Research and Teaching Self-Efficacy of University Faculty: Relations with Job Satisfaction

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**Abstract**

We explored the research and teaching self-efficacy and job satisfaction of 528 university faculty (46% female) from Azerbaijan and Turkey using a mixed methods approach. Results from the quantitative Study 1 showed that teaching self-efficacy was higher than research self-efficacy, and that levels of research self-efficacy varied according to career stage and qualifications, but not gender. Job satisfaction was highest for faculty members with Master’s degrees. Teaching self-efficacy was the strongest predictor of job satisfaction. The results from qualitative Study 2 showed that contextual factors such as university climate and peer collegiality influenced self-efficacy and job satisfaction. Implications of the findings for university administrators and policy-makers in Azerbaijan and Turkey were presented.

*Key words:* university faculty, self-efficacy, job satisfaction, mixed methods

1. **Introduction**

In higher education, there is an international mandate for universities to become more competitive, more effective in their teaching, and more productive in their research (Hemmings, Kay, Sharp & Taylor, 2012). In some settings, restricted available resources places additional pressures on senior managers and university faculty to raise overall performance levels. Although research, teaching, and service are conventionally touted as the trio of expected workplace duties for faculty (Kuntz, 2012), teaching is often de-emphasized in faculty and institutional recognition and advancement, with even traditionally teaching-focused institutions coming under the pressure to meet challenging research expectations (Wilkesmann & Schmid, 2014). Despite gaining some intrinsic and extrinsic rewards by engaging in teaching and service activities, the greatest rewards (such as tenure and promotion) flow to those faculty who are most active in research and publishing scholarly work (Watty, Bellamy & Morley, 2008). For many faculty members, finding a balance between research, teaching, and service is considered to be pivotal for a successful and satisfying career (Kuntz, 2012).

The growing practice of performance tables measuring the research output of departments, faculties and universities (e.g., international comparisons of research such as the Times Higher Education university rankings) places additional pressures on faculty and administrators to increase research productivity, even as pressures to improve teaching quality increase. For faculty members, their *self-efficacy*—confidence to carry out the courses of action necessary to achieve valued goals (Bandura, 1997)—plays an important role in their day-to-day activities and in the satisfaction that they take from their work. Although self-efficacy has been linked with higher levels of job performance in a wide variety of settings, it also influences job satisfaction (Caprara, Barbaranelli, Borgogni & Steca, 2003); we enjoy work activities more if we are confident in carrying them out. Research has shown that teachers' self-efficacy beliefs play an essential role in establishing and sustaining their job satisfaction and teachers with low self-efficacy tend to experience low levels of job satisfaction (e.g., Klassen et al., 2009).

Research and teaching self-efficacy are important for faculty members everywhere, but may be especially important in developing countries where universities are less well-resourced even as government and university expectations for faculty members are increasing in line with international standards. In this article, we use a mixed methods approach to explore research and teaching self-efficacy of university faculty and its relations to job satisfaction in Azerbaijan and Turkey, two developing countries where resources for universities are relatively limited in comparison to culturally western settings.

**2. Theoretical Perspectives**

*2.1. Self-efficacy*

Self-efficacy—the confidence people hold about their capability to successfully carry out a particular course of action—is a predictor of performance in a given domain, but is not a generalized trait that applies to all domains (Bandura, 1997). For example, for university faculty, self-efficacy for carrying out the steps involved in conducting research may be high while facing a classroom filled with undergraduate students triggers uncertainty. The effort invested in a task is regulated by an individual’s self-efficacy. Self-efficacy in a given domain affects the choices made, the effort exerted, and the inclination to persist in a given task (Bandura, 1997). Self-efficacy beliefs do not operate in isolation from other psychosocial determinants: demographic and contextual factors such as career opportunities, career stage, and educational environment influence performance and, eventually, the satisfaction that people draw from their professional life (Caprara, Barbaranelli, Steca & Malone, 2006).

According to Bandura, self-efficacy is formed from four sources: enactive experience, vicarious experience, verbal persuasion, and interpretation of physiological state. The frequent and successful completion of a specific task increases self-efficacy (Bandura, 1997). When people believe that their efforts have been successful, their confidence to accomplish similar or related tasks is raised. Repeated failure, on the other hand, can lower efficacy beliefs. Observing the successes and failures of others contributes to individuals' beliefs about their own capabilities. Beliefs of personal competence are also influenced by the verbal persuasions an individual receives. Positive verbal persuasion encourages individuals to attempt, persist and succeed, which in turn promotes skill development and growth of self-efficacy beliefs. The final source of self-efficacy information is emotional and physiological arousal. Physiological states, such as strength, stamina, aches and pains, and mood affect self-efficacy judgments. Extensive research supports the claim that self-efficacy is an important influence on human achievement in a variety of settings, including health, sports, business and education (Bandura, 1997).

*2.2. Teaching self-efficacy*

There has been a marked increase in interest in the self-efficacy of K-12 school teachers over the last two decades (Klassen & Tze, 2014), but relatively little research targeting university faculty self-efficacy (e.g., Sharp, Hemmings, Kay & Callinan, 2013; Fives & Looney, 2009; Hemmings et al., 2012; Chang, Lin & Song, 2011). Various studies show that teachers with a greater sense of efficacy persist longer when confronted with challenges, exhibit a greater enthusiasm for teaching, and are generally more effective in the classroom (e.g., Holzberger, Philipp & Kunter, 2013). Moreover, teachers with a strong sense of efficacy tend to exhibit greater levels of planning, organization, and enthusiasm (Zee & Koomen, 2016), are open to new ideas, are more willing to experiment with new methods to better meet the needs of their students, and are more committed to teaching (Coladarci, 1992). High self-efficacy also corresponds with a greater tendency to try out new approaches: Tschannen-Moran and Woolfolk Hoy (2001) suggest that higher self-efficacy leads to better instruction due to self-efficacious teachers being more willing to invest effort in their teaching thereby creating mastery experiences that further bolster their self-efficacy.

Because of greater autonomy and more isolating conditions, teaching in a higher education context can encompass different experiences compared to teaching at elementary and high school levels, (Fives & Looney, 2009), thus resulting in differences in how self-efficacy operates. In addition, university faculty are frequently expected to do more than just teach, but also to generate knowledge through research, and to carry out service tasks important for the running of the university. Each of these job functions are represented by a cluster of related work tasks (Hemmings & Kay, 2009). In the higher education context, Bailey (1999) examined the relationship between self-efficacy for research and self-efficacy for teaching and argued that the two constructs were essentially independent. Therefore, it may be possible for a faculty member to be highly efficacious as a teacher and yet not be efficacious as a researcher. In comparison to research exploring the self-efficacy of teachers in K-12 contexts, there have been relatively few attempts to systematically measure university faculty self- efficacy in relation to research- and teaching-related activities (e.g., Fives & Looney, 2009). This study attempts to add to the study of self-efficacy theory in higher education by exploring research and teaching self-efficacy separately.

Studies dating back some decades (Schoen & Winocur, 1988) and those conducted more recently (Sharp et al., 2013) show that university faculty report relatively high levels of confidence when engaging in teaching activities such as preparing teaching materials, presenting lectures, leading tutorials, and marking assigned work. The prevailing view is that these higher levels of confidence are the result of practice effects and mastery learning (Bailey, 1999). Higher levels of confidence about teaching is held by university faculty who have training in delivering lectures, and is also developed through the significant amount of time dedicated to teaching preparation, delivery and assessment tasks compared to research and service activities (Hemmings et al., 2012).

Demographic factors (e.g., gender, experience etc.) may influence faculty self-efficacy for teaching. Male and female faculty members differ significantly in their levels of teaching self-efficacy, with females reporting higher levels of efficacy (e.g., Fives & Looney, 2009). Previous teaching experience generates self-efficacy for university teaching (Hemmings, 2015). For instance, Chang et al. (2011) reported that faculty members with between 16 and 20 years of experience showed higher self-efficacy for teaching than did faculty members with five or fewer years. However, some studies show no significant relationship between experience and teaching self-efficacy in university faculty (Fives & Looney, 2009; Vera, Salanova & Martin del Rio, 2011).

*2.3. Research self-efficacy*

Research tends to be valued over teaching and service in higher education settings in developed, culturally western settings (e.g., Sykes, 2006). Research productivity is now an increasingly important requirement for faculty in all types of institutions of higher education (Lucas & Murry, 2007). Research expectations in universities are increasing rapidly in developing countries which previously had minimal expectations for faculty research (e.g., Stephan, 2012). With low publication rates, faculty members in universities in developing countries risk stagnation in their present ranks and endanger their chances for tenure and promotion. Despite possessing the knowledge and skills needed for research, university faculty may still not be confident in their abilities to conduct and publish research (Hanna, Haug & Krabbenhoft, 2005). Poor publication records appear to be linked to a lack of confidence in research, especially as related to writing and converting writing into a publishable form (Gething & Leelarthaepin, 2000; Seyyed, Al-Haji Umar & Al-Hajji, 2004). University faculty with low levels of self-efficacy for research, or who lack the confidence to perform research tasks, tend to have low research output, as measured by refereed publications (e.g., Hemmings & Kay, 2010). Those with high levels of research self-efficacy are more likely to be the most research productive (Bailey, 1999). However, there is still a dearth of information on research self-efficacy and the sources of research self-efficacy within educational environments (Pasupathy & Siwatu, 2014), especially in developing and culturally non-western settings.

Demographic factors may also influence faculty self-efficacy for research. Some studies have found gender differences in faculty research productivity and research self-efficacy (e.g., Hemmings & Kay, 2009) with males reporting higher self-efficacy. In developing countries, the level of faculty members with PhDs can be lower than in developed countries, a fact often associated with lower rates of research productivity (Bentley, 2014). There is a positive correlation between academic qualification and publication output (Hemmings & Kay, 2009); that is, as the level of qualification increases, so does the amount of research output. Research suggests that completing a doctorate builds essential research skills, fosters self-assurance, and results in increased publications (e.g., Hemmings & Hill, 2009). Earlier studies have shown some support for such a proposition. For instance, Landino and Owen (1988) mention that holding a PhD contributes to higher self-efficacy for research. Similarly, Bailey (1999) reports that holders of doctorates, compared to those with masters’ qualifications, are more prone to have higher level of research self-efficacy. In addition, university faculty who research and publish, compared with those who do not, have higher levels of confidence and are more likely to hold higher academic qualifications and be in more senior academic appointments (Hemmings & Kay, 2009; 2010).

*2.4. Job satisfaction of university faculty*

Job satisfaction—perceptions of fulfilment derived from day-to-day work activities—is associated with higher levels of job performance (Judge, Thoresen, Bono, & Patton, 2001), and is also associated with work-related self-efficacy (e.g., Klassen & Chiu, 2010). University faculty typically work in environments that are high-pressured, multifaceted, and without clear borders. The job performance of university faculty as teachers and researchers determines much of the quality of the student satisfaction and impacts student learning (Machado-Taylor, 2016). Studies show that faculty stress combined with a lack of satisfaction with the work environment can lead to high rates of faculty turnover (Seifert & Umbach, 2008; Rosser, 2004). Moreover, a lack of satisfaction, even among those faculty still at the institution, has trickle-down effects for others (Ambrose, Huston & Norman, 2005).

Higher job satisfaction among university faculty is positively associated with achieving the goals of education (Eyupoglu & Saner, 2009). Well-motivated faculty can, with appropriate support, build a national and international reputation for themselves and the institution (Capelleras, 2005). Understanding the factors leading to faculty satisfaction and to what degree various factors contribute to their level of commitment is important to boosting their performance for research and teaching. A number of studies have examined the effects of demographic factors (e.g., experience, qualification, and gender) on job satisfaction of university faculty (e.g., Toker, 2011; Bozeman & Gaughan, 2011).

*2.5. Contextual factors*

Context influences how self-efficacy beliefs are formed. A responsive environment that rewards performance attainment in conjunction with a high sense of personal efficacy fosters assured, active responsiveness on the part of the recipient. A highly efficacious person who finds him/herself in an environment of low responsiveness will not necessarily cease striving, but may try to change his/her immediate environment. This effort to change may take the form of reassigning personal commitments from a less responsive environment to an environment of high responsiveness (Bandura, 1997). A teacher’s performance reciprocally influences and is influenced by perceptions of the teaching environment. Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) suggest that teachers make efficacy judgments, in part, by assessing the resources in their teaching contexts. For instance, the high teaching load of early career academics may reduce faculty self-efficacy (Lucas & Turner, 2007), as may close scrutiny from senior members of staff (Baron, 2000), workload (Lucas & Turner, 2007), job security issues (Star, 2004), and poor or limited access to resources (Bazeley, 2003). There are studies that also examined the influence of contextual factors (e.g., collegial relations, university climate, salary, etc.) on job satisfaction in university settings (e.g., Ssesanga & Garrett, 2005; Baş & Ardıç, 2001; Sharma & Jyoti, 2009; Noordin & Jussoff, 2009). However, scant research has examined the relations between self-efficacy and job satisfaction in a higher education context.

**3. Current Study**

Although multiple researchers have examined self-efficacy beliefs in education settings, less attention has been paid to self-efficacy beliefs in higher education, and almost no work has explored faculty members’ self-efficacy in university settings outside of culturally western settings. Building an understanding of faculty members’ motivation and job satisfaction in less well-resourced developing settings is important to begin to develop a healthy and productive workforce. Thus, the current study uses a sequential explanatory mixed methods approach (priority given to quantitative phase) to examine faculty members’ self-efficacy for research and teaching and its relations to job satisfaction in universities in Azerbaijan and Turkey. Analysing the quantitative data and studying the initial findings can contribute to deciding which aspects to pursue qualitatively, such as by addressing quantitatively important findings or statistically significant outcomes (Creswell & Plano Clark, 2011). Additionally, compared to the use of a single method, a mixed-methods approach can help expand the scope of our understanding of the topic.

The two countries share similar language foundations, a common culture, similar traditions and religion, and close relationships in the political, economic, commercial, cultural and educational spheres (Ismayilov & Graham, 2016). It is also worth noting that Azerbaijan and Turkey's higher education systems share several major commonalities, with high levels of centralization, and close government control of resources, curriculum, and university governance. The overall autonomy of universities is limited in both countries, with centralized policies that are strictly defined in accordance with educational policies made by the governments.

The current study poses three questions about faculty members’ self-efficacy beliefs: (a) how are demographic characteristics (e.g., gender, career stage, qualifications) associated with self-efficacy and job satisfaction? (b) what is the relationship between research self-efficacy, teaching self-efficacy, and job satisfaction? and (c) what do faculty members say about the critical factors influencing their self-efficacy and job satisfaction? Two studies are presented: first, a quantitative study examining the research and teaching self-efficacy beliefs of university faculty and their relations with job satisfaction, and second, a qualitative study exploring in more depth the factors that influence faculty self-efficacy and job satisfaction.

**4. Study 1: Quantitative Phase**

In Study 1, we used an online survey to explore research and teaching self-efficacy beliefs of university faculty and how these beliefs relate to their job satisfaction.

**4.1 Method**

*4.1.1 Participants*

Participants were 528 university faculty from 9 universities in Azerbaijan (*n* = 205) and 16 universities in Turkey (*n* = 323) who completed a survey on research and teaching self-efficacy beliefs and job satisfaction. Participating universities were invited through an email distributed through established research networks in both countries. The Azerbaijani university faculty were 52% female with a mean of 16.32 years of experience (SD = 12.77). The Turkish university faculty were 55% female, with a mean of 13.49 years of experience (SD = 9.29). 42% of the participants came from sciences and 58% from social sciences.

*4.1.2. Procedure*

The university teachers in each setting were sent a link on Qualtrics survey software and asked to complete a brief online survey on research and teaching self-efficacy and job satisfaction, with a participation rate of approximately 60% of those emailed. Ethical regulations of the host university were followed in all research activities.

*4.1.3. Measures*

We used reliable and well-validated measures of self-efficacy and job satisfaction. The research and teaching self-efficacy measure was created and validated by Hemmings and Kay (2009) with the original scale containing 32 items on research and 22 items on teaching. The scale was adapted and translated to Azerbaijani and Turkish by the first author, and back-translated by two language experts from Azerbaijan and Turkey. As part of the adaptation process, the translated scales were administered in a pilot study to 45 university faculty who noted cultural and language anomalies requiring minor changes, including removing three items from the research self-efficacy scale and two items from the teaching self-efficacy scale due to cultural mis-fit. The final scale included 30 items for research self-efficacy and 19 items for teaching self-efficacy.

Scale items were presented in the format “How confident are you (to do the following)? Keeping up to date with research literature” (research) and “Preparing course materials” (teaching). Scores on the 0 “Not confident at all” to 9 “Completely confident” scale were averaged to create composite scores for research and teaching self-efficacy. Job satisfaction was measured with a four-item scale from Caprara et al. (2003), e.g., “I am satisfied with my job” and, “I am happy with the way my colleagues and superiors treat me”. Participants rated job satisfaction on a 0 “Strongly disagree” to 9 “Strongly agree” scale. Caprara et al.s’ (2003) job satisfaction measure has shown strong evidence of reliability and validity in previous studies (e.g., Klassen, Foster, Rajani, & Bowman, 2009).

*4.1.4. Analysis*

Preliminary analyses showed that the levels of self-efficacy and job satisfaction were similar across the two settings (teaching self-efficacy and job satisfaction), although research self-efficacy was higher in Turkey than in Azerbaijan *F*(1, 526) = 82.65, *p <* .001, η2 = .136. After consideration of the cultural and linguistic similarities and differences between the two countries, the decision was made to combine the samples in further analyses. The total sample was categorized by gender, experience categories (approximately equal-sized groups, resulting in 0-7 years, 8-15 years, and 16+ years), and by qualifications (PhD completed, PhD candidates, and MA only).

Study 1 was designed to compare the level and patterns of relationships between key variables and to explore predictors of job satisfaction. After providing descriptive statistics for three key variables, we used MANOVA to examine how demographic factors were related to research and teaching self-efficacy, and job satisfaction. Next, hierarchical multiple regression was used to explore how demographic factors (experience and qualification) and self-efficacy predicted levels of job satisfaction. Finally, we examined bivariate correlations between research and teaching self-efficacy and job satisfaction.

**4.2. Results**

Table 1 presents descriptive statistics for research self-efficacy, teaching self-efficacy, and job satisfaction for the overall sample, and divided by gender, experience, and qualifications.

**Table 1**

Descriptive statistics for research, teaching self-efficacy, and job satisfaction

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |
|  | **Research SE** | |  | **Teaching SE** | |  | **Job satisfaction** | |
|  |  |  |  |  |  |  |  |  |
| Category | *M* | *SD* |  | *M* | *SD* |  | *M* | *SD* |
| **Overall** | 7.99 | 1.48 |  | 9.04 | 1.09 |  | 8.27 | 1.59 |
| ***Gender*** |  |  |  |  |  |  |  |  |
| Male (*n* = 283) | 8.03 | 1.42 |  | 9.04 | 1.06 |  | 8.28 | 1.64 |
| Female (*n* = 245) | 7.95 | 1.55 |  | 9.09 | 1.03 |  | 8.25 | 1.53 |
| ***Experience*** |  |  |  |  |  |  |  |  |
| 0-7 years (*n* = 165) | 7.79 | 1.51 |  | 8.97 | 1.01 |  | 8.17 | 1.41 |
| 8-15 years (*n* = 165) | 7.83 | 1.49 |  | 8.96 | 1.13 |  | 7.94 | 1.85 |
| 16 + years (*n* = 198) | 8.30 | 1.42 |  | 9.16 | 1.01 |  | 8.62 | 1.44 |
| ***Qualification*** |  |  |  |  |  |  |  |  |
| MA (*n* = 42) | 7.95 | 1.70 |  | 9.40 | 1.01 |  | 8.95 | 1.48 |
| PhD candidates (*n* = 77) | 6.77 | 1.75 |  | 8.91 | 1.36 |  | 8.07 | 1.75 |
| PhD (*n* = 407) | 8.23 | 1.28 |  | 9.03 | 1.02 |  | 8.23 | 1.53 |
|  |  |  |  |  |  |  |  |  |

All measures displayed adequate reliability (research self-efficacy> .95; teaching self-efficacy> .95; job satisfaction> .83). A paired samples *t*-test result demonstrated that there was a significant difference between the scores for the overall sample for teaching self-efficacy (*M* = 9.04; SD = 1.02) and research self-efficacy (*M* = 7.99; SD = 1.48), *t*(525)= 18.33, *p* < .001, with teaching self-efficacy rated higher than research self-efficacy.

Results from MANOVA showed that gender had no multivariate effect on any of the three dependent variables (research and teaching self-efficacy, and job satisfaction). There was a significant multivariate effect of experience on research self-efficacy, *F*(2, 510) = 5.277, *p* = .005, η2 = .020, but not on teaching self-efficacy *F*(2, 510) = .466, *p* = .628, η2 = .002, or on job satisfaction *F*(2, 510) = 2.40, *p* = .092, η2 = .009. A follow-up ANOVA with Bonferroni post hoc tests showed that university faculty with 16+ years of experience had significantly higher self-efficacy for research compared to those with 0-7 and 8-15 years of experience, *F*(2, 525) = 6.837, *p* = .001, partial η2 = .025.

The MANOVA also demonstrated a significant multivariate effect of qualification level on research self-efficacy, *F*(2, 510) = 26.84, *p* < .001, η2 = .095, and on job satisfaction *F*(2, 510) = 3.263, *p* = .039, η2 = .013, but not on teaching self-efficacy *F*(2, 510) = 1.165, *p* = .313, η2 = .005. Follow-up ANOVA with Bonferroni post hoc tests revealed that university faculty with a PhD qualification had greater research self-efficacy than those who were PhD candidates; and MA-level participants had higher research self-efficacy than PhD candidates, *F*(2, 525) = 34.827, *p* < .001, partial η2 = .117. Finally, follow-up tests demonstrated that the means for job satisfaction were significantly different for the three qualification groups; *F*(2, 525) = 5.076, *p* = .007, partial η2 = .019. University faculty with an MA qualification were more satisfied with their job compared to those with a PhD qualification and those who were PhD candidates. Faculty who were PhD candidates and holders of PhDs did not differ in their level of job satisfaction.

As a further analysis, a hierarchical multiple regression (Table 2) was conducted to examine the influence of experience, qualification level, and self-efficacy on job satisfaction. Experience and qualification were entered at Step 1, followed by research self-efficacy at Step 2, and teaching self-efficacy at Step 3. Experience and qualification predicted 2.5 % of variance in job satisfaction, *F*(2, 525) = 6.60, *p* = .001. The addition of research self-efficacy in Step 2 predicted an extra 6.6 % of variance in job satisfaction, *F*(1, 524) = 38.01, *p* < .001. Finally, the addition of teaching self-efficacy in Step 3 increased predicted an extra 3.5 % of variance in job satisfaction, *F*(1, 523) = 20.97, *p* < .001. The results demonstrated that experience, qualification, research, and teaching self-efficacy contributed significantly to job satisfaction.

**Table 2**

Summary of hierarchical regression analysis predicting job satisfaction (*n* = 528).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Variable | β | R² | R² change | *F* change |
| Step 1 |  | .025 | .025 | 6.60 |
| Experience | .129\* |  |  |  |
| Qualification | -.095 |  |  |  |
|  |  |  |  |  |
| Step 2 |  | .091 | .066 | 38.01 |
| Experience | .094\* |  |  |  |
| Qualification | -.148\* |  |  |  |
| Research self-efficacy | .265\*\* |  |  |  |
|  |  |  |  |  |
| Step 3 |  | .126 | .035 | 20.97 |
| Experience | .091\* |  |  |  |
| Qualification | -.110\* |  |  |  |
| Research self-efficacy | .145\* |  |  |  |
| Teaching self-efficacy | .221\*\* |  |  |  |
|  |  |  |  |  |

\* *p* <.05, \*\* *p* < .001

Table 3 presents the bivariate correlations among research self-efficacy, teaching self-efficacy, and job satisfaction. The result revealed that job satisfaction correlated with both research self-efficacy (*r* = .24; *p* < .01), and teaching self-efficacy (*r* = .31; *p* < .01).

**Table 3**

Bivariate correlations for job satisfaction, research and teaching self-efficacy

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  | Variables | **1.** | **2.** | **3.** |
| 1. | Job satisfaction |  |  |  |
| 2. | Research self-efficacy | .24\*\* |  |  |
| 3. | Teaching self-efficacy | .31\*\* | .50\*\* |  |

*Note.* All correlations *p* < .001

**5. Study 2: Qualitative Phase**

Despite its value in the quantitative phase, of course, no simple questionnaire can ever lay claim to capturing anything of the complexity of higher educational institutions and how they operate, nor can it fully probe the attitudes, values and beliefs of those university faculty who work within them. Findings from the quantitative study provided a broad understanding of the relations between faculty self-efficacy and job satisfaction, and furthermore, provided some indication of how demographic categories—gender, experience, and qualifications—influence levels of self-efficacy and job satisfaction. The goal for Study 2 was to elaborate and add depth to the quantitative findings, and also to explore additional contextual factors that university faculty understand to influence their self-efficacy and job satisfaction. In order to meet this goal, we conducted individual interviews with 14 university faculty from Azerbaijan and Turkey. Figure 1 presents a model of the research design showing the relationship between the quantitative Study 1 and the qualitative Study 2.

**5.1. Methods**

*5.1.2. Participants*

The 14 faculty who participated in video Skype interviews were selected from a larger pool of volunteers who had indicated their interest in being interviewed on the quantitative survey. Of the 528 respondents who replied to the online questionnaire, 31 university faculty agreed to be face-to-face interviewed. After reviewing the list of 31 interested university faculty, 14 were selected for the final interview to represent varied demographic variables (e.g., experience). These variables were chosen to reflect the range and typicality of the questionnaire respondents. Of the 14 participants, 7 were from Turkey and 7 from Azerbaijan, with distribution covering urban and regional university settings. The sample included 7 males and 7 females. We selected interviewees to represent a range of experience, ranging 1.5 years from Azerbaijan to 23 years from Turkey.

5.1.3*. Procedure*

We contacted 14 participants who had previously completed the self-efficacy and job satisfaction survey by email in order to identify a suitable date and time for the interviews. All 14 participants agreed to be interviewed face-to-face via Skype video call. The interview protocol was constructed in two ways. First, we used the findings from Phase 1 as a guide to probe self-efficacy and job satisfaction (e.g., *How has your research confidence changed over your career?* and second, we generated additional questions that explored the influence of additional contextual factors on self-efficacy and job satisfaction of university faculty (i.e., *What are additional factors that influence your confidence in research and teaching?*). For the purpose of the interview, the concept of ‘self-efficacy’ was referred to as domain-specific confidence, i.e., confidence in teaching or confidence in conducting research. Face-to-face interviews were preferred over text-only or audio-only interviews because response rates tend to be higher and the data richer when personal contact (albeit virtual) is included in the interview (David & Sutton, 2011). We audio-recorded and transcribed the interviews in preparation for analysis.

*5.1.4. Analysis*

We used a thematic analysis approach (Braun & Clarke, 2006) to understand the qualitative data. Analysis of the data began with a set of ‘‘start codes’’ that reflected the guiding questions of the study (Miles & Huberman, 1994) and that were generated from the findings in Study 1. Further codes were generated after multiple readings of the text generated from the interviews, and from a close reading of literature on faculty member self-efficacy. Table 4 presents the 11 codes with descriptions that were generated from the analysis.

**Table 4**

Codes names and descriptions

|  |  |
| --- | --- |
|  |  |
| Codes | Description |
| experience | years of experience |
| self-efficacy | any reference to teachers' confidence |
| student achievement | references to students' performance, also lower level achievement |
| qualification | degree obtained |
| collegial relations | relationship with a fellow member |
| university climate | atmosphere or spirit at the university |
| salary | the amount of money teachers earns per annum |
| workload | duties assigned to teachers at the university |
| doctoral programme experiences | specific reference to quality of doctoral programmes offered |
| job satisfaction | satisfaction from teaching or research |
| physical condition | references to physical facilities at the university |
|  |  |

The codes were further organized into two themes that centred on self-efficacy and job satisfaction using an approach described by Miles and Huberman (1994) in which the coded data were grouped to identify relationships, patterns and themes. Inter-rater reliability using two raters was conducted as a means to “mitigate interpretative bias” and ensure a “continuous dialogue between researchers to maintain consistency of the coding” (Walther, Sochacka & Kellam, 2013, p. 650). The agreement on the assignment of codes to text segments from the inter-rater reliability check was > 90%. Disagreements between the raters were resolved through a consensus approach. Quotations were analysed in Azerbaijani and Turkish by the first author, and translated into English for the purpose of this article.

**5.2. Results**

The two themes that characterized the generated codes were *Demographic and contextual factors affect self-efficacy* and *Context affects job satisfaction.* Quotes are provided to reflect the voices of participants and to verify the analysis procedures (Creswell & Plano Clark, 2011). In the following sections, we present results of the qualitative analysis of the two key themes accompanied by illustrative quotes.

*5.2.1. Theme 1: Demographic and contextual factors affect self-efficacy*

The teaching self-efficacy of the 14 participants was high; in fact, all of the participants commented that they had a high level of confidence in their teaching ability. Although most of the participants stated that they felt high levels of confidence to conduct research, three participants reported low research confidence. The codes that suggested the influence of demographic factors on self-efficacy included experience and their academic qualification; the codes that suggested the influence of contextual factors on self-efficacy were student achievement, workload, doctoral programme experiences (PhD supervision), university climate (i.e., the atmosphere or ethos of the university), and collegial relations.

All participants mentioned that the necessary skills and experience for successful research and teaching were lacking in the early stages of their careers, and that these skills developed over time. Participants expressed that as they gained experience through learning and practicing (i.e., Bandura’s source of self-efficacy enactive experience), combined with persistence and enthusiasm, they felt more comfortable, more confident and more involved in their work, resulting in higher levels of work-related confidence. Similarly, all participants with PhD qualifications (9/14) considered that their doctoral journeys were transformational experiences that had a direct impact on their motivation for research.

Student achievement and response to instruction were viewed as prominent factors influencing teaching self-efficacy. University faculty (8/14) expressed dismay and deep dissatisfaction with students’ attitudes towards learning and with students’ low achievement, saying that it did not reflect the efforts exerted by them, either in course preparation or in delivering and explaining the subject content in class. As a result, the experience of low student achievement and unmotivated students affected their teaching self-efficacy in a negative way, as suggested by a Turkish participant (male, 33 years) who noted that: *“The majority of students have very low motivation. There are extremely poor exam marks (and) I always try to avoid being demoralized. However, when the term finishes unsuccessfully in terms of student achievement, it affects my teaching confidence in a negative way.”*

Doctoral programme experiences, especially quality of PhD supervision, affected both research and teaching self-efficacy of faculty members. The balance between academic guidance, personal support and autonomy support were noted as essential components of self-efficacy. However, in some cases an extremely high level of academic and personal support during doctoral training lowered self-efficacy by reducing autonomy, as suggested by this female Azerbaijani participant (35 years), who remembered that, *“When I was a doctoral student my supervisor did not give me autonomy. My supervisor interfered too much concerning my research and I did not have a chance to work independently. I strongly believe it influenced my research self-efficacy negatively. Autonomy would have boosted my confidence for research during those years.”*

Participants mentioned that a heavy teaching load and burdensome administrative duties dampened research self-efficacy and productivity. Half of the interviewees (7/14) complained that their research self-efficacy was affected negatively by the teaching loads assigned to them. They expressed their displeasure with teaching tasks, arguing that their allocated weekly teaching load was unmanageable. Perceptions of university climate—including reward structures, recognition, and institutional valuing of research—affected self-efficacy of participants: *“I do not feel any encouragement at my workplace. My institution does not care whether I do research or not and as a result it affects my research self-efficacy in a negative way. I trust, various encouragement strategies and recognition can boost my self-efficacy for both research and teaching”* (Female, aged 38, Turkey). Conversely, encouragement and support from colleagues contributed to self-efficacy in a positive way. Most of the university faculty (8/14) were happy with relationships with peers, and reported that peer relationships built research and teaching self-efficacy.

*5.2.2. Theme 2: Context affects job satisfaction*

Participants’ job satisfaction was critically influenced by some of the same factors that influenced self-efficacy, suggesting a reciprocal relationship in which self-efficacy, job satisfaction, and work environment influenced each other. Participants noted that university climate and collegial relationships were key to satisfaction at work, although additional factors—salary and physical conditions of the university environment were also noted.

The majority of participants (8/14) noted that the importance of university climate is one of the fundamental factors affecting their job satisfaction. Comments about university climate included the factors of a) recognition b) supervisory support and c) participation in decision-making. Some faculty members pointed out that they felt they receive little or no recognition for their work, thus lowering job satisfaction. Two of the participants expressed their dissatisfaction with their department chairs’ expectations, explaining that they were forced to sit at the department from 9 am till 6 pm despite the fact that there were few resources (e.g., computers, labs etc.) available to enhance work productivity. Job satisfaction was highest when participants were actively involved in governance and decision-making; however, opportunities for involvement were often limited in centralized governance systems: “(There is little) *opportunity for faculty members to take part in decision making in any department related issues. It makes me really dissatisfied with my job”* (Female, aged 37, Azerbaijan).

Collegial relations were noted as important for job satisfaction for the majority (8/14) of participants. Although there were examples of negative influence of peer relationships on job satisfaction, personal relationships between co-workers were reported as mostly positive vis-á-vis job satisfaction. Salary was also noted as a strong factor influencing job satisfaction, both positively and negatively: *“Being highly paid gives university faculty a sense of respect and superiority compared to other professions”* (Female, aged 48, Turkey), and *“I am really dissatisfied with my salary… I cannot fulfil my financial, personal and family needs without a need to look for extra work…For me a reasonable and adequate salary is quite important for my motivation and job satisfaction*” (Male, aged 45, Azerbaijan).

Finally, 4/14 participants noted poor physical facilities to be a serious issue contributing to low job satisfaction, highlighting the poor condition of libraries and research labs. Those participants suggested that improvements in physical resources would increase their satisfaction with their jobs.

**6. Discussion**

The current study used a mixed methods approach to examine the self-efficacy and job satisfaction of university faculty in Azerbaijan and Turkey. Three aims characterized the current study. The first aim was to explore how demographic characteristics (e.g., gender, career stage, academic qualifications) are associated with self-efficacy and job satisfaction. The second aim was to examine the relationship between research self-efficacy, teaching self-efficacy, and job satisfaction. The third aim was to probe faculty members in Azerbaijan and Turkey to provide further depth about the critical factors influencing self-efficacy and job satisfaction.

The findings from Study 1 indicated that research self-efficacy was lower than teaching-self efficacy. Similarly, the results from the qualitative Study 2 revealed that university faculty were more positive discussing their teaching self-efficacy compared to research self-efficacy, due to factors including a systematic lack of institutional support for research, and to the burden of competing demands, especially heavy teaching loads. This finding is consistent with Hemmings and Kay (2009) who reported that the level of self-efficacy for teaching was higher when compared with that of research for participants from Australia. The research context in Azerbaijan and Turkey is less well-resourced than in many other western contexts, and the participants in this study, who may look enviously at the perceived wealth of research opportunities in richer countries, recognized the lack of systematic support for research. Another explanation for higher teaching self-efficacy offered by participants was that teaching is performed more frequently and therefore there are more opportunities to successfully master this activity. Frequent completion of a specific task successfully increases self-efficacy (Bandura, 1997), and participants were given more opportunities to teach than to do research. Moreover, teaching provides a wider range of sources for positive feedback from students or from supervisors. As suggested by Bandura, positive verbal persuasion—more available for teaching than for research, according to our participants—can encourage an individual to persist in attempting and completing a task and therefore affect self-efficacy.

University faculty with 16 years or more of experience showed higher research self-efficacy compared to those with lower levels of experience; however, there were no differences for teaching self-efficacy. In Study 2, the majority of university faculty commented that their self-efficacy changed over the course of their careers. According to Bailey (1999), it is reasonable to assume that a low level of experience or success in research will produce low levels of research self-efficacy. However, a critical question is whether research self-efficacy derives from skill, experience or success in research, or whether other factors such as observation of successful others can build confidence. Bandura (1997) suggests that self-efficacy is comprised of self-perceptions of competence rather than actual competence, in which case level of skill is less important than what one believes can be achieved in a particular context. Although successful experience builds self-efficacy, the other sources of efficacy—verbal persuasion, social persuasion, and interpretation of physiological state—can be drawn on by those faculty with lower levels of experience.

While a doctoral level qualification is not a prerequisite for engaging in research, qualification level is related to research engagement and often there is a clear association between the two in terms of research productivity (Hemmings & Kay 2009; 2010). The findings from Study 1 revealed that the holders of PhDs have higher research self-efficacy compared to those who were PhD candidates. Perhaps surprisingly, university faculty with MAs showed greater self-efficacy for research compared to those who were PhD candidates. The results of Study 1 contradicted the qualitative study by Hemmings, Rushbrook and Smith (2007) who found that limited academic qualifications may influence research self-efficacy. One possible explanation could be linked to the stress, isolation, loneliness or negative PhD study experiences that doctoral students often undergo throughout their studies. Research networks and supportive interactions with others, including supervisors and research mentors, are widely regarded as essential both during and after doctoral study (Sharp, Hemmings, Kay & Callinan, 2015).

The findings from Study 1 also showed that there were significant differences in job satisfaction between university faculty based on academic qualifications. Surprisingly, those university teachers with MA qualifications felt more satisfied with their jobs compared to those with PhDs or those who were PhD candidates. One possible explanation might be that education has a negative impact on job satisfaction because increased education is associated with higher expectations, and a person may therefore become dissatisfied with a job not meeting those expectations. The result of the Study 1 is inconsistent with the findings of Sharma and Jyoti (2009), who found the job satisfaction levels of university faculty increase with increases in the level of qualification. They reported that university faculty with a PhD degree showed higher job satisfaction than those with MPhil and postgraduates. Our results raise questions about the direct relationship between qualifications and job satisfaction; further work is necessary to clarify the relationship.

We found a positive relationship between job satisfaction and self-efficacy. No prior research appears to have investigated these relationships in higher education settings. The results from the present study strongly support the conclusions reported by previous research in K-12 school contexts (e.g., Caprara et al., 2003; Klassen & Chiu 2010; Federici & Skaalvik, 2012). Moreover, in K-12 school contexts, research studies show that a positive work environment, autonomy, and feelings of self-efficacy are all predictive of teachers' job satisfaction (Caprara et al., 2003; Klassen, Usher & Bong, 2010; Skaalvik & Skaalvik, 2014). Similarly, in university settings, the results of Study 2 demonstrated that two of the context factors; university climate and collegial relations predicted both self-efficacy, as well as job satisfaction.

The results from Study 2 revealed that student motivation contributed, positively and negatively, to teaching self-efficacy. This result is partially aligned with Kızıltepe (2008) who confirmed the importance of students as the primary factor affecting university faculty motivation in Turkey. Similarly, Oshagbemi (1997) reported that students’ attitudes towards learning (specifically a lack of interest shown by students) was among the teaching-related demotivating factors in university settings. In other words, unprepared students or students who attend university for the reasons other than interest in and commitment to learning the subject matter are among the factors that lower faculty motivation (Gates, 2000).

The results of Study 2 also suggested that teaching load and administrative workload influenced research self-efficacy. Time devoted to research is one of the best predictors of research productivity (Hassan, Tymms & Ismail, 2008), and unsurprisingly, university faculty devoting more of their time to teaching and service activities were less confident in their research productivity and research output. This finding is in line with the work of Hemmings et al. (2007) who reported that university teachers identify administrative duties as a major barrier to their research productivity and publications.

The results from Study 2 revealed that collegial support contributes to faculty self-efficacy. Indeed, verbal persuasion and positive modelling are ways to strengthen self-efficacy (e.g., Bandura, 1997). However, results from our study suggests that verbal persuasion, assessed as the interpersonal support of colleagues, may to be more pertinent for junior faculty rather than their more experienced peers. According to social cognitive theory, self-efficacy beliefs are most in flux early in learning and tend to become fairly stable and resistant to change once set. More importantly, in the context of higher education, collaboration or support from colleagues in various research projects can indeed boost faculty research self-efficacy. For instance, sharing experiences with various research or data analysis methods, research presentations in department seminars (vicarious learning), or encouragement for dissemination of research or conference attendance (verbal persuasion) may, in fact, increase faculty self-efficacy.

Further results from Study 2 suggested that recognition, supervisory support and taking part in decision-making were mentioned as important components leading to job satisfaction. Receiving rewards as well as perceiving an adequate and equitable allocation of such resources as research support may lead to job satisfaction. This particular finding resonates with the results of work reported by Ambrose, Huston and Norman (2005) who found a positive association between university leadership and the job satisfaction of faculty. This association is also in line with previous research by Sharma and Jyoti (2009) who found that the mentoring approach of supervisors can increase job satisfaction. Collegial relations are viewed as key elements of job satisfaction in a range of university contexts (e.g., Baş & Ardıç, 2001; Ssesanga & Garrett, 2005). Additional environmental factors, such as salary levels and the physical condition of university facilities were noted as factors relating to job satisfaction by faculty, a finding that has been seen in other developing countries (e.g., Noordin & Jussoff, 2009).

**6.1. Implications**

For university faculty in Azerbaijan and Turkey, self-efficacy and job satisfaction are inextricably linked. The results of the study can provide some guidance for university administration to understand the specific demands faced by university faculty related to self-efficacy and job satisfaction, with an understanding of how demographic and contextual factors influence these factors. Building from our research, some possible directions may include:

* Expanding the use of competitive funding to increase the quality and relevance of research. It is crucial to develop stronger links with international research and innovation networks to access new knowledge, technologies and know-how generated and developed outside national borders.
* Reviewing both the current structure and the content of doctoral programmes offered in Azerbaijan and Turkey. Given the clear link between self-efficacy for research and research output, and the current imperative within the higher education sector to ratchet up research performance, it is vital that any research development programme targeting research skills emphasize self-efficacy development.
* Initiation of comprehensive reviews of faculty workloads with the goal of seeking creative and innovative solutions to workload challenges. Supporting university faculty to find an appropriate balance between their three primary task areas – research, teaching and administrative work – may help lead to increased satisfaction with their jobs and in turn, to higher institutional effectiveness and productivity.

A further priority alluded to in the qualitative data is the need to re-evaluate faculty reward systems. Participants in the qualitative phase of this research suggested that workload and reward structures were de-motivating and lowered self-efficacy, and especially, job satisfaction. University administrators should evaluate the reward system in light of the many contemporary changes taking place in higher education to determine if the current reward systems are meeting the needs of faculty members.

**6.2. Limitations**

The study is limited by its reliance on a modest sample from 25 universities in two countries that are not often examined in the English-language education research literature. The generalizability of the findings may not extend to other developing countries or to developed or culturally-western cultures. For example, the Azerbaijani and Turkish contexts differ in some ways—the significant difference in research self-efficacy shows this—and results from our combined sample may not characterize the individual countries in a clear way. At the same time, the purpose of the study was not to directly compare the two countries, and the two settings do share important similarities linguistically, culturally, and in their geo-political contexts.