

Motivating IT Staff in a Government Organisation in South Africa

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Abstract

Managing Information Technology (IT) staff to maximize productivity requires them to be motivated. The South African government has a poor reputation with regards to IT performance, and there is increasing pressure and criticism from the public to improve service delivery. The South African government is currently increasing its investment in IT with the aim of modernizing its legacy systems. This research investigated the motivation levels of IT staff in a government organisation. Motivation of Information Technology (IT) personnel in government organisations particularly in a South African context has been under researched and served to provide an updated view of staff motivation in a parastatal. The approach used was similar to previous motivational studies of IT personnel. Both a Herzberg and a Job Characteristics Model questionnaire were used to measure staff motivating factors. The combined questionnaire was sent to government IT staff in a parastatal organisation. Twenty-nine completed questionnaires were returned and analysed.

Neither of the hypotheses, which had been based on the previous research findings, was supported. Firstly, the top Herzberg factors for the government IT employees were security of tenure and pay. The work itself, the top factor in previous research was, however, in the top 5. Secondly, the need to achieve Growth Need Strength (GNS) of IT staff did not match the Motivating Potential Score (MPS). Previous research identified a significant difference between the 2 factors with a very high GNS and a lower MPS for IT staff. In this research, surprisingly, the matching was reversed in that the MPS, the richness of the job, far exceeded the GNS, the individual's need to accomplish. It appears that the job is too rich for the incumbent. This has major implications for IT management in parastatal organisations as this low level of congruence matching IT staff to jobs can lead to low productivity and poor motivation.

Keywords: Motivation, ICT staff, parastatal organisation, government organisation

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Introduction

Managing IT personnel for maximum productivity is a major challenge as staff motivation is seen as difficult to manage (Muo, 2013). The South African government has a poor reputation with IT performance (Czernowalow, 2013), and there is increasing pressure and criticism

from the public to improve service delivery (Harris, 2012).

According to Harris (2011), the South African government is increasing its investment in Information Technology (IT) with the aim of modernizing its legacy systems. Government expenditure on IT is growing at a faster rate than the private sector, specifically investing in IT infrastructure and accelerating e-government projects. By updating their legacy systems with new IT systems, government plans to try and lower costs and improve service delivery (Harris, 2012).

The South African government has a problem attracting and retaining IT staff with critical skills and this affects its capacity to deliver services. Retaining, developing and nurturing critical IT staff is a priority for most Chief Information Officers (CIO) (Stones, 2012). This is important for Government as the capacity of IT to meet service demand depends on the strength of its people. Douglas Cohen of the South African Government Association states “Technology on its own cannot achieve anything and must be supported by capable people and tested processes to provide services in which the public can have confidence” (Stones, 2012, p.3).

The objective of the study was to identify the factors that motivate parastatal IT personnel using the Herzberg and JDS instruments. Historically IT personnel in the government sector are a poorly researched area. Several motivation studies have been done previously in South Africa. These have typically used Herzberg’s Theory of Motivation and the Job Diagnostic Survey (JDS). This research used the same instruments to allow direct comparisons of IT staff working for non-government organizations and government organizations. The sample used in this research was based on a parastatal organization in South Africa. “A parastatal is defined as an organisation or agency owned, or controlled wholly or partly by the government” (Hayward, 2006, p.2).

Literature Review

Motivation is intangible yet its existence is accepted without question. It can be used synonymously with desire, want, need and drive (Couger & Zawacki, 1980, p.67). Early studies into the motivation of IT personnel have been dominated by Couger and Zawacki (1980) in the mid-seventies. Their studies found that IT personnel have a higher growth need than any other job category. In a South African study, a way to improve motivation and productivity through matching the job and the individual’s needs was concluded as being similar to IT staff worldwide (Couger & Smith, 1992a).

Since these early studies, the IT industry has developed dramatically and IT work has become more complex. IT staff turnover remains as a major problem within organisations (Mak and Sockel, 2001). “Stressors such as work overload and role ambiguity may result in an employee having low job satisfaction and motivation which may lead to low organisational commitment, burnout and high turnover” (Mak & Sockel, 2001). Due to an ever increasing demand for skilled IT professionals, it is relatively easy for them to move to new jobs as they have specialized skills which are expensive to replace (Ghapanchi & Aurum, 2011).

When workers are motivated by the tasks they perform and the organizational context, they experience greater satisfaction and are more likely to invest more effort into their work. This has a positive effect on performance and reduces absenteeism, time-wasting and staff turnover (Da Silva & Franca, 2012). Job characteristics defined by Hackman (1980), include the five core job dimensions of autonomy, skill variety, task significance, task identity and task feedback (Chen, 2008). Job characteristics have a big influence on employee satisfaction (Kim, 2009). When IT employees view the five core job dimensions favorably they have a greater sense of responsibility for their jobs and job outcomes (Chen, 2008). Previous IS research has found that IT personnel who view themselves as having a higher level of autonomy experience lower levels of overload and have more satisfaction from their jobs (Thatcher, Stepina, Goodman, & Treadway, 2006). Employees with more autonomy in their jobs have the freedom to decide how to structure their

work in ways they find more intrinsically motivating and experience greater satisfaction from task performance (Thatcher et al., 2006). IT workers have reported higher job satisfaction when they perform highly skilled, more meaningful work (Couger & Zawacki, 1980). When IT workers are able to use their many different skills they find their work more interesting and important and ultimately more intrinsically motivating (Thatcher et al., 2006).

Workplace characteristics are akin to what Herzberg termed ‘hygiene factors’ and include factors such as pay, company policies and supervisory satisfaction and influence work outcomes such as staff turnover (Thatcher et al., 2006; Hall, 2009). Role ambiguity and role conflict are often associated with staff turnover along with job autonomy and perceived workload (Ghapanchi & Aurum, 2011). “Salary, promotion and the perceived fairness of rewards are incentives that often have a determining factor in turnover decisions” (Ghapanchi & Aurum, 2011, p. 239). Organisations may neglect to create the proper work conditions to satisfy an employee’s needs resulting in employee turnover or low performance (McKnight, Phillips, & Hardgrave, 2004). Igarria and Siegel (1992) distinguished between “task and organisation based rewards, proposing that both work and workplace attributes need to be taken into account (McKnight et al., 2004).

Thatcher (2006 et al.) found in his study of the relationship between intrinsic motivation and job characteristics that intrinsic motivation is separate from job satisfaction and that a positive relationship exists between job satisfaction and organisational commitment. Based on this finding it is important to “identify factors that motivate IT workers intrinsically” as that would positively influence job satisfaction and organisational commitment (Thatcher et al., 2006, p. 142).

Herzberg identified eleven factors that are significant to a worker’s motivation, six extrinsic (hygiene) and five intrinsic (motivators). Intrinsic factors which Herzberg calls motivators are factors to do with the job itself and include as an example recognition, achievement, responsibility, advancement and personal growth in competency. Extrinsic factors which Herzberg refers to as hygiene factors include for example factors external to the work such as company policies, management practice, working conditions and salary (Hackman & Oldham, 1976, p. 251). Herzberg’s theory states that workers perform their best and are most motivated when their work is rich in motivator (intrinsic) factors however if extrinsic factors are insufficient they may cause dissatisfaction. Motivating workers to perform their best cannot be accomplished by extrinsic factors alone (Hall, 2009).

The well-established Job Diagnostic Model (JDM) was developed by Hackman and Oldham (1976) and determines which job characteristics are important to an individual. The core job characteristics also referred to as the “five core dimensions” are defined as: skill variety, task identity, task significance, autonomy and feedback from the job. If these five core dimensions are present in a job they result in three psychological states: experienced meaningfulness, experienced responsibility and knowledge of results of their actions (Couger & Zawacki, 1980, p. 15). These psychological states will then result in high internal motivation (Hall, 2009) which motivates an individual to perform and continue to do well, to produce a high quality of work and to maintain those feelings of work satisfaction which will result in lower absenteeism and staff turnover (Couger & Zawacki, 1980). Figure 1 illustrates this model.

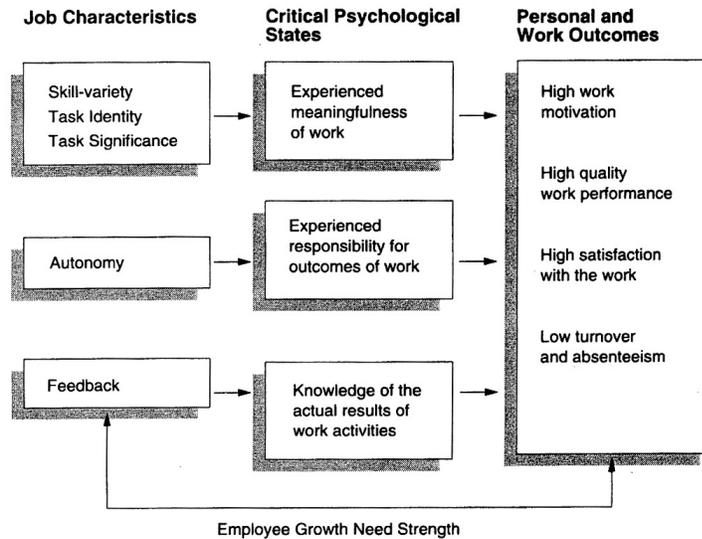


Figure 1: Job Characteristics Model of Motivation (Couger and Smith, 1992)

Based on the model, a questionnaire is used which determines certain metrics for an individual based on questions using a 7-point Lickert score. These include Growth Need Strength (GNS) and Social Need Strength (SNS) for an individual as well as certain goal related, job satisfaction and feedback variables (Hall, 2009). **GNS** is a measure of an individual’s need to achieve, learn and grow beyond their current abilities, knowledge and skill level, **SNS** is a measure of the extent to which an individual needs to interact with other employees and **Motivational Potential Score (MPS)** is a measure of how the current job satisfies the needs of the employee (Couger & Smith, 1992a, 1992b). If there is a significant difference between an individual’s GNS and MPS score, they are likely to be dissatisfied with their current job situation. Previous research findings into IT staff motivation includes a Herzberg ranking of the ‘work itself’ as being the most important which validates the use of the Job Diagnostic Survey (JDS) as a significant means of measuring motivation issues. As shown in Figure 2, there should be an attempt to balance GNS and MPS.

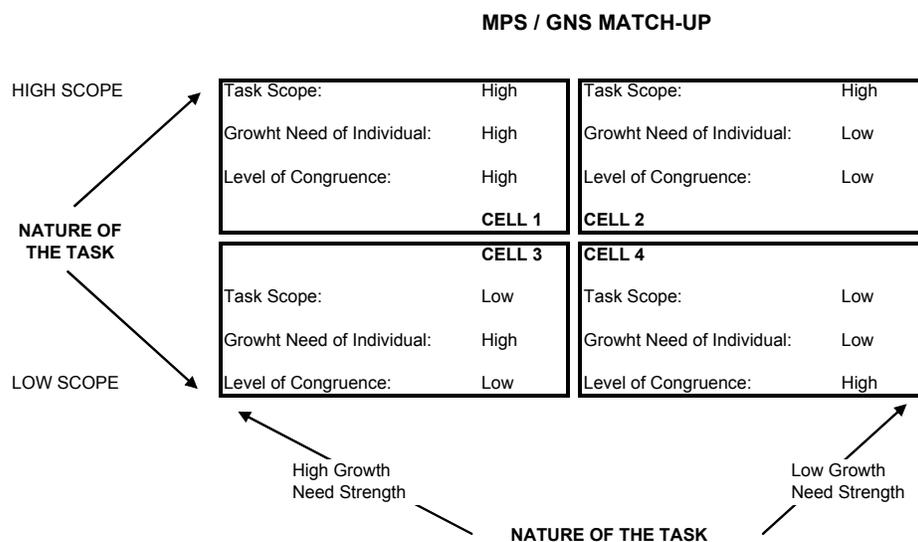


Figure 2: MPS/ GNS Matchup (Couger and Smith, 1992)

Studies of public sector employees have differing views of what motivates them. Some studies propose that there is a higher purpose in working for the public sector and that the worth of an organization's purpose can increase an individual's motivation by increasing the importance of the job (Wright, 2007). He proposes that employees in government have a strong need to be of service to the public and offer a meaningful service (Buelens & Van den Broeck, 2007). Research has established that these employees are often less concerned with financial rewards and find it rewarding to be of service to others as compared to their private sector counterparts who are more motivated by direct economic benefits (Buelens & Van den Broeck, 2007; Wright, 2007). Monetary compensation is a key factor in determining job satisfaction and retention amongst private sector IT staff and on average private sector IT salaries are higher than that offered by government (Kim, 2009). Employees in the public sector have more of a work family balance than private sector employees as fewer working hours are reported (Buelens & Van den Broeck, 2007). Job stability and flexibility is cited as some of the strengths of working for government (Kim, 2009). The generally accepted belief is that "public sector employees are more intrinsically motivated" (Buelens & Van den Broeck, 2007, p. 66).

Opposing this view are studies that have reported problems associated with the public sector relating to job satisfaction (Wright & Davis, 2003). "Job satisfaction describes the feelings, attitudes or preferences of individuals regarding work" (Chen, 2008, p. 16). There are challenges faced by the public sector which may affect job satisfaction and IT staff retention. Of note are the working conditions in the public sector that differs from the private sector as there is a greater need for accountability, less integrated information systems and budgetary issues which prevents adoption of the most recent technologies and management practices. These issues along with staff mobility are a threat to IT staff retention (Reid, Riemenschneider, Allen, & Armstrong, 2008, p. 42). There are issues of low staff morale and inadequate investment in training and skill development. This has placed the public sector at a disservice when competing with the private sector for skilled labor (Wright & Davis, 2003).

The structure of public sector organisations and highly bureaucratic systems create conflict between purpose and structure, preventing public sector employees from reaching their full motivational potential (Wright & Davis, 2003). There is considerable disagreement in the research literature regarding the motivational aspects of government workers.

Research Methodology

The South African government has a problem retaining and attracting IT staff with the critical skills which affects its capacity to effectively deliver services. Nurturing, developing and retaining critical IT staff is a priority for most Chief Information Officers (CIOs) (Stones, 2012). This is important for the South African government too in order to meet service demands which highly depend on the strength of its people (Stones, 2012, p. 3).

The research followed a positivist, quantitative research approach. The objective of the research was to identify the factors that motivate the IT staff within the Parastatal concerned using the JDS developed by Couger and Zawacki (1980) and identify areas that need improvement.

Due to the disagreement mentioned in the previous section, this research has generated hypotheses that are the same as concluded in research for the non-government IT industry.

The following hypotheses were therefore derived from the literature review:

H1 - The 'work itself' is the main motivator of parastatal IT personnel.

H2 - There is a mismatch between GNS and MPS for parastatal IT personnel, whereby the GNS is greater than the MPS.

The Job Diagnostic Survey (JDS) was used to develop an online questionnaire that comprised of two parts: Herzberg's instrument for measuring motivational factors and the Job Diagnostic Survey to evaluate the current state of jobs. The JDS is a well-established tool for measuring motivation and the reliability and validity has been verified and used widely amongst researchers for measuring motivation of IT personnel (Hall, 2009). The survey was sent with management permission to a target population of 120 IT personnel within a South African parastatal nationally. This included all IT personnel in the regional offices including Cape Town, Durban and Port Elizabeth as well as the Head office in Johannesburg. Non-probability sampling method was used as the sample size was insufficient for random sampling (Saunders, Lewis, & Thornhill, 2012). Convenience sampling was used as the target population was the most accessible to the researcher. The survey was conducted over a two and half week period to allow sufficient time for data analysis.

Thirty-three responses were received of which twenty-nine were completed questionnaires that were useable. The rest were incomplete and unusable. A large number of government recipients did not return their survey despite a major effort by the researcher. This study is therefore exploratory in nature as the data set is inadequate for many statistical techniques.

Data from the responses captured in Qualtrics, online survey software, was then exported into Microsoft Excel 2010 and Statistica for further analysis. Findings from the analysis are discussed in the following section.

Findings and Interpretation

The first part of the questionnaire Herzberg Motivational factors were ranked from the number one motivator to the least motivator at number eleven. The statistical mean was calculated and used to determine the highest to lowest ranking. The results are displayed in Table 1 along with a comparison from previous similar motivation studies of IT personnel conducted in South Africa. Conditions may have been different at the time the studies were conducted previously however the comparison serves to gauge whether 'the work itself' is still the number one motivating factor.

In this study, the parastatal IT staff ranked 'job security' as their number one motivating factor. Contrary to previous studies, the 'work itself' was ranked at number 5 and 'pay' was ranked as the number two motivator. 'Job security' and 'pay' are both hygiene factors, were ranked at the top of Herzberg's motivational factors.

This somewhat surprising result could be explained by current restructuring within the National IT to a centralised structure that happened recently resulting in feelings of uncertainty amongst IT staff regarding their current jobs resulting in 'Job security' as the number one ranking.

This finding did not support Hypothesis 1 that stated the 'work itself' is the main motivating factor of parastatal IT employees.

Table 1: Motivating Factors - Previous Research vs. Current Findings
 (*intrinsic;**extrinsic)

Herzberg's Motivational Factors	1988 U.S.A (Couger)	1992 R.S.A (Smith)	2005 Cape Town (Hum- phreys)	Current Findings
*The Work itself	1	1	1	4
*Opportunity for achievement	2	4	5	8
*Opportunity for advancement	3	2	3	3
**Pay and benefits	4	3	2	2
*Recognition	5	5	6	7
*Increased responsibility	6	7	8	6
**Quality of supervision	7	8	9	10
**Interpersonal relations with peers	8	9	10	11
** Job security	9	6	4	1
**Working conditions	10	10	7	9
**Company policies	11	11	11	5

The Core Job Dimensions Compared

The questions in the second part of the questionnaire measure the five core job characteristics which create ideal work outputs. These job characteristics are Skill variety, Task identity, Task significance, Autonomy and Feedback from the job (Couger & Zawacki, 1980). Each of the five core job characteristics are constructs of several questions from the job diagnostic survey. All questions are measured on a scale of 1 to 7 with 1 being extremely dissatisfied and 7 being extremely satisfied. The constructs are calculated from the mean values of each question and averaged to form a single construct.

Table 2 compares the findings of this research with previous results. The same instruments as previous studies were used to allow direct comparisons of IT staff working for non-government organizations and government organizations.

In a comparison with previous studies done by Couger and Smith (1992) and others on the core job characteristics, notable differences were found for 'Task identity' and 'Autonomy' with the parastatal IT scoring significantly lower on both these measures. Following statistical analysis, the results were comparable with previous research.

Table 2: Core Job Characteristics - Previous research vs. Current findings

Previous Research vs. Current Findings				
Core Job Dimensions	1992 R.S.A (Couger & Smith)		Current Findings	
	Systems Programmer	Manager	Technical	Manager
Skill Variety	5.65	5.72	5.08	5.73
Task Identity	5.22	5.42	4.95	4.95
Task Significance	6.08	6.12	6.18	6.33
Autonomy	5.38	5.48	4.86	5.70
Feedback from the job	5.16	4.94	5.04	5.20

When comparing Growth need strength (GNS) with Motivating potential score (MPS) according to job categories, a mismatch was found. Table 3 shows the results from the sample compared to previous research.

Table 3: GNS vs. MPS - Previous Research vs. Current Findings

GNS vs. MPS	1992 R.S.A (Couger & Smith)		Current Findings	
	Systems Programmer	Middle Manager	Technical	Manager
Growth Need Strength	6.32	6.40	4.26	4.25
Motivating Potential Score	5.39	5.34	5.06	5.50
GNS /MPS mismatch	0.93	1.06	-0.8	-1.25

This is a startling finding as it differs significantly to previous findings. Whilst the richness of jobs (MPS) given to IT staff in government and non-government employees are fairly similar, the growth needs (GNS) of the staff to achieve is significantly lower for government staff as compared to previous studies. As the theory argues that the 2 indices should be matched as closely as possible to exert maximum motivation, there is a clear mismatch in this sample. In fact this is the opposite of previous research. The rich jobs far exceed the achievement needs of the IT employees.

Hypothesis 2 which proposed that the mismatch between GNS and MPS was correct except that the mismatch was in the opposite direction. Hypothesis 2 was therefore not supported.

Conclusion

Motivating IT personnel has been researched for many years. Currently there is a dire need to upgrade IT infrastructure and systems in South Africa and significant budgets have been allocated

for this purpose. Whilst IT staff is in short supply world-wide, there is a significant shortage in South Africa. Government find it difficult to recruit and retain IT staff. Part of retention of staff relates to how IT staff is motivated.

This research investigated the motivation levels of IT staff in a government organisation. As this type of organisation has been under researched previously this study served to provide an updated view of staff motivation in this context. The approach used was similar to previous motivational studies of IT personnel. Both Herzberg motivation factors and a Job Characteristics Model questionnaire were used to measure motivating factors. The combined questionnaire was sent to government IT staff in a parastatal organisation. Twenty-nine completed questionnaires were returned and analysed. This small sample means the interpretation should be treated with caution.

Neither of the hypotheses, which had been based on the research literature, was supported. H1 hypothesized that the 'work itself' is the main motivator of Parastatal IT personnel based on findings from previous research that 'the work itself' is the number one motivator of IT personnel. In the current study this was not the case and the 'work itself' was ranked at number 5 according to Herzberg's motivation factors. Surprisingly, 'Job security' was ranked as the number one motivational factor for the IT staff of the Parastatal concerned. This could be attributed to restructuring within IT nationally of the parastatal organisation to a centralised structure creating feelings of uncertainty amongst staff regarding the security of their jobs. This highlights that prevailing conditions within an organisation can affect the outcome of motivational factor rankings and need to be considered when doing a cross sectional study of this nature.

H2 hypothesized that a mismatch exists between GNS and MPS for Parastatal IT whereby the growth need strength exceeds the motivational potential of the job. This was based on previous findings that IT personnel have a high growth need compared to other personal. Although in the current study it was established that a mismatch does exist between GNS of IT staff and MPS of the job, the matching was reversed. MPS, the richness of the job, far exceeded the GNS, the individual's need to grow and accomplish. Although this study is limited in the generalizability of its findings, it has major implications for IT management in this organisation. As shown in Figure 2, in Cell 2 the level of congruence is low leading to the possibility of low productivity and poor motivation.

Practical Implications and limitations

This mismatch has likely lead to low motivation and poor productivity amongst IT staff. The practical implications of this is that job redesign is needed to better match individuals to their tasks and in so doing improve individual motivation levels. Further to this the management of the parastatal concerned should apply the Herzberg's motivation rankings to gain a better understanding of what motivates their IT staff by analysing the top motivators. In this study, the top three motivators were 'job security', 'pay and benefits' and 'opportunity for advancement'.

The limitations of this study were that the sample used was insufficient to generalise the findings. Although the research refers to motivation of IT staff in government organisations in South Africa the results cannot be generalised to all IT staff in all government organisations. More studies need to be conducted in parastatals in order to establish motivational norms of IT individuals.

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Biographies



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Derek Smith is an emeritus professor of Information Systems at the University of Cape Town (UCT). He has many publications in international IS journals and has presented papers at previous international research conferences in the project management and IS fields. He is a certified PMP. His research focus is on people and team issues especially in the project management field. Derek is now developing exciting distance-learning courses for UCT with Getsmarter.