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The Role of Job Relatedness and Self-Efficacy in Applicant Perceptions of Fairness in a High-Stakes Selection Setting

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This article presents results from two samples of applicants (total *N* = 368) for general practitioner posts in the United Kingdom. The roles of job relatedness and self-efficacy in fairness perceptions were explored, with data gathered at two time points: immediately after testing and 1 month later following outcome (pass/fail) feedback. Overall, results indicated that in two samples, job relatedness perceptions measured at the time of testing predicted fairness perceptions measured following outcome feedback. In addition, the stage in the selection process (shortlisting vs. assessment center) was important in determining the extent to which job relatedness perceptions predicted fairness. Findings also suggest that self-efficacy may be a predictor, rather than an outcome variable, in applicant fairness perceptions in this high-stakes setting. Results are discussed in relation to their practical and theoretical implications.

1. Introduction

In the last two decades, an applicant-focused research agenda has been pursued with literature emerging that examines the attitudes, affect, and cognitions that applicants may have about a selection process (Anderson, Herriot, & Hodgkinson, 2001; Chan, Schmitt, Sacco, & DeShon, 1998; Gilliland, 1994; Hülsheger & Anderson, 2009; Ryan & Ployhart, 2000). The dominant model for research on applicant perceptions is presented by Gilliland (1993, 1995), who proposes organizational justice theory (Greenberg, 1987, 1990), as a framework to consider applicant perceptions of selection processes. The fundamental premise underlying this theory is that applicants' perceptions of selection processes influence personal and organizational outcomes such as organization attractiveness and litigation intentions, and these relationships have been supported in numerous studies (e.g., Bauer et al., 2001; Carless, 2003; Konradt, Warszta, & Ellwart, 2013; Macan, Avedon, Paese, & Smith, 1994; Schinkel, van Vianen, & van Dierendonck, 2013; Truxillo, Bauer, Campion, & Paronto, 2002).

However, gaps in the literature persist, suggesting that further research is warranted. First, many studies have been laboratory-based using student samples with cross-sectional designs (e.g., Elkins & Philips, 2000; Moscoso & Salgado, 2004). The use of student samples has been criticized because students may respond differently as they are likely to differ in terms of job search experience, commitment to securing employment within an organization and previous exposure to selection methods (Anderson, 2003; Hausknecht, Day, & Thomas, 2004). Also, students are likely to have higher intellectual abilities (Landy & Conte, 2009), and are generally younger (Phillips & Gully, 2002) than a large proportion of working individuals. Furthermore, it is suggested that attitudinal and emotional responses might develop over time (e.g., Carless, 2003; Chan & Schmit, 2004): if students have not experienced a particular selection method before, rating it for the first time may appear somewhat different to how they might feel about it in the future (Landy & Conte, 2009), and expectations may evolve as new experiences are encountered (Jones & Skarlicki, 2013). In relation to laboratory-based research, there is a clear difference between being hypothetically rejected in an experiment and *actually* being rejected as an applicant for a job (Landy & Conte, 2009). Drawing conclusions based on answers

by students limits the external validity of the research (Shinkel et al., 2013). Therefore, authors have suggested that research should be field-based with real candidates, because reactions may differ with real employment consequences (Bauer, Maertz, Dolen, & Campion, 1998; Truxillo et al., 2002).

Second, there has been a recent call for more applicant-focused research specifically in a healthcare context (e.g., Patterson & Ferguson, 2007; Patterson, Lievens, Kerrin, Zibarras, & Carette, 2012); and this is yet to be explored extensively. Of the research that currently exists (e.g., Humphrey, Dowson, Wall, Diwakar, & Goodyear, 2008; Kumar, Roberts, Rothnie, du Fresne, & Walton, 2009), theoretical frameworks have not been used to underpin the research and explore findings, aside from one recent exception (Patterson, Zibarras, Carr, Irish, & Gregory, 2011). Therefore, we report findings from a field-based study examining the role of job relatedness and self-efficacy in two samples of applicant for jobs in a healthcare context in the United Kingdom. Perceptions of applicants in the current samples were investigated immediately after testing and following the results of applicants' assessments. The selection of doctors within the NHS is a high-profile event that attracts both public and media interest, and, consequently, there is a high level of scrutiny and public accountability (Harris, 2000; Ryan, Greguras, & Ployhart, 1996). Therefore selection decisions must be made fairly and methods must be legally defensible (Carr & Patterson, 2009; Patterson et al., 2011) and so this research was deemed important because in this high-stakes selection process, perceptions of fairness were crucial.

1.1. Job relatedness and fairness perceptions

Job relatedness as a determinant of fairness perceptions is well established in research (e.g., Gilliland, 1993; Hausknecht, 2013; Macan et al., 1994; Rynes & Connerly, 1993; Schmitt, Oswald, Kim, Gillespie, & Ramsay, 2004; Smither, Reilly, Millsap, Pearlman, & Stoffey, 1993; Truxillo, Bauer, & Sanchez, 2001; Truxillo, Bodner, Bertolino, Bauer, & Yonce, 2009). However, studies have been criticized for predominantly focusing on cross-sectional data rather than relationships that take into account perceptions following outcome feedback (Sackett & Lievens, 2008). Indeed, postfeedback perceptions have only been examined in only a few field-based studies (e.g., Bauer et al., 1998; Chan et al., 1998; Schinkel, van Dierendonck, van Vianen, & Ryan, 2011; Schmitt et al., 2004; Truxillo et al., 2001). Postfeedback perceptions are important to consider as the selection decision may be the most salient outcome of the process (Schinkel et al., 2011), yet little research has been conducted that explores the effects of outcome feedback on fairness perceptions. Of the research that has been conducted, there is evidence that outcome feedback impacts candidate perceptions, as well as candidate wellbeing (Bauer et al., 1998; Schinkel et al., 2011). Additional research is necessary to investigate these relationships further; therefore this study explores whether job relatedness perceptions, measured at the time of testing, are positively related to fairness perceptions measured 1 month later following feedback.

In this study, perceptions of job relatedness are focused on, rather than other justice principles for three reasons. First, job relatedness is considered the justice principle that has the greatest influence on overall fairness perceptions as compared to any other characteristics of a selection method; and this has been supported in a number of studies using a number of different occupational samples (e.g., Bauer et al., 2001; Gilliland, 1993; Macan et al., 1994; Rynes & Connerly, 1993; Smither et al., 1993; Schmitt et al., 2004; Truxillo et al., 2001; Van Vianen, Taris, Scholten, & Schinkel, 2004), however, this relationship has not yet been extensively explored in doctors within the NHS context (Patterson & Ferguson, 2007). Second, in the present selection context most of the methods were administered to applicants in large group sessions and therefore many of the other justice principles in Gilliland's (1993) model were likely to be restricted in their effects due to lack of variance (Chan et al., 1998). For instance, because the administration of tests was standardized, the justice principles relating to consistency of administration, selection information and explanation may have been relatively constant for applicants in the group session. However, job relatedness perceptions are likely to vary across applicants even when the same selection method is used (Chan et al., 1998). Third, Chan and Schmitt (2004) suggest that questionnaire measures should direct applicant attention to aspects of the selection method where they are naturally likely to have focused their perceptions. Within the present selection context it was anticipated that job relatedness would be salient for candidates because the selection methods were recently-developed and relatively new methods of assessment (Patterson, Baron, Carr, Plint, & Lane, 2009; Patterson, Carr, Zibarras, Burr, Berkin et al., 2009); all of which were based on an extensive analysis of the general practitioner (GP) (Patterson et al., 2000; Patterson, Ferguson, Norfolk, & Lane, 2005). Owing to the changes in the GP role over the last two decades (Patterson et al., 2000), a need to create and assess candidates against a more clearly defined set of criteria arose. Traditionally, GP posts have been awarded based on curriculum-vitae and unstructured interview methods, which have their limitations in terms of selecting the right person for the job (Patterson et al., 2000). Consequently, the GP selection process has been completely developed over the past few years to introduce more predictive methods of selection (Patterson, Baron et al., 2009; Patterson, Carr et al., 2009), with each method being newly created and introduced in a context where they have not commonly been used

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before. Therefore, it was important to assess candidates' perceived job relatedness towards these new methods, and the impact that this had on their perceptions of fairness.

We examined the association between job relatedness perceptions and fairness perceptions in two samples; therefore, the following Hypothesis was posed for both Samples 1 and 2:

1.1.1 Samples 1 and 2, Hypothesis 1

Job relatedness perceptions of selection methods, measured at the time of testing (T1), will be significantly and positively related to fairness perceptions of the selection process measured 1 month later following outcome feedback (T2).

1.2. The role of self-efficacy in fairness perceptions

Gilliland's (1993) organizational justice theory model proposes self-efficacy as a possible outcome variable where aspects of procedural justice such as job relatedness and outcome (pass/fail) interact to influence an applicant's self-efficacy. This is supported by research (Gilliland, 1994) which found that when job relatedness was high, job performance self-efficacy increased for selected participants, but decreased for rejected participants. However, when job relatedness was low, there was no effect on job performance self-efficacy. Similarly, Bauer et al. (1998) found a positive relationship between fairness and test-taking self-efficacy for applicants who passed the test and a negative relationship for those who had failed. This represented an interaction effect between fairness perceptions and test outcome. A further study (Truxillo et al., 2001) reported that increased perceptions of test fairness led to lower test-taking self-efficacy for those who failed the test. In these studies, the concept of self-efficacy is viewed as something that can be influenced by the experience of the selection process and the methods themselves. Job performance self-efficacy relates to a person's confidence in their ability to perform at a given level (Gilliland, 1994) and test-taking self-efficacy relates to a person's evaluation of their ability to cope with the actual testing process (Bauer et al., 1998), both of which are relatively context-specific self-efficacy constructs (Ployhart & Ryan, 1997).

However, these authors (Bauer et al., 1998; Gilliland, 1994; Truxillo et al., 2001) take a considerably different perspective to other researchers (Nikolaou & Judge, 2007; Oostrom, Born, Serlie, & van der Molen, 2010; Ryan et al., 1996) in the view of self-efficacy as a dependent variable. Instead, authors such as Nikolaou and Judge (2007); Ryan et al. (1996) and Ooostrom et al. (2010) have suggested that self-efficacy may be a predictor variable in fairness perceptions. This is because when looking at broader conceptualizations, such as generalized (e.g., Judge, Locke, Durham, & Kluger, 1998) or occupational self-efficacy (e.g., Schyns & von Collani, 2002), self-efficacy is assumed to be an aspect of personality or stable trait (Nikolaou & Judge, 2007). Generalized self-efficacy relates to evaluations that individuals make about themselves, perceptions about their fundamental ability to cope life's demands (Judge et al., 1998; Nikolaou & Judge, 2007); while occupational self-efficacy is considered a global personality construct and relates to *'one's belief in one's own ability to perform successfully and effectively in different situations and across different tasks in a job'* (Schyns & von Collani, 2002, p. 227). These definitions assume self-efficacy to be a trait and therefore stable over time; and as such may be viewed as an individual difference that could predict fairness perceptions, rather than an outcome.

This conceptualization of self-efficacy has rarely been examined in applicant perception research to date, except for three notable exceptions (Nikolaou & Judge, 2007; Oostrom et al., 2010; Ryan et al., 1996). Ryan et al. (1996) consider self-efficacy to be a predictor of applicant perceptions and self-efficacy was found to positively correlate with perceptions of job-relatedness. Furthermore, individuals with higher self-efficacy perceived physical agility tests to be fairer and consistently administered than those with lower self-efficacy. In both the studies by Nikolaou and Judge (2007) and Oostrom et al. (2010), self-efficacy by itself was not examined, however, the role of core self-evaluations (CSE; encompassing self-efficacy, self-esteem, locus of control, and neuroticism) was explored. Nikolaou and Judge found that CSE was positively related to participants' preferences for both interviews and CVs and also positively related to procedural dimensions of interviews and personal contacts; indicating that participant personality, and potentially self-efficacy, has some relationship with perceptions of selection methods. Oostrom et al. (2010) found that CSE was positively related to perceptions of predictive validity of a cognitive ability test and perceptions of the face validity of a multimedia situational judgment test (SJT). However, more research is needed in this area for two main reasons: first, Ryan and colleagues used a sample of incumbent fire-fighters as their participants and Ooostrom et al. (2010) used a sample of students, meaning that findings may not extend to applicant samples; and second, in two studies (Nikolaou & Judge, 2007; Oostrom et al., 2010) CSE was explored and so the relationship found may be due to the other personality constructs encompassed within CSE, rather than self-efficacy per se. Therefore, research is warranted to examine the precise nature of the relationship between self-efficacy and fairness perceptions, and furthermore, whether self-efficacy can be construed of as a predictor of fairness perceptions.

Therefore, the present study was designed to test whether self-efficacy is better conceptualized as a *trait that predicts* fairness perceptions, or an *outcome variable negatively influenced* by failing a selection process. If self-

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efficacy is better conceived of as a trait then one would expect it to be relatively stable over time (hence it was measured at two time points). Furthermore, one would expect self-efficacy measured at the time of testing to add incremental variance to the prediction of fairness perceptions (over and above that accounted for by job relatedness) measured 1 month later following outcome (pass/fail) feedback. Conversely, if self-efficacy is better conceived of as an outcome variable, then one would expect self-efficacy to be negatively influenced by experiencing the selection process. As outlined above, this has been tested in previous research (e.g., Bauer et al., 1998) by exploring whether procedural justice perceptions and outcome favorability (i.e., pass/fail) interact to influence T2 self-efficacy. Thus the following research question was posed:

1.2.1. Sample 1 and 2, research question

Is self-efficacy better conceived of as a trait (and therefore predicts fairness perceptions) or an outcome variable (and therefore negatively influenced by an interaction between job relatedness and pass/fail)?

1.3. The present study context

This article presents a study conducted in an operational selection setting, using two applicant samples. The samples were qualified doctors applying for GP posts in the United Kingdom (UK) National Health Service. This is a high-stakes setting as the posts are highly coveted jobs with a monopoly employer (Lievens & Patterson, 2011; Patterson & Ferguson, 2007). The applicants have already completed many years of training as doctors (with 4–6 years in medical education followed by 2 years of basic training in junior posts) and have invested a great deal of time and effort in their careers. A three-stage process is used to select candidates for posts. Stage 1 included eligibility checks, using an electronic application process. Stage 2 entailed shortlisting using two validated tests: a job knowledge test (JKT), where candidates apply clinical knowledge to solve problems; and a SJT, where candidates are presented with written work-related scenarios to which they have choose an appropriate response from a list of alternatives (Patterson, Baron et al., 2009; Patterson, Carr et al., 2009). Stage 3 was an assessment center including three selection methods: a group exercise (GE) which involved a group discussion exercise relating to a work-related issue; a simulated patient consultation (SPC) where candidates play the role of doctor and an actor plays the patient role; and a written exercise (WE) where candidates prioritize a list of work-related issues and justify their choices (Patterson et al., 2005). Extensive research has shown that this selection process is reliable and valid (e.g., Lievens & Patterson, 2011; Patterson et al., 2005; Patterson, Baron et al., 2009). The first sample presented in this study used applicants from the shortlisting phase (stage 2), while the second sample used applicants from the assessment center phase (stage 3); see Figure 1. In both, job relatedness perceptions of the selection methods were measured at the time of testing, along with self-efficacy. Then, 1 month later following outcome feedback, fairness perceptions were measured, along with self-efficacy. For stage 2, outcome feedback entailed candidates finding out whether they had been accepted for further consideration in the selection process and for stage 3, candidates found out whether they had been accepted for GP posts.

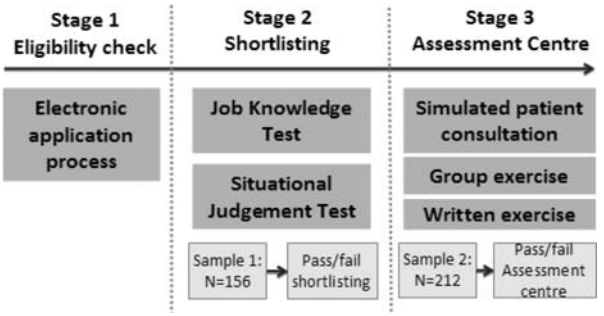

Figure 1. Selection process and associated samples.

2. Sample 1: Method

2.1. Participants

Participants were applicants for GP posts during the shortlisting stage of selection. Data collection occurred at two time points, T1 was immediately post testing and T2 was post outcome (pass/fail) feedback. A total of 385 participants provided data at T1; of these, 156 provided data at T2 and therefore formed the sample. Of the 156, 40% were female, 55% were male (data was missing from 5%); their mean age was 30.5 years ($SD = 6.2$). The participants' ethnic origins were as follows: White (49%), Asian (33%), Black (2%), Mixed (1%), Chinese (3%), and other ethnic groups (6%), data was missing from 6% of the participants.

2.2. Procedure

Data were gathered during shortlisting where candidates were invited to participate in the research on a voluntary basis. They were assured that information would be used for research purposes only and not in any selection decision; all who took part gave their consent to be involved in this research. Applicants attended one of 15 testing centers throughout the United Kingdom where they completed two tests: a JKT and a SJT. Surveys were collected from applicants at two time points: (T1) after candidates had completed the two tests they completed a paper-based questionnaire distributed by trained invigilators; and (T2) about 1 month following the assessment

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day and after applicants had received results indicating whether or not they were eligible for further consideration in the selection process, they were contacted via their email address and sent an online questionnaire. One hundred and fifty-six applicants completed the T2 questionnaire, representing a 43.6% response rate. There were no significant differences between the response and nonresponse groups on age, gender, and ethnic origin.

2.3. Measures

The first section of the questionnaire contained demographic questions including gender, age, and ethnic origin; these were collected at T1. Items in the questionnaire outlined below were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree, unless otherwise stated.

2.3.1. Job relatedness[1]

A measure of job-relatedness was used based on items from Bauer et al. (2001) and Gilliland et al. (2001) but adapted to fit a healthcare context. For example, an original item from Gilliland et al. (2001) was: *'The methods this company used to screen applicants were appropriate'*, and this was adapted to read: *'The content of the Job Knowledge test seemed appropriate for the entry level I was applying for'*. In Sample 1, there were four items measuring job relatedness of the JKT (e.g., *The content of the Job Knowledge Test paper was clearly related to the role of General Practitioner*) and four items measuring job relatedness of the SJT (*A person who scored well on the SJT would be a good GP*).

2.3.2. Self-efficacy

Self-efficacy was measured at both T1 immediately after testing, and T2 after candidates had received their results 1 month later. Six items were adapted from Schyns and von Collani (2002); for example, '*If I am under pressure at work, I can usually think of something to do.*' Responses were rated on a 6-point Likert scale, from 1 = not at all true to 6 = completely true.

2.3.3. Pass/fail

Whether the applicant was selected for further consideration at the next stage of selection was assessed using one item at T2 (e.g., '*Have you been selected for further consideration at the assessment center?*'). Responses were measured as yes (=2) or no (=1).

2.3.4. Fairness perceptions

Fairness perceptions were measured at T2 after candidates had received their results using the four-item scale developed by Gilliland (1994; e.g., '*Whether or not I advanced to the selection center, I am satisfied with the use of the shortlisting assessment papers*,' and '*Overall, I feel the shortlisting assessment papers were fair.*').

3. Sample 1: Results

The means, standard deviations and alpha coefficients of and correlations between all the study variables measured at both T1 and T2 are displayed in Table 1. Partial correlations were calculated to control for the effects of age, as age correlated with both T1 and T2 self-efficacy ($p < .001$). All study scales demonstrated good alpha reliabilities (all $\alpha > .80$), as shown in parentheses in Table 1. T1 and T2 self-efficacy correlate highly ($r = .70$, $p < .001$), suggesting that self-efficacy is relatively stable over a 1-month period.

3.1. T1 job relatedness, self-efficacy and T2 fairness perceptions

According to Hypothesis 1, job relatedness perceptions at T1 would positively predict fairness perceptions measured at T2 (after applicants had received their test results). To test the research question (can self-efficacy be conceived of as a trait that predicts fairness perceptions), we examined the extent to which self-efficacy added incremental variance to perceptions of fairness over and above job relatedness perceptions.

A number of assumptions had to be met to indicate that the data were suitable for regression (Field, 2005). For the assumption of independent errors, the Durbin-Watson statistic was checked to ensure it was close to 2. The variance inflation factor (VIF) and tolerance statistics were checked to ensure that there was no multicolinearity in the data. Plots of standardized residuals against standardized predicted values were checked to ensure that the assumptions of linearity and homoscedasticity were met.

Table 1. Descriptive statistics, alpha reliabilities, and partial-correlations between study variables in Sample 1

Variable	Mean	SD	1	2	3	4	5	6
1. JKT job relatedness	15.62	3.30	(0.89)					
2. SJT job relatedness	13.57	3.43	0.57***	(0.88)				
3. Self efficacy (T1)	29.73	3.49	0.17*	0.17*	(0.85)			
4. Pass/fail[a]	1.88	0.33	0.14	0.02	−0.04	−		
5. Fairness perceptions[a]	14.90	3.00	0.31***	0.35***	0.27***	0.19*	(0.84)	
6. Self-efficacy (T2)[a]	30.10	3.60	0.05	0.14	0.70***	−0.04	0.27***	(0.91)

Note: $N = 147$, due to missing age data. [a]Variables measured at T2. Numbers in parentheses indicate alpha reliability coefficients. JKT = Job knowledge test; SJT = Situational judgment test. *$p < .05$, ***$p < .001$ (2-tailed).

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Additionally, histogram and normal probability plots were checked to ensure that residuals were normally distributed. All these assumptions were met, indicating that the data were suitable for regression. Finally, the number of cases needed to be checked to ensure that there were enough to run these regression analyses. Field (2005) suggests 10 cases for each predictor: there were six predictors, therefore 60 cases would have been sufficient. A further method for calculating the sample size required is given by Miles and Shevlin (2001). For this, the number of predictors, power and effect size values are checked against tables that indicate the sample size necessary for the regression analysis. In this instance with six predictors, to achieve a medium effect size with a power of 0.8, the look-up tables suggest that a minimum sample size of 100 is needed. Thus, once again, the sample size was sufficient.

Following preanalysis checks (e.g., Field, 2005; Miles & Shevlin, 2001), a hierarchical regression equation was calculated with fairness perceptions as the dependent variable. Gender, age and pass/fail were entered in the first step as control variables. Outcome favorability (pass/fail) is important in determining fairness perceptions as candidates perceive selection processes as more fair if they perform well (Bauer et al., 1998; Greenberg, 1987). Therefore pass/fail was controlled for in this regression equation to ensure any relationships found were related to predictor variables alone. JKT and SJT job relatedness perceptions were entered in Step 2, and self-efficacy[2] was entered in Step 3.

Table 2 shows that the addition of JKT and SJT job relatedness perceptions in Step 2 added to the overall prediction of fairness perceptions, $\Delta R^2 = .13$, F (2, 136) = 10.95, $p < .001$; the beta-weight for SJT job relatedness was statistically significant ($\beta = .29$, $p = .003$). The addition of self-efficacy in step 3, significantly added to the prediction of fairness perceptions at T2, $\Delta R^2 = .03$, F (1,135) = 5.82, $p = .02$; with a significant beta-weight for self-efficacy ($\beta = .20$, $p = .02$).

These findings support Hypothesis 1 and also show that self-efficacy can be considered a trait variable that predicts fairness perceptions. However, the increase in variance in step 3 is only a small effect, consistent with previous research (Hausknecht et al., 2004).

Table 2. Hierarchical regression for control variables, JKT/SJT job relatedness perceptions and T1 self-efficacy on fairness perceptions at T2

	B	*SE B*	β
Step 1, $R^2 = 0.06$			
Constant	9.73	2.36	
Age	0.06	0.04	0.12
Gender	−0.67	0.54	−0.11
Pass/fail	1.87	0.84	0.19
Step 2, $\Delta R^2 = 0.13$			
JKT job relatedness	0.10	0.09	0.11
SJT job relatedness	0.26	0.09	0.29**
Step 3, $\Delta R^2 = 0.03$			
Self-efficacy	0.17	0.08	0.20*

Note: $N = 142$. JKT = Job knowledge test; SJT = Situational judgment test. *$p < .05$, **$p < .01$.

3.2. Is self-efficacy an outcome variable at the shortlisting stage?

To test the research question, we used Bauer et al.'s (1998) methodology to explore whether JKT and SJT job relatedness perceptions measured at T1 interact with outcome favorability (pass/fail) to predict T2 self-efficacy. This would indicate whether an applicant's self-efficacy is impacted by the selection process. Therefore, two regression models were run with T2 self-efficacy as the dependent variable. For both equations age, gender and T1 self-efficacy were entered into step 1, as control variables. For the first equation, JKT job relatedness perceptions, outcome favorability and their interaction term were entered into step two. The addition of the variables did not add to the prediction of the model, $\Delta R^2 = .01$, F (3, 128) = 0.59, $p = .62$. For the second equation, SJT job relatedness perceptions, outcome favorability and their interaction were entered into step two. The addition of the variables did not add to the prediction of the model, $\Delta R^2 = .00$, F (3, 128) = 0.28, $p = .84$. Therefore, findings indicate that job relatedness perceptions and outcome favorability do not interact to predict self-efficacy measured at T2.

The research question was also tested by examining the difference between T2 self-efficacy for those who had passed the shortlisting process ($N = 137$) and those who had failed ($N = 19$). If self-efficacy is influenced by failing the shortlisting process, one would expect T2 self-efficacy to be significantly lower for those who failed than those who passed the shortlisting process. To test pass and fail group differences for T2 self-efficacy, a nonparametric Mann-Whitney *U*-test was used, rather than a parametric *t*-test, because the 'fail' group had only 19 participants (below the suggested minimum of 20 for parametric tests; Field, 2005). Findings indicated no significant difference in T2 self-efficacy between those who passed ($Mdn = 30.00$) and those who failed shortlisting ($Mdn = 31.00$, $U = 1093.00$, $p = .25$, $r = -.09$); thus it appears that those who fail shortlisting do not appear to have lower self-efficacy than those who passed shortlisting.

It is also conceivable that what is influenced is the *change* in reported self-efficacy from T1 to T2, which can be calculated by subtracting T2 self-efficacy from T1 self-efficacy. Therefore the *change* in self-reported self-efficacy was examined, and findings indicated no significant difference between pass and fail groups ($U = 1297.50$, $p = .98$).

Finally we also explored whether there was a difference in self-efficacy between those who completed the questionnaire at T1 only (mean = 29.82), and those who responded to the questionnaire at both time points

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(mean = 30.09). We found no significant difference between the two means ($p = .19$). Overall therefore, contrary to what has been found in previous research (e.g., Bauer et al., 1998; Gilliland, 1994), it appears that occupational self-efficacy is *not* an outcome negatively influenced by failing the shortlisting process in this sample.

4. Sample 2: Method

4.1. Participants

Participants were applicants for GP roles during the assessment center stage of the selection process (see Figure 1). Data collection occurred at two time points, 483 participants provided data at the time of testing (T1); of these, 212 provided data at T2 and therefore comprised the second sample for this study. Of the 212, 47% were male, 50% were female (data was missing from 3%); their mean age was 29.1 years ($SD = 4.9$). The participants described themselves as: White (55%), Asian (33%), Black (2%), Mixed (3%), Chinese (2%) and other ethnic groups (3%); data was missing from 2%.

4.2. Procedure

Data were gathered during the assessment center phase of selection. Like with the first sample, candidates were invited to participate on a voluntary basis, were assured that information would be used for research purposes only and not in any selection decision and all who took part gave their consent to be involved. This was the third and final stage of the selection process and applicants attended assessment centers where they completed three selection method exercises: a GE; a SPC, and a WE. Questionnaires were collected from applicants as follows: (T1) after candidates had completed selection exercises they completed a paper-based questionnaire which was distributed by trained invigilators; and (T2) about 1 month following the assessment day and after applicants had received results indicating whether or not they had been offered a post, they were contacted via their email address and sent an online questionnaire. Two hundred and twelve applicants completed the T2 questionnaire (42.4% response rate). There were no significant demographic differences between the response and nonresponse.

4.3. Measures

The measures used for Sample 2 were identical to those used for Sample 1. The first section of the questionnaire included demographic questions that were collected at T1. Items in the questionnaire were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree, unless otherwise stated.

4.3.1. Job relatedness

The same items relating to job relatedness perceptions of selection methods were used; thus, four items measured the job relatedness of each of the exercises (GE; SPC; WE); e.g., *'The content of the Group Exercise was relevant to General Practice.'*

4.3.2. Self-efficacy

Self-efficacy was measured at T1 and T2 using the same six items as used in Sample 1, adapted from Schyns and von Collani (2002).

4.3.3. Pass/fail

Whether the applicant had been selected for a GP role was assessed using one item at T2, (e.g., *'Have you been selected for a general practitioner post?'*). Responses were measured as yes (=2) or no (=1).

4.3.4. Fairness perceptions

Fairness perceptions were measured at T2 using the same four-item scale developed by Gilliland (1994) as used for Sample 1 (e.g., *'Whether or not I was accepted for a general practitioner post, I am satisfied with the use of the assessment center exercises'*).

5. Sample 2: Results

The means, standard deviations and alpha coefficients of and correlations between all the study variables are displayed in Table 3. Partial correlations were calculated to control for the effects of age, as age correlated with both T1 and T2 self-efficacy ($p < .001$). All study scales demonstrated good alpha reliabilities (all $\alpha > 0.80$). Self-efficacy was highly correlated between the two time points ($r = 0.65$, $p < .001$) suggesting that it is relatively stable over the 1-month period.

5.1. T1 job relatedness, self-efficacy and T2 fairness perceptions

According to Hypothesis 1, job relatedness perceptions for the three selection methods measured at T1 would be positively related to fairness perceptions measured at T2 (after applicants had received the outcome results). To test the research question, self-efficacy (as a trait) would add incremental variance over and above job relatedness perceptions. A hierarchical regression equation was calculated with fairness perceptions as the outcome. Age, gender, and pass/fail were entered into Step 1 as control variables; GE, SPC and WE job relatedness perceptions were entered into Step 2; and T1 self-efficacy was entered into Step 3.

Although Step 1 variables were entered into the regression equation as control variables, it is noteworthy that this step predicted 33% of the variance in fairness

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Table 3. Descriptive statistics, alpha reliabilities, and partial-correlations between study variables for Sample 2

Variable	Mean	SD	1	2	3	4	5	6	7
1. GE job relatedness	15.94	2.61	(0.82)						
2. SPC job relatedness	17.37	2.45	0.45***	(0.85)					
3. WE job relatedness	15.58	2.63	0.56***	0.41***	(0.86)				
4. Self efficacy (T1)	29.58	3.04	0.17*	0.15*	0.13	(0.84)			
5. Pass/fail[a]	1.79	0.41	.02	.08	−.00	−.02	−		
6. Fairness perceptions[a]	15.35	3.26	0.13	0.14*	0.13	0.12	0.54***	(0.91)	
7. Self-efficacy (T2)[a]	29.37	3.61	0.11	0.12	.04	0.65***	−0.12	0.11	(0.86)

Note: $N = 206$ (due to missing data). [a]Variables measured at T2. Numbers in parentheses indicate alpha reliability coefficients. GE = group exercise; SPC = simulated patient consultation; WE = written exercise. *$p < .05$, **$p < .01$, ***$p < .001$ (2-tailed).

perceptions, and in particular that the variable pass/fail was significant ($\beta = 0.60$, $p < .001$). This indicated that passing the selection process significantly and positively predicted perceptions of fairness.

Table 4 shows that the addition of job relatedness perceptions (SPC, GE, and WE) in step 2 added to the overall prediction of T2 fairness perceptions, $\Delta R^2 = .03$, F (3, 192) = 2.78, $p = .04$. However, the beta weights for the three selection methods were not statistically significant indicating that none of them had unique variance in predicting fairness perceptions. The addition of self-efficacy in step 3 added to the prediction of fairness perceptions, $\Delta R^2 = .02$, F (1, 189) = 3.65, $p = .04$; the beta-weight for self-efficacy ($\beta = 0.13$, $p = .04$) was significant.

These findings partially support Hypothesis 1, and also show that self-efficacy can be considered a trait variable that predicts fairness perceptions. However, the increase in variance in step 3 is a small effect; consistent with research (e.g., Hausknecht et al., 2004; Oostrom et al., 2010).

5.2. Is self-efficacy an outcome variable at the assessment center?

As with Sample 1, we explored whether GE, SPC and WE job relatedness perceptions measured at T1 interacted with outcome favorability (pass/fail) to influence T2 self-efficacy. Three regression models were run with T2 self-efficacy as the dependent variable and age, gender, and T1 self-efficacy entered into step 1 as control variables. For the first equation, GE job relatedness perceptions, outcome favorability and their interaction term were entered into step two. The addition of the variables did not add to the prediction of the model, $\Delta R^2 = .01$, F (3, 189) = 1.48, $p = .22$. For the second equation, SPC job relatedness perceptions, outcome favorability and their interaction were entered into step two. The addition of the variables did not add to the prediction, $\Delta R^2 = .01$, F (3, 190) = 1.66, $p = 0.18$. Finally, for the third model, WE job relatedness perceptions, outcome favorability and their interaction term were entered into step two. The addition of variables did not add to the prediction of the model, $\Delta R^2 = .01$, F (3, 190) = 1.60, $p = 0.19$. Therefore, findings indicated that job relatedness perceptions and outcome favorability do not interact to predict self-efficacy measured at T2.

Table 4. Hierarchical regression for control variables, job relatedness perceptions and T1 self-efficacy on T2 perceived fairness perceptions

	B	*SE B*	β
Step 1, $R^2 = 0.33$			
Constant	5.23	1.72	
Age	0.07	0.04	0.11
Gender	−0.89	0.40	−0.13
Pass/fail	4.78	0.49	0.60***
Step 2, $\Delta R^2 = 0.03$			
GE job relatedness	0.10	0.10	.08
SPC job relatedness	0.02	0.09	.02
WE job relatedness	0.13	0.09	0.10
Step 3, $\Delta R^2 = 0.02$			
Self-efficacy	0.14	0.07	0.13*

Note: $N = 197$. GE = group exercise; SPC = simulated patient consultation; WE = written exercise. *$p < .05$; ***$p < .001$.

As with Sample 1, the differences between T2 self-efficacy for those who had passed the assessment centre ($N = 162$) and those who had failed ($N = 50$) was also examined to test the research question. Again, if self-efficacy is influenced by 'failing' the assessment centre, one would expect T2 self-efficacy to be lower for those who failed than those who passed. However, age appears to be a covariate because there was a significant association between age and self-efficacy ($r = 0.26$, $p < .001$) and a significant difference in age between the pass ($M = 28.33$) and fail ($M = 31.98$) groups. Therefore, an ANCOVA was used to examine the difference between the pass and fail groups for T2 self-efficacy, while partialling out the effect of age. The covariate, age, was significantly related to T2 self-efficacy, $F(1,204) = 9.23$, $p = .003$. After controlling for the effects of age, there was no significant effect of the pass/fail outcome on T2 self-efficacy, $F(1,204) = 3.43$, $p = .09$, $\eta_p^2 = .02$. Thus, there is no significant difference between pass and fail groups on T2 self-efficacy while controlling for age; thus it appears that those who fail the assessment centre do not have lower self-efficacy than those who passed it.

As was mentioned for Sample 1, it is also possible that the *change* in reported self-efficacy from T1 to T2 is

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influenced and this can be calculated by subtracting T2 self-efficacy from T1 self-efficacy. Therefore the *change* in self-reported self-efficacy was explored, using a nonparametric Mann-Whitney *U* test to examine differences between pass and fail groups due to the uneven sample size in each group (age was not a covariate in this instance). Findings indicated no significant difference between pass and fail groups for change in self-efficacy between T1 and T2 ($U = 4710.00$, $p = .10$).

Finally, we also explored whether there was a difference in self-efficacy between those who completed the questionnaire in T1 only (mean = 29.60), and those who responded to the questionnaire at both time points (mean = 29.42). We found no significant difference between the two means ($p = .33$). Overall therefore, contrary to what has been found in previous research (Bauer et al., 1998; Gilliland, 1994) it appears that self-efficacy is *not* an outcome negatively influenced by failing the assessment centre process.

6. Discussion

6.1. Job relatedness and fairness perceptions

In Sample 1, job relatedness perceptions of the individual selection methods – the JKT and the SJT measured at the time of testing predicted fairness perceptions measured a month later, even after controlling for whether applicants passed or failed the shortlisting stage. These findings support previous research (e.g., Bauer et al., 1998; Chan et al., 1998; Schmitt et al., 2004; Truxillo et al., 2001). However, only the SJT had unique variance in predicting fairness perceptions following feedback. By contrast, in Sample 2, although job relatedness perceptions for the three selection methods – the GE, SPC and WE – made a joint contribution in predicting fairness perceptions, no single selection method contributed unique variance. In other words, the selection methods together had predictive power in explaining fairness perceptions, but no single selection method uniquely explained fairness perceptions.

The selection process examined in this study is particularly high-stakes, where the outcome of the selection process is important to candidates, as not getting a post may have a significant negative impact on future careers (Patterson & Ferguson, 2007; Truxillo et al., 2002). Indeed, following the final stage assessment center, the outcome (pass/fail) rather than procedural factors better predicted perceptions of fairness perceptions. Thus, passing or failing is more important in determining fairness perceptions than job relatedness perceptions, although job relatedness still has some incremental value. Conversely at the shortlisting stage, pass/fail was not a significant predictor of fairness perceptions. In combination, these results suggest that failing the process at the final stage of the selection process has a greater influence on applicants' perceptions of fairness; this may be because they have invested more time and effort in the process at this stage. This supports previous research where, following feedback, fewer procedural justice rules predict various outcomes (e.g., Bauer et al., 1998); and those who 'passed' the process evaluated testing more positively than those who failed (Schleicher, Venkataramani, Morgeson, & Campion, 2006). However, it seems that at early stages in the selection process, job relatedness perceptions are more important in explaining fairness perceptions. These findings support the notion that cross-sectional data may inflate the importance of job-relatedness. For example, Gilliland and Steiner (2012) suggest that procedural justice rules such as job relatedness are more important when selection outcomes are unknown than once outcome feedback has been provided. Taken together, these findings support Hausknecht et al.'s (2004) assertion that a key variable to be considered in applicant fairness perceptions is the *stage* of the selection process. As applicant perception variables have been measured at different selection process stages, important differences in the magnitude of relationships between variables could potentially have been obscured in previous research (Hausknecht et al., 2004).

6.2. Self-efficacy – trait or outcome?

This study explored whether self-efficacy can be conceived of as a trait that predicts fairness, or an outcome that is influenced by the selection process. Results showed that occupational self-efficacy was not influenced by failing the selection process, despite previous research indicating that *test-taking* self-efficacy is (e.g., Truxillo et al., 2001). Instead, a key finding was that self-efficacy explains variance in fairness perceptions across two samples, beyond that accounted for by job relatedness perceptions. Although effect sizes were small, a strength of the present study was that findings replicated across two samples. This study therefore makes an important contribution to the applicant perception literature: it has shown that self-efficacy can be conceived of as a trait that *positively predicts* fairness perceptions, rather than an *outcome negatively influenced* by the selection process. This indicates that applicants who report higher self-efficacy are more likely to perceive selection processes as procedurally fair following outcome results. Similarly, Ployhart and Ryan (1997) found a positive relationship between perceptions of fair processes and self-efficacy regardless of whether applicants were accepted or rejected.

Self-efficacy relates to a person's evaluations of their ability to perform successfully in a variety of situations and generally; empirical research shows that self-efficacy relates positively to work attitudes such job satisfaction (e.g., Judge, Van Vianen, & Pater, 2004) and also job performance (e.g., Judge & Bono, 2001). Individuals high on self-efficacy deal effectively with difficulties (Gist &

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Mitchell, 1992) and persist when challenges arise (Myers, 1999). Furthermore, substantial positive relationships have been found between occupational self-efficacy and internal locus of control (r =.49; Schyns & von Collani, 2002) supporting Bandura's (1977) assertion that people with high perceptions of self-efficacy tend to attribute favorable performance to internal factors such as personality or disposition.

Our findings may be explained by the self-serving bias mechanism, where applicants who perceive themselves positively, internalize their ability to perform well on selection methods and therefore, consider the process to be fair. Studies that have examined the relationship between test performance and applicant perceptions have provided evidence that post-test reactions may in part reflect the operation of a self-serving bias (e.g., Chan & Schmitt, 1997; Chan et al., 1998; Truxillo et al., 2009): applicants who perceive that they have performed well during the selection process report higher favorability perceptions than those who perceive that they did not perform well. If self-efficacy relates to how individuals *generally* feel about themselves (i.e., better able to cope and perform successfully in a wide array of situations), then they may believe they will perform well during selection and therefore rate the process fairer.

In addition, Consistency Theory (Dipboye, 1977) may also help to explain these findings. This theory suggests that people strive to maintain a positive self-image. If individuals have high self-perceptions they reject negative feedback (that is, failing the selection process) because it is inconsistent with their self-image. Because the sample's self-efficacy was particularly high, it could be that individuals who failed the selection process discounted this to maintain a positive self-image and as such self-efficacy was not negatively influenced (Schleicher et al., 2006). An alternative explanation, and one that cannot be corroborated because information was not sought from participants, is that rejected candidates had alternative job offers and therefore their self-efficacy was not negatively influenced by failing because the alternative offer attenuated the negativity of rejection (Anderson & Goltsi, 2008; Ployhart & Ryan, 1997).

6.3. Implications

Our findings have a number of important implications relating to both research and practice. In relation to research, this study highlighted the importance of collecting post outcome (pass/fail) data as in one of the samples (during the final stage assessment center), job relatedness perceptions only moderately predicted fairness perceptions following outcome feedback, with the outcome (pass/fail) being more important in predicting fairness perceptions than job relatedness perceptions. This suggests that perceptions may be less stable than alluded to in previous cross-sectional designs (Hausknecht et al., 2004); that is, once outcome feedback is received the perceptions of job relatedness are no longer important in predicting fairness perceptions. A second implication relates to the importance of considering the stage of the selection process in applicant perception research (Hausknecht et al., 2004; Gilliland, 1993), as findings showed that procedural justice rules may be more or less important depending on the stage of the selection process. For instance, job relatedness perceptions accounted for more variance in fairness perceptions at the shortlisting stage (15% for Sample 1), than they did at the assessment center stage (3% for Sample 2). In addition, at the assessment center stage the outcome (pass/fail) explained 33% of the variance in fairness perceptions. Conversely, at shortlisting once outcome feedback was received, perceptions of job relatedness remained important in predicting fairness perceptions. It is plausible that the outcome is more important at the final stage of selection as applicants have invested more time and effort in the process than at earlier stages in the selection process; as such, failing has a significant negative influence on fairness perceptions. This may be particularly significant in high-stakes settings such as the present context.

Third, this research demonstrates a role for individual differences in perceptions of fairness. Individual differences relating to self-efficacy accounted for a proportion of variance in fairness perceptions. Although these effects were small, it could imply that there is a stable component to applicant perceptions. Indeed, findings were consistent across two field-based samples; and potentially may generalize to other organizational settings. As such, self-efficacy and other individual differences should be included in future studies so that researchers can obtain a more complete understanding of the factors that influence applicant perceptions of selection methods and processes (Oostrom et al., 2010; Truxillo, Bauer, Campion, & Paronto, 2006).

Fourth, findings may also suggest that self-efficacy can be conceived of as a trait that *positively predicts* fairness perceptions, rather than an *outcome negatively influenced* by the selection process. Although test-taking self-efficacy has been shown to be negatively influenced by a selection process (e.g., Truxillo et al., 2001), it is plausible that broader conceptualizations of self-efficacy (that is, general or occupational) are predictors of fairness as, operationalized as traits, they are stable over time (Schyns and von Collani, 2002). If the occupational self-efficacy constructs relates to how individuals *generally* feel about themselves, then it is perhaps not surprising that this influences their perceptions of selection. These findings may be extrapolated to other similar high-stakes contexts. Unlike previous research (e.g., Nikolaou & Judge, 2007) that has tended to focus on student samples or selection that was not particularly high stakes, this research provides a unique insight into the role of self-efficacy in a selection

context that has significant implications for a candidate's future career prospects.

Fifth, passing or failing the final stage of selection process (Sample 2) predicted a significant amount of the variance in fairness perceptions following pass/fail results. From a practical perspective, this indicates that organizations will have to 'work hard' to overcome the disappointment that comes from being rejected from a highly desirable job. It may suggest that organizations with high-stakes selection processes have limited control to improve applicant perceptions because failing will negatively influence fairness perceptions, whether or not selection methods are procedurally fair. Achieving greater conceptual understanding of the nature of applicant perceptions has further practical implications. If negative perceptions of selection methods are primarily a result of a method's content or the way it was administered, then it may be possible to encourage positive perceptions through amending content or administration (Chan & Schmitt, 2004; Van Vianen et al., 2004). Conversely, if applicant perceptions are due to stable individual differences among applicants, such as self-efficacy, then employers may only be able to influence applicant perceptions to some extent.

Finally, the finding that job relatedness is more important in terms of its impact on fairness perceptions in the first stages of selection could indicate that organizations may wish to explicitly state how selection tests are job-relevant from the onset. This may be particularly important for high-stakes candidates where reactions can be heightened due to the potential negative impact on a person's career if the selection process is not passed. The fact that this study explored real candidates in an operational selection setting increases the external validity of the research (Schinkel et al., 2013) and is likely to be a better representation of applicant perceptions in selection than student studies that are merely imagining their responses. Therefore research in operational contexts is extremely important for a greater understanding of the processes behind applicant reactions.

6.4. Limitations

There are a number of potential limitations of the studies presented in this study that should be noted. First, the selection methods in this research were specifically created for the GP selection process. However, these types of methods are fairly commonly-used in selection processes (e.g., Zibarras & Woods, 2010), so to the extent that other selection methods are similar, these results are likely to be generalizable. Second, one could argue that perception measures should have been collected both before and after completing the selection methods because otherwise participants' base-rate for these variables cannot be controlled for, which might confound the ability to isolate the effects of applicant characteristics (Chan & Schmitt, 2004; Schmitt & Chan, 1999). However, in this instance pretest perceptions would have been meaningless, because it would have been impossible for candidates to assess job relatedness of the method *before* it was completed. Nonetheless, the self-efficacy questionnaire may have been better completed prior to the selection process. Ideally, future research should aim to access this information; however, in the present testing context, it was not possible to collect pretest perceptions due to time and logistical constraints of an operational setting. Finally, researchers (e.g., Truxillo et al., 2001) have suggested that multidimensional measures of fairness (as suggested by Gilliland, 1993) should be used, in addition to employing broader measures. In the present study, a specific measure of one procedural factor, job relatedness, was used. In the context of this research, however, it was deemed appropriate to focus on job relatedness as it was anticipated that this would be a salient feature for candidates in this context as the selection methods were relatively new methods of assessment. However, further research is needed to explore the relative impact of various justice rules on fairness because this will provide more specific insight into the rules crucial in applicant perceptions, as procedural rules may be differentially weighted (Anderson et al., 2001; Schleicher et al., 2006).

6.5. Conclusion

Overall, the results from this study show that in two samples, job relatedness perceptions measured at the time of testing predict fairness perceptions measured following outcome feedback. However, findings also indicated that the stage in the selection process was important in determining the extent to which job relatedness perceptions predicted fairness. Job relatedness perceptions were more important at the shortlisting stage than the assessment center stage in predicting fairness perceptions; at the final assessment center stage, passing or failing the process was more important. Findings also indicated that self-efficacy may be a predictor that influences applicant fairness perceptions, supporting the theory that there may be a stable component to applicant perceptions.

Notes

1. Note that a factor analysis revealed that the two job relatedness scales and the fairness items all loaded separately onto three factors.
2. Note that T1, rather than T2, self-efficacy is used. In these analyses it is conceived of as a trait, being relatively stable over time ($r = .70$). This also reduces common method bias.

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