

**African Journal of Business and Economic Research
(AJBER) Volume 11, Issue 1, 2016
Pp 45-92**

Power Distribution at Eskom: Putting Self-Leadership, Locus of Control and Job Performance of Engineers in Context

Patient Rambe*

*Department of Business Support Studies
Central University of Technology
Private Bag 20539 Bloemfontein, South Africa
prambe@cut.ac.za*

Disebo Modise

*Department of Business Support Studies
Central University of Technology
Private Bag 20539 Bloemfontein, South Africa
modised@cut.ac.za*

Abstract

Given the deep energy crisis that currently engulfs South Africa, which has been attributed to the crisis of electricity supply leadership and perceived weak locus of control among Eskom management and staff, the purpose of this study is to review the self-leadership and internal locus of control literature to identify components of these concepts that could leverage employee job performance and improve electricity service delivery. In the absence of literature that examines the combined effects of self-leadership and internal locus of control, the researchers adopted a theoretical and reflective approach that combined the interpretation of extant literature on isolated effects of these variables on job performance and the researchers' individual perspectives on the matter. Drawing on this literature review, gaps in the extant literature are identified and

an integrative framework for improving Eskom engineers' job performance and electricity service delivery is developed. The study reported that although the reward strategy component of self-leadership and external locus of control serve as moderating variables, the combination of behaviour-focused strategies, thought self-leadership strategies of self-leadership and internal locus of control had the greatest influence on job performance of Eskom engineers. The paper renders a rich literature review on self-leadership and locus of control in a resilient, national energy supply institution and bestows an innovative conceptual framework for leveraging the job performance in particular and electricity service supply in an energy crisis ridden country in general.

Keywords: *Self-Leadership, Locus of Control, Energy Crisis, Electricity Supply Leadership, Coal-Powered Generators.*

Biographical Notes

Dr. Patient Rambe holds a PhD in Educational Technology from the University of Cape Town, South Africa. He holds the position of Senior Researcher in the Faculty of Management Sciences at the Central University of Technology in South Africa. Dr Rambe is also a Convener of the Masters and Doctoral Programme Stream at the same university. He has previously served as a Postdoctoral Research Fellow and Assistant Director in the Office of International Academic Projects at the University of the Free State, South Africa. His research is widely acknowledged and is rated by the National Research Foundation of South Africa.

Miss Disebo Lotty Modise is a Masters of Business Administration candidate at the Central University of Technology in South Africa. She graduated with Cum Laude for National Diploma and B-Tech in Office Management and Technology. She is currently working in the Faculty of Humanities as an Senior Administrative Assistant in Teaching and Learning Special Projects, at Central University of Technology. Her current research focuses on the relationship between Self-Leadership, Locus of Control and Job

Performance of engineers in a power distribution utility, Eskom: A theoretical perspective.

Introduction

Eskom Holdings SOC Limited (hereinafter referred to as “Eskom”) is the largest public power utility responsible for the generation, transmission and distribution of electricity in South Africa. It is mandated to generate, transmit, and distribute electricity to industrial, mining, commercial, agricultural, redistributors, and residential customers (Eskom Holdings SOC Limited SWOT Analysis, 2015:4). During Financial Year 2014, the company generated 231,129 GWh of electricity, 209,483 GWh of coal-fired electricity, 14,106 GWh of nuclear electricity, 3,621 GWh of gas turbine electricity, 2,881 GWh of pumped storage electricity, 1,036 GWh of hydroelectricity, and 2 GWh of wind energy (Eskom Holdings SOC Limited SWOT Analysis, 2015:4). Eskom transmits electricity countrywide via a network of high-voltage sub-stations and inter-connecting transmission lines (765, 400 and 275 kV), and from the transmission sub-stations, the electricity is distributed to end users through a network of smaller sub-stations and power lines (88, 3322 and 11 kV) (Eskom St Faith Substation Draft Scoping Report, 2014:1). Eskom’s national strategic and developmental significance lies in the capacity to use its public electricity infrastructure to service its diverse clientele ranging from energy intensive mining companies, manufacturing services and retail users. Among its core mandates, Eskom has steered positive economic growth, economic and social transformation, strived to reduce carbon emissions (for which it is one chief contributor) and improvised efficiency (Tsotsi, 2011:2) of the electricity generation and distribution programmes and projects. Specifically, the size and scale of Eskom’s economic, social and environmental footprint, has

shaped the development of South Africa in six key impact areas: economic growth, employment creation, skills development, impacting local communities, environmental footprint and enabling South African development through electricity provision in South Africa (Dames, 2011:3).

Despite this strategic role, Eskom is currently engulfed in an intricate web of challenges namely: continual exodus of its top management resulting in a lack of consistent policy direction, capacity building and utilization challenges, demands for electricity that outstrip supply leading to the under-production of mining companies, economic stagnation (at 2% in 2015 rather than the projected 5%) and rollout of blackouts resulting in malfunctioning of traffic lights, traffic jam and increased accidents. As Yelland (2014:1) observes, the recent departure of Eskom leaders (Two Chief Executive Officers (CEO) in within three years, the recent resignation of a Financial Director) reflects some frustration at the lack of a clear policy direction, common understanding and common purpose between the ruling party, government (cabinet, Department of Energy and Department of Public Enterprises) and Eskom, and the absence of an effective broader electricity supply industry leadership with a clear, consistent and inspiring vision. The endemic culture of appointment of CEOs in an acting capacity at Eskom and various state-owned enterprises in South Africa does not only reflect the poor succession planning of the board and serious leadership challenges (Redelinghuys, 2014:1) but perhaps, also borders on a weak locus of control among Eskom employees. Participatory governance and optimal delivery of electricity services has been hampered by lack of a logical strategic framework for the realization of capitalization, investment and development goals, weak and incoherent corporate policy framework, incapacity to restructure Eskom's administration

and service delivery arrangements as well as instill a new culture of delivery for employees (Maluleke, 2012:103-104). Fostering a culture of service delivery demands Eskom employees at the operational levels (e.g. Engineers) to possess an internal locus of control to influence critical decision making at various levels and to execute electricity generation, transmission and distribution tasks and activities successfully. As such, combined influence of self-leadership of leaders and the locus of control of employees at Eskom on job performance need examination to ensure effective delivery of electricity services in South Africa.

The evidence of poor leadership and weak locus of control at Eskom manifest in the perpetual power wrangles at board level, lack of clear and consistent succession planning displayed in multiple care-taker administration once incumbent boards are dissolved, including failure to address forecasted power outages and incapacity to exploit existing resource capacity in electricity generation, transmission and distribution. For the purpose of this study, self-leadership is defined as the process of self-motivating and self-determining one's conduct through specific behavioral and cognitive methods (Stewart, Courtright and Manz, 2011:185). Since self-leadership encapsulates one's intrinsic motivation to influence self - regarding what, why and how to perform a particular task (Stewart et al., 2011:189), the successful delivery of Eskom electricity generation, transmission and distribution plans, programmes and activities is inseparable from the possession of self-leadership in Eskom. Yet, the possession of self-leadership is neither a universal determinant of job performance nor operate in a vacuum. Rather self-leadership is consummated by locus of control - one's ability conceive himself/herself as well capacitated to influence the outcomes of his/her decisions and being fully equipped to achieve

his/her pre-conceived goals. Locus of control is a psychological concept that refers to how strongly people believe they have control over the situations and experiences that affect their lives. As literature suggests, self-leadership is impossible without an internal locus of control (Adams et al., 2008:109; McDevitt, Giapponi and Tromley, 2007:219).

Since Eskom operatives such as engineers are directly involved in the conceptual (e.g. leadership strategy development and key decision making about infrastructure investment), technical (e.g. design engineering, drawing up of engineering drawing and designing technical specifications) and operational management (e.g. determining plant life cycles and maintenance issues) of power generation plants, main sub stations and smaller sub stations and power lines, it is fundamental to investigate the combined influence of self-leadership and locus of control on the job performance of engineers in Eskom. Our preoccupation with self-leadership derives from the convergence of literature on the role of self-leadership in improving organizational performance (Dewettinck and van Ameijde, 2011: 284; Kalyar, 2011:20; Neck and Houghton, 2006:270; Schermuly and Meyer, 2011:252; Sharma and Kaur, 2011:105). Similarly, Thomas et al. (2006:107) reports a strong connection between employees' regulation/control of their actions (i.e. locus of control) and the consequences of those actions in the work environment (e.g. successful job performance). More so, when employees possess locus of control, they are more likely to believe that performing well at work will lead to positive work outcomes such as increased pay or promotion (Muhonen and Torkelson, 2004:21). Although the clear relationship between each concept (self-leadership and locus of control) and job performance is non-trivial, what remain unknown in extant literature is the combined influence of these concepts on job

performance of employees especially those in public utilities such as Eskom. Since self-leadership and locus of control are believed to stimulate innovative behaviors (Prattom and Savatsomboon, 2012:1063), there is scope to investigate the combined effects of locus of control and self-leadership on the performance of employees in this public organization. This is critical given the strategic role of Eskom in the South African economy, the public mandate of this organisation to deliver effective electricity services and ensure its public financial accountability given its continual bailouts using public funds. Without understanding the relationship between locus of control and self-leadership, leaders will be more limited in their ability to improve their job performance (Keller, 2012:225).

Problem Background

Eskom epitomizes a giant public entity reeling under economic malaise and burdened by a crisis of leadership. For instance, in January 2008, this entity mandated with reliable and efficient generation and distribution of electricity in South Africa, rollout load shedding and huge blackouts hit the country. The blackouts have been explicated by: Eskom's poor diversification of energy sources manifested in its dependence on coal-powered plants, Eskom's dependence on small, cheaper, but unreliable suppliers of coal to drive its coal-fired power plants, failure to attract relevant critical skills, delays in the completion of two new coal-fired power stations (that is Medupi and Kusile) and increased demand for electricity due to economic growth (Van der Nest, 2015:1). On January 25, 2008, gold and platinum mines were forced to shut down operations for five days (CDE Round Table, 2008:1) to prevent severe strain and instability on the power generation plants and electricity generation grid respectively. In that year

alone, the impact of load shedding on the economy was catastrophic. The mining sector experienced a 22.1% contraction in output for the first quarter, one giant mining company was forced to lay off 5000 workers, manufacturing, services and tourism were also badly hit and the nation's GDP growth fell to its lowest rate in more than six years (CDE Round Table, 2008:3).

While the electricity supply intermittently stabilized between mid-2008 and 2012 partly due to the Global Financial Crisis of 2008, which led to an economic downturn that triggered a decline in demand for electricity and stabilisation of the electricity grid (Van der Nest, 2015:3), blackouts resurfaced in 2015. Eskom's rollout of blackouts following the collapse of one of its coal storage silos, diesel shortages, and poor maintenance of its dated power generation plants (Business Tech, 2015:1) has resulted in catastrophic effects on both the economy, the industrial and retail sector as well as the general public. As at 25 March, 2015, the power cuts implemented by Eskom in Stage 1 cost the South African economy between \$1.7 billion (R20 billion) and \$6.8 billion (R80.1 billion) per month, Stage 2 cost the economy R40 billion per month, while Stage 3 is estimated to cost South Africa R80 billion per month (Business Tech, 2015:1). The energy crisis at Eskom can be conceived as a microcosm of the macrocosm. It epitomizes Eskom's leadership crisis, general resource mismanagement and its incapacity to upgrade or refurbish its unreliable fleet of aging power plants and transmission lines. This weak operational capacity and inertia resulted in delays in finalising the implementation of the Medupi power station, the first new power station South Africa has built in two decades. Formerly projected to be online in 2011, Medupi power station is now expected to be completed in 2018 (Wexler, 2015:2). A recent technical fault at the Koeberg nuclear power

plant resulted in one of its 900MW units going offline, resulting in further costs of unserved energy to the productive economy in SA and Eskom of R7.5 billion (Business Tech, 2015:1). It is inconceivable to assume that these issues did not occur under the Eskom leadership' hawkish eye.

The poor performance of Eskom has been interpreted as a consequence of multiple factors: grave and persistent failures of electricity supply leadership by the board of Eskom, more serious leadership failures in government, lack of capacity, both in Eskom and government to contract successfully with the private sector for new generation capacity, Eskom's management poor response to the difficult situation in which it was placed by its shareholder, the South African government (Business Tech, 2015:1; CDE Round Table, 2008:3; Wexler, 2015:2). Crisis of leadership manifested in the failure of the Eskom Board to provide skilled, independent leadership to Eskom's management on coal procurement issues and the energy mix; and for at least a decade, to communicate effectively with government and the public about the urgent need to build more power stations (CDE Round Table, 2008:4). To further compound this conundrum, the leadership crisis at Eskom continue spiral out of control judging from the recent suspension of Eskom's CEO, Tshediso Matona, and three other senior executives including the Financial Director, to allow for the Eskom Board Chairman, Mr Tsotsi's inquiry into the operations of the utility without their interference (Business Tech, 2015:1). The lack capacity in Eskom and in the African National Congress (ANC)-led Government manifested in their failure to contract international and local contractors to build a single plant in seven years (2001-2007) (CDE Round Table, 2008:4) long after the electricity crisis in South has been predicted by the ANC cabinet in 1998.

Although the Eskom Leadership Institute has implemented a leadership assessment framework which encompasses a compendium of leadership behavioural effectiveness qualities, competencies and psychometric assessments for talent acquisition, talent identification, talent management, talent development and performance management at Eskom (Becker, 2015:4), this initiative has done very little to save this organisation from poor leadership, general mismanagement of resources and limited locus of control of its employees. The leadership assessment framework, which emphasises inter alia, leadership behaviour assessment, and postulates various leadership typologies such as *leadership with the heart of a servant*, *leadership that creates a learning organisation*, *leadership characterised by good governance* and *leadership characterised by disciplined execution* (Becker, 2015:4), these typologies remains a distant reality for an organisation battered by fiscal squeeze and dependence on government bailouts. For instance, in June 2015, Eskom received a R23 billion bailout package from the national treasury for maintenance of its power generation plants and purchase of diesel fuel for backup power stations (Fripp, 2015). Apart from the cost overruns as a result in delays in completing of power generation plants due to poor planning and execution problems, Eskom is also hamstrung by its customers frustrated by the ever-increasing electricity tariffs, poor electrical supply services and asymmetrical distribution of electricity, hefty insurance claims from large industries and consumers alike for the breakdown of machinery and household equipment due to erratic electric outages. For instance, Eskom's latest application for a tariff increase of about 25% in June 2015 (Krugell and Keeton, 2015:3) has irritated cash strapped energy consumers and frustrated corporate organisations. This disturbing scenario backs Maas and Herrington's (2006:15) observation that the South African

business climate reels under a chronic ill namely; lack of strong leadership and internal locus of control among employers and employees (Maas and Herrington, 2006:16) and Eskom is a typical incarnation of a giant public agency under siege.

The GEM Executive Report for South Africa (2006) eloquently documents the poor leadership culture and weak locus of control inherent in the South African business environment (see Maas and Herrington, 2006:16). The paucity of a strong leadership and locus of control can be attributed to the apartheid legacy, which discriminated and marginalised some racial groups from gaining experience in managing large businesses due to its discriminatory laws on: business training, access to financial credit from banks and access to elite education. Apart from the apartheid era denying these racial groups' (especially Blacks, Coloured and Indians) the opportunities to operate large businesses (except for small retail businesses such as spaza shops and taxis) and access to business management leadership opportunities, the post-apartheid legacy has not sufficiently facilitated the effective operation of these former marginalised groups in senior leadership and management positions due to limited management experience and poor educational attainments. These blocked opportunities for expression of self-leadership and locus of control (Elloy, 2008:809) also explain the continued underrepresentation of these groups in top corporations listed on the Johannesburg Stock Exchange (JSE) (see Black Management Forum Transformation Barometer Research Report, 2015:22). For instance, a study conducted by the JSE on the racial representation of top leadership in the top 100 listed companies found that black investors held 9% of the investment in these top companies (Mashego and Dookey, 2015:1). Ineffective Bantu education, restriction of the black population to the working class, and virtual lack of

management training not only fostered a culture of servant hood among these historically marginalized groups, which undermined their creative imagination and undermines opportunities to lead but in the words of Morris et al. (1996:812) “created an ethnic enclave character that restricted opportunities for successful business management leadership”

Problem Statement

Eskom is engulfed in a power generation crisis and Stage 3 of the load shedding costs the South African economy R80 billion per month (Business Tech, 2015:1). When one considers that the approximate GDP of South Africa in 2014 was R4 trillion approximately, 1-2% of GDP could potentially be wiped out per month of load shedding (Van der Nest, 2015:3). The cumulative effects of blackouts and load shedding have been widespread: declining exports of precious metals to finance South Africa’s current account deficit as energy intensive mining operations are badly hit, the depreciation of the rand, South African currency, the stalling of economic growth and downward revisions in economic growth forecasts. The power generation crisis is largely a consequence of Eskom management’s (both middle and upper) lack of electricity generation leadership, poor management and its incapacity to resist the South African government’s blatant inference in its internal management affairs – a failure to wither external locus of control. For instance, even though Eskom had correctly projected that South Africa would experience blackouts by the end of 2007 and the government’s 1998 Energy Policy White Paper made a similar prediction (CDE Round Table 2008:4), Eskom board and management failed to convince government on the immediate contracting of private contractors to build additional power generation stations and to diversify energy

sources for about 10 years (1998 to 2007), before the first black outs hit the country. The conundrum, therefore, is the poor electricity supply leadership and weak locus of control of both Eskom senior management and employees that continue to manifest in their blatant miscalculations and oversights, in particular their failure to replace existing ageing, overused power generation plants, their reliance on small, cheap but unreliable and under-resourced coal contractors and sheer reluctance to open up national power generation to private independent power producers.

Despite the aforementioned enigma's demonstration of the inseparable connection of self-leadership and locus of control, the discourse of self-leadership and locus of control and their impact on job performance are often explored as independent subjects rather than acknowledge the symbiotic relationship between these concepts (self-leadership, locus of control) as they relate to job performance. For instance, a demonstration of self-leadership by management is considered to modify employee perception of aspects of organizational culture such as social irresponsibility and minimize the associated negative effects that lead to undesirable behaviors among organisational employees (Pearce and Manz, 2011:563). By the same token, since an internal locus of control is regarded to generate a positive relationship with performance (Thomas et al., 2006:107), fostering internal locus of control among employees of an organization can optimize performance of the organization. Although internal locus of control may positively impact performance of organization, such impact cannot be assumed to be universal as other critical variables (e.g. self-leadership) are also implicated in organizational performance. However, the combined effects of locus of control and self-leadership on organizational performance remain unknown in developing economies. Understanding the combined effects of

self-leadership and locus of control on performance is critical particularly in emerging economies where there is a heightened call to improve efficiency in the use of human resources, provide an environment in which employees feel comfortable to achieve the organization's objectives through their knowledge, experiences, abilities and capabilities (Asgari and Vakili, 2012:255). To our knowledge, although no systematic study has examined the combined effects of self-leadership and locus of control on job performance in the electricity generation industry in South Africa, fostering high levels of self-leadership and internal locus of control can contribute to the overcoming of organizational cultures that impede innovation (Prattom and Savatsomboon, 2012:1063) and optimization of organizational performance of employees. Therefore, without understanding the relationship between locus of control and self-leadership, leaders and employees will be more limited in their ability to improve organizational performance (Keller, 2012:225). The problem, therefore, is our limited knowledge of combined effects of self-leadership and locus of control on organizational performance.

Literature review

The review of literature emphasises an examination of the self-leadership, locus of control and performance as concepts and their relationships. A clear understanding of the self-leadership concept requires an examination of this concept as well as its impact on job performance. For this reason, the concept will be first be examined individually and thereafter, its relationship with performance will be explored.

Self-Leadership

The widely shared perspective on self-leadership is anchored in the capacity to self-regulate one's behavior to realize personal and organisational objectives (see Furtner *et al.*, 2011; Neck and Houghton, 2006; Stewart *et al.*, 2011:185). Stewart *et al.* (2011:185) defines self-leadership as the self-influence behavior that leads an individual towards performance when working on tasks that are either naturally rewarding or not (Stewart *et al.*, 2011:185). The term, therefore denotes the influence which an individual exerts on his/herself in the performance of a job task or activity. Self-leadership entails the implementation of self-direction and self-motivation strategies to realize specific goals or objectives (Aslam, Khan and Riaz, 2012:18). To the extent that self-leadership seeks to explain how leaders think and behave according to cognitive, motivational and behavioral strategies (Neck and Houghton, 2006:270), it resonates with Eskom operational strategies aimed at regulating its employees' (e.g. engineers) positive behaviors to optimise their performance on the job. Similarly, Furtner *et al.* (2011:369) conceive of self-leadership as a theoretical construct that explains the underlying mechanisms of self-influence. In spite of the general consensus of literature on self-leadership being underpinned by personal influence, the construct is an emerging phenomenon, which is under-explored in mainstream management literature.

Unravelling the concept of self-leadership demands one to examine the different levels of its application within an organisational setting. Self-leadership is considered to operate at the individual level (Furtner *et al.*, 2011:369) as much as its manifests at the team level (Elloy, 2008:801). At individual level the concepts finds expression in self-examination, self-efficacy, self-esteem and in a sense of self accomplishment. Although initially developed as a theoretical construct

explaining the mechanisms through which individuals were self-motivated to lead themselves, the construct of self-leadership was later extended to the group level (Stewart et al., 2011:185). Consequently, self-leadership has expanded through structures established at organizational levels and ties together research that integrates behavioral characteristics found at individual and team levels (Stewart et al., 2011:185). As such, it is uncontested that although certain self-leadership behaviors such as self-rehearsal, self-goal setting, self-criticism, self-reinforcement, self-expectation, and self-observation may be conceived to be individual traits, they can also find expression at team level (Manz and Sims 2001, as cited in Elloy, 2008:801). Self-leadership has been reported to have a positive influence on personal effectiveness at individual and team levels (Elloy, 2008:801) such as task efficacy, task performance and efficient and effective goal realisation.

Self-leadership employs specific behavioral and cognitive strategies, which are grouped into three main categories: *behavior-focused strategies*, *natural reward strategies* and *thought self-leadership strategies* (Hauschildt, and Konradt, 2012:497). Although the practical application of these strategies has some resonance with the leadership debates at the Eskom Leadership Institute about fostering leadership traits such as integrity, intelligence, high energy and the ability to act as leaders, self-leadership traits such as flexibility, stability and sensitivity to others were reported to be missing at Eskom and in need of attention (Lekganyane and Oosthuizen, 2006:237). We infer from this study that the lack of stability and consistency in Eskom manifests in its continued reliance on care taker administrations after the sacking of senior leadership. Lack of stability and poor leadership manifest in the inability of Eskom senior management to persuade government to fund the production of new power generation

plants and poor coal contracting manifested judging from its failure to extend favorable long-term contracts to major coal suppliers who provided Eskom with coal and an overemphasis on procuring from small, inexperienced and expensive coal suppliers in the name of BEE (CDE Round Table, 2008:26). Lack of flexibility is instantiated by Eskom senior management's resistance to create competition through the introduction of independent power producers that would break Eskom monopoly in electricity generation and distribution. Until very recently, Eskom also made it prohibitively difficult and unprofitable for private contractors to sell electricity to it (CDE Round Table, 2008:27). A lack of sensitivity manifests in the Eskom's continual tariff hikes and reduction of electricity units per household/consumer irrespective of a consideration of the economic situation of its customers.

However, the issue of sensitivity in relation to Eskom imperatives is never a straight jacket one. For instance, sensitivity to others, manifested in the signing of a Memorandum of Understanding between Eskom Transmission and the South Africa Sugar Association (SASA) (MoU) to resolve the problem of flashovers and resultant outages, which are caused by the burning of sugar cane under transmission and distribution lines. Eskom has since investigated the installation of taller towers to allow for the normal practice of sugar cane farming under transmission lines (Eskom St Faith Substation Draft Scoping Report, 2014:3). Self-leadership is also reported to contribute to personal focused strategies, natural rewards and constructive thought patterns (Neck and Houghton 2006:295). A demonstration of professionalism, integrity, empathy, honesty and courtesy are critical personal focused strategies expected of any engineer as a self-leader in their dealings with various stakeholders.

Natural rewards could manifest in various forms such as a sense of self-accomplishment and self-efficacy derived from conceptualization of engineering structures, mastery of engineering drawings, connecting prototypes to established ISO standards and technical problem solving (see Eskom Quality Engineer (Rosherville) ERI website). Constructive thought processes are useful in technical strategy development, engineering design thinking, the write up development of technical reports and the building of cooperative teams. While self-leadership is believed to motivates individuals to eliminate negative behavioral habits and to incorporate positive features into work tasks (Furtner, Rauthmann and Sachse, 2011:369; Stewart et al., 2011:185), understanding this concept demands a detailed discussion of the three self-leadership strategies within the context of Eskom engineers' mandate and responsibilities.

Behavior-Focused Strategy

These self-leadership strategies are aimed at heightening self-awareness to manage behaviors in unpleasant tasks (Hynes, 2009:644). They refer to the observation and change of one's own behavior through the primary factor strategies of self-observation, self-goal setting, self-reward, self-punishment, and self-cueing (Neck and Houghton, 2006:270). Self-observation fosters self-awareness and understanding of the when and how of one's own behavior, thus provide a departure point for identifying and improving ineffective or unproductive behaviors (Neck and Houghton, 2006:270). For a mechanical engineer this could relate to understanding of the different behaviors and skills expected of him/her in various challenging or unpleasant contexts and situations, including the self-consciousness about when to shift such behaviors. For instance, tolerance for ambiguity, intolerance for failure, and

sensitivity to multiple stakeholders are all required in a mechanical engineer when conducting technical maintenance of power generation plants, servicing electrical equipment of clients, writing up feasibility designs and prototypes respectively. Flexing between conceptual and technical skills is critical to solving design problems in line with given stakeholders' specifications, conducting assessments of plant life cycles and reducing the amounts to technical risks associated with the work environment. The building of engineering structures requires conformity to ISO and organisational standards. For example, the Eskom policy on High Voltage self-built projects suggest that the connection works must be built according to the Eskom Standards and Eskom will not be obliged to take over and energise any asset that is not built according to its Standards (Eskom, Procedure for HV Self-Build Projects, 2013:44). Self-goal setting describes the process of identifying goals for oneself which lead to an improvement in personal performance (Manz, 1986: 585; Manz and Neck, 2004). Within the mechanical engineering this could mean setting and executing optimal goals relating to reducing outages on turbo generators, overseeing staff technical and maintenance work on turbo generators to reduce downtime, assessments of turbine maintenance to reduce overuse or overheating, and fault finding and problem solving on turbo generator systems, incident investigations and root cause analysis (Eskom Mechanical Engineers in Training Programme, 2012). Self-reward, self-punishment and self-cuing may be used to shape and model behavior in pursuit of these goals.

Natural Reward Strategy

Natural reward strategies are primarily aimed at garnering motivation for disagreeable tasks by building on the inherent

pleasurable aspects of an activity. Aimed at increasing intrinsic motivation, natural reward strategies allow the task itself to be the reward by either focusing attention on the already existing pleasant aspects or by introducing more enjoyable features (Manz and Sims, 2001; Manz and Neck, 2004; Neck and Houghton, 2006:270). For electric engineers, the perfect understanding of the entire electrical systems architecture (transformers, substations, small substations), platforms and electrical networks is just as important as the reduction of risks associated with electrical plant failures and electric shocks. This means that tasks relating to these technologies should be designed by managers and supervisors of engineers not only to meet internal specifications and ISO standards but rather to make their completion enjoyable.

Thought Self-Leadership Strategy

Building on social cognitive theory, another aspect of self-leadership called *thought self-leadership strategy* was conceptualized (Furtner, Rauthmann and Sachse, 2011:369) as a process of influencing or leading oneself through the purposeful control of one's thoughts. Originally these strategies were called constructive thought patterns, but were later expanded with the full development of the concept of thought self-leadership (Diliello, Houghton and Dawley, 2011:151). The practice of thought self-leadership helps an individual to have influence or more control of their own thoughts. Neck and Houghton (2006:270) conclude that these specific cognitive strategies are designed to provide constructive thought patterns of thinking with positive effects on performance. As such, these strategies focus on the habitual thinking patterns that have a positive impact on performance. For a senior engineer in operations and maintenance field/ departments this may involve pondering above a wide range of existing and ever evolving

technical innovations and inventions in the engineering world, developing strategies of tapping into these interventions, aligning existing technical specifications and safety standards to these innovations and adjusting these innovations to meet industrial engineering codes and specifications. Since operations and maintenance engineering is a component of the broader discourse of what Mutloane (2009:2) calls asset management (through maintenance and management thereof) in particular, preventative management within Eskom, such engineering should be operationalized in view of the energy crisis instantiated by electricity demand (consumption of electricity) outstripping supply (persistent generation of electricity). Since electricity cannot be served once generated, innovative ways of its production, transmission and distribution are key to effective asset management particularly in view of the ageing electricity generation plants at Eskom, whose refurbishment has been a hurdle in the last twenty years.

Self-Leadership and Job Performance

Leadership theory has a central role in explaining operations management processes such as the development and implementation of business strategies of innovation management (Martin et al., 2010:240). Research evidence links organizational success to various features of leadership including self-leadership (Houghton, Dawley and DiLiello, 2012:216). The significance of self-leadership for an organization can also be noticed in the financial resources allocated to leadership development and Eskom Leadership Initiative is a perfect representation of both material and financial investment in leadership development. However, Goldman, Wesner, and Karnchanomai (2013:63) lament that while organizations spend billions each year on leadership

development programs, the benefits for organizations and the individuals who complete these programs are not yet discernible and well understood. The continual bailing out of Eskom by the South African national treasury and persistent deterioration of electricity service despite the multiple leadership initiatives in Eskom smacks in the face of the giant institution's claims about strong electricity supply leadership and sustainable performance.

In view of the aforementioned contradictions, understanding the impact of self-leadership on organization performance became of interest to scholars and practitioners. Focusing on the team level, Hauschildt and Konradt (2012:497) explored the role of self-leadership in achieving a high level of team performance aspects such as proficiency, adaptation or proactivity. Aspects within the Eskom performance scoreboard that signal the thriving of strong team work and some semblance of strong leadership in electricity generation, transmission and distribution are a strong electricity generating capacity, asset base and its ever increasing customer base. Between 1994 and 2014, generating fleet capacity of Eskom has been expanded from 37 636MW to 41 995MW (Eskom Integrated Report, 2014:1). Eskom boasts of a transmission grid comprising 157 substations and 29,924km of transmission lines, 46,093km of distribution lines, 276,027km of reticulation power lines and 7,293km of underground cables in FY2014 (Eskom Holdings SOC Limited SWOT Analysis, 2015:5). The growing customer base of the company is inconceivable without a strong sense of team work, and a proficient and functional management structure. For instance, as at March 31, 2014, Eskom had 5.2 million customers, as compared to 5 million in financial year 2013 (Eskom Holdings SOC Limited SWOT Analysis, 2015:5).

Yet the Eskom phenomenon is an oxymoron. There are some disturbing features in the Eskom business model that point to the company's weak electricity supply leadership and complicate proactivity and adaptability. For instance, in spite of the availability of natural gas, the continued overdependence of Eskom leadership and employees on coal-fired power generation (currently coal-fired power generation accounts for 90.6% of the total nominal capacity of the company) with its associated carbon emissions including increased public demands for clean power generation capacity not only raise environmental sustainability concerns but also have a material impact on the company's margins and profitability (Eskom Holdings SOC Limited SWOT Analysis, 2015:5). Self-leadership has been considered to influence job performance-related issues such as adaptation and proactivity.

Hauschildt and Konradt (2012:497) conducted an empirical study in a German business context, in which self-leadership was measured using the revised Self-Leadership Questionnaire (RSLQ) developed by Houghton and Neck (2002:672). They reported that self-leadership was positively related to adaption and proactivity at the individual and team task level. The study was confirmed by Neck and Houghton's (2006:270) suggestion that self-leadership positively influenced individual performance and consequently team performance. In the case of Eskom, the company's high dependence on its South African operations (the company generated 95.7% of its revenues in the 2014 financial year from its South African operations) exposes it to risks associated with market concentration such as lower demand, severe weather conditions, labor strikes, change in regulations, and economic conditions (Eskom Holdings SOC Limited SWOT Analysis, 2015:5), which may affect its overall performance negatively in the long term.

Locus of Control

Closely linked to self-leadership is locus of control, which directly influences the improved performance of large organizations. This construct emerged from Social Learning theory, which was developed by Rotter in 1966 as a personal characteristic and it underpins the generalized expectation of beliefs related to the cause-effect relationship between a person's behavior and results of this behavior. Applying this concept in a business context, Forte (2005:65) defines locus of control as the circumstances that individuals attribute their success and failures to. Locus of control typically refers to how employees perceive the causes of their success or failure in the organization (<http://edglossary.org/hidden-curriculum>). The term describes the extent to which individuals believe that they have control over their own destiny. People who perceive locus of control to be a product of their own behavior are regarded as having internal locus of control. Locus of control has been conceptualized as a hierarchical construct, with general locus of control existing at the highest level within this hierarchy (Chen et al, 2004:349; Lefcourt, 1976; Phares, 1976; Rotter, 1975:56). At face value, Eskom management's large influence on budgetary control on large infrastructural expansion projects (e.g. Eskom spent R59.8 billion on capital expenditure in 2013/14), their frugal spending (e.g. they spent R2.5 billion less than the figure budgeted for 2013/2014 capital expenditure) and their leadership that led to the successful completion of the construction of three stations (that is, Camden, Grootvlei and Komati) under the return-to-service programme during the reporting period and the refurbishment of Kriel Project (Eskom Integrated Report, 2014:18) all point in the direction of a management structure with relatively high locus of control. However, a different picture on internal locus of control is projected when one

considers the continual blatant interferences of the national government in the management of Eskom, judging from the frustration and ultimate resignation of some members of senior management and the Eskom Board.

General locus of control refers to the extent to which one generally attributes rewards to one's own behavior rather than to external causes, such as luck or other people. For example, general locus of control items includes statements such as "I can certainly determine what will happen in my life" and "My life is determined by my own actions" (Levenson, 1981:15). Unlike narrower conceptualizations of the construct, general locus of control does not make reference to a specific context or situation. Several context-specific sub dimensions such as health locus of control, marital locus of control and parental locus of control exist at lower levels of the hierarchy (Wang et al., 2012:761). Perhaps, the economic and financial successes of a giant institution of national significance such as Eskom can be attributed to both individual qualities such as strong leadership, charisma and vision which affect the engineering and maintenance execution strategies, asset management, maintenance base and risk assessments (see Eskom Process Control Manual, n.d), as much as they are a consequence of institutional factors such as strategy development and nation-wide considerations such as customer base, resource endowments and the general economic climate.

The current study focuses specifically on work locus of control, which is another context-specific sub dimension. Thomas et al. (2006:107) describes work locus of control as the extent to which employees believe that they have control over their own destiny in the workplace. Work locus of control represents the extent to which people attribute rewards at work to their own behavior. For Eskom Engineers, the extent of their work locus of control may depend on their

skills and competencies base, their success motivation, customer orientation, job context and support structures for effective work execution. General reward systems in the organisation can also affect the effectiveness of the work locus of control of employees. Specifically, it is related to rewards or outcomes within the organizational context such as promotions, bonuses, salary increases and job perks (Spector, 1982:482). An example of work locus of control items includes statements like “People who perform their jobs well generally get rewarded” and “Most people are capable of doing their jobs well if they make the effort” (Spector, 1982).

Locus of Control and Job Performance

Locus of control construct has two dimensions, which are, internal locus of control and external locus of control. Individuals with an internal work locus of control believe that there is a strong link between their actions and consequences, and they also believe that they are the masters of their destiny and therefore, are often confident, alert, and active in an attempt to control their external environments. Moreover, they tend to see a strong connection between their actions and the consequences of those actions in the work environment (Thomas, et al., 2006:107). By implication if Eskom engineers conceive a direct relationship between efforts expended on execution of tasks and organisational performance, they could be motivated to perform better. Workers are more likely to believe that performing well at work will lead to positive work outcomes such as increased pay or promotion (Muhonen and Torkelson, 2004:21).

On the other hand, individuals with an external work locus of control are more likely to attribute their success at work to external forces such as chance or fate (Muhonen and Torkelson, 2004:21). They believe that they do not have direct

control of their destiny and conceive themselves in a passive role with regard to the external environment (Thomas et al., 2006:107). For instance, it has been found that locus of control is related to various important work outcomes including job satisfaction and job performance (Thomas et al., 2006:107). Our interpretation is that if Eskom management has an authoritarian leadership style, engineers at the middle and operational levels may not be well positioned to connect the effort they spend on tasks to their job performance but rather to external circumstances. On the other hand, if engineers enjoy a great deal of autonomy on their job, they will be more inclined to conceive the direct consonance of their individual effort and their job performance. Researchers have also found that individuals with an internal work locus of control generally have lower levels of job stress and perform better (Chen and Silverthorne, 2008:572). Furthermore, other authors have reported a strong relationship between perceived work control and certain job-related factors such as job satisfaction and emotional distress (Wang et al., 2010:761). Our intuition, therefore, is that the more locus of control Eskom engineers have on their work, the higher the chances of their satisfaction on the job and they attribute success to individual and collective effort.

From a theoretical perspective, individuals with an internal work locus of control are generally more satisfied with their jobs than individuals with an external work locus of control. Individuals with an internal work locus of control conceive their supervisors in high regard and as initiators of work structure. Also, they feel that they have more work autonomy, control and report less job role stress (Sonnetage et al., 2010). Indeed, employees with an external work locus of control do not believe that they can control important aspects of their work environment (Wang et al., 2010:761). Additionally, they

generally find the work environment to be more threatening and stressful.

Methodology

In the absence of literature that examines the combined effects of self-leadership and internal locus of control, the researchers adopted a theoretical and reflective approach that combined the researchers' individual perspectives and their interpretation of extant literature on isolated effects of these variables on job performance. According to George State University (2015), theoretical research is "based on the observation of others" and "runs no analytical procedures due to absence of empirical data." The study employs constructs, concepts, and definitions drawn from literature to make logical inferences about the combined impact of self-leadership and internal locus of control on job performance of engineers of a power distribution utility, Eskom. Given that the purpose of theoretical research is to explain phenomenon, this study explains the association among self-leadership, internal locus of control and job performance.

Discussion

The study has noted with great concern the traces of weak self-leadership and low locus of control by both Eskom management and employees judging from the organisation's policy ambiguities and confusion with regard to building new power generation plants irrespective of the company's profitability, the cost overruns as a result of delays in the completion of new power generation plants and the asymmetrical distribution of electricity supply in some residential areas domiciled by low income groups. The current study has documented the imbalance between the rapidly-growing demand for electricity and electricity supply capacity

constraints in Eskom (Kiratu, 2010 cited in Vorster and Marais, 2014:32) leading to continued blackouts. This scenario partly buttresses the findings of the Black Management Forum (BMF) Transformation Barometer Report (2015:10) which expresses frustration about the neglect of key areas of infrastructural development such as electricity generation, port and rail capacity, road maintenance and potable water supply. These challenges seem to resonate with earlier studies conducted on Eskom into leadership and locus of control, even though they did not necessarily combine the two concepts. For instance, De Wet's (1990) master's thesis examined the level of locus of control and self-motivation among unskilled coloured Eskom employees and reported the existence of external locus of control and the low self-motivation amongst them. Although the study targeted unskilled workers, the dominance of external locus of control can be detrimental to job performance as employees attribute success to chance and external circumstances and not their personal effort and task efficacy. A study conducted by Maluleke (2012:103) on the performance management in Eskom acknowledges that the organisation is confronted with the challenge of incorporating participatory governance into their performance management system. At the administrative level, a performance driven Eskom was conceived to be attainable if appropriate delegation of responsibility and accountability were rendered to employees, if employees were allowed to self-manage and were given the appropriate responsibilities to ensure that this happens and if a shift from bureaucratic control to service delivery was promoted (Maluleke, 2012:104). We infer from Maluleke (2012:1.3-104) that a service delivery based organisation demands the inseparable combination of a considerable locus of control through increased delegation of authority (rather than

centralisation) and a new culture of nurturing self-leadership within the organisation.

In a study that examined Eskom's safety leadership, Steenkamp (2010:69-70) acknowledges male employees' general apathy regarding the General Division leadership's vision on the matter, which contributed to loss of momentum and under performance with regard to safety matters. Steenkamp' (2010:53; 70) study confirmed that the active leadership of General Division leaders, democratic participation and influence of workers are critical to the establishment of the current safety culture in Eskom. Although the study recorded some good points about safety leadership through the Zero Harm programme, it can be inferred that Eskom's problematic work safety performance at General Division level can be attributed to a relatively weak sense self-leadership from senior management and possession of limited locus of control by workers. By extension, both self-leadership and locus of control can be expected of Eskom Engineers as well. Therefore, leaders of engineering-based organizations must rely on innovative engineers who are self-leaders and who possess internal locus of control to create new engineering products and services. The importance of the self-leader-locus of control-performance relationship derives from the contribution of followers to the leadership process as followers are integral to the performance of leadership (Verwey, Francois du Plessis and van der Merwe, 2013). The argument is that Eskom engineers do not only have to cooperate and follow the lead of their superiors but rather should also demonstrate self-leadership by challenging or resisting problematic and inappropriate leadership strategies implemented by their leaders.

Since self-leadership emphasises one's intrinsic motivation to self-influence regarding what, why, and how to perform

work (Stewart et al., 2011:185), is can be conceived to directly feed into perceptions about one's capacity to influence his/her work-related outcomes and therefore, improve performance of large organizations. As such, self-leadership is impossible without an internal locus of control and innovation (Adams et al., 2008:109; McDevitt et al., 2007:219). Inferring from the aforementioned discussion, a combination of self-leadership and internal locus of control is critical to achieving high job performance for engineers through increased proficiency, adaptation or proactivity, for example, the ability to multi task in the face of competing tasks and work activities. Our intuition is that behaviour focused strategies and constructive thought patterns needs to be aligned with internal locus of control behaviours to give effect to improved job performance of engineers. Behaviour focused strategies, which emphasise observation and change of engineers' own behaviour through the primary factor strategies (Neck and Houghton, 2006:270), could emphasise a strong customer orientation through proactive work order handling, prioritisation of customer needs, efficient and effective resource (money, time and energy) allocation, rapid response strategies to field services, fault management, control centre and flexing of work requirements in view of resource constraints. Constructive thought process would cover all the "head work" required in design engineering, alignment of technical drawings to industrial and ISO standards, plant life cycle management and maintenance.

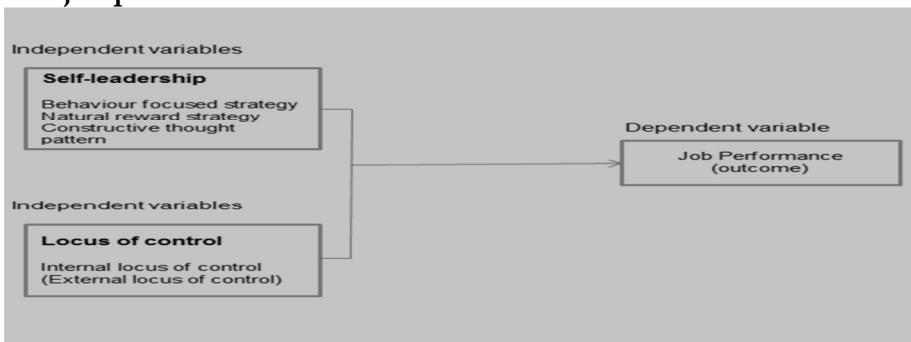
All these aforementioned thought processes dovetail with internal locus of control issues relating to the capacity of the individual to conceive themselves as making a recognisable impact in their area of work such as operational resources management; network system configuration administration and plant maintenance; basic system maintenance and risk

reduction; fault finding and repair work among other considerations.

Proposed conceptual framework

As Figure 1 suggests, the relationship among self-leadership, locus of control and performance is of a compound nature. It is never an either (self-leadership-job performance) or (locus of control-job performance) scenario, but rather an amalgam of these two concepts (self-leadership; locus of control) as they relate to job performance (self-leadership-locus of control-job performance). While the two concepts may have equal strength with regard to their influence on job performance, their individual constitutive components may not necessarily have equal weight.

Figure 1: The relationship between self-leadership, locus of control and job performance



For instance, behaviour focused strategies and constructive thoughts patterns seem to have more dominance on job performance than natural reward strategies, the same way internal locus of control seem to be more powerful for improved job performance than external locus of control. We argue that while rewards may be foundational to energizing an individual to initiate task execution at the basic level to justify receipt of remuneration, rewards may not necessarily sustain

optimal success motivation behaviour, rather behaviour focused strategies and constructive thoughts patterns do. Collectively conceived, behaviour focused strategies and constructive thoughts and internal locus of control seem to shape job performance more than reward strategies and external locus of control, which can be removed with little effect on the job outcomes. That said, these sub-concepts' level and subject operation within the organisation also shape their impact. Our assumption is that internal locus of control could have more dominance on job performance at the operational levels (engineers) while both internal and external locus of control become more dominant at middle (i.e. middle managers) and senior management (i.e. Eskom Board and top management) levels given their higher interaction with the external environment than the lower levels.

Conclusions and Implications

An opportunity for expression of self-leadership and internal locus of control becomes an albatross among engineers. Engineering education does little for developing self-leadership skills, internal locus of control skills and behaviours for working on highly innovative engineering projects (MacLeod, 2010:21; Westergren, 2011:223). Success performance in engineering programmes and projects requires change not only in the way in which engineering education prepares students for professional practice, but rather change in the work philosophy and culture of leadership at all levels to ensure all employees' socialisation into leadership repertoires, internalisation of a strong internal locus of control, a strong work ethic and their practical manifestations at all organisational levels. The study noted with concern that although sophisticated leadership models have been instituted and applied in the training of Eskom management and

employees at the Eskom Leadership Initiative, there is overwhelming evidence to suggest that such training and experience has not filtered through and benefited all organisational levels judging from multiple considerations. These are the general dissatisfaction of customers with electricity services, general evidence of weak locus of control at both senior management and operational levels judging from blatant government interference in Eskom's internal management affairs, Eskom management's poor consultations with the public on tariff increases and service delivery failure. The government should adopt a "hands off approach that emphasises strategic influence and contingent interventions with regards financing and oversight of Eskom affairs rather than meddling, which triggers policy ambiguity, dissension in management and lack of consistency.

We noted with appreciation the many strong points' in Eskom such as its sophisticated electricity supply infrastructure, strong market presence, firm and surging customer base and strong extractive capacity. We were, however, quick to caution that these points are juxtaposed by impediments such as ageing infrastructure that needs replacements, refurbishments or repairs, monopolistic tendencies of Eskom, limited internationalisation of electricity generation business operations (apart from electricity "exports") and failure to externalise risk by diversifying energy supplies. Overall, South African [electricity] business climate reels under a chronic ill of lack of strong leadership and internal locus of control among employers and employees (Maas and Herrington, 2006:17). Eskom is an incarnation of an organisation under siege. On the basis of crisis of leadership and weak locus of control within Eskom including the independent examination in literature of self-leadership and locus of control as they relate to job performance, the

study postulated a union of these concepts and its relationship with job performance. We proposed that with their strong psychological orientation, behaviour focused strategy and constructive thought pattern and internal locus of control could have the greatest effects on job performance.

References:

- Adams, R., Kalliny, M., De los Santos, G., and Wang, Y. (2008), "Marketing implications of locus of control orientation among college students: Comparisons of Hispanic and Anglo students in the United States". *The Marketing Management Journal*, 15 (18):109-120.
- Amabile, T.M. (2006), "Entrepreneurial creativity through motivational synergy". *Journal of Creative Behavior*, 31 (1): 1
- Asgari M. H. and Vakili, M. (2012), "The Relationship between Locus of Control, Creativity and Performance of the Educational Department Employees in the west of Mazandaran", *International Research Journal of Applied and Basic Sciences*, 3 (17): 255-256
- Aslam, N., Khan, M. J., and Riaz, M. (2012). Leadership styles as predictors of innovative work behavior. *Pakistan Journal of Social and Clinical Psychology*, 10 (1): 18-23. Retrieved from <http://www.gcu.edu.pk/Soc&ClinPsyJour.htm>
- Barron, F. and Harrington, D.M. (2011), "Creativity, intelligence, and personality". *Annual Review of Psychology*, 32 (4): 439-76.
- Becker, M. (2015), "The design and effective application of a 360°assessment tool in a large diverse organisation". Eskom Leadership Institute.
- Beins, B. C., and McCarthy, M. A. (2012), *Research methods and statistics*. Pearson: Boston.
- Black Management Forum (BMF) Transformation Barometer Research Report 2015, (accessed 28 October 2015), available

- at: www.bmfonline.co.za/resource/.../BMF_Transformation_Barometer.pdf
- Blanche, M. T., Durrheim, K., and Painter, D. (2006), *Research in practice* (2nd Ed.). Cape Town: University of Cape Town.
- Bryman, A., and Bell, E. (2007), *Business research methods*. Oxford: Oxford University Press.
- CDE Round Table, (2008), “South Africa’s electricity crisis”. How did we get here? And how do we put things right? An occasional publication by the Centre for Development and Enterprise reflecting discussions held on key national issues. July 2008 Number 10 <http://www.cde.org.za/wp-content/uploads/2013/02/South%20Africas%20Electricity%20Crisis%20Full%20Report.pdf>
- Chase, M. A. (2010), Should coaches believe in innate ability? The importance of leadership mind-set. *Quest*, 62 (23): 296-307. (Accessed 28 October 2015) Retrieved from: <http://www.questjournal.net>
- Chen, G., Goddard, T. G., and Casper, W. J. (2004), “Examination of the relationships among general and work-specific self-evaluations, work-related control beliefs, and job attitudes”. *Journal Applied Psychology: An International Review*, 53 (3): 349–370.
- Chen, J.-C., and Silverthorne, C. (2008), “The impact of locus of control on job stress, job performance and job satisfaction in Taiwan leadership and Organization Development”. *Journal of Organizational Behavior*, 29 (5): 572-582.
- Cohen, L., Manion, L., and Morinson, K. (2011), *Research methods in education*. Routledge: London.
- Creswell, J.W. (2009), *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 3rd Edition. University of Nebraska, Omaha: Sage Publications.
- Davis, S. (2009), “Engineering innovation requires consistency and creativity”. *Power Electronics* (accessed 28 October 2015),

- available at: <http://powerelectronics.com/content/engineering-innovation-requires-consistency-and-creativity>
- Denney, J. (2011), "Priming the innovation pump: America needs more scientists, engineers, and basic research". *Defense Acquisition Research Journal*, 18 (1): 25-44.
- Denzin, N., and Lincoln, Y. (Eds.). (2005), *Handbook of qualitative research*. 3rd Edition. Thousand Oaks, CA: Sage.
- De Wet, M. A. (1990), "Locus of control and achievement motivation of unskilled coloured Eskom employees to participate in training and advancement programme: Eskom integrated report, 2014.
- Dewettinck, K., and van Ameijde, M. (2011), "Linking leadership empowerment behaviour to employee attitudes and behavioural intentions": Testing the mediating role of psychological empowerment. *Personnel Review*, 40 (3): 284-305.
- Diliello, T. C., Houghton, J. D., and Dawley, D. (2011), "Narrowing the creativity gap: The moderating effects of perceived support for creativity". *Journal of Psychology*, 29 (145): 151-172, available at: <http://dx.doi.org/10.1080/00223980.2010.548412>
- Dobni, C. B. (2008), "Measuring innovation culture in organizations: The development of a generalized innovation culture construct using exploratory factor analysis". *European Journal of Innovation Management*, 14 (11): 539-559, available at: <http://dx.doi.org/10.1108/14601060810911156>
- Ejaz, W., Shah, S. S. H., Aziz, J., Jaffari, A. R., Zaman, A., and Jaffari, M. R. (2011), "Role of self-concordant goals in obtaining innovation and creativity in the employees". *Interdisciplinary Journal of Contemporary Research in Business*, 21 (3): 172-181. Available at: <http://www.ijcrb.webs.com>

- Elloy, D. F. (2008), "The relationship between self-leadership behaviors and organization variables in a self-managed work team environment". *Management Research Review*, 40 (31): 801-810, Available at: <http://dx.doi.org/10.1108/01409170810913015>
- Eskom Holdings SOC Limited SWOT Analysis' 2015, Eskom Holdings Limited SWOT Analysis, pp. 1-7, Business Source Corporate, EBSCOhost, (Accessed 15 October 2015), Available at: <http://web.b.ebscohost.com/ehost/detail/detail?sid=cbb7751e-bace4cd987a8556edd8b3d97%40sessionmgr114&vid=3&hid=115&bdata=JnNpdGU9ZWwhvc3QtbGl2ZQ%3d%3d#AN=101528719&db=bch>
- Eskom Holdings (SOC) Limited Proposed St Faiths 400 KV Sub-Station and Associated 400 KV and 132 KV Transmission Lines. Environmental Authorisation (EIA REF: 14/12/16/3/3/1/78312) Draft Scoping Report
- Eskom Mechanical Engineers in Training Programme (2012), (Accessed 28 October 2015), Available at: <http://www.puffandpass.co.za/eskom-mechanical-engineers-in-training-programme>
- Eskom Quality Engineer (Rosherville) ERI, (Accessed 28 October 2015), Available at: [https://secapps.eskom.co.za/sites/Recruitment/Pages/Quality-Engineer-\(Rosherville\)-ERI.aspx](https://secapps.eskom.co.za/sites/Recruitment/Pages/Quality-Engineer-(Rosherville)-ERI.aspx)
- Eskom Process Control Manual Appendix D (n.d.), Context and background information. Retrieved from: http://mp2mas17.eskom.co.za/tenderbulletin/File_Show.asp?ID=21385.
- Ford, J. D., Ford, L. W., and d'Amelio, A. (2008), "Resistance to change: The rest of the story". *Academy of Management Review*, 1 (33): 362-377, (Accessed 18 June 2015), Available at: <http://dx.doi.org/10.5465/AMR.2008.31193235>
- Ford, C.M. (2009), A theory of individual creative action in multiple social domains. *Academy of Management Review*, 21 (4): 1112-1142.

- Fowle, J., and Wood, M. (2009). The emotional impact of leaders' behaviors. *Journal of European Industrial Training*, 14 (33): 559-572. <http://dx.doi.org/10.1108/0309059091097442>
- Forte, A. (2005). Locus of control and the moral reasoning of managers. *Journal of Business Ethics*, 2 (58): 65-77.
- Fripp, C. (2015), "Eskom to receive R23 billion government bailout", (Posted 15 June, 2015), Available at: <http://www.htxt.co.za/2015/06/25/eskom-to-receive-r23-billion-government-bailout/>
- Furtner, M. R., Rauthmann, J. F., and Sachse, P. (2011), "The self-loving self-leader: An examination of the relationship between self-leadership and the Dark Triad". *Social Behavior & Personality*. 4 (39): 369-379, (Accessed 18 June 2015), Available at: <http://dx.doi.org/10.2224/sbp.2011.39.3.369>
- Gandolfi, F. (2012), "A conceptual discussion of transformational leadership and intercultural competence". *Review of International Comparative Management*, 9 (13): 522-534, (Accessed 18 June 2015), Available at: <http://www.rmci.ase.ro/>
- Gelso, C. (2006), *Applying theories to research: The interplay of theory and research in science*. In F.
- George State University Library. (2015), "What are Empirical, Reviewand Theoretical sources" <http://research.library.gsu.edu/c.php?g=115857&p=753960>. Accessed on 6 March.
- Goldman, E., Wesner, M., and Karnchanomai, O. (2013), "Reciprocal peer coaching: A critical contributor to implementing individual leadership plans". *Human Resource Development Quarterly*, 19 (24): 63-87, (Accessed 10 June 2015), Available at: <http://dx.doi.org/10.1002/hrdq.21153>
- Grint, K. (2012), "Management or leadership"? *Journal of Health Services Research & Policy*, 15 (7): 248-251.
- Hauschildt, K., and Konradt, U. (2012), "Self-leadership and team members' work role performance". *Journal of*

- Managerial Psychology*, 7 (27): 497-517, (Accessed 10 June 2015), Available at: <http://dx.doi.org/10.1108/026839412123540>
- Ho, J., and Nesbit, P. L. (2009), "A refinement and extension of the self-leadership scale for the Chinese context". *Journal of Managerial Psychology*, 11 (24): 450-476, (Accessed 10 June 2015), Available at: <http://dx.doi.org/10.1108/02683940910959771>
- Hoch, J. (2013), "Shared leadership and innovation: The role of vertical leadership and employee integrity". *Journal of Business & Psychology*, 20 (28): 159-174, (Accessed 10 June 2015), Available at: <http://dx.doi.org/10.1007/s10869-012-9273-6>
- Houghton, J. D., and Neck, C. P. (2002), "The revised self-leadership questionnaire: Testing a hierarchical factor structure for self-leadership". *Journal of Managerial Psychology*, 1 (17): 672-691, (Accessed 10 June 2015), Available at: <http://dx.doi.org/10.1108/02683940210450484>
- Houghton, J. D., Dawley, D., and DiLiello, T. C. (2012), "The abbreviated self-leadership questionnaire (ASLQ): A more concise measure of self-leadership". *International Journal of Leadership Studies*, 9 (7): 216-232, (Accessed 3 June 2015), Available at: <http://www.regent.edu/acad/global/publications/ijls/new/home.htm>
- Houghton, J. D., and DiLiello, T. C. (2010), "Leadership development: The key to unlocking individual creativity in organizations". *Leadership & Organization Development Journal*, 5 (31): 230-245, (Accessed 10 June 2015), Available at: <http://dx.doi.org/10.1108/01437731011039343>
- Hynes, N. (2009), "Corporate culture, strategic orientation, and business performance: New approaches to modeling complex relationships". *Technological Forecasting and Social*

- Change*, 4 (76): 644-651, (Accessed 3 June 2015), Available at: <http://dx.doi.org/10.1016/j.techfore.2008.08.014>
- Ishikawa, J. (2012), "Transformational leadership and gatekeeping leadership: The roles of norm for maintaining consensus and shared leadership in team performance". *Asia Pacific Journal of Management*, 25 (29): 265-283, (Accessed 10 June 2015), Available at: <http://dx.doi.org/10.1007/s10490-012-9282-z>
- Kalyar, M. N. (2011), "Creativity, self-leadership and individual innovation". *The Journal of Commerce*, 3 (3): 20-20.
- Keller, R. T. (2012), "Predicting the performance and innovativeness of scientists and engineers". *Journal of Applied Psychology*, 6 (97): 225-233.
- Krugell, W., Parsons, R., and Keeton, G. (2015), "Eskom's Further Application for a Tariff Increase Joint Submission to National Energy Regulator of South Africa (NERSA)".
- Leedy, P., and Ormrod, J. (2005), *Practical Research: Planning and Designing*. Upper Saddle River, New Jersey: Pearson Education.
- Lekganyane, J., and Oosthuizen, T. (2006), "Analysing leadership traits in establishing effective leadership at Eskom." *Acta Commercii*; 6 (1):237-247.
- Leong and J. Austin (Eds.), *Psychology research handbook: A primer for graduate students and research assistants*. Thousand Oaks, CA: Sage.
- Levy, P. S., and Lemeshow, S. (2008), *Sampling of populations: Methods and applications*. New York: Wiley & Sons.
- Levenson, H. (1981), "Differentiating among internality, powerful others, and chance". In H. M. Lefcourt (Ed.), *Research with the locus of control constructs. 1. Assessment methods*, (pp. 15-63). New York, NY: Academic Press.
- Levin, D. M. (1988), *The opening of vision: Nihilism and the postmodern situation*. London: Routledge.

- Lefcourt, H. M. (1976), *Locus of control: Current trends in theory and research*. Hillsdale, NJ: Erlbaum. (Accessed 03 June 2015), Available at: <http://dx.doi.org/10.1037/a0025332>
- Lekganyane, J and Oosthuizen, T. (2006). Analysing Leadership traits in establishing effective leadership at Eskom. *University of Johannesburg*, pp. 237-245.
- Limpanitgul, T. 2009. Methodological considerations in conducting a quantitative study examining the relationship between job attitudes and citizenship behaviours. 18th *EDAMBA Summer Academy*, Soreze, France, 17 (20): 17-29.
- Maas, G and M Herrington (2006), *Global Entrepreneurship Monitor. South African Executive Report 2006*, Cape Town: University of Cape Town, Graduate School of Business.
- MacLeod, I. A. (2010), “The education of innovative engineers”. *Engineering, Construction and Architectural Management*, 2 (17): 21-34.<http://dx.doi.org/10.1108/09699981011011294>
- Maluleke, K., and Dlodlu, D. (2012), “Evaluating Performance Management at Eskom Holdings”. Masters Dissertation: UNISA.
- Manz, C. C. (1986), “Self-leadership: Toward an expanded theory of self-influence processes in organizations”. *Academy of Management Review*, 3 (11): 585–600.
- Manz, C. C., and Neck, C. P. (2004), *Mastering self-leadership: Empowering yourself for personal excellence* (3rd Ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Manz, C. C., and Sims, H. P., Jr. (2001), *The new super leadership: Leading others to lead themselves*. San Francisco: Berrett-Koehler.
- Mashego, P. and Dookey, X. (2015), “Companies lagging in transformation”, (says BMF September 03 2015). Available at <http://www.bdlive.co.za/business/2015/09/03/companies-lagging-in-transformation-says-bmf>

- Martin, L., Joachim, S., Norma, H., Roger, M., and Manoj, K. M. (2010), "Antecedents to supplier integration in the automotive industry: A multiple-case study of foreign subsidiaries in China". *Journal of Operations Management* 12 (28): 240-256, (Accessed 03 June 2015), Available at: <http://dx.doi.org/10.1016/j.jom.2009.11.004>
- McDevitt, R., Giapponi, C., and Tromley, C. (2007), "A model of ethical decision-making: The integration of process and content". *Journal of Business Ethics*, 10 (73): 219-29
- Morris JS, Frith CD, Perrett DI, Rowland D, Young AW, Calder AJ. (1996) "A differential neural response in the human amygdala to fearful and happy facial expressions". *Nature*, 1(383): 812–815.
- Mostovicz, E. I., Kakabadse, N. K., and Kakabadse, A. P. (2009), "A dynamic theory of leadership development". *Leadership & Organization Development Journal*, 7 (30): 563-576.
- Muhonen, T., and Tokelson, E. (2004) "Work locus of control and its relationship to health and job satisfaction from a gender perspective". *Journal of Stress and Health*, 21 (20): 21–28.
- Mutloane, O. E. (2009), Maintenance management for effective operations management at Matimba Power Station. Masters Thesis, North-West University, Vaal Triangle Campus, 2010.
- Mouton, J. (2001), *How to succeed in your master's & doctoral studies: A South African guide and resource book*. Van Schaik Publishers, Pretoria.
- Naicker, N 2008. *Organisational culture and employee commitment*. Masters Dissertation. DUT: Durban University of Technology.

- Neck, C. P., and Houghton, J. D. (2006), "Two decades of self-leadership theory and research". *Journal of Managerial Psychology*, 21 (4): 270-295. Doi: 10.1108/02683940610663097
- Neck, C. P., and Manz, C. C. (2010), *Mastering self-leadership: Empowering yourself for personal excellence* (5th Ed.). Upper Saddle River, NJ: Prentice Hall.
- Newman, J. L. (2009), "Building a creative high-performance R&D culture". *Research Technology Management*, 52 (5): 21-31.
- Pearce, C. L. and Manz, C. C. (2011), "Leadership centrality and corporate social irresponsibility (CSIR): The potential ameliorating effects of self and shared leadership on CSIR". *Journal of Business Ethics*, 1 (102): 563-579, (Accessed 10 June 2015), Available at: <http://dx.doi.org/10.1007/s10551-011-0828-7>
- Perl, M. L. (2008), "Developing creativity and innovation in engineering and science" [PDF document], (Accessed 10 June 2015), Available at: http://www.worldscibooks.com/etextbook/6775/6775_chap01.pdf
- Phares, E. J. (1997), *Introduction to Personality*. New York: Longman.
- Pratoom, K., and Savatsomboon, G. (2012), "Explaining factors affecting individual innovation: The case of producer group members in Thailand". *Asia Pacific Journal of Management*, 3 (29): 1063-1087. <http://dx.doi.org/10.1007/s10490-010-9246-0>
- Preisendorfer, P. Bitz, A. and Bezuidenhout, F. J. (2012), "In Search Of Black Entrepreneurship: why is there a lack of entrepreneurial activity among the black population in South Africa". *Journal of Developmental Entrepreneurship*. 17 (1): 18
- Pundt, A., Martins, E., and Nerdinger, F. W. (2010), "Innovative behavior and the reciprocal exchange between

- employees and organizations”. *Zeitschrift Für Personalforschung*, 18 (24): 173-193.
- Rotter, J. B. (1975), “Some Problems and Misconceptions to the Construct of Internal Versus External Control of Reinforcement”. *Journal of Consulting and Clinical Psychology*, 43 (1): 56-67.
- Redelinghuys, J. (2014). *The dark side of the Eskom boardroom power struggle*. Analysis of the third kind. 19 November 2015 10:32 (South Africa).
- Sargent, J. (2013), “The U.S. science and engineering workforce: Recent, current, and projected employment, wages, and unemployment. Congressional Research Service”. (Accessed 10 June 2015), Available at: <http://www.fas.org/sgp/crs/misc/R43061.pdf>
- Salkind, N .J. (2007) *Exploring Research*. Pearson Education. New Jersey.
- Sapford, R., and Jupp, V. (2006), *Data collection and analysis*. SAGE Publications, Inc.: London.
- Saunders M, Lewis P and Thornhill A (2009), *Research Methods for Business Students*. 5th ed. Prentice Hall, London: UK.
- Schermuly, C. C., Schermuly, R. A., and Meyer, B. (2011), “Effects of vice- principals’ psychological empowerment on job satisfaction and burnout”. *The International Journal of Educational Management*, 25 (3): 252-264.
- Scotland J (2012), “Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical Research Paradigms”. *English Language Teaching. Canadian Centre of Science and Education*, 5 (9); 2012
- Shah, J., and Ali, B. (2011), “Organizational climate: Stimulating creativity and idea generation for discovery of innovative solutions”. *Interdisciplinary Journal of Contemporary*

- Research in Business*, 9 (3): 429-447, (Accessed 03 June 2015), Available at: ijcrb.webs.com
- Sharma, M., and Kaur, G. (2011), "Workplace empowerment and organizational effectiveness: An empirical investigation of Indian banking sector". *Academy of Banking Studies Journal*, 10 (2): 105-120.
- Skaggs, P., Fry, R., and Wright, G. (2012), "Creating a mindset for innovation". *Journal of Strategic Innovation and Sustainability*, 7 (3): 95-99, (Accessed 10 June 2015), Available at: <http://www.nabusinesspress.com/jsisopen.html>
- Spector, P. E. (1982), "Behavior in organizations as a function of employees' locus of control". *Psychological Bulletin*, 25 (91): 482-497.
- Steenkamp, A. J. (2010), "Safety leadership initiatives in Eskom, generation: A case study on the reduction of lost time injuries due to the effect of safety leadership initiatives in Eskom, generation division". Master Thesis, University of Stellenbosch. Available at: https://scholar.sun.ac.za/bitstream/...1/.../steenkamp_safety_2010.pdf.
- Stewart, G. L., Courtright, S. H., and Manz, C. C. (2011), "Self-leadership: A multilevel review". *Journal of Management*, 19 (37): 185-222.
- Stieb, J. (2011), "Understanding engineering professionalism: A reflection on the rights of engineers". *Science and Engineering Ethics*, 7 (17): 149-169.
- Sonnentag, S., Volmer, J., and Spychala, A. (2010), "Job Performance. Konstanzer (Online) Publications System (KOPS)", (Accessed 10 June 2015), Available at: <http://nbn-resolving.org/urn:nbn:de:bsz:352-opus-121834>
- Sreejesh, S., Mohapatra, S., and Anusree, M. R. (2014), *Business Research Methods*. New York: Springer.
- Taurasi, E. M. (2007), Forging a path for today's engineers. *Design News*, 62 (10): 62-66.

- Thomas W. H. N., Kelly, I. S., and Lillian T. E., (2006), Locus of Control At Work: A Meta-Analysis. *Journal of Organizational Behavior*. 27: 107–118.
- Tsotsi, Z. (2011), “The Eskom Factor: Chairman’s reflection. Eskom Holdings Limited. Sunninghill Sandton, Johannesburg”. Available at: <http://www.eskom.co.za/OurCompany/SustainableDevelopment/Documents/EskomFactor.pdf>
- Valencia, N. J. C., Valle, R. S., and Jimenez, D. J. (2010), “Organizational culture as determinant of product innovation”. *European Journal of Innovation Management*, 2 (13): 466-480, (Accessed 10 June 2015), Available at: <http://dx.doi.org/10.1108/14601061011086294>
- Van der Nest, G. (2015), “The economic consequences of load shedding in South Africa and the state of the electrical grid.” Retrieved from: <http://www.tralac.org/discussions/article/7000-the-economic-consequences-ofload-shedding-in-south-africa-and-the-state-of-the-electrical-grid.html>
- Verwey, A., Du Plessis, F., and Van der Merwe, L. (2013), “Leadership Effectiveness and Toxicity – Different Perspectives”. A Pilot Study in South Africa, October. Retrieved from: http://whizants.co.za/wp-content/uploads/2012/06/Leadership-Effectiveness-and-Toxicity_Article-2_20131025.pdf
- Wang, Q., Bowling, N. A. and Eschleman, K. J. (2010), “A Meta-Analytic Examination of Work and General Locus of Control”. *Journal of Applied Psychology*. 95 (4): 761–76.
- Westergren, U. H. (2011), “Opening up innovation: The impact of contextual factors on the co-creation of IT-enabled value adding services within the manufacturing industry”. *Information Systems and eBusiness Management*, 15 (9): 223-245.

- Woodman, R.W. and Schoenfeldt, L.F. (2013), "Individual differences in creativity: an interactionist perspective". In Glover, J.A., Ronning, R.R. and Reynolds, C.R. (Eds), *Handbook of Creativity*. Plenum Press, New York, NY.
- Xerri, M. and Brunetto, Y. (2011), "Fostering the innovative behavior of SME employees: A social capital perspective". *Research & Practice in Human Resource Management*, 30 (19): 43-59, (Accessed 03 June 2015), Available at: <http://rphrm.curtin.edu.au>
- Yelland, C. (2014), "Eskom's leadership quandary: Can anyone deliver". (Accessed 10 June 2015), Available at: <http://www.dailymaverick.co.za/article/2014-01-07-eskoms-leadership-quandary-can-anyone-deliver/#.Vh4aKfmqpBc>
- Zeffane, R. (2010), "Towards a two-factor theory of interpersonal trust: A focus on trust in leadership". *International Journal of Commerce & Management*, 22 (20): 246-257. (Accessed 10 June 2015), Available at: <http://dx.doi.org/10.1108/10569211011076938>