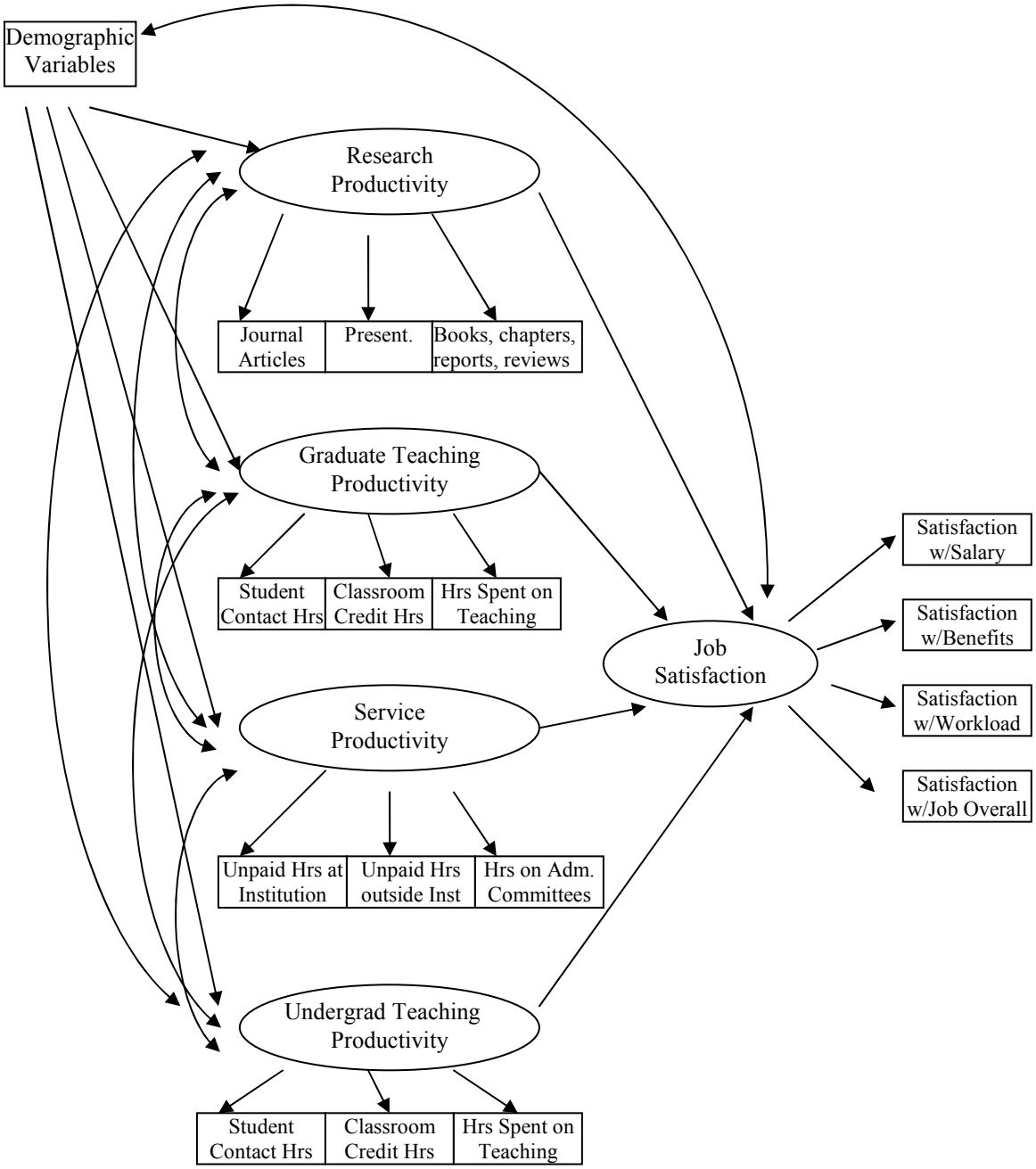
The study utilized the 2004 National Study of Postsecondary Faculty (NSOPF:04) data set to examine the research questions. NSOPF:04 provided a nationally representative sample of faculty and instructional staff at public and private degree-granting institutions in the U.S. (National Center for Education Statistics (NCES), 2006). NSOPF:04 relied on complex sampling, which included stratification, multiple stages of selection, and unequal probability selection of respondents (NCES, 2006). NSOPF:04 consisted of a sample of 35,630 faculty and instructional staff across a sample of 1,080 institutions. The data were collected using a Web-based questionnaire that was either self-administered or conducted via telephone with a trained interviewer (NCES, 2006). Completed surveys were obtained from about 26,100 faculty and instructional staff, for a weighted response rate of 76%.

The sample for the current study consisted of 1,636 U.S. citizen and non-citizen full-time faculty members from Research Extensive and Research Intensive universities whose primary responsibilities were teaching and research. First, the researcher selected a subset of 818 full-time non-citizen faculty members from Research Extensive and Research Intensive universities whose primary responsibilities were teaching and

research. Second, the researcher employed a stratified random sampling to identify a matching control group of 818 U.S. citizen faculty from NSOPF:04. Stratified random sampling ensured that there were equal numbers of international and U.S. citizen faculty members within each institutional type and disciplinary category.

The following statistical techniques were utilized in the study: Frequencies and percentages were provided on the demographic variables (i. e., gender, race/ethnicity, academic rank, and tenure status) for both international and citizen faculty subgroups. Descriptive statistics (i.e., means and standard deviations) were examined for all job satisfaction and productivity items used in the study. Finally, a two-group Structural Equation Modeling (SEM) was conducted to simultaneously define and measure international and citizen faculty members' graduate and undergraduate teaching, research, and service productivity and job satisfaction and to examine the direct effects of productivity on faculty job satisfaction, while controlling for the selected demographic characteristics. Similar to Rosser's (2005) two-group SEM analysis of faculty worklife and satisfaction, a two-group SEM analysis employed in this study proceeded in the following three steps. First, the researcher validated the measurement model through confirmatory factor analysis (CFA) for the international faculty subset in the study. Second, the researcher conducted a two-group CFA analysis to see whether the definition and measurement of the constructs held for the citizen faculty subset as well. Finally, after these steps were completed, the researcher proceeded with testing the hypothesized two-group structural equation model (Figure 1).

Figure 1. Proposed Conceptual Model



International Faculty / U.S. Citizen Faculty

Results

Step 1 – Baseline CFA Model

The first step in the analysis was to validate the international faculty data set as a baseline model. The purpose of the first CFA was to establish the validity of the constructs for the baseline model from which to examine differences and similarities between international and U.S. citizen faculty members. For this model, the chi-square coefficient was 237.333 with 94 degrees of freedom and significant (p = .000). Because of the chi-square's sample size dependency, other fit indices were examined to supplement the significant chi-square test statistic and to evaluate the overall model fit. As Table 1 indicates, all the fit indices suggested that the proposed model fit the data well. For example, the RMSEA and SRMR values were .043 and .041, respectively. CFI value was .97 and TLI value was .96, both suggesting a good fit of the baseline model to the observed data.

Table 1

Goodness-of-Fit Indices for the Model Tests

Models	Chi-Square	Df	CFI	TLI	RMSEA	SRMR
Baseline CFA	237.333	94	.970	.961	.043	.041
Two-Group CFA	539.902	210	.965	.960	.044	.043
Two-Group SEM	839.590	369	.953	.937	.039	.036

Step 2 – Two-Group CFA Model

Two-group CFA model was the second step in the analysis. The purpose of the two-group CFA model was to see whether the construct validity that was established for

the baseline model would hold in the citizen faculty data set. At this stage, the researcher also examined whether there were any differences in the definition and measurement of job satisfaction and productivity constructs between international and U.S. citizen faculty samples. The fit of the two-group CFA model was evaluated by the chi-square test statistic and other commonly used goodness-of-fit measures (Table 1). Similar to the baseline model, the chi-square statistic for the two-group CFA model was also relatively large (539.902) and significant (p = .000). Despite the significant chi-square, other fit indices suggested a good fit of the model. CFI and TLI values were .97 and .96, respectively. Furthermore, RMSEA and SRMR coefficients of .04 and .04, respectively, also indicated that the proposed model fit the data well across both international and U.S. citizen samples.

After establishing the construct validity and examining the relationships among latent factors for both international and citizen faculty subgroups, two-group CFA also allowed the researcher to observe statistically significant differences in productivity and satisfaction constructs between the two groups (Table 2). This was achieved by testing for the equality of latent factor means. To conduct this test, the factor means in the international faculty data set were set as zero (.000) and the factor means in the citizen faculty subset were tested against them with t-tests. By testing for the equality of latent factor means, the researcher could determine if factor means for the citizen sample were significantly higher or lower than factor means for the baseline international faculty sample. The results in Table 3 indicate that citizen faculty members were significantly more productive in service and undergraduate teaching than their international faculty counterparts (.40 and .26, respectively). On the other hand, citizen faculty members'

research productivity was significantly lower than international faculty members' scholarly productivity (-.17). There were no significant differences in job satisfaction and graduate teaching productivity factor means between international and citizen faculty members (.10 and .09, respectively).

Table 2

Two-Group CFA Model: Tests of Equality of Latent Factor Means

Productivity and Satisfaction Constructs	Means	
	International Faculty	U.S. Citizen Faculty
Research Productivity	**0.00**	**-0.17***
Refereed and non-refereed articles	1.57	1.45
Books, book reviews, chapters, reports	0.60	0.62
Presentations, exhibitions/performances	1.67	1.52
Graduate Teaching Productivity	**0.00**	**0.09**
Classroom credit hours	1.76	2.00
Student contact hours [a]	1.67	1.88
Hours spent on teaching per week	2.22	2.46
Service Productivity	**0.00**	**0.40***
Hours on unpaid tasks within institution [a]	1.00	0.98
Hours on unpaid tasks outside of institution [a]	0.61	0.69
Hours on administrative committee work [a]	0.85	1.11
Undergraduate Teaching Productivity	**0.00**	**0.26***
Classroom credit hours	2.84	3.72
Student contact hours [a]	2.44	3.14
Hours spent on teaching per week	3.11	4.28
Job Satisfaction	**0.00**	**0.10**
Satisfaction with workload	3.03	3.04
Satisfaction with salary	2.65	2.65
Satisfaction with benefits	3.03	3.07
Satisfaction with the job overall	3.15	3.27

Note. [a] Natural Log of the variables.

$p < .05$. Significant difference (t-tests regarding the equality of latent factor means) between international and citizen faculty members' productivity and satisfaction constructs.

Step 3 – Two-Group SEM Model

Two-group SEM model was the final step in the analysis. Two-group SEM provided the possibility to the researcher to simultaneously measure and define productivity and job satisfaction constructs across both groups and to test for the direct effects of productivity on job satisfaction, while controlling for selected demographic variables. For this final SEM model, the chi-square was 839.590, with 369 degrees of freedom, and significant (p = .000). Despite the significant chi-square, other fit indices suggested that the final two-group SEM model fit the data well across both subsets. As summarized in Table 1, RMSEA and SRMR values were .039 and .036, respectively. CFI and TLI values were also within the acceptable range (.95 and .94, respectively), indicating the good fit of the model.

Table 3 illustrates the parameter estimates from the final two-group SEM regarding the relationships among productivity and satisfaction constructs across both international and citizen faculty samples. In the international faculty subset, the parameter estimates leading service and undergraduate teaching productivity to job satisfaction were negative and significant (-.18 and -.14, respectively). The effects of research and graduate teaching productivity on job satisfaction were non-significant. In the citizen faculty subset, the effect of undergraduate teaching productivity on job satisfaction was significant and negative (-.15). On the other hand, the effects of other three productivity constructs (i.e., service, research, and graduate teaching) on job satisfaction were non-significant (-.10, -.08, and -.07, respectively).

The differences between international and citizen faculty members were also examined through the selected demographic variables (i.e., gender, race, tenure status,

and academic rank) in the final two-group SEM model. As illustrated in Table 9, in terms of job satisfaction, full professors both in the international and citizen faculty subsets were significantly more satisfied than their colleagues (.10 and .22, respectively). In addition, Asian and Black international faculty members were significantly less satisfied than their white non-citizen colleagues (-.12 and -.10, respectively). There were no significant differences between Asian or Black and their Caucasian counterparts in the citizen faculty sample (-.05 and .05, respectively).

Table 3

Two-Group SEM: The Effects of Productivity and Demographics of Job Satisfaction

	International Faculty	U.S. Citizen Faculty
	Parameter Estimates	
Job Satisfaction		
Research Productivity	-.01	-.08
Graduate teaching productivity	-.02	-.07
Service Productivity	-.18*	-.10
Undergraduate teaching productivity	-.14*	-.15*
Female	-.04	-.06
Black	-.10*	.06
Asian	-.12*	-.05
Full professor	-.10	.22*
Assistant professor	-.03	.04
Tenured	-.09	-.05

Note. *$p < .05$

Table 4 illustrates the effects of faculty demographics on their productivity. Regarding research productivity, female faculty members were significantly less productive in research than their male colleagues both in the international and citizen faculty subsets (-.10 and -.15, respectively). There were no significant differences in

international faculty members' scholarly productivity in terms of their academic rank or tenure status. On the other hand, in the citizen faculty subset, assistant and full professors and tenured faculty members were significantly more productive in research (.14, .19, and .17, respectively). Furthermore, in the international faculty portion of the model, Asian faculty members conducted significantly less research (-.11) and in the citizen faculty subset, Black faculty members were significantly less productive in research (-.07). As for service, both in the international and citizen faculty subgroups, assistant professors and tenured faculty members conducted significantly more service than their colleagues (.32 and .50 for international faculty subset and .24 and .51 for citizen faculty subset, respectively).

In terms of undergraduate teaching productivity, in the international faculty sample, assistant and tenured professors and female faculty members were significantly more productive in undergraduate teaching (.10, .19, and .13, respectively). However, Asian international faculty members were significantly less productive in their undergraduate teaching (-.07). In the citizen portion of the model, tenured professors were also significantly more productive in undergraduate teaching (.20), but full professors and Asian faculty members were significantly less productive (-.17 and -.10, respectively). Finally, in the citizen faculty sample, assistant, full, and tenured professors were significantly more productive in their graduate teaching (.09, .17, and .11, respectively). In the international faculty sample, assistant and tenured professors were significantly more involved in graduate level teaching (.26 and .32, respectively), but there was no significant difference between non-citizen full professors and their other international colleagues.

Table 4

Two-Group SEM: The Effects of Demographics on Productivity

	International Faculty	U.S. Citizen Faculty
	Parameter Estimates	
Research Productivity		
Female	-.10*	-.15*
Black	-.01	-.07
Asian	-.11*	.04
Full professor	.04	.19*
Assistant professor	.07	.14*
Tenured	.12	.17*
Graduate Teaching Productivity		
Female	-.04	.06
Black	.06	.02
Asian	.01	.02
Full professor	.01	.17*
Assistant professor	.26*	.09*
Tenured	.32*	.11*
Service Productivity		
Female	.06	.01
Black	.08	.08
Asian	-.06	-.04
Full professor	.08	.02
Assistant professor	.32*	.24*
Tenured	.50*	.51*
Undergraduate Teaching Productivity		
Female	.13*	.01
Black	.07	-.03
Asian	-.07	-.10*
Full professor	-.08	-.17*
Assistant professor	.10*	-.02
Tenured	.19*	.20*

Note. *$p < .05$

Discussion and Conclusion

Comparing International and U.S. Citizen Faculty Productivity and Job Satisfaction

The findings demonstrated that international faculty members were significantly more productive in research but were significantly less engaged in service tasks and

undergraduate instruction. There were no significant differences between international and citizen faculty members' graduate teaching productivity and job satisfaction. How do these findings inform our understanding of international faculty members' productivity and job satisfaction relative to their U.S. citizen faculty peers?

The comparison of international and U.S. citizen faculty members' productivity highlighted the significant role international faculty played at U.S higher education institutions, especially in the area of research. The findings in regard to international faculty members' research productivity are in line with much of the previous research on foreign-born faculty members in the U.S. (Corley & Sabharwal, 2007; Levin & Stephen, 1999; Marvasti, 2005). Marvasti (2005) argues that the hiring of increasing numbers of international faculty members by research universities is partially due to their higher publication records relative to citizen faculty. Based on the examination of the 1993 and 1999 NSOPF data sets, Marvasti (2005) indicated that international academics in all fields spent a higher percentage of their time on scholarly activities and expressed stronger preferences to allocate even more of their time on research. As a result, international faculty members in Marvasti's (2005) study had significantly better publication records, especially in terms of refereed media, than their native-born faculty peers.

In addition, there have been other studies that have focused on the scholarly contributions foreign-born faculty members have made to the U.S scientific enterprise. Given that more than half of the sample in this study, namely, 56.7% of academics in each of the two faculty subgroups, is in natural science and engineering fields, the findings from the previous research on international academic scientists and engineers are

particularly noteworthy. Levin and Stephen (1999), for example, concluded that "individuals making exceptional contributions to Sciences and Engineering in the United States are disproportionately drawn from the foreign-born" (p. 3). Exceptional contributions were determined by using six different criteria: individuals elected to the National Academy of Sciences (NAS) and National Academy of Engineering (NAE), authors of citation classics, authors of "hot" papers, the 250 most-cited authors, authors of highly cited patents, and the founders of biotechnology firms.

The most recent study by Corley and Sabharwal (2007) also argued that foreign-born academic scientists and engineers were more productive in research on all measures of productivity used in their study. Using the 2001 Survey of Doctorate Recipients (SDR), they concluded that foreign-born academics in sciences and engineering produced more published papers, presentations, and books than their citizen faculty counterparts. Foreign-born academics in Corley and Sabharwal's (2007) study were also significantly more likely to be an inventor on a U.S. patent.

In regard to undergraduate teaching productivity, there has not been any previous research to directly suggest that international faculty members spent less time on teaching, generated less classroom credit hours, or taught less number of students. However, there have been studies that examine how international faculty members are perceived as teachers and how their cultural backgrounds and experiences affect their teaching experiences and interactions with students (Manrique & Manrique, 1999; Marvasti, 2005; Skachkova, 2007; Thomas & Johnson, 2004). These studies suggest that as non-native speakers of English, international faculty members experience more questioning of their teaching credibility (Manrique & Manrique, 1999; Skachkova, 2007)

that can adversely affect their teaching preferences and performance. Marvasti (2005) indicates that judgments about international faculty members' teaching effectiveness are often influenced by the perceptions about their linguistic proficiency. Women foreign-born faculty members in Skachkova's (2007) study reveal that their teaching skills are often judged by their students based on their accents.

Previous research also shows that international faculty members are often segregated to teach courses or research topics that are related to their ethnic, national, or regional background (Manrique & Manrique, 1999; Skachkova, 2007), which might further undermine their role as an expert teacher of American-based subjects. Furthermore, Thomas and Johnson (2004) argue that their cultural backgrounds and lack of familiarity with the U.S. cultural norms in the classroom might also cause more challenges for them in their interactions with students. These perceptions, barriers, and challenges that international faculty members face in their teaching role might not be directly linked to their instructional productivity, but they might be influencing their teaching interests, tendencies, and preferences relative to research.

The study also found that international faculty members were less involved in service activities than U.S. citizen faculty members, especially in terms of hours spent on administrative committee work and unpaid tasks outside the institution. This finding is also consistent with the previous research that suggests that international faculty members are not as involved in administration and governing of the institution as U.S.-born faculty (Marvsati, 2005; Skachkova, 2007). They are also often excluded from professional networks of their peers, which might also affect their engagement in service tasks outside the institution.

The readers need to be cautious in interpreting the findings of this study. The researcher cautions the readers from concluding that international faculty members make significant contributions in research, but not as much so in teaching and service. When interpreting the results, the readers should keep in mind how teaching, research, or service productivity is measured in this study. For example, hours spent in the classroom and with the students do not necessarily equate with students' learning outcomes, which should be the true measures of teaching productivity. Similarly, number of articles published or presentations made is not a guarantee that they are quality scholarly outputs that make significant contributions to the advancement of knowledge in the field. Thus, the differences found between international and citizen faculty members' productivity need to be more fully understood and interpreted with caution.

The examination of the differences between international and citizen faculty members' productivity by their demographic characteristics revealed some important findings as well. The disparity among the core academic functions of teaching, research, and service was the most evident when examined by gender. Female faculty members in both samples were significantly less engaged in research than their male counterparts. In addition, the study showed that international female faculty members were also more likely to be involved in undergraduate teaching. These findings are consistent with much of the previous literature on female faculty productivity (e.g., Allen, 1997; Aquirre, 2000; Bellas & Toutkoushian, 1999; Fox, 2005; Sax et al., 2002; Tack & Patitu, 1992). However, it should be noted that the disparity in research and teaching productivity between males and females could be partially attributed to their uneven distribution across academic fields. The researcher suspects that higher concentration of females in

humanities, social sciences, and education rather than in more research-intensive engineering and natural science fields might account for some variation in research and teaching productivity by gender.

When controlling for race/ethnicity, the researcher found that race contributed very little to faculty productivity in the areas of research, teaching, and service. The only significant findings were that citizen African-American faculty members and non-citizen Asian faculty members were significantly less productive in research. Citizen Asian faculty members were also significantly less productive in undergraduate teaching. The researcher believes that the findings with respect to race/ethnicity in the present study need to be interpreted very cautiously for a couple of reasons. First, the understanding of the concept of race/ethnicity might be different for citizen and international faculty members. International faculty members generally identify themselves along the lines of ethnicity or country of origin, which questions the validity of the racial categories provided in NSOPF:04 survey for the international faculty subgroup in the study. Second, as would be expected, international faculty sample in the study appears to be more ethnically/racially diverse than citizen faculty sample. Note that only 56.2% of international faculty members were white as opposed to 86.7% of citizen faculty who were Caucasian. A very homogeneous citizen sample might have led to less variance in productivity and satisfaction of the racial minority groups within the citizen faculty sample.

With regard to the academic rank, assistant professors in this study were significantly more productive than their peers across both groups in almost all areas of faculty work. This finding might indicate that increased performance pressures and

expectations are more evident for junior faculty members who are trying to make certain that they achieve high levels of productivity during their pre-tenure years.

Finally, the study revealed that there was no significant difference between international and citizen faculty members' job satisfaction. This finding is contrary to the evidence from previous research that shows minority faculty members to be less satisfied, especially with promotional and professional development opportunities, performance evaluations, and social and academic relations with their colleagues (Aguirre, Martinez, & Hernandez, 1993; Aguirre, 2000; Bower, 2002; Fraser & Hodge, 2000; Gardner & Creswell, 1993; Johnsrud & Sadao, 1998; Smart, 1990). In addition, studies that specifically look at the difference between international and U.S. native-born faculty members' job satisfaction suggest that international academics are significantly less satisfied than their citizen counterparts (Corley & Sabharwal, 2007; Wells et al., 2007).

There could be several explanations why no significant difference was found between international and citizen faculty members' job satisfaction in this study. First, this finding could partly be driven by how the construct of job satisfaction is measured by the researcher. As discussed in previous chapters, the construct of job satisfaction in this study encompassed the following four dimensions: satisfaction with workload, salary, benefits, and the job overall at the employing institution. While there are no differences between international and citizen faculty members' satisfaction along these four dimensions, there might be other aspects of job satisfaction more important for international members that are not accounted for in this analysis (e.g., satisfaction with autonomy, workplace relations, interactions with students and faculty, social support, etc.). Second, citizenship status itself might not be a good predictor of job satisfaction. As

noted earlier, international faculty members in this study are a very diverse group in terms of their racial/ethnic composition and they should not be treated as a homogeneous group. The study by Wells et al. (2007) revealed that there were differences in international faculty members' job satisfaction by their geographic region of origin. Indeed, when examining job satisfaction by race/ethnicity (which is not the same as region of origin, but could be highly correlated) in this study, some differences emerged between international and citizen faculty members. For example, Asian and Black faculty members in the international sample appeared to be significantly less satisfied than their peers. But again, the readers should be careful in interpreting the findings regarding race for international faculty members in this study. According to Wells et al. (2007), race, as a socially constructed concept, may mean "different things across national borders, and it may not accurately reflect cultural differences" (p. 27). It would have been more appropriate to use region or country of origin to categorize international faculty members in this study. However, due to a data limitation (NSOPF:04 does not include the variable about country of origin), the researcher had to use the race variable instead, which might have masked the differences in job satisfaction across different ethnic groups within the international faculty sample.

Examining the Relationship between Faculty Productivity and Job Satisfaction

The findings of this study also revealed that international faculty who were more productive in undergraduate teaching and service had significantly lower job satisfaction. Similarly, as faculty in the citizen sample produced more undergraduate instructional outcomes, they became significantly less satisfied with their jobs.

One likely explanation for these inverse relationships could be that measures of teaching and service productivity and time spent on these activities may not be valued as much and may not be tied to rewards, such as pay and promotion (Fairweather, 1993, 1997, 2005). Expectancy and self-determination theories of motivation suggest that good performance is satisfying if it leads to valued outcomes and greater intrinsic and extrinsic rewards (Deci & Ryan, 1984; Gagner & Deci, 2005; Lawler & Porter, 1967; Locke, 1970; Vroom, 1964). These theories argue that people are motivated to perform better and produce more if they feel that better outcomes of their work will lead to increased rewards and recognition.

Most of the previous research on faculty productivity shows that faculty who publish more and work with graduate students, especially at research universities, are more likely to receive higher salaries, earn tenure, be promoted to higher ranks, and be recognized for their work than their colleagues who devote more time to undergraduate teaching and service (Fairweather, 1997, 2005). Fairweather (2005) argues that spending more hours on undergraduate instruction is related to a lower base salary regardless of the type of institution. In addition to pay, the value system of the academic culture is also communicated in tenure and promotion decisions and annual reviews. The fact that among various functions of academic work, undergraduate teaching and service are particularly undervalued could partly explain the negative relationship the study found between these roles and faculty job satisfaction.

Another likely explanation of these negative relationships could be the assumption suggested by self-determination theorists that when motivation to perform better is “prompted by external” contingencies, effective performance was less likely to

result in high levels of job satisfaction (Gagner & Deci, 2005, p. 353). Traditionally, faculty members at research universities report a greater orientation to research than teaching (Schuster & Finkelstein, 2006). The actual and "preferred" distribution of faculty time suggests that faculty at research universities would like to engage in more research activities and shift some of their time from teaching to research (Finkelstein, Seal, & Schuster, 1998; Schuster & Finkelstein, 2006). At the same time, there are growing external pressures on faculty to pay more attention to teaching and undergraduate education. Despite some faculty members' preferred orientations to research, they might have to respond to these growing external pressures and workload expectations and engage in more undergraduate teaching and service. When outside pressures and expectations divert faculty from their most valued activities, they might experience "considerable strain that might negatively affect their work" (Schuster & Finkelstein, 2006, p. 87). The researcher suggests that because increased undergraduate teaching and service productivity might be prompted by external pressures and contingencies, it might less likely lead to positive emotional responses to the job (Gagner & Deci, 2005).

One can argue that increased productivity, especially in undergraduate teaching and service, is not "willingly chosen" or "self-imposed" by faculty, but "is largely driven by institutional and professional demands" (Jacobs & Winslow, 2004, p. 11). As noted earlier, Jacobs and Winslow (2004) in their study outline two competing views regarding the nature of academic work. An optimistic or self imposed view of faculty work suggests that academia is a context in which devotion to work is self-imposed. Faculty members love what they do and they choose to devote more time and effort to it. In

contrast, the pessimistic or structural constraints view holds that faculty work patterns are the result of institutional and professional pressures. This study seems to support Jacobs and Winslow's pessimistic or structural constraints view of faculty work, which would suggest that increased teaching and service productivity may not be completely voluntary, but the result of growing demands and pressures from inside and outside of the academy.

On a final note, the researcher needs to emphasize that the constructs of productivity in the present study do not explain job satisfaction. Nor does the researcher suggest that productivity is the cause or the predictor of job satisfaction. The effects of productivity on job satisfaction have very little explanatory power. As noted earlier, SEM model explained only 10% and 7% of the variance in job satisfaction in the international and citizen faculty samples, respectively. Undoubtedly, there are numerous other factors, not included in this analysis that may be affecting faculty members' job satisfaction. Thus, when examining the effects of productivity on job satisfaction in this study, the researcher believes it is more appropriate to discuss how productivity relates to job satisfaction, rather than suggesting that productivity explains or predicts faculty job satisfaction.

Implications for Institutional Policy

The findings of this study have important policy implications. The study demonstrates that international faculty members make significant contributions to the excellence and scope of American universities, particularly in the area of research. At the same time, there is some evidence to suggest that there are areas in which international faculty might need more institutional support to fully utilize their expertise as a resource

that benefits the university and students. The researcher pointed out that international faculty members' involvement, or lack of it, in undergraduate teaching and service might to some extent be attributed to the stereotypes and perceptions about their teaching effectiveness, language proficiency, and ability to interact with students. According to Marvasti (2005), to change these perceptions, social and institutional support is needed. Institutions and departments need to create a more inclusive social climate that would recognize the academic advantages and contributions of international faculty in all functions of their work and not just in research. Furthermore, faculty, administrators, and policy makers in higher education institutions need to help build a supportive policy environment that would encourage more inclusion of international academics in professional and peer networks and in institutional leadership and governance process.

The findings regarding faculty productivity and satisfaction relationship also have important policy implications. There are still many unanswered questions regarding the relationship between productivity and job satisfaction, but clearly, from the policy perspective, this relationship can tell us a lot about the effectiveness of the organization. As noted earlier, Lawler and Porter (1967) argue that "a measure of the relationship between satisfaction and performance would be a helpful diagnostic tool for examining organizations" (p. 28). It is beneficial for the organization to keep highly productive employees satisfied with their jobs, because increased job satisfaction will encourage further good performance and will reduce turnover and absenteeism among productive faculty (Gruneberg, 1979; Herzberg, Mausner, & Snyderman, 1959; Schultz, 1973; Spector, 1997). The study provides some evidence that faculty members' hard work, especially in undergraduate instruction and service to their institutions and professions,

does not lead to job satisfaction. These findings may suggest that good performance of faculty may not be fairly rewarded, may not be self-imposed, and in turn, may not lead to job satisfaction. Higher education institutions clearly need to rethink their reward structures, value systems, and expectations placed on faculty work in order to keep highly productive faculty more satisfied with their jobs, and thus provide them with the academic workplace that is more appealing and attractive.

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