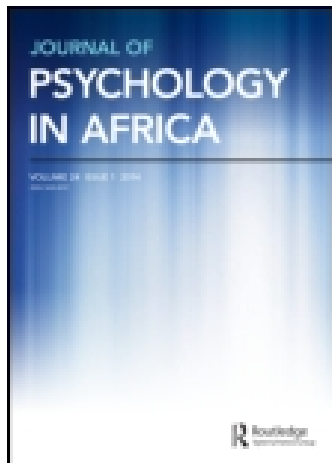


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Performance appraisal systems — equity perceptions of mathematics teachers: an exploratory study

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This study investigated equity perceptions of a school based performance appraisal system in a subject discipline. Participants were 110 mathematics teachers (females = 10%) and 12 school principals (females = 25%). They completed a questionnaire on distributive, procedural and interactional justice regarding the performance evaluation process. The School principals and eight of the teachers were qualitatively interviewed to elaborate on their performance appraisal equity perceptions. The quantitative data were descriptively analysed to characterize negative and positive perceptions and the qualitative data were thematically analysed. The findings show that respondents perceived inequity in the distributive, procedural and interactional aspects of the performance based scheme. Equity was marginally more endorsed regarding just one category of interactional justice. The study underscores the importance of perceptions of equity in performance appraisal systems in work organisations.

Keywords: Equity theory, organisational justice, performance appraisal, teacher motivation, Zimbabwe, education system

Equity theory (Hatfield, Salmon, & Rapson, 2011) states that employees tend to judge fairness by comparing their relevant inputs into an organisation, to the outcomes they receive. People seek a fair balance between what they put into their job and what they get out of it. Equity theory also proposes that when employees perceive their treatment to be fair, they are motivated to increase both quantity and quality of individual as well as organisational outcomes. Three components (distributive, procedural and interactional justice) make up an individual's view of justice within the organisation (see Figure 1).

Distributive justice requires that rights, benefits and responsibilities are distributed on the basis of skills and contributions. So a valuation of justice based on this principle of merit expresses an expectation for rewards for an action based on ability and effort that is conceived as contributing to an organisation (Liu & Nauta, 2013). The second component, procedural justice is about perceived fairness of the process used to determine the distribution of rewards from implementation of a performance appraisal system. Procedural justice refers to the appropriateness of the ways in which a human service system is implemented by providers (de Waal, 2007).

Interactional justice is an individual's perception of the degree to which he or she is treated with dignity, concern, and respect. In workplaces, interactional justice is about humane organisational practices (Young & Hatfield, 2011), especially the quality of the interpersonal relationships in decision making procedures. Equity theory proposes that an individual's own inputs (skill and ability) influences judgement of such interpersonal treatment received. Equity is ultimately about the judgement of being treated with dignity and respect and it is important for employee motivation.

In educational settings the ability of any appraisal system to achieve its intended goals depends very much on how teachers perceive the evaluation process. Perceptions of equity of appraisal systems in education

service organisations are understudied compared to those for profit or commercial organisations. This is despite the fact that performance based pay plans for teachers are increasingly being adopted across the globe out of a desire to improve the performance of students, as well as general accountability in the teaching profession (de Waal, 2007; Chait, 2010).

In an educational performance based plan, school principals (managers) are mandated to evaluate individual teachers for rewards and incentives. Toch and Rothman (2008) have provided some evidence that excellence is not fairly rewarded in educational organisations due to poor implementation of performance appraisals systems by managers. Appraisals by the managers were often inflated leading to poor discrimination of merit and to equal distribution of rewards – guided mainly by egalitarian considerations. Equity theory proposes that individuals with self-interest express a weaker support for such egalitarian considerations (equal distribution of rewards). Mathematics teachers are sought after hence they have self-interest. This may inflate their self-perceptions leading them to expect an appraisal system that respects their privileged scarce skills designation. To be effective, appraisal evaluation systems should result in the identification of genuine differences in performance and abilities (Kondrasuk, 2011). This suggests that mathematics teachers' perceptions are important to the outcomes of performance appraisal systems in educational settings especially in less developed countries.

Research on equity in education sector performance systems

Previous studies on perceptions of equity in performance based schemes for public servants have focused on civil servants in general (Karyeija, 2012) and in education have focused on teachers in general, (Honeycutt et al., 2006), teachers at secondary school level (Chait, 2010) or

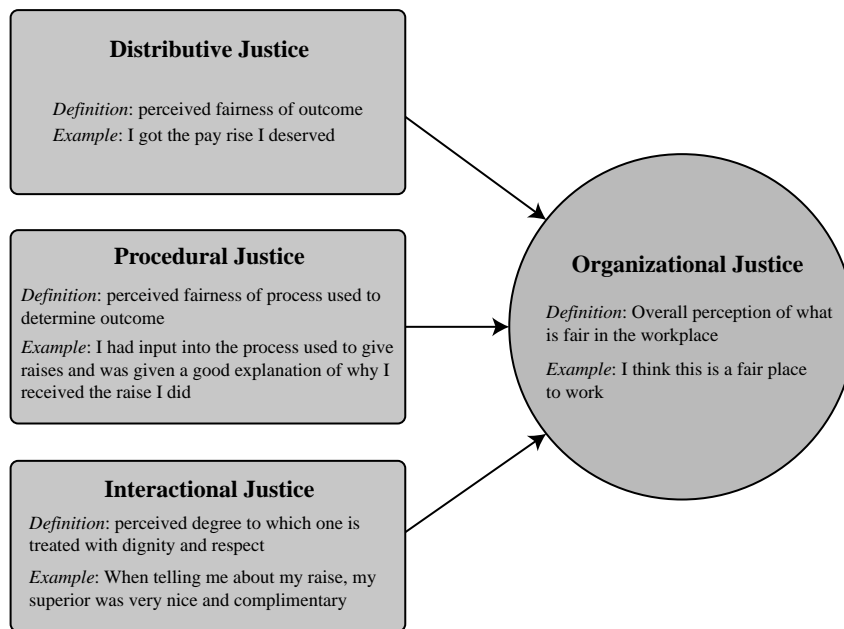


Figure 1. Conceptualisation of organisational justice

teachers at tertiary level (de Waal, 2007). However, studies that focus on performance appraisal equity by teachers of subjects with skills shortage were not identified.

Goal of the study

This study sought to explore perceptions of equity of performance appraisal system by Zimbabwean mathematics teachers in a public school system. The question for study was: What equity qualities do mathematics teachers perceive in the appraisal system implemented at their schools?

Method

Participants and setting

Participants were a convenience sample of 122 educationists comprising 110 mathematics teachers (females = 10 %) and 12 school principals (females = 25 %). These participants were drawn from 41 schools in one peri-urban Zimbabwean district.

Data collection instruments

Data on judgements of appraisal equity and outcomes were collected using a questionnaire and member check interview. The questionnaire gathered data on (a) judgements about fairness of distributions, (b) judgments about the fairness of acts of punishments and compensation, and (c) judgements about the fairness of the methods and procedures employed to generate performance outcomes. Specifically, participants made judgements about the extent to which they felt deprived, equitably treated or advantaged with regards each of the three categories (merit, equality and need) for distributive justice. They were also asked to place their judgement in four categories (truthfulness, respect, propriety and justification) for interactional justice. Examples of items to measure judgements of fairness of reward-distributions included statements such as: (1) “*In this performance*

appraisal system rewards are based on merit” or (2) “*In this performance appraisal system rewards are based on equality*”. Those for judgements about procedures included statements such as: (3) “*In this performance appraisal system justification is made for decisions taken*” or (4) “*In this performance appraisal system decisions are made truthfully*”. The items were then scored on a 7 point Likert scale (from -3 = extremely deprived, through 0 = equitably treated, to +3 = extremely advantaged). The reliability score from the judgement scale with the present sample was 0.89.

Interviews

Member check interviews were carried out with 8 teachers and 12 principals to follow-up and elaborate on the evidence from the questionnaire. These interviews were audio recorded, transcribed then availed to two peer researchers who coded participants’ responses independently. Coding of responses was done in accordance with the elements of organisational justice as shown in Table 1.

In terms of inter-rater reliability, a Fleiss’ kappa coefficient of 0.79 was obtained for the researcher and the two peers suggesting a substantial agreement amongst the 3 raters (Fleiss, Levin, & Paik, 2003). Credibility was further enhanced through the triangulation of data from the questionnaires and the interviews.

Procedure

Permission for the study was granted by the Provincial Education Office and the Zimbabwe Open University. Participants individually consented in writing. Data were collected at the schools during normal school hours. One month after analysing the questionnaire responses, member check interviews were carried out with the teachers and school principals at their schools.

Table 1. Components, categories and codes for organisational justice

Components	Categories	Codes	Description
Distributive justice (outcomes are fairly distributed)	Merit	DJM	There should be a fit between the reward and the investment based on ability and effort
	Equality	DJE	Rewards are based on membership in a community which serves as criterion for compensating the individual
	Need	DJN	Based on securing the minimal resources that are sufficient for living according to acceptable standard of living
Procedural justice (methods used to make a decision are fair)	Consistency	PJC	The same allocations are made across persons, situations and time
	Neutrality	PJN	Refers to the use of facts to make an unbiased decision (i.e. not based on vested interest or personal feelings of the decision maker)
	Accuracy	PJA	The information used to formulate and justify the decision is up to date and correct
	Correctability	PJ√	Provisions for grievance or appeal procedures exist for challenging and/or reversing ill-advised decisions
	Representativeness	PJR	All those whom the outcome will affect have their concerns taken into account
	Morality & Ethicality	PJM	Gender, age, nationality, tribe or other extraneous factors have no bearing on the decision that is made
Interactional justice (quality of interpersonal treatment received)	Truthfulness	IJT	Information is presented in an open and forthright manner
	Respect	IJR	Employees are treated with dignity with no recourse to insults or discourteous behaviour
	Propriety	IJP	Based on such qualities as politeness, decency and good manners as opposed to prejudicial elements such as racism or sexism
	Justification	IJJ	Involves explanations (or apology) as to why certain organisational decisions were taken – should be done on an on-going basis

Note: DJ = Distributive justice, PJ = Procedural justice; IJ = Interactional justice

Data analysis

Quantitative data were analysed using descriptive measures. Because interviews were semi-structured, qualitative data analysis followed themes that had been developed following the different elements of organisational justice as shown in Table 1. The themes constructed then provided evidence to substantiate the arguments about the emerging knowledge claims. Three letter codes are used to identify components and categories of organisational justice.

Results

Table 2 presents the findings from the descriptive analysis of judgment data. As is apparent from Table 2, participants perceived organisation system inequity in the process of implementing the performance appraisal process and outcomes with regard to distributive justice, procedural justice, and interactional justice.

Distributive justice

With reference to distributive justice, participants reported different levels of inequity regarding managers' consideration of merit, need and equality when rewarding teachers (see Table 2).

Qualitative responses on lack of equity in terms of the three categories of distributive justice were coded accordingly (DJM, DJN, DJE) and some of the responses were:

[DJM] *Students fall below their expected level of mathematics achievement for a variety of reasons some of which fall outside my control as a teacher. It is therefore unfair to judge a teacher and award rewards based mainly on learner outcomes. Even if these factors were brought to*

the attention of the school principal when setting the initial targets, the principal was more concerned about high pass rates hence rating of performance could not be based on merit in such circumstances. (Male teacher).

[DJE] *Some schools are highly selective when admitting learners for secondary education. Mathematics teachers in such schools were therefore placed at an unfair advantage in terms of teaching better performing students. Such teachers would therefore be getting rewards which they might not have worked for at all and in my view mathematics teachers should paid a specialist allowance equally across the board.* (Female teacher).

[DJN] *Mathematics teachers also need to be accorded a standard of living that was commensurate with societal valuation of such teachers. Society speaks highly of mathematics teachers but we don't see this translating into the way we are rewarded salary-wise.* (Male teacher).

Procedural justice

Participants reported different levels of inequity regarding managers' consistency; neutrality; accuracy; correctability and morality when rewarding teachers (see Table 2).

From the focused group interviews teachers expressed the following views which were transcribed and coded in accordance with the specific categories:

[PJC] *In our school because we were not very sure of the requirements of this scheme, we copied each other's key result areas (KRA's) word for word and were all rated the same but to our surprise when the actual salary increase came from government only one teacher got the reward.* (Male teacher).

[PJN] *Sometimes the same people continue to be rated favourably even when there is evidence that other teachers*

Table 2. Equity perceptions endorsements by equity component and category ($n = 110$)

Categories	Codes	Equity perceptions endorsements					
		No		Somewhat		Yes	
		Freq.	%	Freq.	%	Freq.	%
Equity component 1 - Distributive justice							
Merit	DJM	96	87	11	10	3	3
Equality	DJE	88	80	11	10	11	10
Need	DJN	94	85	16	15	0	0
Equity component 2 - Procedural justice							
Consistency	PJC	80	73	25	23	4	4
Neutrality	PJN	92	84	17	15	1	1
Accuracy	PJA	95	86	15	14	0	0
Correctability	PJ√	99	90	8	7	3	3
Representativeness	PJR	84	76	26	24	0	0
Morality & Ethicality	PJM	77	70	29	26	4	4
Equity component 3 - Interactional justice							
Truthfulness	IJT	89	81	15	14	6	5
Respect	IJR	100	91	8	7	2	2
Propriety	IJP	52	47	58	53	0	0
Justification	IJJ	79	72	11	10	20	18

had performed better and deserved a higher rating. (Male teacher).

[PJN] Although on paper there is provision for a teacher to refuse to sign the performance appraisal when he/she felt unfairly treated; in practice this is complicated due to a number of factors. (Researcher – can you elaborate). Firstly it requires a senior education officer to come to the school and mediate. The hearing process is also lengthy because the person serving as fact finder usually does not have a background to the context in which targets were set and evaluated. (Male teacher).

[PJR] Some learners just have a negative attitude towards mathematics and even if we bring this to the attention of the school head, it is never taken into consideration. So how can I as a teacher be made accountable in such a case? (Female teacher).

[PJM] Where are the school heads in this game? Learner performance is dependent on good leadership which includes provision of resources, motivation of learners etc. So why should the teacher be the only sacrificed lamb? (Male teacher).

Interactional justice

Participants reported different levels of inequity regarding managers' truthfulness; respect; propriety and justification when rewarding teachers (see Table 2). Example statements from interviews included:

[IJT] School heads are evasive when it comes to (key result areas) KRA's. Despite giving low performance rating, school heads would not say exactly what was amiss. (Male teacher).

[IJR] Personally I feel that the performance appraisal is being used by school heads more as a management tool. As teachers we are constantly reminded and in a retributive way, of what would happen to our performance score if we did not comply with the head's demands and expectations. (Male teacher).

[IJP] Personally I have not experienced a situation where a school principal has been impolite or bad mannered during the review process. Principals have always tried to maintain a professional approach but I think it is what they do when they have gone into their offices that we are not sure about. (Female teacher).

[IJJ] Government policies are like directives in the military where you don't ask 'why' questions. You ask 'how' questions. If you are asked to jump you don't ask why, instead you ask how high? (Female teacher).

[IJJ] As a mathematics teacher, I set my realistic and achievable targets (which might be low) based on the characteristics of learners that I will have observed in the class compared with the resources that are available in the school. That is my justification. But school heads are not compromising when it comes to high pass rates even when such objectives may be unachievable under the circumstances in which some of our schools are operating. Therefore in most cases the school head's targets are at variance with the realistic and achievable ones that I might have set as a subject specialist. Because he/she has the final say in the whole process it means we as teachers are working in a system that lacks justification. (Male teacher).

Summary of the findings

Table 3 presents the summary findings from the descriptive analysis of judgements.

On average (as can be seen from Table 3) eight-five percent of the participants reported lack of distributive justice in terms of merit, need and equality. On average eighty percent of the participants reported lack of procedural justice in terms of consistency, neutrality, accuracy, correctability and morality when rewarding teachers. On average seventy-three percent of the participants reported lack of interactional justice in terms of truthfulness, respect, propriety and justification when rewarding teachers.

Discussion and conclusion

The respondents perceived lack of equity with the implementation of the performance appraisal system, and partly from poor orientation to the appraisal procedures used. Lack of proper worker orientation to performance appraisal systems defeats the purpose for which the system was instituted as it is likely to result in avoidable perceptions of inequity in the system (Brumback, 2011). Proponents of performance appraisal schemes recommend

Table 3. Participants' endorsements of equity in the three components¹ ($n = 110$)

Parameter	Distributive justice	Procedural justice	Interactional justice
Mean score	93	88	80
SD	4	9	21
n	3	6	4
% mean	85	80	73
minimum	88	77	52
median	94	88	84
maximum	96	99	100

¹ Higher value denotes lower perceived equity

teacher performance evaluations be based on objective, clear criteria for equitable distribution of rewards and that the methods by which merit-pay decisions are to be communicated to the teachers as part of the process (Chait, 2010).

The teachers perceived inequity in the performance appraisal system due to its failure to credibly distinguish between high and low performers. If performance rewards were earned equally with no regard for actual achievement, then teachers may not offer their best effort (Chait, 2010). This lack of respect for merit in appraisal system implementation, if it was wide spread would be de-motivating. Todd & Mason (2005) have argued that teacher motivation is probably the most crucial factor that contributes to school effectiveness. Their view was that all the other factors (leadership, material resources, teacher subject matter knowledge, and learner factors) only have an impact on the student outcomes when the teacher is motivated to exploit them.

An appraisal system lacking in equity cannot address matters of underperforming workers (Tudor, 2011). If a performance management system lacked in responsiveness to poor or good performance, this would compromise organization productivity in the long-run (Liu & Nauta, 2011). Furthermore, weak equity in the performance appraisal system encourages cheating behaviour that 'beats the system' to look good (Chait, 2010).

Implications for performance appraisal implementation

This was an exploratory study in a unique education system, and findings cannot be generalised to all education systems. Nonetheless, the findings of this study suggest that a desire to motivate employees is likely to be achieved when procedures and decisions around performance management are perceived to be fair. Perceived distributive, procedural and interactional justice or injustice is important for motivating workers to achieve organisation productivity targets.

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