

A COMPARISON OF THE JOB-SATISFIED AND JOB-DISSATISFIED ENVIRONMENTAL HEALTH OFFICER IN SOUTH AFRICA

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ABSTRACT

Environmental health is one of the key areas in the Reconstruction and Development Programme in South Africa because of its close links with the primary prevention of disease. The possibility of individual differences between job-satisfied and job-dissatisfied environmental health officers were investigated. The individual differences found between these groups can be used to select and train students for training who show a tendency towards the indicated personality traits. A relationship is indicated by researchers between job-satisfaction and job performance; it can therefore be expected that the selection of environmental health officers with the indicated tendencies in personality, values, achievement motivation, interests and biographical information will have a positive effect on productivity in environmental health.

OPSOMMING

Omgewingsgesondheid is een van die sleutelareas in die Heropbou- en Ontwikkelingsprogram in Suid-Afrika, vanweë die noue band wat dit met die primêre voorkoming van siektes het. Hierdie studie ondersoek die moontlikheid van individuele verskille tussen werkstevrede en nie-werkstevrede omgewingsgesondheidsbeamptes. Die individuele verskille wat tussen die groepe gevind is, kan gebruik word vir die keuring en opleiding van studente met 'n neiging tot die aangeduide persoonlikheidstrekke. 'n Verband word tussen werkstevredenheid en werksprestasie word deur navorsers aangedui. Daar kan dus verwag word dat die keuring van omgewingsgesondheidsbeamptes met die aangeduide geneighede in persoonlikheid, waardes, prestasie-motiverings, belangstellings en biografiese besonderhede, 'n positiewe bydrae tot produktiwiteit in omgewingsgesondheid sal lewer.

Environmental health is one of the key areas in the Reconstruction and Development Programme in South Africa because of its close links with the primary prevention of disease (Von Schirnding, 1994). It was reported in the **Cape Times** ("SA in WHO Plan", 22 February 1995) that Kreisel, executive director of the World Health Organisation, proposed that an African World Health Organisation be established in South Africa to assist with the Africa WHO 2000 projects aimed at expediting the provision of water and sanitation in Africa. Activities of this kind are directly related to the work of the environmental health officer and this statement thus has implications for environmental health in South Africa.

Von Schirnding (1994) has also mentioned some of the key factors that have resulted in environmental health not being incorporated optimally into the Reconstruction and Development Programme. According to her an insufficient number of general and specialised environmental health officers is being trained in South Africa. If one takes into account this need for trained environmental health officers, as well as the probable link between job satisfaction and job performance, the value of job-satisfied environmental health officers is evident. If it is possible to distinguish further in terms of personality between officers who are job-satisfied and those who are job-dissatisfied, the training of students with certain personality tendencies will have a further beneficial effect on job satisfaction and job performance in environmental health.

In the light of this, the following hypotheses can be formulated: There is a significant difference between job-satisfied and job-dissatisfied environmental health officers with respect to personality, values, achievement motivation, interests and biographical factors. If there are such significant differences, this information may be useful for selection, manpower planning and training in this career.

Environmental health

According to Amegee and Larty (in Bakkes, 1992), environmental health is the control of all those factors that have a detrimental influence on the physical, spiritual and social welfare of human beings. According to Bakkes (1994) environmental health developed as a discipline out of public health.

To date Bakkes (1992) has been the only researcher, as far as could be ascertained, who has laid down job-specific specifications for environmental health officers. For this reason his work has been used as the basis for the description of the task of the environmental health officer in South Africa:

- He/she must be able to conceptualise, recognise, identify and evaluate conditions that are detrimental and a danger to health in the following functional fields: air, water, environmental and noise pollution, geo-hygiene, food and industrial hygiene, pest control and dealing with hazardous material and housing. He/she must determine the best way of, in the first place, preventing and then controlling these health hazards and detrimental conditions.
- In addition to these fields, there are also certain areas in which the environmental health officer is involved, such as generic administrative processes, legal aspects and providing guidance to people.
- The environmental health officer must not only have a thorough knowledge of health-related legislation, but also possess the necessary skills to implement practical steps.
- The National Diploma in Environmental Health is the only entry qualification for the career.

Job satisfaction

Gerber, Nel and Van Dyk (1995) describe job satisfaction as the quality of life at work as experienced by the employee, but also as a condition that could be promoted by social responsibility programmes executed by the employer. According to Dipboye, Smith and Howell (1994) job-satisfaction may be regarded as a relatively constant attitude that is formed mainly by social and interpersonal processes in the working environment. They describe three broad approaches in job-satisfaction

theories: the two-factor theory, comparative theories and cognitive theories. The two-factor theory attempts to explain how job-satisfaction is influenced by intrinsic factors such as responsibility and achievement, while job-dissatisfaction is influenced by extrinsic employment factors such as salary and working conditions. Comparative theories involve concepts such as needs and values. Employees evaluate what they get out of their jobs and determine whether this accords with their needs and values. Other theories of job-satisfaction focus on cognitive processes and personality traits of employees. Employees' job-satisfaction is based on their perception of what is happening in the job environment, not on their perception of the environment itself. This indicates the importance of individual differences in personality and the cognitive processes that colour the individuals' awareness of their job-satisfaction (Robbins, 1998).

Furnham (1992) divides the factors that can have an influence on job-satisfaction into three groups:

- Organisational policies and procedures that have to do with the nature of the remuneration package, supervision and decision-making practices, and the perception of the quality of supervision.
- Specific aspects of the total workload, the variety of skills applied, autonomy, feedback and the physical nature of the working environment.
- Personal aspects such as self-image, ability to deal with stress and general satisfaction with life.

Robbins's (1998) review of the literature revealed more or less the same trend and he indicates the following work-related variables as important for job-satisfaction: mentally challenging work, equitable rewards, supportive working conditions, supportive colleagues, congruency of employee's personality and the demands of the job, and the individual's genetic disposition.

According to Furnham (1992) researchers have found no relationship between job satisfaction and job performance. The effect of satisfaction on performance is, according to him, indirect and coincidental. Only if satisfaction leads to dedication to an organisation and its aims, and only if the aims are challenging and associated with a high degree of self-effectiveness, will performance follow from satisfaction. Furthermore, dedication is dependent on the expectation of future remuneration and this expectation is based on remuneration in the past and the individual's assessment of the way in which the situation can change.

Various other researchers however, found a relationship between job satisfaction and job performance (Robbins, 1998; VanYperen and De Jong, 1997; Babin and Boles, 1996; Khaleque, Hossain and Hoque, 1992). The introduction of moderating variables usually improves the satisfaction-performance correlation. So VanYperen and De Jong (1997) found that with higher-level positions with more open-ended job descriptions, the possibility seems to be greater that employees who are satisfied are productive too, with regard to both in-role requirements and "Organisational Citizenship Behaviour".

Robbins (1998) found that the studies where cause and effect were controlled often indicated that productivity led to satisfaction, rather than the other way round. He also recommends that satisfaction-performance studies should preferably be executed with data gathered for the organisation as a whole than with data at the individual level, as the latter does not consider all the complexities in the work process.

Researchers such as Staw and Ross (1985), Gerhardt (1987), and Arvey, Bouchard, Segal and Abraham (1989) investigated the effect of personality determinants versus organisational factors on job attitudes, especially job satisfaction. Some of their findings were that previous job satisfaction seemed to be a significant indicator of current job satisfaction, rather than salary

and job complexity, and that the genetic disposition of the individual influences job satisfaction more decisively than organisational factors. According to Struempfer, Danana, Gouws and Viviers (1998) dispositional and situational factors are modest predictors of job satisfaction, but researchers differ about the relative weight of the effect they have on job satisfaction.

In their research Struempfer, Danana, Gouws and Viviers (1998) found significant correlations between negative affectivity, positive affectivity, bipolar affectivity and sense of coherence and job satisfaction, with correlations varying from 0,21 to 0,47. Duffy, Ganster and Shaw (1998) found a strong negative relationship between job satisfaction and negative outcomes for high-positive affectivity in individuals with longer tenure. Tokar and Subich (1997) used several measures to assess personality, interest types, job-satisfaction, interest-job congruence and demographic characteristics. Congruence, as measured by each of two indices, did not predict job-satisfaction, but the block of Big Five personality dimensions did contribute significantly to the prediction of job satisfaction.

This study investigates the possibility of specific individual personality differences between job-satisfied and job-dissatisfied environmental health officers respectively. If individual differences are found between these groups, this information can be used to select and train students who show a tendency towards a certain profile. As a relationship was indicated by various researchers between job satisfaction and job performance, it can be expected that environmental health officers with the indicated tendencies in personal qualities will most probably tend to be more productive.

According to the quoted researchers in this article, the expectation is that personality differences can be found between environmental health officers who are job-satisfied and those who are job-dissatisfied.

METHOD

The available psychometric and other data from 117 environmental health officers (White = 84; Black = 3; Coloured and Indian = 30) were collected during 1991. The officers were selected randomly by distributing the places of evaluation in the former Western Cape, Boland and South-Western districts. Psychometric data were gathered on the personality, values, performance motivation, interests and biographical factors of the job-satisfied officers. All psychometric data were collected by the researcher.

A series of t-test analyses was done to determine significant differences between environmental health officers who are job-satisfied and those who are job-dissatisfied.

The Job Description Index (Edwards, 1986) and the Job Satisfaction Index (Mauer, 1976) were used to divide the environmental health officers, namely those who experienced job satisfaction and those who experienced job dissatisfaction. This was done to identify significant differences with respect to job satisfaction.

Measuring instruments

The instruments were selected in order to meet as fully as possible the cross-cultural requirements. The investigation into job satisfaction was conducted with the aid of the following psychometric evaluation instruments: personality was measured with the Sixteen Personality Factor Questionnaire (16-PF) (Cattell, Eber and Tatsuoka, 1980) and the Jung Personality Questionnaire (Jung) (Du Toit, 1987); the evaluation of value orientation was done with Edwards's Personal Preference Questionnaire (EPPQ) as adapted by Steel (1979); motivation was measured with the Achievement Motivation Questionnaire (AMQ) (Pottas, Erwee, Boshoff and Lessing, 1988); assessment of interests with the Self-Directed Search (SDS) (Holland, 1985); and the evaluation of job satisfaction with the Job Descriptive Index (JDI) (Edwards, 1986) and the Job Satisfaction Index (JSI) (Mauer, 1976). Biographical data were col-

lected with the help of a questionnaire that covered a variety of biographical details. The intellectual ability and aptitudes of the environmental health officers were not evaluated, because the officers themselves had already proved themselves academically by obtaining the minimum qualification for entry into the career.

Statistical procedure

The statistical calculations in the investigation were done by the researcher with the help of Hintze's (1990) Number Cruncher Statistical System (NCSS), with the aid of a personal computer.

Hintze's (1990) t-test calculation for independent samples was used. This procedure tests the statistically significant difference between the averages of the two populations. He emphasises the assumptions underlying this technique, namely that

- the variance of the samples is similar. NCSS provides an F-ratio score that tests the assumption that the two populations have the same variance. Unequal variance t-test results are also provided for each calculation, in case the assumption is rejected;
- the element of error is distributed normally; and
- the samples have been chosen at random.

RESULTS

Classification on the basis of JSI results

A division of the environmental health officers into groups A1 and B1 was made in such a way that there would be a definite difference in the experience of job satisfaction between the two groups:

- The officers in group A1 all obtained less than or just as much as the first quartile of the group's scores in the JSI.
- The officers in group B1 all obtained more than the third quartile of the group's scores in the JSI.

Table 1
The t-test results of the significant differences on the JSI between officers with job-dissatisfaction (A1) and officers with job-satisfaction (B1)

Variable	X Group A1	X Group B1	t-value	p
JUNGBP	5.800	4.830	1.953	0.050
PFA	5.121	6.321	-2.080	0.050
PFC	4.788	5.857	-2.363	0.050
PFQ2	5.333	4.321	1.997	0.050
PFQ3	5.121	6.143	-2.350	0.050
PFQ4	5.606	4.750	2.124	0.050
EPPQ1	29.606	33.536	-3.354	0.010
EPPQ10	32.758	35.929	-2.385	0.050
AMA	4.970	6.500	-2.953	0.010
AMC	4.970	6.464	-3.144	0.010
AME	5.697	6.929	-3.103	0.010
AMAA	4.515	6.000	-3.253	0.010
AMAM	4.788	6.107	-2.747	0.010
SDS-S	24.939	31.250	-2.977	0.010
SDS-E	22.879	27.500	-2.092	0.050
SDS-C	18.182	26.321	-4.202	0.010

According to Table 1 groups A1 and B1 show significant difference at the 1% level for EPPQ1 (Edwards Personal Preferences Questionnaire, value scale achievement), AMA (Achievement Motivation Questionnaire, subfactor persistence), AMC (Achievement Motivation Questionnaire, subfactor action orientation), AME (Achievement Motivation Questionnaire, subfactor personal causation), AMAA (Achievement Motivation Questionnaire, factor goal-directedness), AMAM (Achievement Motivation Questionnaire, total score, achievement motivation), SDS-S (Self Directed Search, scale social) and SDS-C (Self Directed Search, scale conventional).

Groups A1 and B1 show significant differences at the 5% level

for JUNGPJ (Jung Personality Questionnaire, scale judging-perceiving), PFA (16-PF, factor A, reserved – outgoing), PFC (16-PF, factor C, affected by feelings – emotionally stable), PFQ2 (16-PF, factor Q2, group-dependent – self-sufficient), PFQ3 (16-PF, factor Q3, casual – controlled, socially precise), PFQ4 (16-PF, factor Q4, relaxed – tense), EPPQ10 (Edwards Personal Preferences Questionnaire, value scale endurance) and SDS-E (Self-Directed Search, scale enterprising).

The environmental health officers who experience job-satisfaction according to the JSI can be described as follows, compared to the officers who experience job-dissatisfaction on the JSI. They rate the values achievement and endurance higher, are more persistent, action orientated, believe in their ability to control their own success, and are goal directed and generally motivated when it comes to achievement motivation. According to the 16-PF, they tend to be more outgoing and emotionally stable, group-dependent (wanting to satisfy the group), socially precise and tense. The Jung Personality Questionnaire explains the job-satisfied environmental health officer as more perceiving than judging; in other words they are perceptive rather than judging in dealing with the outer world. According to the interest questionnaire, the job-satisfied officers tend to identify more strongly with the social, conventional and enterprising fields. They are therefore more people, detail and business orientated.

Classification on the basis of JDI results

The division of the environmental health officers into groups A2 and B2 was done in the same way as with the JSI:

- The officers in group A2 all obtained less than or just as much as the first quartile of the group's scores in the JDI.
- The officers in group B2 all obtained more than the third quartile of the group's scores in the JDI.

Table 2
The t-test results of the significant differences on the JDI between officers with job-dissatisfaction (A2) and officers with job-satisfaction (B2)

Variable	X Group A2	X Group B2	t-value	p
Age	36.867	41.633	-2.041	0.050
JUNGIE	6.278	4.983	2.730	0.010
EPPQ4	27.500	25.500	1.938	0.050
EPPQ8	32.400	36.500	-3.403	0.010
SDS-S	31.000	26.233	2.016	0.050
SDS-E	28.367	23.433	2.102	0.050

According to Table 2 groups A2 and B2 show significant differences at the 1% level for JUNGIE (Jung Personality Questionnaire, scale introversion-extraversion) and EPPQ8 (Edwards Personal Preference Questionnaire, value scale succorance). Groups A2 and B2 show significant differences at the 5% level for Age, EPPQ4 (Edwards Personal Preference Questionnaire, value scale autonomy), SDS-S (SDS, scale social) and SDS-E (SDS, scale enterprising).

The environmental health officers who experience job-satisfaction according to the JDI can be described as follows, compared to the officers who experience job-dissatisfaction on the JDI. They are older, rate the value autonomy lower and the value succorance (kindness) higher. The Jung Personality Questionnaire explains the job-satisfied environmental health officers as tending towards introversion, thus orientated more toward the inner world, focusing their perception and judgement upon concepts and ideas. According to the interest questionnaire, the job-satisfied officers identify weaker on the social and enterprising fields than the job-dissatisfied officer. The latter finding is the opposite of what was found with the JSI.

The JSI consists of 16 items and was designed to provide a measurement of job-satisfaction, applicable to all job categories (Mauer, 1976). The questions tend to measure a person's general

perception of his/her job-satisfaction at a given time, while the JDI measures job satisfaction in five fields of work: the job itself, supervision, co-workers, remuneration and the opportunities for promotion. Smith, Kendall and Hulin (1969) included these five aspects in their questionnaire because they corresponded closely with the studies designed to identify the underlying dimensions of job satisfaction.

Table 3
The t-test results of the significant differences on the JDI subtests between officers with job-dissatisfaction (A2sub) and officers with job-satisfaction (B2sub)

Area of job-satisfaction	Variable	X Group	X Group	t-value	P
Job itself (n A2sub = 35, B2sub = 27)	Age	35.029	40.630	-2.302	0.050
	PFI	5.543	6.519	-2.111	0.050
	PFQ2	5.257	4.222	1.982	0.050
	EPPQ4	28.114	25.630	2.391	0.050
	EPPQ8	33.314	36.556	-2.716	0.010
Remuneration (n A2sub = 33, B2sub = 21)	Age	35.091	41.952	-2.889	0.010
	JUNGIE	6.202	4.316	3.610	0.010
	PFH	6.788	5.571	2.115	0.050
	EPPQ8	32.697	36.762	-2.716	0.010
	SDS-S	31.455	24.286	2.819	0.010
	SDS-E	29.030	21.952	2.619	0.050
Supervision (n A2sub = 30, B2sub = 25)	PFL	4.267	5.440	-2.463	0.050
Opportunity for promotion (n A2sub = 30, B2sub = 27)	PFL	4.276	5.185	-2.111	0.050
Co-workers (n A2sub = 34, B2sub = 24)	PFB	4.618	5.958	-2.543	0.050
	PFC	4.618	5.750	-2.180	0.050
	PFQ	5.706	6.667	-2.806	0.010
	PFQ2	7.529	6.208	2.632	0.010
	PFQ3	5.235	6.167	-1.985	0.050
	EPPQ3	19.824	16.667	2.019	0.050

In order to understand the difference in SDS results between the JSI and JDI, the t-test calculation of the significant differences between officers with job-satisfaction and those with job-dissatisfaction was also done on the JDI subtests. Table 3 indicates the opposite tendency of the job-satisfied officers on the SDS's social and enterprising fields, compared to Table 1. Officers with satisfaction about their remuneration tend to identify more weakly with the social and enterprising SDS fields than the officers with dissatisfaction about their remuneration. The implication is therefore that officers with dissatisfaction about remuneration tend to be more service, people and enterprise orientated.

There are also similarities between officers with job satisfaction on the JSI (Table 1) and on certain of the JDI subtests (Table 3). The tendency with job-satisfied officers on the JSI classification towards group dependence, emotional stability and being controlled (16-PF, factors Q2, C and Q3 respectively) is also present on the JDI with officers who are satisfied about the job itself (16-PF, factor Q2) and with co-workers (16-PF, factors C and Q3).

A significant difference exists on the JDI at the 1% level between officers with satisfaction and dissatisfaction about the job itself (JDI subtest results in Table 3). The satisfied group achieved higher on the value scale succorance (kindness) (EPPQ8, Edwards Personal Preference Questionnaire); the same as was found on the JDI total score analysis. The significant differences at the 5% level are age (average 40, 63 years for satisfied group; 35, 03 years for dissatisfied group), the value autonomy (EPPQ4, Edwards Personal Preference Questionnaire, satisfied group value scale autonomy), and factor I of the 16-PF (satisfaction group more tender-minded than tough-minded)

Officers who are satisfied with the remuneration are older (average 41,95 years) than those who are not satisfied (average 35,09 years); tend towards introversion (JUNGIE, Jung Personality Questionnaire, scale introversion-extraversion) and

achieve higher on the value scale succorance (EPPQ8, Edwards Personal Preference Questionnaire). All these differences were achieved on the 1% level. The significant difference at the 1% level exists between the two groups, with the job satisfaction group achieving lower on 16-PF, factor H. They tend to be more shy than venturesome.

For both satisfaction with supervision and opportunities for promotion (JDI sub tests), the satisfied officers achieved higher on factor L of the 16-PF (significant on the 5 % level), meaning that in comparison with the dissatisfied officers they tend to be more suspicious than trusting.

The significant differences at the 1% level between officers with satisfaction and dissatisfaction about co-workers are PFG (16-PF, factor G, expedient – conscientious, with the satisfied group more towards conscientiousness) and PFQ2 (16-PF, factor Q2, group-dependent – self-sufficient, with the satisfied group more towards group-dependence). The significant differences at the 5% level are PFB (16-PF, factor B, less intelligent – more intelligent, with the satisfied group tending towards more intelligent) and the value exhibition (EPPQ3, Edwards Personal Preference Questionnaire), with the satisfied group lower on exhibition: they do not need a lot of attention focused on them.

CONCLUSION

The hypothesis that was formulated can be accepted according to the results of the t-test analyses. Significant differences were found between the personalities of job-satisfied and job-dissatisfied environmental health officers with respect to personality, values, achievement motivation, interests and biographical factors.

Certain significant differences between the environmental health officers who experience job satisfaction and those who experience job dissatisfaction were found on both job satisfaction instruments: They tend to be group dependent (sound follower), emotionally stable and controlled.

The interest scales social and enterprising differentiate significantly for the job-satisfaction and the job-dissatisfaction groups, but in different directions with the two job satisfaction instruments. The JSI's general evaluation of job satisfaction indicates environmental health officers with job satisfaction as being more interested in serving people and participating in enterprising activities than the officers with job-dissatisfaction. The JDI, which is a combination of 5 subtests, indicates the opposite tendency. Closer analyses of the sub-tests of the JDI reveals that only officers who are satisfied with their salaries are less interested in serving people and participating in enterprising activities, in comparison with the officers who are dissatisfied with their salaries.

According to Tables 1, 2 and 3, various other significant personality differences on the 1% and 5% levels were found on the JSI and JDI instruments between job-satisfied and job-dissatisfied environmental health officers with respect to personality, values, achievement motivation, interests and age.

According to the literature review, a relationship is indicated between job satisfaction and job performance, especially when moderating variables are introduced into the research design. This investigation confirms the expectation that certain personality tendencies and personal qualities can be related to job satisfaction or job dissatisfaction. It can therefore be expected that environmental health officers with the indicated personality tendencies will most possibly tend to be job satisfied and also tend to be more productive than job-dissatisfied officers.

Recommendations

The individual differences that were found between the job-satisfied and the job-dissatisfied environmental health officers can be used to select and train students who show a tendency towards a certain personality profile, as well as to do more ef-

fective manpower planning and training in the environmental health industry. Job-satisfied officers will most probably be more productive and this can positively influence the manpower needs of the industry.

It is recommended that available Self-Directed Search information be used to investigate the Holland's personality – job fit theory more intensively than the research done in this investigation. The information was only used to investigate significant differences between average group scores for job-satisfied and job-dissatisfied officers.

A discriminant analysis or multiple regression prediction formula for job-satisfied environmental health officers should be developed. A more accurate prediction of job-satisfied officers would then be possible.

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