Psychological capital and innovative work behaviour as predictors of employee in-role behaviour

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ABSTRACT

This study investigates the empirical relationship between psychological capital and innovative behaviour and whether the two latent variables act as antecedents of employee in role behaviour. Competitive advantage can be attained through in- role work behaviours in that they determine how well a business can offer quality goods and services at a fee to clients, being in the position to meet the objective of making profits and social responsibility targets. If in-role behaviours have such important organizational outcomes it is therefore important to explore some of their antecedents. A survey design was used to achieve the research objectives. Participants in this study were a group of 193 employees aged between 20-60 from the public sector selected based on a non-probability sampling technique specifically convenient sampling. The instruments included: The psychological capital rating scale, the innovative behaviour scale and the in role behaviour scale (Williams & Anderson, 1991). Item and factor analysis was performed via SPSS 25. Confirmatory Factor Analysis (CFA) was performed for the measurement model and through Structural Equation Modelling (SEM) and the hypothesized paths in the proposed structural model were empirically assessed using Lisrel 8.80. The three measuring instruments had acceptable reliability levels. Through exploratory factor analysis, all three scales demonstrated Uni-dimensionality. The goodness of fit indices showed that the measurement model achieved a reasonable fit with the data. The completely standardized gamma matrix of path coefficients for the structural model indicates a statistically significant relationship between psychological capital and innovative behaviour with a t-value of 4.915 which is bigger than 1.96 and p< 0.05, psychological capital and employee in role behaviours with t value of 2.874 which is also bigger than 1.96 and p < 0.05. The relationship in the beta matrix between innovative behaviour and employee in- role behaviour is supported with a t value of 2.352. Empirical results for this study have proven that psychological capital and innovative behaviour are predictors of employee in- role behaviour.

Keywords: Psychological capital, innovative work behaviour, in role behaviour

INTRODUCTION

Outstanding employee in role behaviours also known as task performance is the key to attaining high productivity and competitive advantage for business houses in this global competitive economy with ever changing customer needs and services (Sutherland, Debruin & Crous, 2007). These important employee performance outcomes have led organisations to gain and maintain competitive advantage through human resource interventions such as selection, training and retention (Meihem, 2004). Through recruitment and selection organizations have the privilege of attracting and selecting employees with the right attitudes and behaviors in line with the organization vision and goals so as to outperform their competitors. By sharpening employees skills and work behaviours through training and later on retain such employees organisations will always be ahead of competition. Given the importance of employee in role performance it is therefore cardinal for organization to possess an understanding on factors that encourages employees to exhibit in role behaviors. Human resource and industrial psychology literature has documented antecedents of employee in role performance such as job satisfaction (Biswas & Varma, 2012), job engagement (Rich,Lepine & Crawford, 2010,) job commitment (Malhotra & Mukherjee, 2004), role clarity (Whitaker, Dahling & Levy, 2007), innovative behaviour (Janssen,2000) as well as psychological capital (Avey,Reichard,Luthans & Mhatre, 2011;Luthans & Youssef-Morgan, 2017). In light of the possible antecedents of employee in role performance highlighted above it was decided to explore the relationship between some antecedents and employee performance. Due to theoretical and practical reasons as well as limiting the scope of the study to a meaningful and governable level a selection of variables was necessary. The first step involved examining employee performance literature on future research direction. The second step involved assessing known predictors of employee performance specifically in- role behaviour. In this case innovative work behaviour and psychological capital were considered.

Research-initiating question

The research-initiating question for this study is therefore: why variance exists in employee in role behaviour, with specific reference to the role that innovative work behaviour and psychological capital play in this regard not to the exclusion of other factors in the organisation.

Objective

The general objective was to empirically examine the relationship between psychological capital, innovative work behaviour and employee in role behaviour. From this general research objective more specific operational research objectives were derived for this study.

1. To investigate the influence of psychological capital on innovative work behaviour
2. To assess the influence of psychological capital on employee in role behaviour
3. To evaluate the influence of innovative work behaviour on employee in role behaviour

LITERATURE REVIEW

Conceptualizing employee In-role behaviour

Employee performance is a multidimensional aggregate term for work related behaviour such as contextual performance and task performance (Bowman & Van Scotter, 1994, Campbell, McCloy, Oppler & Sager, 1993). According to Svyantek as cited in Sutherland et al., (2007) contextual performance is characterized by activities that employees are not necessarily contracted to perform, but which are necessary for the achievement of organizational goals. In role work behaviour is the completion of role activities prescribed in the job description. In role employee behaviour according to Borman and Motowidlo (1997) has to do with how effective job incumbents are at performing job related activities that contribute to the organization technical core. Behaviors associated with in role performance include co-ordination and supervision of work activities, transforming raw materials into goods and services as well as distribution of products (Borman & Motowidlo, 1997).

Conceptualising Innovative work Behaviour

Janssen (2000) defines innovation work behaviour as the intentional creation, introduction and application of new ideas

within a work role, group or organisation in order to benefit role performance, the group, or the organisation. The first dimension involves idea generation. According to Janssen (2000), innovation begins with idea generation which is often instigated by perceived work related problems. The next stage in Janssen model involves idea promotion. According to Steyn & DeBruin (2019) the generated idea need to be endorsed by capable sponsors so as to provide the necessary assistance for implementation. The third dimension involves realisation which involves experimentation and application of ideas.

Scott and Bruce (1994) conceptualised Innovative work behaviour as something more than creativity. They argue that creativity relates to the production of novel and useful ideas whereas innovation has to do with the production or adoption of beneficial ideas and idea implementation. Scott and Bruce (1994) proposed a three stage multi-stage process involving generation, sponsorship and operationalising the idea. These stages are similar to those of Kanter (1988) who proposed a four stage process of innovative work behaviour involving idea generation, coalition building, idea realization and transfer of diffusion.

De Jong and Hartog (2010) are of the view that innovative work behaviour includes a broad set of behaviors related to the generation of ideas, creating support for them and helping their implementation. They proposed a four stage process involving idea. exploration, generation, championing and implementation. In the first stage an employee identifies opportunities or problems related to products, services or processes. The second stage involves solving the identified problems or making use of the opportunities. Innovative Ideas need to be promoted due to anticipated resistance hence the third stage of championing. Creative ideas need to be supported either within the organisation or outside if they are to flourish (Steyn & De Bruin, 2019). The last stage involves applying efforts into rolling innovative ideas and being result oriented (Steyn & De Bruin, 2019).

Conceptualizing Psychological Capital

Psychological capital refers to positive cognitive resources that influences ones attitudes, behaviour, performance and well-being such as hope, efficacy, resilience and optimism (Luthans & Youssef-Morgan, 2017). Hope is defined as the determination or willpower to pursue goals (Luthans & Youssef-Morgan, 2017). Synder, Irving and Anderson(1991) defined hope as a positive motivational state based on an interactively derived sense of successful (a) agency (goal - directed energy) and (b) pathways (planning to meet goals). Efficacy is defined as the individual's conviction or confidence about his or her abilities to mobilize the motivation, cognitive resources or courses of action needed to successfully execute a specific task within a given context (Stajkovic & Luthans, 1998). The ability to recover, rebound or bounce back from adversity, conflict, failure or even positive events, progress and increased responsibility was coined as resilience by Luthans (2002). According to Luthans and Youssef-Morgan (2017), optimism is a positive explanatory style that attributes positive events to personal, permanent and pervasive causes and interprets negative events in terms of external, temporary and situation -specific factors.

Empirical relationship Between Psychological Capital and Innovative Behaviour

The four psychological capital resources of hope, efficacy, resilience and optimism(HERO) share a common theme of positive appraisal of work circumstances and probability for success based on motivated effort and perseverance hence positively influencing creativity (Luthans et al , 2007). For example resiliency will motivate innovative employees to continue pushing in the face of challenges until they are successful. Hope on the other side will allow the individual employee to generate and pursue multiple pathways toward those goals (Luthans & Youssef-Morgan, 2017). It is therefore hypothesized that psychological capital influences an individual's ability to be innovative.

Empirical relationship Between Psychological Capital and In role Behaviour

Through efficacy employees will have confidence and will intentionally choose

challenging work related goals and will remain motivated to achieve them (Luthans & Youssef-Morgan, 2017). Optimistic employees will view their chances of being successful to be high and will eventually apply more effort so as to be successful leading to high productivity (Luthans & Youssef-Morgan,2017).Psychological capital positively affects employees attitude, behaviour and well-being hence performance is improved (Luthans & Youssef-Morgan,2017). It is therefore hypothesized that psychological capital positively influences in role behaviour.

Empirical relationship Between Innovative Behaviour and In role Behaviour

In this competitive business world organisations can only survive if they are to compete through employees that are innovative. Individuals that generate new ideas of how to perform their jobs or are creative due to cognitive positive resources are able to perform their jobs to the best of their abilities leading to high work performance and productivity. It is therefore hypothesized that innovation among employees leads to improved performance.

Conceptual Model

A conceptual model was derived at after a thorough investigation of literature. The model in figure 1 depicts the specific hypothesized structural paths between the three variables. Psychological Capital is portrayed as the independent variable while innovative behaviour and in role employee behaviour as dependent variables.
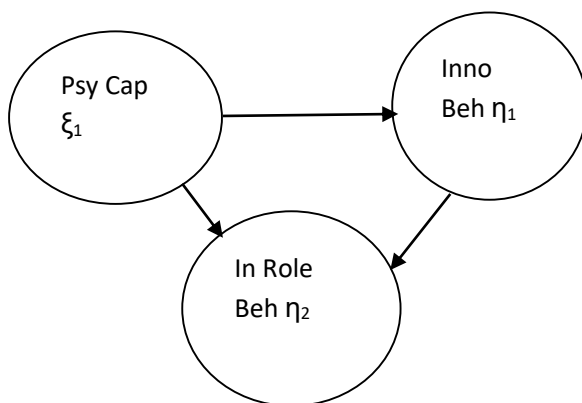

FIGURE 1: The structural model representing the relationships between psychological capital, innovative work behaviour and in role behaviour.

Statistical hypotheses

Hypothesis 1: The overarching research hypothesis was interpreted to indicate that the structural model depicted in Figure 1 above provides a perfect explanation of the manner in which psychological capital and innovative behaviour influences employee in-role behaviour. The research hypothesis was translated into the following exact fit null hypothesis:

H01: RMSEA=0
Ha1: RMSEA>0

Where RMSEA is the root mean square error of approximation.

Hypothesis 2: The overarching research hypothesis for the close fit null hypothesis is:
H01: RMSEA<0.05
Ha1: RMSEA > 0.05
Where, RMSEA is the root mean square error of approximation. In order to test the validity of the proposed relationships in the structural model, the following specific research hypotheses were tested:

Hypothesis 3: Innovative work behaviour (η_1) is positively related to in role behaviour (η_2) (H_{03}: $\beta_{21} = 0$; H_{a3}: $\beta_{21} > 0$).

Hypothesis 4: Psychological Capital (ξ_1) is positively related to in role behaviour (η_2) (H_{04}: $\gamma_{21} = 0$; H_{a4}: $\gamma_{21} > 0$).

Hypothesis 5: Psychological capital (ξ_1) is positively related to innovative work behaviour (η_1)(H_{05}:$\gamma_{11}=0$; Ha5:$\gamma_{11}>0$).

DATA AND METHODOLOGY

Study design

A survey design through structural equation modelling (SEM) was used to achieve the objectives set out for this study.

Study population

The research hypotheses were empirically evaluated using a sample of secondary school teachers. A non-probability sampling method, specifically convenience sampling was used. The sample was comprised of male (43.9%) and female (56.1%) participants. 13.9% of the participants were aged between 20 and 29 years of age, 37.5% between 30 and 39, 35.6% between 40 and 49 while 7.7% between 50 and 59. Level of qualification in the sample was distributed as follows; with certificate (2.9%), diploma

(57.7%), bachelor's degree (29.3%), and master's degree (4.3%).

Data Collection Procedure
300 Questionnaires were distributed to the selected participants and 200 completed questionnaires were returned. Data was collected using three instruments namely the psychological capital scale, items from the teacher innovative work behaviour scale and 7items of in role behaviour from Williams and Anderson (1991).

Data Analysis
To evaluate the internal consistency of the three scales by means of a cronbach alpha coefficient (α), item analysis was performed using the statistical package of the social sciences (SPSS 26.0). Exploratory factor analysis (EFA) was used to examine the uni-dimensionality assumption with regards to each of the three scales. In particular, the principal axis factoring extraction method with the direct oblimin-rotated solution was used in SPSS 26.0. The cut-off point for substantial factor loadings, were loadings ≥ 0.40 (Hinkin, 1998). Data was also analyzed with confirmatory factor analysis (CFA) and structural equation modelling (SEM) in Lisrel 8.80 (Jöreskog & Sörbom, 2006). Assessment of model fit was based on various goodness fit indices (Bollen, 1989), such as the root mean square error of approximation (RMSEA), root mean squared residual (RMR), standardized root mean square residual (SRMR) goodness-of fit index (GFI), adjusted GFI, normed fit index (NFI), non-normed Fit Index (NNFI), comparative fit index (CFI), incremental fit index (IFI), and relative fit index (RFI).

RESULTS

Missing Values
Multiple imputation was used as the method to solve the problem of missing values. After treating for missing values a sample size of 193 was retained.

Reliability analysis
Reliability Coefficients results are shown in table 1. The psychological capital scale had the highest cronbach alpha of 0.868, followed by the in- role behaviour scale of 0,758 while the in- role behaviour scale registered a cronbach alpha coefficient of 0.770. All the three scales meet the

benchmark reliability standard of greater than 0.70 (Nunnally, 1978).

Exploratory factor analysis
All three scales were found to be uni dimensional. The items comprising the three scales all reflect a single underlying factor as shown in table 2. All factor loadings were acceptable (> 0.50) and variance explained in each factor was satisfactory (> 40%).

Multivariate normality
Robust maximum likelihood (RML) estimation method was performed to normalise the data.

Confirmatory factor analysis (CFA) results
Goodness-of-fit: The measurement model
The goodness of fit statistics for the measurement model are presented in Table 3. The RMSEA value of 0.0886 indicates mediocre but close model fit in the data. This is reflected in the incremental fit statistics. The NFI achieved (0.094), NNFI (0.919), CFI (0.933), IFI (0.933), and the RFI (0.872).

Measurement model factor loadings
The completely standardized factor loading for the items contained in the overall measurement model are generally satisfactorily large >.50 (Hair, Black, Babin, & Anderson, 2010).

TABLE 1: Reliability of the measurement scales

Scale	Number of items	α
Psychological Capital rating scale	8	.868
Innovative Work behaviour scale	5	.770
In role Behaviour scale	4	.758

Goodness-of-fit indices for the structural model
The goodness of fit statistics for the structural model overall suggest that the model fitted the data well. . The RMSEA value of this model (0.0886) extends into mediocre but not poor fit. The goodness of fit index GFI of this model achieved a value of

0.852. The incremental fit indices, namely the NFI; 0.894, NNFI; 0.919, CFI; 0.933, IFI; 0.933, RFI; 0.872.

TABLE 2: Exploratory factor analysis output

Dimension	Number of items	Factor loadings	% variance explained
Psychological Capital	8	0.56-0.84	47.29
Innovative Work Behaviour	5	0.63-0.74	41.69
In role Behaviour	4	0.53-0.81	46.08

TABLE 3: Goodness-of-fit indices for the measurement and structural model

Model	RMSEA	PClose Fit	SRMR	GFI	NFI	NNFI	CFI	IFI	RFI
Measurement	0.0886	0.000	0.0751	0.852	0.894	0.919	0.933	0.933	0.872
Structural	0.0886	0.000	0.0751	0.852	0.894	0.919	0.933	0.933	0.872

Note: RMSEA, root mean square error of approximation; P close fit, *P*-Value for test of close fit (RMSEA < 0.05); SRMR, standardized root mean residual; GFI, goodness-of-fit index; NFI, normed fit index; NNFI, non-normed fit index; CFI, comparative fit index; IFI, incremental fit index; RFI, relative fit index

OTHER KEY FINDINGS

The gamma matrix shows that the path coefficient in the structural model between psychological capital and innovative work behaviour was significant (t = 4.915; p < 0.05) as shown in table 4, thus hypothesis 5 was confirmed. A significant positive relationship between psychological capital and in role behaviour was found (t =2.874; p < 0.05) hence hypothesis 4 was supported. The SEM path between innovative work behaviour and in role behaviour was significant thus supporting hypothesis 3 (t = 2.352; p < 0.05) (see Table 4).

DISCUSSION

This study aimed at investigating the structural relationship between psychological capital, innovative work behaviour and employee in role behaviour. Reliability for all the scales was established. All the scales registered cronbach alpha coefficients above the .70. Under exploratory factor analysis the factor loadings were adequate with acceptable variances. Acceptable fit with the data was obtained for both the measurement and structural models. These results are an indication that the proposed structural model underlying the relationship between the three variables is supported. Statistically significant relationships between psychological capital and in role behaviour, psychological capital and innovative work behaviour were found supporting hypotheses 4 and 5. In terms of the beta matrix a significant positive relationship between innovative work behaviour and employee in role behaviour was established supporting hypothesis 3.

Table 4: The gamma and beta matrix of path coefficients for the structural model

Latent Variable	Psychological Capital	Innovative Work Behaviour
Innovative Work Behaviour	0.510 (0.104) 4.915	
In role Behaviour	0.315 (0.109) 2.874	0.266 (0.113) 2.352

Completely standardized path coefficients in bold. Standard error estimates in brackets *t*-

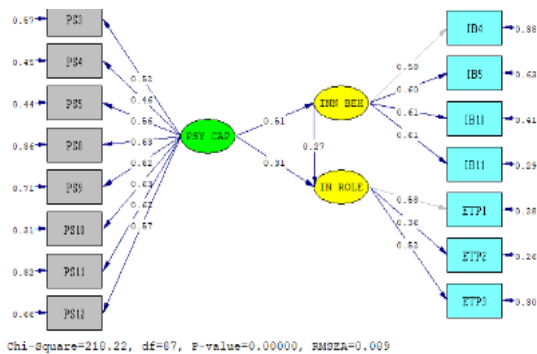values ≥ | 1.96| indicate significant parameter estimates. *, $p < 0.05$

Chi-Square=210.22, df=87, P-value=0.00000, RMSEA=0.009

Figure 2. **PSY CAP-Structural model**

Theoretical and practical implications
Practical implications

From the theoretical and managerial perspective, several important implications can be drawn from the results of this study. Theoretically, evidence has been provided that cognitive resources acts as antecedents to employee creativity which later affects employees' performance on work tasks. Practically human capital specialist need to find ways of motivating employees as a way of harnessing psychological capital among employees due to positive outcomes such as innovation and improved employee performance.

Structural equation modelling (SEM) in Lisrel requires bigger sample sizes of about 200 and above for good results. A sample size of 193 could have had a huge effect on the results. Future studies should replicate the study using bigger sample sizes.

Availability of data and materials

The data used and analyzed during the current study is available from the corresponding author on reasonable request.

Abbreviations

PSY CAP: Psychological Capital
IWB: Innovative Work Behaviour
IRB: In Role Behaviour
RMSEA: Root Mean Square Error of
SRMR: Standardized Root Mean Residual
GFI: Goodness of Fit Index
NFI: Normed Fit Index
CFI: Comparative Fit Index

Limitations of the study and suggestions for future research

Structural equation modelling (SEM) in Lisrel requires bigger sample sizes of about 200 and above for good results. A sample size of 193 could have had a huge effect on the results.

CONCLUSION

All the three scales obtained adequate reliability coefficients above the threshold of .70. The psychology capital scale had a cronbach alpha of .868, innovative work behaviour .770, and role behaviour .758. Construct validity was established first through dimension analysis and secondly through confirmatory factor analysis. Under dimension analysis adequate factor loadings > .50 were recorded in each scale. Goodness of fit statistics for both the measurement and structural model were acceptable. CFI had a value of (0.933), NNFI (0.919) with other fit statistics slightly below .90 but acceptable. An RMSEA value of 0.0886 was slightly above 0.08 of good fit. With hypothesis 3, 4 and 5 supported the results of this study have provided empirical evidence that innovative work behaviour positively influences worker performance in the form of in role behaviour. Results have also shown that psychological capital positively influences innovative work behaviour and employee in role behaviour.

Appendices
None

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Author's contributions
N.M. was responsible for Data collection and writing

V.C. was responsible for Statistical analyses, interpretation of results and writing of the article.

M.S. was responsible for writing the article

S. C. K. was responsible for writing the article

S.S.M   was responsible for writing the article

Ethical consideration

All respondents in this study consented before attempting items from the three measures. Ethical clearance was obtained from Mulungushi University ethical clearance committee.

Consent for publication

No images, individual details or videos for clients' data are part of this paper.

Competing interests

The authors declare that they have no financial or personal relationships which may have inappropriately influenced them in writing this article.