Justice and self-efficacy: Implications for influence on performance and satisfaction

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Abstract

This paper fills a gap in the literature by evaluating whether perceptions of justice or self-efficacy has a stronger influence on student's performance and satisfaction. We evaluate the mediating effect of student performance on the relationship between distributive justice and two dimensions of self-efficacy (i.e., task self-efficacy and learning self-efficacy) and student satisfaction. Findings indicate that justice perceptions explain more variance in satisfaction than self-efficacy, but that task self-efficacy explains more variance in performance than justice. Performance partially mediates the relationship between justice and satisfaction but fully mediates the relationship between task self-efficacy and satisfaction. One of the more interesting findings stems from the negative effect learning self-efficacy has on satisfaction providing support for findings that individuals may either overestimate their abilities or underestimate difficulty and/or affect satisfaction in learning environments. Theoretical, academic, and managerial implications are explored.

Introduction

Justice is a substantially important issue to individuals and organizations. Indeed, editors have increased attention to these topics in organizational journals (Colquitt & Rodell, 2011). Researchers find that justice perceptions are consistent predictors of employee behavior and attitudes, and meta-analytic results support relationships between justice perceptions and key organizational outcomes such as organizational citizenship behavior, organizational commitment, and task performance (Cohen-Charash & Spector, 2001; Colquitt, Conolon, Wesson, Porter, & Ng, 2001). The importance of justice as a core requirement for both the effective functioning of an organization and the personal satisfaction of those associated with the organization has been long recognized by researchers (Greenberg, 1990a). Indeed, Rawls (1971) identified justice as the "first virtue of social institutions" (p. 3). More recently scholars have integrated multiple theories to derive predictions about relationships among justice and other variables like trustworthiness and trust (Colquitt & Rodell, 2011), and meta-analysis have investigated employee justice across cultures (Shao, Rupp, Skarlicki, & Jones, 2013). While justice has received attention from various scholars, most notably in the political science and organizational behavior areas, scholars have recently identified a gap in investigating these variables in instructional settings (Chory-Assad, 2002; Tyler, 1987).

The term organizational justice describes the role of fairness as it directly relates to the workplace. Moorman (1991) suggests that organizational justice is concerned with

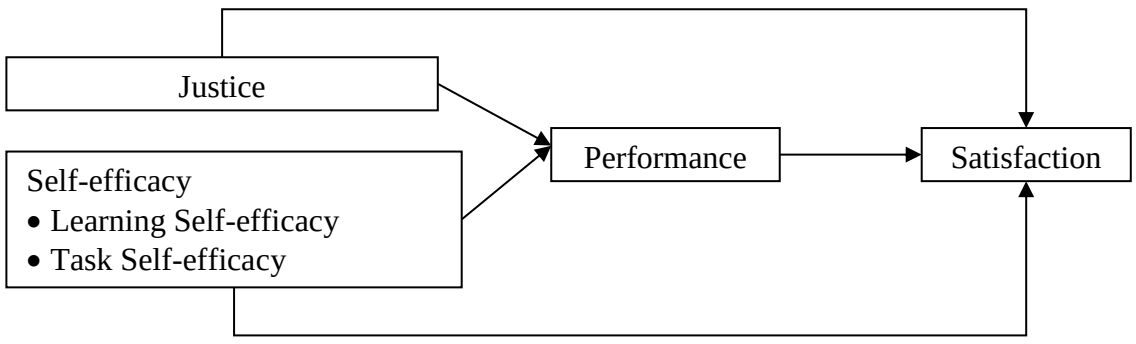
individual's perceptions of whether they have been treated fairly in the workplace and how these perceptions influence other work related variables. Distributive justice and procedural justice are two sources of organizational justice frequently cited in the literature (Folger & Greenberg, 1985). Distributive justice describes the fairness of outcomes an individual receives and procedural justice describes the fairness of the procedures used to determine those outcomes. Distributive justice, however, appears to be a more important predictor of personal outcomes (e.g., satisfaction with pay level or grades) than procedural justice (McFarlin & Sweeney, 1992). Just as instructional researchers have examined traditionally organizational concepts (e.g., Chen 2000; Chory-Assad, 2002; Chory & McCrosky, 1999; Richmond & McCrosky, 1993), the present study draws from organizational justice literature in examining justice perceptions and consequences in an instructional setting.

Satisfaction in the workplace is directly related to the performance of an individual, and Cohen-Charash and Spector (2001) found that most satisfaction measures are related to organizational justice. The extent to which individuals are able to satiate their needs through task performance is reflected in their level of satisfaction. Fryxell & Gordon (1989) found that perceptions of linkages between effort, performance, and reward were important correlates of their satisfaction. Instructional researchers evaluate student outcomes such as satisfaction and affective learning in both traditional and nontraditional classrooms such as online classes (Chory-Assad, 2002; Swan, 2001), and the present study evaluates satisfaction among students.

Self-efficacy is considered one of the best dispositional predictors of satisfaction and performance (Judge & Bono, 2001). In their meta-analysis of the relationships between 4 traits with satisfaction, Judge and Bono (2001) found the estimated true score correlations to be 0.26 for self-esteem, 0.45 for generalized self-efficacy, 0.32 for locus of control, and 0.24 for emotional stability. The estimated true score correlations between the 4 traits with job performance were 0.26 for self-esteem, 0.23 for generalized self-efficacy, 0.22 for locus of control, and 0.19 for emotional stability.

Although the justice-performance-satisfaction relationship and the self-efficacy-performance-satisfaction relationships have been considered separately in the literature (e.g., Awamlch & Al-Dmour, 2004; Ang, & Van Dyne & Begley, 2003), there is no evidence the streams of research have been simultaneously integrated. The purpose of this study is to test a model of justice and self-efficacy that has implications for student performance and satisfaction. Specifically, we want to determine which construct, justice or self-efficacy, has more influence on performance and satisfaction. The theoretical model depicting the relationships among these constructs is presented below in Figure 1.

Figure 1: ***Theoretical relationship among justice, self-efficacy, performance*** **and satisfaction.**



Theoretical Framework and Hypotheses

Organizational Justice

Organizational justice has received increased attention as a research stream in organizational behavior (Colquitt & Rodell, 2011) and instructional research (e.g., Chen 2000; Chory-Assad, 2002; Chory & McCrosky, 1999; Richmond & McCrosky, 1993). While early studies of fairness in psychology date back to Adams' (1963, 1965) work on equity theory, studies conducted over the last two decades comprise the bulk of research involving organizational justice and researchers have studied the influence of justice in various contexts on multiple outcomes. Monin, Noorderhaven, Vaara, & Kroon (2013) recently evaluated the role of justice norms in post-merger integration, how they evolve as organizational integration unfolds over time, and how norms of justice are enacted through intergroup dynamics. Thus, researchers attribute importance to fairness in organizational life. This is evidenced by the over 500 empirical and theoretical papers focusing on issues of fairness and justice (Cohen-Charash & Spector, 2001, Shao, et al., 2013). For the purpose of this paper, organizational fairness and organizational justice are viewed as interchangeable terms.

Distributive justice models were among the first justice archetypes (Adams, 1963, 1965) emphasizing the perceived fairness of outcomes. The study of procedural justice – "the perceived fairness of the process by which outcomes are arrived" (Cohen-Charash & Spector, 2001: 279) – followed when equity theory and other distributive justice models failed to adequately explain and predict peoples' reactions to perceived injustice. Greenberg (1990a) cautions researchers to remember that the earliest theories of social justice, which were applied to organizations, were derived for a specific purpose – to test principles of justice in general social interaction, not organizations in particular. More recent research and conceptual models are sensitive to variables and issues that directly affect organizations, and management researchers have studied justice at multiple levels (e.g., individual, group, and organizational). Bies & Moag (1986) introduced the concept of interactional justice, focusing on the interpersonal treatment and communication by managers to employees. Cohen-Charash and Spector (2001) have since found empirical merit of the distinction among the three types of organizational justice – distributive justice, procedural justice, and interactional justice. The distinction between interactional justice and distributive justice is clearly supported (Alexander & Ruderman, 1987; Folger & Konovsky, 1989; Gollinad, 1994; Sweeney & McFarlin, 1993), and Cropanzano & Greenberg (1997) confirm the basic distinction between fairness of process and fairness of outcome when they suggest that interactional justice is really a subcomponent of procedural justice.

There is less agreement, however, on the distinction between procedural justice and distributive justice, with some authors supporting the distinction (Colquitt, 1999; Cropanzano & Prehar, 1999; Moorman, 1991) and others questioning it (Tyler & Bies, 1990). McFarlin and Sweeney (1992) found distributive justice measures to be a more important predictor of personal outcomes, whereas procedural justice measures are a more important predictor of organizational outcomes. Thus, we use distributive justice scales to measure perceptions of organizational justice. The term justice will be used to describe our findings from these distributive justice scales, and we investigate the relationship among perceived fairness of outcomes, dimensions of self-efficacy, performance, and satisfaction – operationalized at the individual level.

Justice, Performance, and Satisfaction

There are conceptual reasons, and both empirical and theoretical support, for expectations that justice is directly related to performance and satisfaction, albeit for different reasons. Distributive justice is fostered when appropriate allocation norms are utilized in delivering key outcomes (Leventhal, 1976). In both business and academic contexts, the appropriate norm is equity, where allocation of outcomes is largely tied directly to inputs (e.g., hour/years worked toward a promotion or reward; hours allocated to study of course materials). Justice is likely to be relevant to performance because the harder one works or prepares the more likely they are to optimize performance relative to respective input. Justice is germane to satisfaction because equity has important affective and cognitive consequences. Inequity distress (e.g., anger from underpayment inequity, guilt form overpayment inequity) is often a direct consequence of inequitable allocations (Adams, 1965). Moreover, failing to make equitable decisions about something as salient to the individual as a job promotion, bonus, or course grades could undermine the competence, reliability, and dedication of an authority figure.

Researchers have examined the perceived fairness and the relationship of justice perceptions to numerous criterion variables (Walster, Walster, & Bersheid, 1978). In their investigation of justice for example, Walster and colleagues (1978) found that both quality and quantity of work are two outcome variables. Because distributive justice focuses on outcomes, it is related primarily to cognitive, affective, and behavioral reactions to specific outcomes (Cohen-Charash & Spector, 2001). Perceptions of the fairness of a particular outcome affect both emotions and cognitions. As these perceptions either persist or increase, behavior such as performance and/or satisfaction is influenced.

Equity theory (Adams, 1963, 1965) suggests that both fairness and satisfaction are influenced by perceptions of equity in outcome distributions. Gilliand & Chan (2001) suggest that a conceptual overlap and a distinction between outcome fairness and outcome satisfaction exist. McFarlin and Sweeney (1992), however, distinguish between fairness and satisfaction. They suggest that fairness is an antecedent to satisfaction.

Adams' equity theory also provides a theoretical explanation to the distributive justice effect on performance, which indicates that individuals can alter their work performance to restore justice. When perceived they are treated fairly, individuals are more likely to be motivated to improve task performance; however, when they feel unfairly treated, individuals may decrease their quality and quantity of work to seek a stronger sense of balance. The direct relationship between distributive justice and performance is affirmed in a recent empirical study conducted by Wang et al. (2010).

Social exchange theory is used by a growing number of researchers to explain the connection between distributive justice and performance (Colquitt, LePine, Piccolo, Zapata, & Rich, 2012; Dirks & Ferrin, 2002). If justice is perceived as fairly allocated, a high quality of social exchange will ensue. Researchers have used occupational trust in evaluating self-efficacy (Otto, Glaser, & Dalbert, 2009), and studies evaluating trust are pertinent in establishing theoretical and empirical associations between justice, self-efficacy, and both satisfaction and performance. A number of meta-analytic studies reveal a positive relationship between organizational justice and outcomes such as trust (Dirks & Ferrin 2002).

When trust is present, uncertainty about outcomes is reduced and individuals are more convinced to contribute to their performance. Colquitt et al. (2012) conducted an empirical study to demonstrate that trust, as an uncertainty reducer and an exchange

deepener, can foster the positive relationship between the organizational justice and performance.

As such, we predict that justice will be positively related to both satisfaction and performance.

H1a: Justice is positively related to satisfaction.

H1b: Justice is positively related to performance.

Self-efficacy

Self-efficacy is embodied in Bandura's social cognitive theory. Bandura (1977) defined self-efficacy as judgment of one's own capabilities to organize and execute courses of action required to achieve a desired objective. The effort one expends, and the persistence which they exhibit in the face of obstacles or failures, are influenced by efficacy expectations.

Individuals possess various levels of self-efficacy. Individuals with high self-efficacy view themselves successfully completing a task (Bandura, 1977). This high self-efficacy is then reinforced and can generalize to other, distinct tasks. Individuals with low self-efficacy view themselves as failing at a task or focusing on the negative aspects of how things can go wrong. The effects of failure are partly dependent on the timing and total pattern of experiences surrounding the failure. Low self-efficacy can function as a self-fulfilling prophecy and affect other tasks as well.

Self-efficacy, Performance, and Satisfaction

There are shared origins to efficacy expectations (Smith, Kass, Rotunda, & Schnieder, 2006). Bandura (1977) identifies four principal sources upon which one's self-efficacy is based. These include performance accomplishments, vicarious experience, verbal persuasion, and physiological states/emotional arousal. Because it is based on personal mastery experiences, performance is considered especially influential (Bandura, 1977).

Self-efficacy has been shown to affect performance in a variety of situations. Studies of self-efficacy and the workplace, sports, sales, and employee training are but a few. Stajkovic and Luthans (1998) conducted a meta-analysis considering self-efficacy in the workplace. Their review of 114 studies found a significant positive relationship between self-efficacy and work-related performance. Mortiz et al. (2000) conducted an additional meta-analytic review of 45 studies involving sports. They found a significant positive correlation between self-efficacy measures and performance.

Self-efficacy has also been found to be an antecedent to performance among salespersons. Krishnan, Netenmeyer, and Boles (2003) found that self-efficacy has both direct and indirect effects on sales performance. The self-efficacy-performance relationship has also been examined in employee training. Both general and specific self-efficacy improves performance through enhanced performance expectancy associated with employee training intervention (Schwoerer, May, Hollensbe, and Mencl, 2005). These studies coupled with the moderate, positive findings of the above cited meta-analyses clearly indicate that there is a positive relationship between self-efficacy and performance. Researchers have also found relationships between justice perceptions and self-efficacy. Otto and colleagues (Otto et al., 2009) investigated whether justice perceptions would enhance evaluations of working life (i.e., job satisfaction, organizational commitment) and both increase occupational trust (i.e., entrepreneurial

self-efficacy, occupational self-efficacy) and mental health (i.e., life satisfaction, self-esteem). Findings indicate that justice perceptions positively influence both mental health and occupational trust among all participant groups.

Learning Self-efficacy, Performance, and Satisfaction

Another area of self-efficacy involves learning. Potosky and Ramakrishna (2002) distinguish between self-efficacy and learning self-efficacy (LSE) in their study investigating the moderating role of updating climate perceptions in the relationship between goal orientation, self-efficacy, and job performance. They identify LSE as the beliefs associated with one's ability to learn and adapt in an organizational environment.

Their study found that learning self-efficacy mediated the relationship between performance goal orientation and job performance.

A substantial amount of research has focused on the role that self-efficacy plays as a motivational mechanism allowing the mobilization of effort, cognitive resources, and actions necessary for performance (Gist & Mitchell, 1992), yet little research has focused on the direct effects of LSE on performance or satisfaction outcomes. Zimmerman and colleagues found general support for the relationship between efficacy and learning performance, but efficacy generally functioned indirectly as a mediator or moderator. Zimmerman (1995) investigated the relationship between self-efficacy and academic performance and results from that study indicate that a high sense of self-efficacy results in better academic achievement and performance at the college level. Zimmerman, Bandura, and Martinez-Pons (1992) found a positive relationship between student's beliefs in their efficacy for self-regulated learning and their perceived self-efficacy for academic achievement. This, in turn, influences the individual's academic goals and ultimately their academic achievement.

While the overall relationship between LSE and performance has been studied, the direction of the relationship has not been directly investigated. Steele-Johnson et al. (2000) found a positive relationship between performance orientation and self-efficacy, but this relationship was conditional. The relationship only held when scheduling tasks were simple and required fewer attentional resources. Phillips and Gully (1997) report a similar finding between performance-goal orientation and self-efficacy, but under more challenging circumstances of a college exam. Nesbit & Burton (2006) found an interaction between grade outcomes and negative justice perceptions. Specifically, poor performers with negative justice perceptions had subsequently lower self-efficacy and satisfaction than those with no injustice perceptions. Self-efficacy rose, however, if students with negative justice perceptions also received high performance feedback. Thus, justice, self-efficacy, satisfaction and performance are related for students participating in this study. The following hypotheses are based on the above discussion:

H2a: Learning self-efficacy is positively related to performance.

H2b: Learning self-efficacy is positively related to satisfaction.

Task Self-efficacy, Performance and Satisfaction

Bandura (1982, 1986, and 1997) suggests that self-efficacy is primarily task-specific. Kanfer (1987) defines task-specific self-efficacy (TSE) as an individual's intention to allocate effort to achieve targeted levels of performance. Weigane & Stockhan (2000) contend that task-specific measurement of self-efficacy is necessary to

successfully predict behavior. Other researchers believe that self-efficacy is a measurable trait predicting behavior across domains (Chen, Gully & Eaden, 2001; Chen, Gully, Whiteman & Kilcullen, 2000). Chen et al. (2000) found a high correlation between TSE and generalized self-efficacy (GSE). They also found that TSE mediates the effects of trait-like GSE. This finding supports Bandura's (1997) contention that generalized beliefs about the self are not good proximal predictors of behavior (Smith et al., 2006).

The predictive power of TSE has been demonstrated in major meta-analyses (Mortiz, Feltz, Fahrbach, and Mack, 2000; Stajkovic & Luthans, 1998). Scholz, Dona, Sud, & Schwarzer (2002) suggest that TSE predicts task performance better than GSE. We will examine the relationship between TSE, performance, and satisfaction in our final model.

The present study investigates the relationship between TSE and two outcomes – performance and satisfaction. Based upon previous findings, we propose that there is a positive relationship between task self-efficacy and performance and task self-efficacy and satisfaction.

H3a: Task self-efficacy is positively related to performance.

H3b: Task self-efficacy is positively related to satisfaction.

Performance and Satisfaction

Although the core premise of the attitude construct rests upon the notion that attitudes influence behavior, attitudes have been shown to be poor predictors of behavior (Brief, 1998). This is true for the satisfaction performance relationship as well, and there are several methodological reasons for these findings (Judge, Bono, Thoreson, & Patterson, 2001). Attitudes may not predict behavior because of potency or strength limitations (e.g., strongly held values associated with the attitude), strong situational pressures (e.g., situations where the individual has little discretion), and incompatible levels of abstraction (e.g., using general attitudes to predict specific behaviors).

Judge et al. (2001), however, addressed this incompatibility principle in their meta-analysis. They found that when the relationship between overall satisfaction and overall job performance were assessed, the relationship was both positive and moderate. The estimated correlation that emerged from that study was 0.30. Judge et al. did not, however, specify which direction the relationship should go – performance-satisfaction or satisfaction-performance. Overall, there is a moderate correlation between job performance and satisfaction. As such, we contend that performance will be positively related to satisfaction.

H4: Performance is positively related to satisfaction.

Methods

Sample

The sample for this project was drawn from a university in the southwest United States. Data collection consisted of distributing questionnaires to students enrolled in the undergraduate business classes. Participants were told that their information was confidential and that the survey was for scientific research purpose only and directives from the Institutional Research Board (IRB) were discussed. Also, minimal extra credit was offered in some classes to encourage participation. All in all, 450 questionnaires were returned, of which 7 were dropped due to entire incomplete sections of the survey.

The sample distribution was as follows: 48% of participants were male, 52% were female; 58.4% were senior, 31.2% were junior, and 10.4% were freshman or sophomore; 68.5% were below 25 years of age, 20.8% were between 25 and 30 years of age, and 10.7% were above 30 years of age; 42.3% had GPA below 3.0, 37.2% had GPA between 3.0 and 3.5, and 20.4% had GPA above 3.5.

Measurement

All measures used in the survey were collected by means of a 5-point Likert scale ranging from 1 (strongly agree) to 5 (Strongly disagree). Content validity is evaluated based on the logic and theory to make sure that the domains of content were reflected. A literature review provided a pool of items for measuring self-efficacy, justice, performance and satisfaction. Measurement items were either generated from the literature or adopted from established measures. A pilot study was conducted to improve content validity and clarity.

Self-efficacy: An 8-item scale for self-efficacy was used in this study (Smith et al., 2006; Schwoerer et al., 2005; Krishnan et al., 2002). The self-efficacy scale consists of four measures of task self-efficacy and four measures of learning self-efficacy.
Task self-efficacy measures one's beliefs regarding ability to perform a task. Respondents reported the extent to which they agreed with statements such as "I feel I am capable of completing assignments". Cronbach's alpha for the task self-efficacy scale was 0.715. Learning self-efficacy scale developed by Potosky and Ramakrishna (2002) measures one's beliefs about his or her ability to learn and to deal with a new task or assignment (e.g. "I feel I can perform new tasks well" or "I feel that learning new tasks is something I do well"). Cronbach's alpha for learning self-efficacy scale was 0.923.

Justice: A 7-item scale of justice (modified for instructional justice) was used in this study (Sweeney and McFarlin, 1997; Brashear et al, 2004; Niehoff and Moorman, 1993). This scale measures the degree to which respondents believe that they are fairly rewarded on the basis of their performance (e.g. my professor evaluated my overall performance on things related to my academic performance). Cronbach's alpha for this scale was 0.910.

Performance: Performance was measured by using student's academic performance (e.g. what grade did you receive on your last exam in this class?), as well as by using student self-report to some items adapted from a scale by Krishnan et al. (2002) (e.g. How do you rate yourself in terms of quality of your performance in regard to knowledge and mastery of material in this class?). Cronbach's alpha for this 6-item scale was 0.869.

Satisfaction: Satisfaction was measured with Rom´n 's (2003) and Pincus et al.'s (1990) job satisfaction scale. To better focus on the impact of self-efficacy and justice on satisfaction, we replaced the contextual satisfaction items with another designed to academic satisfaction. A 5-item scale of satisfaction was used to assess the degree to which respondents agree or disagree with a series of evaluative statement. For example, "I would recommend this course to a friend" or "the professor provides me the information I really need to do well in this course". Cronbach's alpha for this scale was 0.910.

Data Analysis Strategy

First, we conducted an exploratory factor analysis (EFA). As a conservative heuristic, items with a loading smaller than 0.4 on any factor were deleted. Moreover, the Kaiser (1960) eigenvalue-one criterion was used to identify the number of factors. Next, a confirmatory factor analysis (CFA) was conducted because this technique provides the more rigorous interpretation of reliability, validity and unidimensionality than is provided by the exploratory factor analysis (Olorunniwo, Hsu, & Udo, 2006). LISREL 8.54 was used to construct the measurement and structural equation models discussed below. Following recommendations by Olorunniwo and colleagues (2006) and Joreskog and Sorbom (1993), this study includes the following fit indices: chi-squared statistic, adjusted goodness of fit index (AGFI), comparative fit index (CFI), normed fit index (NFI), nonnormed fit index (NNFI), and root-mean-square error of approximation index (RMSEA). An AGFI value greater than 0.8 is considered acceptable. Brown and Cudeck (1989) suggest that RMSEA values at or below 0.08 indicate a good fit between the model estimated by the sample data and the population. For the remaining fit indices described above, values above 0.9 indicate a good fit. Modifications were performed after the degree of fit was assessed by several generally accepted measures.

Results

Factor Analysis

Exploratory factor analysis was first used to determine which items should contribute to justice perceptions and self-efficacy perceptions. Reliability was tested by using Cronbach's □, and the values obtained for each scale were over the threshold value of 0.7 established by Nunnally (1978) (Tables 1a & 1b) indicating acceptable reliability.

Convergent and discriminant validity using inter-item correlation was then assessed (Churchill 1979). The inter-item correlations (Table 2) between items were generally higher within a factor than across factors. These indicate acceptable levels of internal consistency as well as convergent and discriminant validity.

Table 1a: Rotated factor structure, descriptive statistics, and Cronbach's alpha scores: justice, learning self-efficacy, and task self-efficacy.

	1	2	3	Label
J14 I am rewarded fairly for the amount of effort I put forth.	0.876			Justice
J16 Overall, the grades I receive in this class are fair.	0.863			
J12 My performance rating presents a fair and accurate picture of my actual class performance.	0.817			
J15 I consider my course work load to be fair.	0.743			
J11 My professor evaluates my overall performance on things related to my academic performance.	0.728			
J17 I feel that my class responsibilities are fair (e.g., outside readings, homework preparation, group meetings, etc	0.716			
J13 My own hard work will lead to recognition as a good performer.	0.652			
L34 I fell I am able to learn new tasks quickly.		0.880		Learning Self-efficacy
L35 I believe that learning new tasks is something I do well.		0.873		
L33 I feel I can perform new tasks well.		0.872		
L32 I feel I master new tasks easily.		0.825		
T30 I feel I am confident to stay motivated.			0.766	Task Self-efficacy
T28 I will not give up easily when I am trying to solve a difficult question in my homework, quiz, project and exam.			0.712	
T29 I feel I am confident in my ability to handle receiving a poor grade in my assignments.			0.671	
T31 I feel I am capable of completing assignments.			0.642	
% of variance explained (total = 66.56%)	29.193	22.203	15.165	
Alpha	0.901	0.923	0.715	
Mean	1.803	1.813	1.840	
Std.Deviation	0.742	0.709	0.637	

Table 1b: Items measuring performance and satisfaction

	N	Mean	SD	Overall
Performance:				
P38 What grade did you receive on your last exam in this class?	442	2.602	1.104	Mean = 2.117
P47 How would you rate yourself in terms of the grades you receive among students in this class?	439	2.405	0.919	SD = 0.666
P42 What grade do you expect to get in this class?	437	1.801	0.710	Alpha = 0.869
P43 What is the best grade you can get in this class (Considering your specific circumstances)?	443	1.528	0.653	
P48 How would you rate yourself in terms of the grades you receive among your friends in school?	441	2.088	0.833	
P49 How do you rate yourself in terms of quality of your performance in regard to knowledge and mastery of the material?	441	2.261	0.824	
Satisfaction:				
S51 I would recommend this course to a friend.	440	2.230	1.275	Mean = 2.020
S52 Overall, I am very satisfied with this course.	441	2.154	1.190	SD = 0.996
S54 I am kept informed of how I am progressing in this course.	441	1.912	1.132	Alpha = 0.910
S55 The professor provides me the information I really need to do well in this course.	441	1.916	1.083	
S56 My course assignments are specified in clear and concise language.	440	1.886	1.116	

Table 2: Inter-item correlation: justice, learning self-efficacy, task self-efficacy, performance, satisfaction

	J11	J12	J13	J14	J15	J16	J17	L32	L33	L34	L35	T28	T29	T30	T31	P38	P42	P43	P47	P48	P49	S51	S52	S54	S55	S56
J11	1.0	0.6	0.4	0.5	0.4	0.6	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.1	0.2	0.1	0.2	0.4	0.4	0.4	0.5	0.5
J12	0.6	1.0	0.5	0.7	0.5	0.7	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.1	0.3	0.5	0.5	0.4	0.5	0.5
J13	0.4	0.5	1.0	0.6	0.4	0.5	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.4	0.4	0.4	0.4	0.4
J14	0.5	0.7	0.6	1.0	0.6	0.7	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.0	0.3	0.5	0.6	0.4	0.6	0.5
J15	0.4	0.5	0.4	0.6	1.0	0.6	0.6	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.0	0.2	0.4	0.5	0.3	0.5	0.4
J16	0.6	0.7	0.5	0.7	0.6	1.0	0.6	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.6	0.6	0.4	0.7	0.6
J17	0.5	0.5	0.3	0.6	0.6	0.6	1.0	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.1	0.2	0.4	0.4	0.3	0.5	0.5
L32	0.2	0.2	0.3	0.2	0.3	0.3	0.2	1.0	0.8	0.7	0.7	0.5	0.2	0.4	0.5	0.2	0.1	0.1	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2
L33	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.8	1.0	0.7	0.7	0.4	0.2	0.4	0.4	0.1	0.1	0.1	0.3	0.2	0.3	0.1	0.2	0.2	0.1	0.2
L34	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.7	0.7	1.0	0.8	0.4	0.2	0.3	0.4	0.2	0.1	0.1	0.2	0.3	0.3	0.1	0.2	0.2	0.2	0.2
L35	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.7	0.7	0.8	1.0	0.4	0.3	0.3	0.4	0.2	0.1	0.1	0.3	0.3	0.3	0.1	0.1	0.2	0.2	0.2
T28	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.4	0.4	0.4	1.0	0.4	0.5	0.5	0.2	0.1	0.1	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2
T29	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	1.0	0.4	0.3	0.1	0.0	0.1	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.3
T30	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.3	0.3	0.5	0.4	1.0	0.5	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2
T31	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.5	0.4	0.4	0.4	0.5	0.3	0.5	1.0	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.3
P38	0.1	0.2	0.1	0.2	0.1	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	1.0	0.6	0.6	0.7	0.5	0.5	0.3	0.3	0.2	0.3	0.2
P42	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.2	0.6	1.0	0.7	0.6	0.4	0.5	0.4	0.4	0.3	0.4	0.3
P43	0.1	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.6	0.7	1.0	0.6	0.4	0.4	0.4	0.4	0.3	0.3	0.3
P47	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.2	0.1	0.2	0.3	0.7	0.6	0.6	1.0	0.6	0.6	0.2	0.3	0.3	0.2	0.2
P48	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.2	0.3	0.3	0.2	0.0	0.2	0.3	0.5	0.4	0.4	0.6	1.0	0.5	0.0	0.0	0.2	0.1	0.1
P49	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.3	0.3	0.5	0.5	0.4	0.6	0.5	1.0	0.3	0.3	0.3	0.3	0.3
S51	0.4	0.5	0.4	0.5	0.4	0.6	0.4	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.2	0.0	0.3	1.0	0.9	0.5	0.7	0.6
S52	0.4	0.5	0.4	0.6	0.5	0.6	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.3	0.0	0.3	0.9	1.0	0.5	0.7	0.7
S54	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.5	0.5	1.0	0.7	0.6
S55	0.5	0.5	0.4	0.6	0.5	0.7	0.5	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.1	0.3	0.7	0.7	0.7	1.0	0.7
S56	0.5	0.5	0.4	0.5	0.4	0.6	0.5	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.2	0.1	0.3	0.6	0.7	0.6	0.7	1.0

Table 3 reports the correlations between the constructs in this study, which were calculated from scales scores for all the latent variables. The significance of this set of correlations offers support for the hypotheses in this study because significant correlations exist between the justice and performance, justice and satisfaction, performance and satisfaction, self-efficacy and performance, and self-efficacy and satisfaction relationships.

Table 3: Intercorrelations of latent variables

	1	2	3	4	5
1. Justice	(0.74)				
2. Learning Self-efficacy	0.31**	(0.71)			
3.Task Self-efficacy	0.37**	0.49**	(0.64)		
4. Performance	0.30**	0.28**	0.30**	(0.67)	
5. Satisfaction	0.70**	0.19**	0.33**	0.38**	(1.00)

Note: Standard deviations are reported along the diagonal
** Correlation is significant at the 0.01 level (2-tailed).

Guided by results generated from the above analyses, a more rigid procedure (i.e., confirmatory factor analysis) was performed to further assess the unidimensionality of each latent variable. Structural equation measurement modeling was used to test unidimensionality in order to examine if an item measures one and only one construct (Bagozzi, 1980). Jöreskog and Sörbom (1993) suggest that the separate measurement model for each factor should be estimated, then, the measurement model for all factors is constructed. At both steps, goodness-of-fit test should be used to assess whether or not the model fits the data.

Three measurement models for all exogenous factors were evaluated, that is, the measurement models represent justice, learning self-efficacy, and task self-efficacy separately. All goodness-of-fit indices indicated an acceptable fit. By combining all the factors into a full measurement model, further evidence can be obtained to assess the convergent and discriminant validity of all of the five latent factors and facilitate the analysis as to whether the full model fit the data as measured. Convergent validity was assessed by reviewing the t-test for the factor loadings (Olorunniwo et al., 2006). If the t-value of each item is greater than 2, it means that loadings of the items on their respective factors are significant. Significant t-statistics values (p-value < 0.01) suggest that all indicators provide good measures of their respective constructs (see results of factor loadings and their t-statistics in Table 4). Goodness-of-fit indices were indicated by a RMSEA of 0.053, a NFI of 0.96, a CFI of 0.98, a GFI of 0.89, and an AGFI of 0.87.

Table 4: Overall confirmatory analysis model for justice, learning self-efficacy, task self-efficacy, performance, and satisfaction

Construct and Indicators	Loading	t-statistics
Justice		
J14 I am rewarded fairly for the amount of effort I put forth.	0.79	20.39*
J16 Overall, the grades I receive in this class are fair.	0.85	22.37*
J12 My performance rating presents a fair and accurate picture of my actual class performance.	0.75	18.16*
J15 I consider my course work load to be fair.	0.65	15.98*
J11 My professor evaluates my overall performance on things related to my academic performance.	0.61	14.78*
J17 I feel that my class responsibilities are fair (e.g., outside readings, homework preparation, group meetings, etc.)	0.63	15.23*
J13 My own hard work will lead to recognition as a good performer.	0.49	12.84*
Learning Self-efficacy		
L34 I fell I am able to learn new tasks quickly.	0.63	19.59*
L35 I believe that learning new tasks is something I do well.	0.65	23.58*
L33 I feel I can perform new tasks well.	0.67	19.76*
L32 I feel I master new tasks easily.	0.69	21.69*
Task Self-efficacy		
T30 I feel I am confident to stay motivated.	0.59	14.6*
T28 I will not give up easily when I am trying to solve a difficult question in my homework, quiz, project and exam.	0.58	14.76*
T29 I feel I am confident in my ability to handle receiving a poor grade in my assignments.	0.48	8.78*
T31 I feel I am capable of completing assignments.	0.50	16.36*
Performance		
P47 How would you rate yourself in terms of the grades you receive among students in this class?	0.82	22.17*
P48 How would you rate yourself in terms of the grades you receive among your friends in school?	0.52	13.62*
P49 How do you rate yourself in terms of quality of your performance in regard to knowledge and mastery of material in this class?	0.60	16.36*
P38 What grade did you receive on your last exam in this class?	0.83	17.53*
P42 What grade do you expect to get in this class?	0.50	14.45*
P43 What is the best grade you can get in this class (considering your specific circumstances)?	0.41	12.19*
Satisfaction		
S51 I would recommend this course to a friend.	0.97	18.96*
S52 Overall, I am very satisfied with this course.	0.99	21.23*
S54 I am kept informed of how I am progressing in this course.	0.79	16.11*
S55 The professor provides me the information I really need to do well in this course.	0.96	23.09*
S56 My course assignments are specified in clear and concise language.	0.89	19.53*

* indicates significance at $p < 0.01$

Discriminant validity was further assessed by $\chi 2$ difference tests between the constrained and unconstrained model. In the constrained model, each pair of factors was restricted to zero. Therefore, the change in $\chi 2$ reflects the effect of removing this pair of factors and thus is a test of its significance to the model. The significant $\chi 2$ difference (lower $\chi 2$ for the unconstrained model) suggests that the factors demonstrate discriminant validity. Results indicate that all $\chi 2$ differences are statistically significant at p-value of 0.01.

Analysis of the Structural Model

The structural model was tested to determine the significance of each path based on the results of the measurement models by using LISREL 8.54. The overall model fit statistics indicate that the sample data fit the hypothesized model well. The $\chi 2$ test for the fit of the full structural model has a value of 601.04 with 289 ($P < 0.01$) degrees freedom. The $\chi 2$ test is sensitive to the sample size, however, and most studies obtain significant $\chi 2$ values when the sample size is more than 200 (Hair, Anderson, Yatham, & Black, 1995). Meyer and Collier (2001) suggest that the RMSEA is not dependent on sample size. The RMSEA of 0.051 for the model estimated here indicates good fit. Other overall model fit statistics also reflect a good fit (NFI = 0.97, GFI = 0.90, CFI = 0.98, and AGFI = 0.88).

Significance of the individual paths was also examined. These tests allow for the determination of the direction of the effects as well as their significance. The results for each individual path provide empirical support for the estimated causal relationships in the theoretical model (see Table 5). Hypothesis 1 states justice influences satisfaction and performance. The t-test for H1a and H1b reveals that both are significant at the level of 0.01. The support of these hypotheses indicates that justice is an overall driver of satisfaction and performance. The path estimates for justice's significant relationship are: performance ($\gamma = 0.22$, $p < 0.01$) and satisfaction ($\gamma = 0.84$, $p < 0.01$).

Hypotheses 2 (a & b) suggest that learning self-efficacy has a direct positive effect on both satisfaction and performance. The results in Table 5 indicate that learning self-efficacy positively correlates with performance; however, it is not significant at $\alpha = 0.05$. Also, the sample data indicate that learning self-efficacy has a significant, but negative, influence on satisfaction, a direction opposite of that hypothesized (H2b).

Hypothesis 3 states that task self-efficacy is positively related to both performance and satisfaction. H3a is supported by the results in Table 5 ($\gamma = 0.40$, $p < 0.05$), which indicate a significant positive influence of task self-efficacy on performance. While our findings indicate that task self-efficacy positively correlates with satisfaction, it is not significant at the level of 0.05. Thus, H3a is supported and H3b is rejected.

We also tested the premise that performance is positively related to satisfaction ($\gamma = 0.20$, $p < 0.01$). Hypothesis 4 is therefore supported by the sample data. This finding indicates that better performance is the reason for satisfaction.

Overall, the significance of the individual paths suggests that self-efficacy has significant influence on performance; however, this relationship may be explained as the improvement in performance mostly due to task self-efficacy, not learning self-efficacy. Moreover, the direct and indirect effect of justice indicates the partial mediating influence of performance on the relationship between justice and satisfaction. Furthermore, the results of H3 and H4 suggest that performance fully mediates the relationship between task self-efficacy and satisfaction.

Table 5: Parameter estimates for the individual paths

Path Description	Coefficient	t-value
Performance → Satisfaction	0.20**	4.01
Justice → Performance	0.22**	3.91
Justice → Satisfaction	0.84**	15.22
Learning Self-efficacy → Performance	0.09	0.97
Task Self-efficacy → Performance	0.40*	3.32
Learning Self-efficacy → Satisfaction	-0.22*	-2.92
Task Self-efficacy → Satisfaction	0.17	1.62

* $p < 0.05$ **$p < 0.01$

Discussion

The purpose of this paper was to determine which had more influence on performance and satisfaction, justice perceptions or an individual's self-efficacy. There is an interesting finding regarding hypothesis 2b. While the coefficient is significant, the direction of the coefficient is negative.

Research indicates that there are some instances where high degrees of self-efficacy can actually have an inverse effect on performance (Vancouver, Thompson, Tishner, & Putka, 2002; Vancouver, Thompson, & Williams, 2001). Individuals with high learning self-efficacy may become overconfident in their ability to master a cognitive task. In addition, the increased learning self-efficacy may cause the individual to underestimate the level of difficulty associated learning the new material, process, or function resulting in the individual actually reducing the amount of effort they expend. Performance and satisfaction, under these circumstances, will be affected. It would be interesting to learn if this situation is more likely to occur under more challenging circumstances or when the perceived level of difficulty is either very high or very low. Future research should explore these questions.

Justice is more strongly related to satisfaction ($\gamma = 0.84$, $p < 0.01$) than it is to performance ($\gamma = 0.22$, $p < 0.01$). The justice-satisfaction relationship was also much stronger than any of the other relationships indicating that the justice-satisfaction relationship accounts for the greatest amount of variance in the model. The relationship between task self-efficacy and performance explains the majority of the remaining variance ($B=0.40$, $p<0.01$). All other significant coefficients were less than 0.22. Overall, it appears that justice perceptions explain more of the variance in satisfaction than self-efficacy, but that task self-efficacy explains more of the variance in performance than justice.

The hypotheses in this study were generally supported. The exceptions are hypothesis 2a and b and hypothesis 3b all pertaining to self-efficacy. Hypothesis 2a, which suggested that learning self-efficacy is positively related to performance, was not supported. Hypothesis 3b proposing a positive relationship between task self-efficacy and performance was also non-significant. While hypothesis 2b was significant indicating a relationship between learning self-efficacy exists, the coefficient sign was in the opposite direction of the hypothesized relationship.

Results indicate that performance is significantly related to satisfaction providing support for hypothesis 4. That is, the better one performs the more satisfied he or she will be with his or her performance. Judge et al. (2001) suggested that the relationship

between performance and satisfaction could be non-recursive, and that higher levels of satisfaction could reinforce strong performance. Future research should evaluate this proposition. In sum, our findings support that performance has a partial mediating effect on the relationship between justice and satisfaction; simultaneously, performance also has a full mediating effect on the relationship between task self-efficacy and satisfaction.

Limitations

One of the basic limitations to this study is its reliance on cross-sectional, self-report data. This reliance precludes us from making strong causal statements about, or generalizing from these results. Future research should employ a longitudinal study designs to improve the assessment of causality.

Another potential limitation associated with this study is mono-method bias, a threat to construct validity because only one method of measurement was used (Trochim and Donnelly, 2007). Procedural and statistical remedies were applied to minimize the effects of consistency artifacts (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff & Organ, 1986). Furthermore, structural equation modeling (SEM) was used to minimize the effects of common method variance (Podsakoff et al., 2003). Temporal separation of data collection between criterion and predictor variables to contend with another issue associated with common method variance (CMV), in which CMV saturates higher order multidimensional constructs, is recommended by researchers (Johnson, Rosen, & Djurdjevic, 2011). Various constraints (i.e., time, financial, etc.) prohibited temporal separation of data collection for the present study. Thus, while researchers suggest that common method variance presents less of a concern in some studies (Spector, 2006), correlations in the bivariate correlation analysis point to the notion that common method variance may be present in this study. Hence, it is impossible to rule out potential bias due to CMV even though every effort was used to minimize potential effects, and results should be considered accordingly.

Theoretical and Practical Contributions

There is an abundance of research evaluating organizational justice relationships (e.g., Cohen-Charash & Spector, 2001; Colquitt, et al., 2001; Colquitt & Rodell, 2011; Cropanzano & Greenberg, 1997; Greenberg, 1990; Monin, Noorderhaven, Vaara, & Kroon, 2013; Moorman, 1991, etc.). Similarly, there is copious research evaluating relationships associated with self-efficacy (e.g., Bandura, 1977; Chen, Gully, Whiteman, & Kilcullen, 2000; Gist, & Mitchell, 1992; Krishnan et al., 2003; Mortiz et al., 2000; Scholz et al., 2002; Schwoerer et al., 2005; Smith et al., 2006; Zimmerman, 1995; Zimmerman et al., 1992, etc.). There is a dearth of research, however, integrating these two areas of inquiry, particularly in the instructional literature. This study provides a first step in addressing this important gap in the literature. As such, one of the major theoretical contributions of this study is the assessment of the mediating role of performance on the relationship between both justice and self-efficacy on perceptions of satisfaction among students.

Results from this study also have implications both in business organizations and in the classroom. First and foremost, findings are in alignment with both management and instructional research (e.g., Bollliger, 2004; Cohen-Charash & Spector, 2001; Colquitt et al., 2001; Colquitt et al., 2012; Colquitt & Rodell, 2011; Cropanzano & Greenberg, 1997; Folger & Greenberg, 1985; Krishnan et al., 2003, Nesbit & Burton,

2006; Swan, 2001) confirming that justice perceptions influence performance and satisfaction. Specifically, findings indicate that justice is an overall driver of satisfaction and performance. Those in charge should ensure that justice norms are embraced as part of an organization or institution's culture to ensure that individual performance and satisfaction are maximized.

Findings from this study indicate that self-efficacy does not influence performance but rather self-efficacy negatively influences satisfaction. These findings align with research (Vancouver et al., 2002; Vancouver et al., 2001) suggesting that individuals high in self-efficacy can underestimate the level of difficulty or overestimate their abilities (due to overconfidence). Thus, establishing clear expectations regarding difficulty can assist individuals in expending the appropriate amount of effort in reaching performance and satisfaction outcomes. It is important for professors and instructors to clarify expectations regarding coursework so that students do not underestimate either difficulty level or time allocation necessary in preparation for assignments and exams. Moreover, expectations should be explored and discussed to bring student's confidence levels in line with actual ability to perform well in challenging courses.

Future Research

Future research should evaluate whether increasingly challenging circumstances influence performance and satisfaction for individuals both high and low in perceived self-efficacy. Moreover, evaluating perceived levels of difficulty (either very high or very low) would help expand the nomological network related to these associations. Future research efforts investigating these hypotheses, with other samples from both academia and various occupations to determine the robustness of results is also necessary. Additionally, studies with other consequences such as task performance, organizational citizenship behavior, turnover and organizational commitment would help extend understanding related to these associations. We encourage future studies that examine these outcomes, as well as research efforts with other, related consequences and longitudinal research designs as these types of investigations would be insightful.

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