Journal of Industrial Psychology, 2000, 26(1), 29-38
Tydskrif vir Bedryfsielkunde, 2000, 26(1), 29-38

ORGANISATIONAL JUSTICE RULES AS DETERMINANTS OF BLACK AND WHITE EMPLOYEES' FAIRNESS PERCEPTIONS OF PERSONNEL SELECTION TECHNIQUES

ANGELA DE JONG
DELÉNE VISSER*

Department of Human Resource Management
Rand Afrikaans University

ABSTRACT

The diversity of the South African population may lead to opinions that test fairness is not a pure empirical problem, but requires certain subjective value judgements. The aim of this study was to identify applicants' underlying reasons for evaluating a selection technique as being fair/unfair. These fairness perceptions were analysed by means of the organisational justice theory. The total sample consisted of 328 mature university students (M = 30,6) all of whom had work experience. The analyses comprised two sets of comparisons. The first set involved Black (uninformed) and White (uninformed) groups. The second comparison involved informed versus uninformed black students. Exposure to the subjects Strategic Personnel Management and/or undergraduate Industrial Psychology, in which the nature and value of various selection techniques are studied, constituted the variable 'being informed'. It was hypothesised that the Black (uninformed) and the White (uninformed) groups would perceive the value of the 11 justice rules for the total fairness perception across the ten selection techniques differently. Substantial support was found for this hypothesis. The same hypothesis was investigated for the Black (informed) and the Black (uninformed) groups, but no significant differences were found to support the latter hypothesis. The implications of these findings are discussed in terms of South African selection practices.
Key words: Personnel selection techniques, organisational justice theory, fairness perceptions.

OPSOMMING

Die diversiteit van die Suid-Afrikaanse bevolking mag daartoe lei dat persepsies van die billikheid van verskillende personeelkeuringtegnieke op 'n verskeidenheid van subjektiewe waarde-oordele gegrond word. Dit is die doel van hierdie ondersoek om die onderliggende redes waarvolgens kandidate keuringtegnieke as billik/onbillik evalueer, te identifiseer. Die kandidate se billikheidpersepsies van tien keuringtegnieke is aan die hand van die organisatoriese billikheidteorie ontleed. Die steekproef het bestaan uit 328 volwasse universiteitstudente (M = 30,6 jaar) wat almal oor werkervaring beskik het. Die ontledings het twee stelle vergelykings behels. Die eerste stel het Swart (oningeligte) en Wit (oningeligte) groepe vergelyk en die tweede het oningeligte versus ingeligte swart studente vergelyk. Blootstelling aan die vakke Strategiese Personeelbestuur en/of voorgraadse Bedryfsielkunde, waarin die aard en nut van verskeie keuringtegnieke behandel word, het die veranderlike 'ingeligtheid' gespesifiseer. Die hipotese is gestel dat die Swart (oningeligte) en Wit (oningeligte) groepe die waarde wat hulle aan die 11 billikheidreëls ten opsigte van die billikheid van die keuringtegnieke heg, verskillend sal evalueer. Die resultate het hierdie hipotese gesteun. Dieselfde hipotese is ondersoek vir die Swart (ingeligte) en Swart (oningeligte) groepe, maar geen beduidende verskille is gevind om die laasgenoemde hipotese te ondersteun nie. Die implikasies van hierdie bevindinge word bespreek in terme van keuringpraktyke in Suid-Afrika.
Sleutelwoorde: Personeelkeuringtegnieke, organisatoriese billikheidteorie, billikheidpersepsies.

It is important for employers from an ethical, legal and business perspective to use valid and fair selection techniques. From an ethical perspective it is important that employers use selection techniques that are contextually relevant for members of the different South African population groups (Employment Equity Act, 1998). From a legal perspective selection functions as a powerful mechanism for addressing affirmative action issues. In the Employment Equity Act (1998) it is stated that positive steps should be taken to advance equal representation in all occupational categories and levels. Thirdly, from a business perspective selection functions as a fundamental activity to supply the organisation with new talent that will secure the growth and prosperity of the organisation (Boolsen & Theron, 1996; Sunter, 1997).

A significant amount of research has been conducted to determine the value of selection techniques on empirical grounds, such as the validity, reliability, utility, and bias of selection techniques (Arvey & Sackett, 1993; Carson, Becker & Henderson, 1998; Cascio, 1997; Cronbach, 1990; Gregory, 1996; Reilly & Chao, 1982; Schmidt & Hunter, 1998). However, the fairness of psychological measuring procedures, including selection measures, is a broad concept that is based on one's notion of justice and social values. Test fairness is a subjective values issue that refers to certain subjective social and ethical value judgements that need to be made regarding the fair use of a selection technique (Anastasi & Urbina, 1997; Gregory, 1996).

Irrespective of how test fairness is defined and despite the fact that fairness is often confused with test bias, selection fairness has been and will be one of the most persistent and crucial issues in personnel psychology (Singer, 1990). Singer notes that job applicants are likely to attach significant importance to the fairness of selection in the current international situation of declining economic resources and shrinking employment opportunities. Utilising selection techniques that are perceived as being unfair by the applicants may have a negative effect on applicant attraction and retention, acceptance of job offers by suitable applicants and organisational attractiveness (Bauer, Maertz, Dolen & Campion, 1998; Rynes & Connerley, 1993; Smither, Reilly, Millsap, Pearlman & Stoffey, 1993). Furthermore, negative perceptions of selection techniques may result in reduced motivation to perform, which may in turn lower the operational validity and utility of the selection technique (Arvey, Strickland, Drauden & Martin, 1990). In the South African context the new Employment Equity Act (1998) defines applicants as employees and they have the right to take legal action against the employer when they perceive the selection process as unfair. It is therefore necessary to investi-

Requests for reprints should be addressed to: A. de Jong, Department of Human Resource Management, Rand Afrikaans University.

gate applicants' fairness perceptions regarding specific selection techniques and to identify the reasons that underlie these perceptions.

In various international studies the fairness perceptions of selection techniques such as personality tests, assessment centres, biographical questionnaires, general mental ability tests, and interviews were analysed (Landy, Shankster & Kohler, 1994; Rynes, 1993; Schmitt & Coyle, 1976). The aim of these studies was mainly to determine the utility of the selection techniques, or to compare the fairness perceptions of different selection techniques. More recently the focus has been on identifying the fairness perceptions of selection techniques to identify the reasons for the fairness perception (Harland, Rauzi & Biasotto, 1995; Kluger & Rothstein, 1993; Macan, Avedon, Paese & Smith, 1994; Robertson, Iles, Gratton, & Sharpley, 1991; Rynes & Connerley, 1993; Smither & Pearlman, 1991; Steiner & Gilliland, 1996). Consequently, the focus of this investigation will be on determining the reasons for the fairness perception of selection techniques, as well as whether the different population groups in South Africa perceive the various selection techniques differently.

According to Singer (1993) social psychological research has shown that justice is the central concern of human beings. In an organisational setting the organisational justice theory therefore seems appropriate. Gilliland (1993) developed a model that is based on organisational justice theory and that offers a concise overview of relations between important variables for understanding applicants' fairness perceptions of selection techniques. It explains fairness perceptions in terms of certain organisational justice rules. The model proposes that applicants rate selection techniques as being fair/unfair on the basis of these rules. The organisational justice rules are divided into two main categories, namely distributive justice rules and procedural justice rules (see Figure 1).

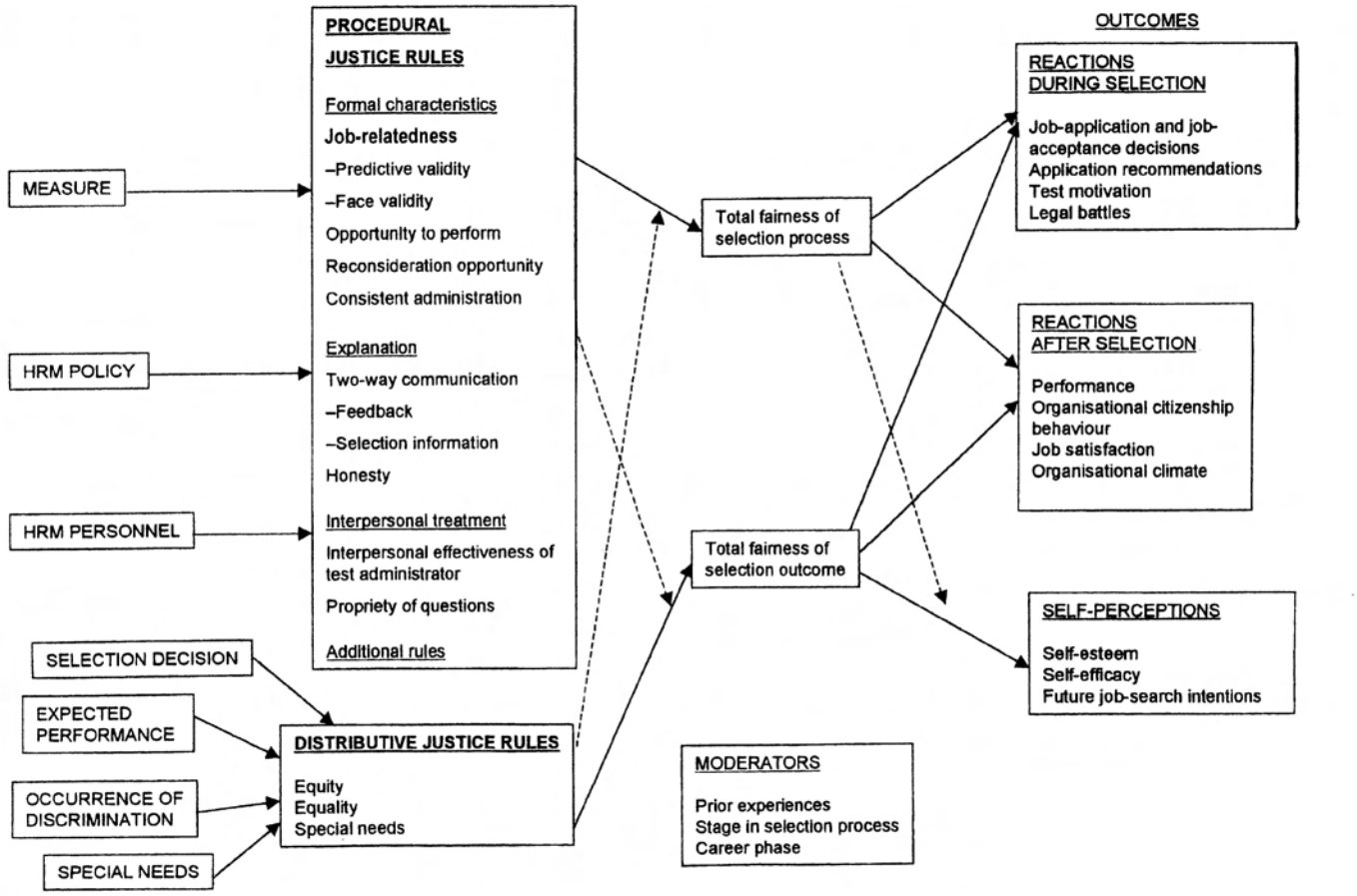

Figure 1: Model of reactions to selection techniques.
(Adapted from Gilliland, 1993; Schuler, 1993; Singer, 1993; Steiner & Gilliland, 1996)

In terms of the distributive justice rules an applicant is influenced by his/her perception of the equality in the outcome of the selection decision, that is, the perceived fairness of the selection outcome (Singer, 1993; Ployhart & Ryan, 1998). Gilliland (1993) explains that the various distributive justice rules may be interpreted as follows:

(a) Equity: The equity rule proposes that applicants should receive rewards consistent with their inputs in the selection process - relative to a comparable other. For this reason the selection technique must generate objective information about the applicant.
(b) Equality: The equality rule suggests that all applicants should be given an equal opportunity to receive the reward, irrespective of differentiating characteristics, such as gender, race or beliefs.
(c) Need: The need rule proposes that rewards should be given on a basis of individual needs. Special needs in the work environment refer to preference being given to individuals belonging to minority groups, to affirmative action programs, or to individuals with disabilities.

Procedural justice concerns the fairness of the selection process (Ployhart & Ryan, 1998), the fairness perceptions of selection techniques when differentiation between candidates is taking place. Procedural justice rules are categorised in terms of three components, namely formal characteristics, explanation and interpersonal treatment (Gilliland, 1993).

Formal aspects. The formal characteristics of a selection technique include justice rules such as job-relatedness (subdivided into predictive validity and face validity), opportunity to perform, reconsideration opportunity and consistency of test administration.

Research suggests that job-related selection techniques will be perceived as being fair (Reilly & Warech, 1990; Schuler, 1993).

Smither and Pearlman (1991) explain that job-relatedness pertains to both content validity (test content relevant to work content) and predictive validity (test performance is prediction of work performance). However, the term job-relatedness should be distinguished from face validity. Face validity refers to 'what the selection technique appears to measure', as well as 'whether the selection technique appears valid' (Anastasi & Urbina, 1997). An important complication arises, because a selection technique may appear face valid without being job-related (Anastasi & Urbina, 1997). Consequently, if a selection technique does not appear face valid, or job-related, the applicant may not be motivated to perform. This may lead to inaccurate scores and biased results (Gilliland, 1993) thereby indirectly influencing the true validity and utility of selection techniques (Smither et al., 1993). As a result the operational validity of the selection technique may decrease (Anastasi & Urbina, 1997). Additionally, in the Employment Equity Act (1998) the advice is given to rather avoid selection techniques that cannot legally be proven as being job-related. The requirement is that all selection techniques that are used during a selection process should respect cultural diversity and make accurate predictions for members of different population groups.

The second procedural justice rule is closely related to job-relatedness. Kluger and Rothstein (1993) reported that applicants who were given an opportunity to demonstrate their relevant skills, were of the opinion that they performed better than those applicants who were not given this opportunity. In addition these applicants were of the opinion that they had more control over factors influencing their performance and that the technique generated more accurate information about the applicant. For these reasons the selection technique was evaluated as being fair. Schuler (1993) suggests that the acceptability of selection techniques depend on the amount of participation and control the applicants have in a selection situation.

The third formal characteristic of a selection technique, the opportunity for reconsideration, or the opportunity to re-evaluate selection results (thus being given a second chance), is an important consideration (Gilliland, 1993). However, this dimension was not included in the study, since not all selection techniques permit a reconsideration opportunity.

The fourth formal characteristic of a selection technique is the opportunity for consistent test administration. Gilliland (1993) pointed out that if objective, reliable results are generated consistently over time, the selection technique will be perceived as being fair. However, the results should also be consistent over applicants (in terms of content of the selection technique, scoring of tests and interpretations of test scores).

Explanation. Explanation, or interactional fairness, refers to the quality of information given to applicants, as well as the manner in which applicants are treated during a selection situation (Gilliland, 1993). This justice rule includes both **what** is communicated during (and after) the decision-making process, as well as **how** it is communicated (Singer, 1993). The importance of interactional justice is determined by the extent to which the specific selection technique preserves the humanity and self-respect of applicants (Greenberg, 1994). This category is subdivided into two-way communication and the honesty that is displayed during the selection process.

Two-way communication refers to the opportunity provided for applicants to ask questions pertaining to the vacant post, organisation and selection process (Gilliland, 1993) with an opportunity for feedback (Ivancevich & Matteson, 1993). The fairness perceptions of selection techniques are also influenced by the information available regarding the validity of the selection technique, scoring of the tests, as well as the manner in which the test scores will be used in the decision-making process (Gilliland, 1993). Results of the Rynes and Connerley (1993) study indicate that applicants' attitudes toward the selection techniques can be predicted, to a certain extent, by their trust in the scoring process. Landy, et al., (1994) mention that these reactions can be based on the applicants' trust in the employer's (or test administrator's) competence to interpret and understand the information correctly.

Provision of accurate, informative feedback as soon as possible after the selection situation, is appraised as being an important factor influencing the fairness perception of a selection technique (Ivancevich & Matteson, 1993). Therefore applicants should be provided with substantial opportunities to obtain information relevant to the vacant post (Harland, et al., 1995; Schuler, 1993). If these opportunities are not provided, the applicant may evaluate the selection technique as being unfair.

Schuler (1993) verified that two-way communication and honesty are two important components of an effective feedback process. Although honesty forms an integral part of the communication process, his research disclosed that honesty functions as an independent component of the fairness perception.

The last category, interpersonal treatment, consists of two procedural rules, namely interpersonal effectiveness of the test administrator and the propriety of questions.

Interpersonal treatment. The interpersonal effectiveness of the test administrator refers to the way in which applicants are treated with respect and interpersonal warmth (Gilliland, 1993). Research shows that interpersonal warmth and courteousness of the interviewer are the strongest predictors of positive perceptions regarding the organisations' image (Schmitt & Coyle, 1976). It serves as a guide for expectations regarding the job offer and it also influences acceptance of such offers (Schmitt & Coyle, 1976). Because of the nature of the questionnaire used in this study, it was not possible to test this justice rule.

A justice rule that was investigated in this study, was the effect that the propriety of questions has on the fairness perception. The propriety of questions include aspects such as judgmental statements, inappropriate questioning and irrelevant probing. Arvey and Sackett (1993) note that little information exists about this variable, probably because such questions are perceived as being illegal and unethical during a selection situation. Consequently most organisations will deny that such behaviour does occur (Rynes, 1993). However, these questions may lead to negative outcomes such as complaints, court cases or suitable applicants turning down job offers (Smither et al., 1993).

Graham and Lilly (1984) reported that questions that are asked about the applicants' personal life that are not job-related might result in an unfair perception of the selection technique.

Additional rules. Steiner and Gilliland (1996) added two rules to the existing model. They determined that when certain selection techniques are widely used, they will be perceived as being fair. Secondly, they reported that applicants evaluated a selection technique as being fair when they were of the opinion that the employer has the right to obtain that information.

Using the organisational justice theory as a basis, Steiner and Gilliland (1996) developed a questionnaire with the aim to identify both the fairness perceptions of certain selection techniques as well as the underlying justice rules that determine the perception of fairness/unfairness. They compared a French sample with an American sample and found that in general those selection techniques that were perceived as being fair by the American sample were also perceived as being fair by the French sample. However, significant differences were found between the two samples in terms of some of the underlying justice rules that determined the perceptions of fairness. These justice rules included the value given to techniques that are scientifically researched (thus have predictive validity), face valid techniques, techniques that provide applicants with an

opportunity to demonstrate job relevant skills, the acceptability of the employer to request specific information, as well as techniques that are widely used.

Steiner and Gilliland (1996) concluded that although the validity of selection techniques is generalisable across countries (with divergent cultural backgrounds), the factors that determine the use of selection techniques could differ according to country and culture. The relevance for investigating this aspect in South African circumstances is obvious if the value attached to the justice rules differ across population groups.

A critical question that should be asked is: Do the justice rules whereby selection techniques are perceived as being fair differ across population groups in South Africa? An aspect that has not been addressed in previous investigations is the role that the variable 'being informed' plays in the fairness perceptions regarding selection techniques. When an individual has completed a course, or has been exposed to lectures or academic modules in which the nature and value of certain selection techniques are discussed, the individual will give a moderated response, because of exposure to this information. The individual has been informed about the value of the selection technique. A further question that is relevant in this investigation is: Does the variable 'being informed' regarding the nature of selection techniques have an influence on the value that is attached to certain justice rules?

METHOD

Sample

In this study relatively mature students ($M = 30{,}61$; $SD = 7{,}54$), all of whom had work experience, participated in order to improve on shortcomings of previous studies. The age of the participants varied from 18 years to 56 years. The mean age of the total sample was substantially higher than the mean age of the sample in the Steiner and Gilliland (1996) study. This increased the probability that the participants had been exposed to several selection techniques and would be able to give meaningful responses. The age groups of the participants resembled a representative range of the five career development phases, from organisational entry to retirement (Greenhaus & Callanan, 1994).

The initial sample included Asian, black, coloured, and white participants, but since only six Asian (1,8% of total sample) and 13 coloured (4% of total sample) students participated, it was decided to exclude these population groups. Individual cases for which no variance in subjects' responses per item over the various selection techniques was obtained, were also excluded.

The sample sizes and mean ages of the participants per group are presented in Table 1. The Black (informed) group consisted of 107 participants, the Black (uninformed) group consisted of 104 participants and there were 75 in the White (uninformed) group. The mean age of the Black (informed) and the Black (uninformed) groups were similar. The valid percentages are indicated in brackets.

TABLE 1
SAMPLE STATISTICS

Population group	Male *N*	Female *N*	Age *M* (*SD*)
Black (informed)	45(42,1%)	62(57,9%)	32,55(6,85)
Black (uninformed)	48(46,2%)	56(53,8%)	32,45(7,30)
White (uninformed)	27(36,0%)	48(64,0%)	26,09(6,63)

Exposure to the subjects Strategic Personnel Management and/or undergraduate Industrial Psychology, in which the nature and value of various selection techniques are studied, constituted the variable 'being informed'. Only the Black (informed) and Black (uninformed) groups were compared when testing for the variable 'being informed', because of the small number of White (informed) participants ($N = 21$; 13,67% of sample).

Measuring instruments

In order to make comparisons the questionnaire that Steiner and Gilliland (1996) developed for their study was adapted for use in this study. It was decided to use the same format as the original questionnaire, because meaningful results were obtained in the Steiner and Gilliland (1996) study, but in the present study some questions were added.

In the Steiner and Gilliland (1996) study the completion of the questionnaire was linked to any job that the participant could apply for. In this study a certain context was created. The participants were asked to imagine that they were applying for a job as personnel manager. Then they had to consider how they would react if an employer used each of the ten selection techniques to evaluate them as an applicant for the job. Varying frames of reference could in this way be controlled as an extraneous variable. A definition of every selection technique preceded the relevant items in the questionnaire (see Table 2).

TABLE 2
DEFINITIONS OF SELECTION TECHNIQUES
(Adapted from Steiner & Gilliland, 1996).

Interviews: Face-to-face interaction in which employers ask you a variety of questions about your background, work experience and qualifications. The interview is also used for assessing work attitudes, intentions and motivation.
Curriculum vitae: A self-written description of information on all your professional experiences, your educational background and work history.
Work-sample tests: Tests in which you actually perform a part of the job so that your success in doing that part of the job can be determined.
Biographical information blank: Forms requesting very specific information about your general background, work experiences, and education. They often include questions about your hobbies, interests, and past accomplishments. These questions are frequently in multiple-choice format where you check the appropriate answer.
Written ability tests/Psychometric tests: Paper-and-pencil tests that are used to assess a variety of intellectual or mental abilities and skills, such as reasoning, learning, verbal, clerical or mathematical ability.
Personal references: In this method, you must request letters of reference or provide the names of your prior employers so that the employer can obtain information about your suitability for the job.
Personality tests/Psychometric tests: Paper-and-pencil tests that ask you questions about your opinions and past experiences to assess your personality traits.
Honesty tests: Tests that ask you about your thoughts on theft and experiences related to your personal honesty. Such tests are used to assess personal integrity.
Personal contacts: Knowing someone influential in the company where you hope to be employed, whose connections can help you get the job.
Graphology: The analysis of aspects of your handwriting, including style and form, to assess personal characteristics.

The first item in the questionnaire asked whether the participant had been exposed to the selection technique in a selection situation. The subsequent three items determined ratings of perceived effectiveness, fairness and validity. Participants indicated their perceptions on seven-point Likert scales (1 indicating a strong negative response and 7 a strong positive response). These three items constituted the fairness perception of the selection technique. The remaining 11 items determined ratings of perceived fairness of the justice rules. With these 11 items it was intended to determine why the participants rated the specific selection technique as fair/unfair. Participants indicated their perceptions on seven-point Likert scales (1 indicating a strong negative response and 7 a strong positive response). Every item was based on specific justice rules from the organisational justice theory (Gilliland, 1993), as indicated in Table 3.

In the first column of Table 3 the item in the questionnaire is given. It is also indicates whether the question was an original question taken from the Steiner and Gilliland (1996) study. In the next column a possible reason for the fairness perception is given. Thirdly, the relevant justice rule is identified and lastly the literature reference is provided.

The 15 items were repeated for every selection technique. A second version of the questionnaire that presented the selection techniques in reverse order, was developed. This was done to control for possible order effects and/or the influence of fatigue. The two forms of the questionnaire were randomly distributed among the students.

Procedure

The questionnaires were handed to students who volunteered

TABLE 3
EXPLANATION OF THE ITEMS IN THE QUESTIONNAIRE THAT ARE RELEVANT TO THE ORGANISATIONAL JUSTICE RULES

1. ITEM IN QUESTIONNAIRE	2. POSSIBLE REASONS FOR PERCEPTIONS	3. RELEVANT JUSTICE RULES	4. REFERENCES
(a) "This method provides objective information about individuals".	The technique is perceived as being (un-) fair, because the technique provides objective information.	EQUITY Distributive rule	Gilliland, 1993; Singer, 1993.
(b) "This approach enables employers to address issues such as affirmative action".	The technique is perceived as being (un-) fair, because the technique enables employers to address issues such as affirmative action.	SPECIAL NEEDS Distributive rule	Gilliland, 1993; Singer, 1993.
(c) "This method for selecting employees provides job-related information".	The technique is perceived as being (un-) fair, because it generates job-related information about the applicant.	JOB-RELATEDNESS Procedural rule	Rynes & Connerly, 1993; Schuler, 1993; Smither, et al., 1993
(d) "This approach to selecting employees is based on solid scientific research". *Original item.*	The technique is perceived as being (un-) fair, because the technique is based on scientific knowledge.	PREDICTIVE VALIDITY Procedural rule	Steiner & Gilliland, 1996.
(e) "This method is a logical approach to selecting employees for this job". *Original item.*	The technique is percieved as being (un-) fair, because the technique is a logical, face valid approach to select the most appropriate applicant for the job.	FACE VALIDITY Procedural rule	Anastasi & Urbina, 1997; Macan et al., 1994; Rynes & Connerly, 1993; Smither et al., 1993.
(f) "This method is likely to detect important qualities that make me different form others". *Original item.*	The technique is perceived as being (un-) fair, because the applicant is given an opportunity to perform, since those qualities that distinguish the applicants from others are identified.	OPPORTUNITY TO PERFORM Procedural rule	Arvey & Sackeff, 1993; Kluger & Rothstein, 1993; Macan, et al., 1994; Rynes & Connerly, 1993.
(g) "This method yields consistent and reliable results".	The technique is perceived as being (un-) fair, because the technique provides consistent and reliable results.	CONSISTENT ADMINISTRATION Procedural rule	Gilliland, 1993; Reilly & Chao, 1982.
(h) "This approach allows effective two-way communication".	The technique is perceived as being (un-) fair, because the technique provides effective two-way communication.	EXPLANATION Procedural rule	Dweck & Leggett, 1988; Greenberg. 1994; Harland, et al., 1995; Robertson & Smith, 1989; Schuler, 1993; Singer, 1993.
(i) "This method is not invasive of personal privacy". *Original item.* *Item reflected.*	The technique perceived as being (un-) fair, because the technique does not invade the applicants' privacy.	PROPRIETY OF QUESTIONS Prodecural rule	Anastasi & Urbina 1997; Graham & Lilly, 1984; Rynes, 1993.
(j) "It is good to use a method such as this one, because it is widely used." *Original item.*	The technique is perceived as being (un-) fair, because the technique is widely used.	WIDELY USED Additional rule	Steiner & Gilliland, 1996.
(k) "Employers have the right to obtain information from applicants using this method".	The technique is perceived as being (un-) fair, because the applicant finds it acceptable that the employer requests the information.	EMPLOYERS' RIGHT Additional rule	Steiner & Gilliland, 1996.

to participate and they completed the questionnaires in their own time. They were also asked to complete a demographic information sheet.

RESULTS

For every individual a total fairness perception, separate per technique, was calculated by adding the three scores (perception of effectiveness, fairness and validity of selection technique) and dividing by three (De Jong & Visser, submitted for publication).

Two one-way MANOVAs were performed to determine whether there were differences between (a) the Black (uninformed) and White (uninformed) groups, and (b) the Black (uninformed) and Black (informed) groups with regard to the value that they attached to the 11 organisational justice rules. For every individual separately, the correlation per justice rule with the total fairness perception across the ten selection techniques, was calculated. (One variable for the correlation calculation was therefore the participant's scores on one of the items across the ten selection techniques and the other variable was the participant's scores on total fairness perception across the ten selection techniques). Since there were 11 justice rules, there were 11 correlations per individual.

Next Fisher r-to-z transformations were calculated (Hays, 1988, p.590). The z values across all individuals per justice rule were the scores for the dependent variable in the one-way MANOVAs. The Black (uninformed) and White (uninformed) groups' mean z scores with regard to the various justice rules are presented in Table 4. For those cases where perfect correlations were obtained between the total fairness perception and one or more of the justice rules, the Fisher r-to-z transformations will deliver a value of zero. Such cases were excluded in the MANOVAs. These perfect correlations occur, because the participants' responses are correlated with their own responses.

TABLE 4
COMPARISON OF BLACK (UNINFORMED) AND WHITE (UNINFORMED) MEAN z SCORES FOR FAIRNESS PERCEPTIONS OF THE VALUE ATTACHED TO THE JUSTICE RULES.

Total fairness perception	Black (uninformed)			White (uninformed)						
Justice rule	z Rank	SD	N	z Rank	SD	N	F	df	p	Estimated effect size f
Equity	0,84 (3)	0,53	93	0,84 (6)	0,45	72	0,00	1 & 163	0,996	0,00
Special needs	0,56 (10)	0,56	93	0,51 (10)	0,46	72	0,50	1 & 163	0,481	0,11
Job-relatedness	0,97 (1)	0,57	93	1,00 (2)	0,52	72	0,16	1 & 163	0,692	0,05
Predictive validity	0,72 (7)	0,59	93	0,70 (8)	0,48	72	0,30	1 & 163	0,872	0,02
Face validity	0,91 (2)	0,65	93	1,08 (1)	0,45	72	3,45	1 & 163	0,054	0,29
Opportunity to perform	0,81 (4)	0,54	93	0,92 (4)	0,47	72	2,08	1 & 163	0,151	0,22
Consistent administration	0,73 (6)	0,59	93	0,93 (3)	0,44	72	5,52	1 & 163	0,020	0,36
Explanation	0,61 (9)	0,54	93	0,58 (9)	0,57	72	0,12	1 & 163	0,732	0,05
Propriety of questions	0,45 (11)	0,54	93	0,43 (11)	0,54	72	0,05	1 & 163	0,818	0,03
Widely used	0,76 (5)	0,66	93	0,90 (5)	0,48	72	2,56	1 & 163	0,109	0,24
Employers' right	0,68 (8)	0,54	93	0,79 (7)	0,54	72	1,66	1 & 163	0,199	0,21

Wilks' lambda = 0,87
F (11,153) = 2,03, p = 0,029

Wilks' coefficient lambda was used to determine whether the centroids of the Black (uninformed) and White (uninformed) groups differed significantly. The obtained lambda of 0,87 with associated F (11,153) = 2,03, p = 0,029 was statistically significant, so the combined effect of the 11 justice rules were significant with regard to the value attached to the various justice rules. F tests were used to test for differences between the mean z scores of the population groups. The only significant difference obtained was for consistency of test administration. However, estimated effect sizes were calculated using Cohen's f (Aron & Aron, 1994, p. 330). According to Cohen's conventions for f no large effect sizes (f = 0,40) were obtained, but several medium-sized estimated effect sizes (f = 0,25) were found, namely for consistent administration (f = 0,36), face validity (f = 0,29), and widely used (f = 0,24). Approaching medium-sized effect sizes were opportunity to perform (0,22) and employer's right (0,21).

In the second MANOVA, using 'being informed' as the independent variable, the difference between the centroids of the Black (uninformed) and Black (informed) groups' mean z scores with regard to the justice rules were investigated. Wilks' coefficient lambda was calculated as 0,93 with associated F (11,176) = 1,13, p = 0,342 and was therefore not significant. The means and standard deviations of the value attached to the 11 justice rules by the above-mentioned groups across the ten selection techniques are presented in Table 5. However, no fewer than three medium-sized estimated effect sizes were obtained, they were consistent administration (f = 0,32), widely used (f = 0,32), and special needs (f = 0,28). Three more comparisons approached medium-sized f's, namely opportunity to perform (f = 0,24), employers' right (f = 0,23) and predictive validity (f = 0,22).

TABLE 5
COMPARISON OF BLACK (UNINFORMED) AND BLACK (INFORMED) MEAN z SCORES FOR FAIRNESS PERCEPTIONS OF THE VALUE ATTACHED TO THE JUSTICE RULES.

Total fairness perception	Black (uninformed)			Black (informed)			
Justice rule	z Rank	SD	N	z Rank	SD	N	Estimated effect size f
Equity	0,84 (3)	0,53	93	0,90 (5)	0,52	95	0,11
Special needs	0,56 (10)	0,56	93	0,71 (9)	0,53	95	0,28
Job-relatedness	0,97 (1)	0,57	93	1,06 (1)	0,43	95	0,17
Predictive validity	0,72 (7)	0,59	93	0,85 (7)	0,58	95	0,22
Face validity	0,91 (2)	0,65	93	1,01 (2)	0,52	95	0,17
Opportunity to perform	0,81 (4)	0,54	93	0,94 (4)	0,50	95	0,24
Consistent administration	0,73 (6)	0,59	93	0,90 (5)	0,46	95	0,32
Explanation	0,61 (9)	0,54	93	0,61 (10)	0,48	95	0
Propriety of questions	0,45 (11)	0,54	93	0,50 (11)	0,56	95	0,10
Widely used	0,76 (5)	0,66	93	0,95 (3)	0,46	95	0,32
Employers' right	0,68 (8)	0,54	93	0,81 (8)	0,56	95	0,23

Wilks' lambda = 0,93
F (11,176) = 1,13, p = 0,342

The purpose of Table 6 is to indicate specific differences and similarities between the Black (uninformed) and White (uninformed) groups in terms of their evaluation of the 11 organisational justice rules across the various selection techniques.

Statistically significant differences obtained with *t* tests between the groups are indicated with brackets. The correlations in the last row of Table 6, are the correlations between the group means across the ten selection techniques with regard to each justice rule. The correlations varied from 0,86 to 0,95, indicating considerable similarities between the two population groups.

TABLE 6
MEANS FOR THE JUSTICE RULES OF THE POPULATION GROUPS ACROSS SELECTION TECHNIQUES

Selection technique	Population group	Equity	Special needs	Job-relatedness	Predictive validity	Face validity	Opporunity to perform
		M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Interviews	Black (uninformed)	5,71 (1,27)	4,97 (1,69)	5,73 (1,29)	5,08 (1,69)	5,62 (1,43)	5,84 (1,35)
	White (uninformed)	5,01 (1,69)	5,00 (1,75)	5,83 (1,05)	4,33 (1,83)	5,61 (1,43)	5,93 (1,37)
Curriculum vitae	Black (uninformed)	5,39 (1,55)	4,66 (1,79)	5,67 (1,37)	4,82 (1,69)	5,21 (1,54)	5,35 (1,59)
	White (uninformed)	4,99 (1,86)	4,68 (1,84)	5,64 (1,48)	4,11 (1,79)	4,99 (1,58)	5,36 (1,67)
Work-sample tests	Black (uninformed)	5,10 (1,57)	4,32 (1,90)	5,28 (1,71)	4,81 (1,76)	4,98 (1,67)	5,54 (1,50)
	White (uninformed)	5,26 (1,40)	4,61 (2,06)	5,58 (1,57)	4,42 (1,64)	5,25 (1,52)	5,67 (1,52)
Biographical blank	Black (uninformed)	5,17 (1,64)	4,63 (1,74)	5,13 (1,62)	4,55 (1,75)	4,89 (1,84)	5,54 (1,31)
	White (uninformed)	4,64 (1,74)	3,96 (1,90)	4,61 (1,65)	4,24 (1,71)	4,38 (1,53)	5,14 (1,53)
Written ability tests	Black (uninformed)	5,03 (1,59)	3,95 (1,94)	4,84 (1,56)	5,03 (1,82)	4,86 (1,66)	5,24 (1,60)
	White (uninformed)	5,44 (1,42)	3,82 (1,95)	5,28 (1,50)	5,74 (1,39)	5,10 (1,50)	5,71 (1,16)
Personal references	Black (uninformed)	4,36 (1,88)	3,87 (1,87)	4,73 (1,77)	3,88 (2,03)	4,33 (1,93)	4,67 (1,85)
	White (uninformed)	4,07 (2,08)	3,74 (2,04)	5,00 (1,85)	3,08 (1,77)	4,85 (1,75)	5,18 (1,79)
Personality tests	Black (uninformed)	4,77 (1,79)	3,84 (1,85)	4,61 (1,78)	4,89 (2,00)	4,80 (1,55)	4,91 (1,73)
	White (uninformed)	5,39 (1,30)	3,88 (1,77)	5,47 (1,39)	5,35 (1,59)	5,32 (1,31)	5,79 (1,15)
Honesty tests	Black (uninformed)	4,04 (2,12)	3,22 (1,95)	4,04 (1,93)	3,82 (1,95)	4,05 (2,01)	4,28 (1,96)
	White (uninformed)	4,47 (1,94)	3,17 (1,87)	4,04 (1,79)	3,88 (1,78)	4,07 (1,92)	4,81 (1,80)
Personal contacts	Black (uninformed)	3,13 (2,08)	2,70 (2,06)	3,20 (2,11)	2,68 (2,08)	2,80 (2,02)	3,24 (2,20)
	White (uninformed)	2,40 (1,56)	3,13 (2,16)	2,83 (1,86)	1,83 (1,37)	2,42 (1,74)	3,03 (1,99)
Graphology	Black (uninformed)	3,23 (2,09)	2,79 (2,12)	3,18 (2,10)	3,24 (1,90)	3,04 (2,13)	3,37 (2,16)
	White (uninformed)	3,22 (2,10)	2,14 (1,50)	2,87 (1,77)	3,40 (1,98)	2,32 (1,63)	3,49 (1,96)
Correlations		0,87	0,91	0,94	0,87	0,95	0,92

Selection technique	Population group	Consistent administration	Explanation	Propriety of questions	Widely used	Employers' right
		M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Interviews	Black (uninformed)	4,72 (1,72)	6,81 (1,11)	5,09 (1,66)	5,45 (1,42)	5,74 (1,44)
	White (uninformed)	4,49 (1,78)	6,24 (1,17)	4,78 (1,79)	5,36 (1,64)	5,63 (1,65)
Curriculum vitae	Black (uninformed)	4,70 (1,65)	4,49 (2,17)	4,98 (1,72)	5,26 (1,61)	5,55 (1,49)
	White (uninformed)	4,21 (1,49)	3,58 (2,07)	5,14 (1,67)	5,10 (1,66)	5,47 (1,45)
Work-sample tests	Black (uninformed)	4,80 (1,73)	4,81 (1,78)	4,78 (1,58)	4,48 (1,61)	4,89 (1,85)
	White (uninformed)	4,68 (1,60)	4,60 (1,76)	5,43 (1,39)	4,06 (1,56)	5,24 (1,70)
Biographical blank	Black (uninformed)	4,63 (1,75)	4,30 (2,00)	4,40 (1,69)	4,84 (1,68)	5,06 (1,69)
	White (uninformed)	3,93 (1,57)	3,63 (1,83)	3,64 (2,00)	4,00 (1,67)	4,44 (1,80)
Written ability tests	Black (uninformed)	4,59 (1,78)	3,99 (2,17)	4,57 (1,82)	4,52 (1,76)	4,68 (1,84)
	White (uninformed)	5,29 (1,24)	3,47 (1,89)	4,49 (1,67)	4,85 (1,61)	5,18 (1,72)
Personal references	Black (uninformed)	3,83 (1,89)	3,84 (2,08)	4,11 (1,80)	4,33 (1,83)	4,65 (1,86)
	White (uninformed)	3,82 (1,83)	3,42 (1,82)	3,81 (1,85)	4,75 (1,93)	4,85 (1,84)
Personality tests	Black (uninformed)	4,18 (1,84)	3,89 (2,03)	4,42 (1,79)	4,31 (1,73)	4,73 (1,63)
	White (uninformed)	4,93 (1,38)	4,03 (1,66)	4,19 (1,77)	4,90 (1,67)	5,42 (1,31)
Honesty tests	Black (uninformed)	3,62 (1,97)	3,97 (2,02)	3,96 (1,93)	3,59 (1,73)	4,05 (2,13)
	White (uninformed)	3,69 (1,80)	3,63 (1,90)	3,46 (1,84)	3,49 (1,48)	4,52 (1,93)
Personal contacts	Black (uninformed)	2,60 (1,83)	3,38 (2,27)	3,46 (2,00)	2,78 (1,88)	3,23 (2,29)
	White (uninformed)	2,42 (1,63)	3,01 (1,83)	3,38 (1,79)	2,60 (1,76)	3,46 (1,98)
Graphology	Black (uninformed)	3,01 (2,00)	3,22 (2,26)	3,83 (2,09)	2,95 (1,91)	3,34 (2,12)
	White (uninformed)	2,38 (1,70)	2,28 (1,49)	3,40 (1,98)	1,89 (1,23)	2,85 (1,72)
Correlations		0,86	0,95	0,88	0,89	0,88

DISCUSSION

It was the aim of this study to investigate the organisational justice rules as determinants of the fairness perceptions of selection techniques. The MANOVA that was performed between the Black (uninformed) and the White (uninformed) groups to test for the difference between the value that the groups attach to the justice rules, indicated an overall difference between these population groups. The significant difference with regard to the justice rule, consistency of test administration, indicates more positive perceptions for the White (uninformed) group than the Black (uninformed) group. Bauer et al. (1998) found that consistency of test administration was predictive of the fairness perception of a selection process after the applicants were informed of their test performance. No statistically significant differences were found between the population groups regarding the value that the groups attach to the other justice rules, but a number of substantial effect sizes were obtained as reported earlier.

When the justice rules in Table 4 are ranked in order of preference (see columns 3 and 7), it is noted that both population groups ranked job-relatedness and face validity in the first two positions. The Black (uninformed) group ranked job-relatedness in the first position and face validity in the second position, whereas the White (uninformed) group ranked face validity in the first position and job-relatedness in the second position. Taking the Employment Equity Act (1998) into account, it is understandable that participants regard these justice rules as important. Also, various previous studies have confirmed the predictive value of job-relatedness for different selection techniques, including interviews, assessment centres and cognitive ability tests (Smither et al., 1993), as well as biographical information blanks (Kluger & Rothstein, 1991). Furthermore, Rynes and Connerley (1993) determined that the selection techniques with the clearest job-relatedness were perceived as being the fairest selection techniques.

On the other hand, both groups ranked explanation, special needs and the propriety of questions in the three lowest positions. Also, both population groups did not rate predictive validity as highly as had been expected. From a human resource practitioner's viewpoint the relatively low rating of predictive validity is alarming. According to these results applicants attach relatively low value to selection techniques that predict work performance. In other words, the main goal of using selection techniques, namely to select appropriate applicants who can do the job, is being regarded as relatively unimportant.

Ployhart, Ryan and Bennett (1999) indicated that providing an explanation for preferential selection decisions based on diversity issues, such as demographic factors, majority/minority groups or gender-based factors, appear to have a positive influence on the fairness perceptions of the applicants. However, an unexpected result in the current South African context is that both population groups attached little value to programs, such as affirmative action, where special needs are addressed in the work environment. Also the relatively low rating of the propriety of questions raises concern, but might be an indication that inappropriate questioning does not occur frequently in the workplace, otherwise the applicants might have had stronger reactions against it. Stone and Kotch (1989) asserted that the perception of invasion of privacy is linked to the ability that the applicant has in controlling personal information. They tested the perceived invasion of privacy toward drug testing practices. It was found that when employees were informed about the testing dates in advance, the negative perceptions regarding invasion of privacy was reduced. This justice rule links closely with the explanation or information provided regarding the testing procedure. Confirming these results Greenberg (1994) found that when a substantial amount of information was given in a socially sensitive manner, the acceptance of a work site smoking ban was enhanced. Ployhart et al. (1999) found that when employers provided the applicants with procedural information regarding the selection process, this information enhanced the fairness perceptions of the selection technique and organisational image. Furthermore, the rejected applicants reported that providing an explanation had a minimising effect on their negative self-perceptions.

For the White (uninformed) group face validity (z = 1,08) was most predictive of the fairness perception. This result confirms the findings of Steiner and Gilliland (1996) where face validity was also found to be the strongest predictor of the fairness perception for both the American and French groups. They also found that widely used techniques and the employers' right to obtain information were rated as important justice rules in determining the fairness perceptions of selection techniques (Steiner & Gilliland, 1996). Also, the opportunity to perform was rated as important justice rules influencing the fairness perceptions of selection techniques. Schuler (1993) agrees that the fairness perception of a selection technique depends on the amount of participation and control the applicants have in a selection situation.

In the current study job-relatedness (z = 1,00), consistency of test administration (z = 0,93), opportunity to perform (z = 0,92) and widely used techniques (z = 0,90) were rated as very strong predictors of the fairness perception for the White (uninformed) group. Equity (z = 0,84), the employers' right to obtain information (z = 0,79) and predictive validity (z = 0,70) were rated as moderately strong predictors for the fairness perception of selection techniques. The weakest predictors of the fairness perception for the White (uninformed) group were the following justice rules, namely explanation (z = 0,58), special needs (z = 0,51) and propriety of questions (z = 0,43).

For the Black (uninformed) group job-relatedness (z = 0,97) was most predictive of the fairness perception. Face validity (z = 0,91), equity (z = 0,84) and opportunity to perform (z = 0,81) were also very strong predictors. It is not surprising that the Black (uninformed) group rated equity as a very strong predictor of the fairness perception. Singer (1990) determined that an equal opportunity regardless of race, age or gender was rated as an important determinant of the perceived fairness of a selection process. Rynes and Connerley (1993) found that the fairness perceptions of selection techniques could be predicted on the basis of the applicants' expected performance when an opportunity to perform was provided. Also, Bauer et al. (1998) found that applicants who had been tested, but had not received feedback on their performance, rated a selection process as fair based on the opportunity provided to demonstrate relevant skills, perceived job-relatedness and the interpersonal treatment in the testing situation. Their results also indicate that the opportunity to perform was related to the applicants' perception of self-efficacy in the selection situation.

Other strong predictors of the fairness perception for the Black (uninformed) group were widely used techniques (z = 0,76), consistent test administration (z = 0,73) and predictive validity (z = 0,72). The weakest predictors of the fairness perception for the Black (uninformed) group were the employers' right to obtain information (z = 0,68), explanation (z = 0,61), special needs (z = 0,56) and propriety of questions (z = 0,45).

The role of being informed. In the second MANOVA the Black (uninformed) and Black (informed) comparison yielded no overall significant difference between the groups in terms of the 11 justice rules. No support was found for the hypothesis that a significant difference exists between the Black (uninformed) and Black (informed) groups with regard to the justice rules as determinants for the fairness perceptions of personnel selection techniques. Thus, being informed regarding the nature and value of selection techniques in this study using tertiary students did not appear to affect the participants' fairness perceptions of the selection techniques or the value attached to the different justice rules.

Analysis of justice rules per selection technique. The differences and similarities of the population groups' perceptions of the justice rules across the ten selection techniques are

illustrated in Table 6. Statistically significant differences between the population groups are indicated with brackets. The largest number of differences between the population groups in terms of the justice rules were obtained for biographical information blanks, personality tests and graphology. However, close similarities exist between the Black (uninformed) and White (uninformed) groups with regard to their fairness perceptions of the justice rules across the ten selection techniques, because the perceptions of the two groups correlate highly (ranging from 0,86 to 0,95).

As can be seen in Figure 1, certain situational or intra-individual factors also contribute to the total fairness perception of the selection process. Situational or intra-individual factors are the characteristics of the selection technique, the human resource management policy and the behaviour and attitude of the selection personnel (Gilliland, 1993). These situational factors constitute the procedural justice rules. From the procedural justice perspective results indicate that it appears to be beneficial to use selection techniques that are clearly job-related and face valid. Both population groups also rated the opportunity to perform as an important predictor of the fairness perception of the selection process. It is interesting to note that applicants perceive selection techniques that are widely used as a predictor of the fairness perception. According to Steiner and Gilliland (1996) applicants may view widely used techniques as acceptable, because they make the assumption that widely used selection techniques must be valid. However, this assumption is not substantial proof in a legal action, and therefore empirical evidence for the validity, reliability and utility of the selection technique should be calculated for all selection techniques (Employment Equity Act, 1998).

The factors constituting the distributive justice rules that influence the total fairness perception of the selection outcome are the selection decision, the applicant's expected performance, the occurrence of discrimination and special needs. Although results indicate that special needs are not rated as a strong predictor of the fairness perception, the other distributive justice rule, equity, is rated as an important predictor of the fairness perception for both population groups.

An applicant's previous experiences with the selection process, the stage in the selection process or the career phase of the applicant has a moderating effect on the total fairness perception (Gilliland, 1993; Robertson et al., 1991). The total fairness perception has an influence on the reactions during the selection process for job-application and job-acceptance decisions, applicant recommendations, test motivation and the prevalence of legal battles (Gilliland, 1993). Reactions after the selection process may also influence work performance, organisational citizenship behaviour, job satisfaction and organisational climate. On the other hand, the total fairness perception of the selection outcome has an influence on the above-mentioned two phases of the selection process, as well as on the applicant's self-perceptions. Gilliland (1993) explains that perceived unfairness of the selection outcome may have an effect on the self-esteem, self-efficacy and future job-search intentions of the applicant.

A conclusion from this study is that when employers evaluate selection techniques in terms of their perceived fairness as predicted by the various procedural and distributive justice rules the above-mentioned reactions may enhance the organisational image, organisational performance and positive self-perceptions. These requirements, in conjunction with the guidelines provided by the Psychological Assessment Initiative task force may be helpful to employers who have to develop selection batteries by choosing among the available selection options.

ACKNOWLEDGEMENTS

This article is based on master's degree research and is published with the permission of the Rand Afrikaans University.

We gratefully thank Erik de Jong and Jirk Nel for helping with test administration and Elsabé Smit for assisting in the data analysis.

REFERENCES

Anastasi, A., & Urbina, S. (1997). *Psychological testing* (7th ed.). Upper Saddle River, NJ: Prentice-Hall.

Aron, A., & Aron, E.N. (1994). *Statistics for psychology*. Englewood Cliffs, NJ: Prentice-Hall.

Arvey, R.D., & Sackett, P.R. (1993). Fairness in selection: Current developments and perspectives. In N. Schmitt & W.C. Borman (Eds), *Personnel Selection* (pp. 171-202). San Francisco, Fl: Jossey-Bass.

Arvey, R.D., Strickland, W., Drauden, G., & Martin, C. (1990). Motivational components of test taking. *Personnel Psychology*, *43*, 695-716.

Bauer, T.N., Maertz (Jr), C.P., Dolen, M.R., & Campion, M.A. (1998). Longitudinal assessment of applicant reactions to employment testing and test outcome feedback. *Journal of Applied Psychology*, *83*(6), 892-903.

Boolsen, M., & Theron, C.C. (1996). Kennisbasisse, gebruikspatrone en gebruikshindernisse ten opsigte van die riglyne vir die ontwikkeling en validering van personeelkeuringprosedures (Knowledge bases, user patterns, and usage obstacles regarding the guidelines for the development and validation of personnel selection procedures). *Journal of Industrial Psychology*, *22*(2), 7-14.

Carson, K.P., Becker, J.S., & Henderson, J.A. (1998). Is utility really futile? A failure to replicate and an extension. *Journal of Applied Psychology*, *83*(1), 84-96.

Cascio, W.F. (1997). *Applied psychology in human resource management*. Englewood Cliffs, NJ: Prentice-Hall.

Cronbach, L.J. (1990). *Essentials of psychological testing* (5th ed.). New York: Harper-Collins.

De Jong, A., & Visser, D. Black and white employees' fairness perceptions of personnel selection techniques. Manuscript submitted for publication.

Dweck, C.S., & Leggett, E.L. (1988). A social-cognitive approach to motivation and personality. *Psychological Bulletin*, *95*, 256-273.

Employment Equity Act (1998). *Government Gazette*, *55* (19370).

Gilliland, S.W. (1993). The perceived fairness of selection systems: An organizational justice perspective. *Academy of Management Review*, *18*(4), 694-734.

Graham, J.R., & Lilly, R.S. (1984). *Psychological testing*. Englewood Cliffs, NJ: Prentice-Hall.

Greenberg, J. (1994). Using socially fair treatment to promote acceptance of a work site smoking ban. *Journal of Applied Psychology*, *79*(2), 288-297.

Greenhaus, J.H., & Callanan, G.A. (1994). *Career Management* (2nd ed.). Orlando, Fl: Dryden.

Gregory, R.J. (1996). *Psychological Testing. History, principles and applications* (2nd ed.). Boston: Allyn & Bacon.

Harland, L.K., Rauzi, T., & Biasotto, M.M. (1995). Perceived fairness of personality tests and the impact of explanations for their use. *Employee Responsibilities and Rights Journal*, *8*(3), 183-192.

Hays, W.L. (1988). *Statistics* (4th ed.). New York: Holt, Rinehart & Winston.

Ivancevich, J.M., & Matteson, M.T. (1993). *Organizational behavior and management* (3rd ed.). Burr Ridge, Ill: Irwin.

Kluger, A.N., & Rothstein, H.R. (1993). The influence of selection test type on applicant reactions to employment testing. *Journal of Business and Psychology*, *8*(1), 3-25.

Landy, F.J., Shankster, L.J., & Kohler, S.S. (1994). Personnel selection and placement. *Annual Review of Psychology*, *45*, 261-296.

Macan, T.H., Avedon, M.J., Paese, M., & Smith, D.E. (1994). The effects of applicants' reactions to cognitive ability tests and an assessment center. *Personnel Psychology*, *47*(4), 715-738.

Ployhart, R.E., & Ryan, A.M. (1998). Applicants' reactions to the fairness of selection procedures: The effects of positive

rule violations and time of measurement. *Journal of Applied Psychology, 83*(1), 3-16.

Ployhart, R.E., Ryan, A.M., & Bennett, M. (1999). Explanation for selection decisions: Applicants' reactions to informational and sensitivity features of explanations. *Journal of Applied Psychology, 84*(1), 87-106.

Reilly, R.R., & Warech, M.W. (1990). The validity and fairness of alternatives to cognitive tests. *Commission on Testing and Public Policy*. Berkeley. CA 94720.

Reilly, R.R., & Chao, G.T. (1982). Validity and fairness of some alternative employee selection procedures. *Personnel Psychology, 35*, 1-62.

Robertson, I.T., Iles, P.A. Gratton, L., & Sharpley, D. (1991). The impact of personnel selection and assessment methods on candidates. *Human Relations, 44*(9), 963-902.

Robertson, I.T., & Smith, M. (1989). Personnel selection methods. In M. Smith & I. Robertson (Eds), *Advances in selection and assessment* (pp. 89-112). Chichester, England: Wiley.

Rynes, S.L. (1993). Who's selecting whom? Effects of selection practices on applicant attitudes and behavior. In N. Schmitt & W.C. Borman. *Personnel selection in organizations* (pp. 240-274). San Francisco, Fl: Jossey-Bass.

Rynes, S.L., & Connerley, M.L. (1993). Applicant reactions to alternative selection procedures. *Journal of Business and Psychology, 7*(3), 261-277.

Schmidt F.L., & Hunter, J.E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin, 124*(2), 262-274.

Schmitt, N., & Coyle, B.W. (1976). Applicant decisions in the employment interview. *Journal of Applied Psychology, 61* (2), 184-192.

Schuler, H. (1993). Social validity of selection situations: A concept and some empirical results. In H. Schuler, J.L. Farr & M. Smith. *Personnel selection and assessment: Individual and organizational perspectives* (pp. 11-26). Hillside, NJ: Erlbaum.

Singer, M. (1990). Determinants of perceived fairness in selection practices: An organizational justice perspective. *Genetic, Social and General Psychology Monographs, 116* (4), 475-494.

Singer, M. (1993). The application of organizational justice theories to selection fairness research. *New Zealand Journal of Psychology, 22*, 32-45.

Smither, J.W., & Pearlman, K. (1991). *Perceptions of the job-relatedness of selection procedures among college recruits and recruiting/employment managers*. A paper presented at the Sixth Annual Conference of the Society for Industrial and Organizational Psychology, St. Louis, MO.

Smither, J.W., Reilly, R.R., Millsap, R.E., Pearlman, K., & Stoffey, R.W. (1993). Applicant reactions to selection procedures. *Personnel Psychology, 46*(1), 49-76.

Steiner, D.D., & Gilliland, S.W. (1996). Fairness reactions to personnel selection techniques in France and the United States. *Journal of Applied Psychology, 81*(2), 134-141.

Stone, D.L., & Kotch, D.A. (1989). Individuals' attitudes toward organizational drug testing policies and practices. *Journal of Applied Psychology, 74*(3), 518-521.

Sunter, C. (1997). *What it really takes to be world class*. Tafelberg: Human & Rousseau.