



# The development and validation of a graduate leader competency questionnaire: Arguing the need for a graduate leader performance measure

**Authors:**

Jacques S. Pienaar<sup>1</sup>   
 Carl C. Theron<sup>1</sup> 

**Affiliations:**

<sup>1</sup>Department of Industrial Psychology, Faculty of Economic and Management Sciences, Stellenbosch University, Stellenbosch, South Africa

**Corresponding author:**

Jacques Pienaar,  
 jacquespienaarorama@gmail.com

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This article deals with the need for the conceptualisation and operationalisation of a modern graduate leader performance construct and the development and psychometric evaluation of a (graduate) leader competency questionnaire. The need for an investigation into the graduate leader performance construct is motivated against the backdrop of the availability of a new generation of leaders given the impending retirement of the world's most senior management talent. Generation Y is singled out as a critical resource pool whose leadership potential needs to be tapped to enhance organisational performance and improve the economic fortunes of our country. However, it is pointed out that our understanding of this generation, as well as the psychological mechanism that determines how leaders influence various aspects of an organisation, work group or team to bring about optimal performance at a collective level, is fragmented and incomplete. Accordingly, we make suggestions for expanding contemporary conceptualisations of competency models so as to merge an expanded form of a competency model with the notion of a nomological network in providing a comprehensive explanation for the psychological mechanism that regulates graduate leader performance within organisational settings. The explication of such a competency model logically needs to start with the conceptualisation of the graduate leader performance construct. The validation of such a competency model will necessitate in future, amongst others, a measure of the competencies comprising the graduate leader performance construct as well.

**Keywords:** competencies; competency modelling; Gen Y; graduate; leadership; nomological network; performance; talent.

## Introduction

The imminent retirement of most of industry's senior and most influential management talent (Lacey & Groves, 2014) from the Baby Boomer generation (Wong, Lang, Gardiner, & Coulon, 2008) (individuals born between 1945 and 1964) is creating a leadership vacuum in organisations around the world (Miner, 2019; Silvestri, 2013; Squyres, 2020). It is estimated that between 60 and 80 million Baby Boomers will be exiting the workforce over the next 7 to 10 years, which roughly translates into approximately 10 000 of this generation's employees, retiring daily across the globe, each of which has between 30 and 40-years of work experience (Miner, 2019). Lacey and Groves (2014) liken the retirement of the Baby Boomers to a catastrophe – referring to it as the 5/50 crisis as the expectation at the time was that industry would lose up to 50% of their management talent within 5 years. This massive exodus of leadership (or managerial) talent, knowledge and work experience (Hagemann & Stroepe, 2013) challenges human resource (HR) departments with creating strategies for the preservation or transfer of institutional knowledge, filling critical (functional) skills gaps and lastly but most importantly, developing leadership (or management) succession pipelines for the future (Seemiller & Grace, 2019). However, whilst the substitution of retiring managers (or leaders) with high potentials from the newer generations represents the obvious solution to this latter leadership pipeline dilemma, this evolutionary process, which has been a natural occurrence in intergenerational takeovers up until now, might not work as well this time around. This is because Gen X (the second newest generational cohort to enter the workforce comprising of individuals born between 1965 and 1981; Wong et al., 2008) is made up of significantly fewer people than the older Baby Boomer generation who they are expected to replace. As Gen X is believed to have approximately 25 million fewer people (and thus a considerably smaller talent pool) than the Baby Boomers (Miner, 2019), there is simply not enough (capable) replacements amongst this generation of employees to meet industry's declining manpower and leadership needs.

The rationale for singling out Gen Y employees (a cohort of individuals born between 1982 and 2000; Wong et al., 2008) in the current discussion is thus marked by their ever-increasing representation in the workforce (they will make up 75% of the workforce by 2025; Culiberg & Mihelic, 2016) and the smaller number of Gen X employees coupled with the imminent retirement of Baby Boomers, with Gen Z (born after 2000<sup>1</sup>; McCRindle research, 2006) still waiting in the wings. As was the case in the past with the Baby Boomers where organisations adjusted their structure, strategies, compensation and management styles to fit this cohort's specific mindset (Risher, 2008), Gen Y also brings forward unique characteristics that are remarkably different from previous generations (Naim & Lenka, 2018). These characteristics have 'significant implications for the design of organisations and work groups in order to meet the needs of these younger workers' (Yrle, Hartman, & Payne, 2005, p. 198), elicit the best performances from them (Cook, 2016) and develop leadership bench strength amongst them in the workplace. These characteristics, therefore, also need to be acknowledged and reflected in an explanatory graduate leader competency model.

## The new workforce – Gen Y

In explaining the origins of generational differences, *generational cohort theory* holds that different generations develop unique psycho-graphical attributes because of shared events they experience during their formative years, leading to a similar values system, perceptions and attitudes (D'Amato & Herzfeldt, 2008; Gentry, Griggs, Deal, Mondore, & Cox, 2011; Kupperschmidt, 2000) that ultimately manifest in the form of new behavioural trends in the workplace. For example, Generation Y individuals are reported to be emotionally needy and to constantly seek approval and praise (Bencsik, Horváth-Csikó, & Tímea, 2016; Crumpacker & Crumpacker, 2007). This need for constant feedback and recognition (Hurst & Good, 2009) has been reinforced by several authors in the literature (e.g. Martin, 2005; Smith & Galbraith, 2012), is understood to be characteristic of this high maintenance (Graen & Schiemann, 2013; Martin, 2005) generation and is probably a consequence of comparable liberal parental direction experienced in their childhood (Glass, 2007) which became popular during their youth. For similar reasons, Gen Y employees may also prefer teamwork (Gilbert, 2011; Hills, Ryan, Smith, & Warren-Forward, 2012; Olšovská, Mura, & Švec, 2015; Van der Wal, 2017), environments where there is collaborative decision-making (Glass, 2007; Vanmeter, Grisaffe, Douglas, Chonko, & Roberts, 2013) and where they have freedom and flexibility to get the task done and at their own pace (Martin, 2005).

Furthermore, Gen Y employees appear to have superior ambition and a desire to keep learning and move quickly upwards through an organisation (Rheeder, 2015) into

positions or assignments that will improve their curricula vitae (CVs) (Hira, 2007) and portfolios of marketable skills (Connor & Shaw, 2008). Their desire for rapid career growth is mirrored in higher salary expectations, with some Gen Y employees even expecting pay raises after only 6 months on the job (Erikson, Alsop, Nicholson, & Miller, 2009). Their parents' continued financial and emotional support once again may have likely contributed to this sense of entitlement (Erickson, 2008), but regardless of some who view this positively as a form of optimism, this generation still expects to progress in their careers at a rate considered unrealistic by their (senior) colleagues (Karefalk, Pettersen, & Zhu, 2007). In a similar vein, Hanson and Gulish (2016) and Sharma (2012) attribute this form of self-entitlement of Gen Y to being the most educated generation ever and to the fact that they have grown up in relative opulence compared to other generations. Accordingly, this generational cohort is described as fickle in terms of where they want to work, with respect to employer brand (Pihlak, 2018), industry sector (PWC, 2011) and remuneration (they will not accept a low salary with the promise of raises to come later; Martin & Tulgan, 2011) despite many of them being perpetually unemployed (Pauw, Borat, Goga, Ncube, Oosthuizen, & Van der Westhuizen, 2006). These fickle preferences, of course, are relevant to their choice of work and assignments as well in that it is generally accepted that Gen Y individuals desire challenging and meaningful assignments (Baruch, 2004; Olšovská et al., 2015) and are simply not satisfied with menial or mediocre jobs (Laundrum, 2016). For millennials, 'it's not a question of whether or not they are right for the job, it's a question of is the job right for them' (Caraher, 2015, p. 27). Unfortunately, however, competition and work requirements<sup>2</sup> have risen substantially from the time of the Baby Boomers, thus making it difficult for them to find meaningful (entry-level) work (Hanson & Gulish, 2016) at all.

Perhaps one of the most defining characteristics of Gen Y is their kinship with the digital world (Rheeder, 2015). Prensky (2001) refers to them as 'digital natives' as they have grown up with broadband, email (Mangelsdorf, 2015), social media and a wide range of other online applications and services, making them extremely tech-savvy (Zang, Lu, & Murat, 2017) with an intuitive grasp of technology (Combes, 2009) and demanding of instant access to information (Rheeder, 2015) and gratification (Erickson, 2008). Based on these experiences, Hershatter and Epstein (2010) argue that they have every reason to assume that all necessary information can be obtained (and work and learning be done, and relationships maintained) with the touch of a button, and on a 24/7/365 basis, which further exacerbates their sense of entitlement as well as their

1. Some authors' timelines differ, with many having contrasting opinions. For example, in their research, Francis and Hoefel (2018) label the generation born between 1995 and 2010 as Gen Z. For this article, however, such precise detail and differences in opinion are of secondary relevance.

2. Employers these days expect, apart from academic capabilities and degrees, and given new organisational and technological work models that have evolved (e.g. lean production, internally flexible organisation, the learning organisation, etc.) which impose fundamental shifts in the working competencies required by the traditional organisation that graduates should display ability on competencies not directly related to functional (or vocational) task competencies that will facilitate prompt and successful transition from higher education (Holmes & Miller, 2000). Many young graduates lack competence on these more generic competencies (i.e. the graduate employability dilemma).

demands for instant gratification. Regardless, these above-mentioned characteristics of millennials have one aspect in common, namely a desire to express their *individuality* (FERF, 2016) in all aspects of their lives:

In short, they (also) want a customised work environment – and personalised careers... None of this should be too surprising... We live in a world that expects mass customisation... Customers demand goods and services that meet their individual needs... It's not hard to see why millennials growing up in this environment expect no less from their jobs. (p. 5)

In summary, from the above, it should be clear that Gen Y possesses more bargaining power in the labour market than ever before and that they bring unique needs, values and characteristics that appear markedly different (Rheeder, 2015) from those traditionally held in the workplace. In conjunction with the rise of the protean career that emphasises career success (Park & Rothwell, 2009) and freedom (Chin & Rasdi, 2014) from the side of employees in crafting their own career trajectories in ways that might not align with the organisation's leadership pipeline needs, Gen Y's unique needs, values and characteristics might therefore also derail leadership development initiatives targeted at this generation as well. For example, the reported transactional, medium- and short-term orientation of Gen Y in terms of the psychological contracts they now enter with employers (Beddingfield, 2005) and their documented demand for work-life balance (Clarke, 2015) makes one wonder whether leadership development programs that rely on many sacrifices from the side of trainees, including the time and effort associated with intensive and extra-curricular training and a longer-term commitment to stay on in one organisation, will gain traction with this generation at all.

Despite this continuing shift in workforce dynamics, however, there has been no significant change in human resource (HR) management practices in recent years (Naim & Lenka, 2018; Sylvester, 2015) to acknowledge the changing nature of the workforce. The reluctance (or negligence) from the side of HR professionals to properly address this matter is a cause for concern as it should be the continuing goal of behavioural scientists to study, understand and positively influence employee job performance, interpreted to be constituted by a structurally interrelated network of latent competencies and latent outcome variables and to be determined by a complex interrelated nomological network (Cronbach & Meehl, 1955) of latent variables characterising the employee and the organisational context. Without a valid understanding of the nomological net of latent variables constituting and determining employee performance, the HR profession is relatively helpless in their attempts to enhance employee performance via a range of interventions. Whilst vast strides have been made in the past in many areas of the HR body of knowledge, the failure to bring HR theory and the application thereof up to date and in alignment with the shifting realities of the workplace is threatening the credibility of the profession amidst growing calls from executive boards for HR to demonstrate return on investment.

## The need for effective leaders

From the introductory discussion, it should be clear that the most influential group of employees that currently requires prioritisation is the Gen Y resource pool that serves as the main feeder source for entry level jobs. Perhaps, HR's most critical responsibility within the context of the impending 5/50 crisis, however, is to create leadership bench strength for the future (Lacey & Groves, 2014; Ulrich, Smallwood, & Sweetman, 2008). In this regard, the Gen Y resource pool has a dual purpose (a second role) in that it serves as a feeder pool for industry's fast-track, or 'high-flyer' leadership development programmes as well. The importance of the development and supply of effective leaders is elevated in this discussion by the fact that leadership transcends individual performance contributions by way of potential multiplicative or synergistic (Hackman & Wageman, 2005) effects on groups or teams. Thus, whilst the individual performance contributions of individual Gen Y employees (the entry role) remain important from the perspective of critical manpower and (functional) skills shortages as the Baby Boomer workforce starts to retire, our focus on the Gen Y leadership (the second) role and its nomological network is motivated by the collective performance advantages that could be unlocked by this valuable resource given the impending loss of the core of our managerial talent instead.

Here we draw on the evolutionary utility of leadership as a phenomenon fundamental to societal growth (Toor & Ofori, 2008) and highlight the criticality of leadership within the context of universal societal survival needs such as adaptation (Van Vugt, 2006), the achievement of collective goals (Toor & Ofori, 2008), conflict resolution, teaching and the promotion of social cohesion (Van Vugt & Ronay, 2013). The reasoning behind this argument is thus simple – effective leaders can mean the difference between outstanding and poor organisational performance (Kragt & Guenter, 2018; Peterson, Smith, Marorana, & Owens, 2003). Effective leaders steer organisations to success, inspire and motivate followers, they spearhead change and innovation, develop capability, resolve conflicts and provide a moral compass for employees from which direction is set. Poor leaders, on the other hand, can inflict a considerable amount of damage on organisations, demoralise staff and destroy value. One does not need to search far to find examples of how poor (and unethical) leadership in South African society have left destruction in its wake from the looting scandal resulting in VBS Mutual Bank's collapse and the Electricity Supply Commission's (ESKOM) poor management that has led to neglected maintenance of South Africa's power infrastructure and ultimately the load shedding debacle, to Passenger Rail Agency of South Africa's (PRASA) train acquisition blunder and most recently the Steinhoff saga.

South African business leaders must also address several further challenges in addition to an unethical leadership culture that are unique to this country against the backdrop of an already ailing economy as evidenced by the World Economic Forum (2019) that ranks the country at number 60 out of 141 countries on economic performance in the world.

The South African leadership improvement challenge 'began in 1994 with the demise of apartheid that placed unprecedented demands upon leaders of organisations in all sectors of society' (Nkomo & Kriek, 2011, p. 453). Private organisations found themselves thrust into a new world economy and having to compete with global powerhouse firms. The lack of capability to stay one step ahead of global competitors (i.e. external scanning) and to seize upon export-led industrial growth opportunities (i.e. business strategy) were glaringly obvious and are perhaps still currently lacking amongst many senior South African organisational leadership teams today. Also, the end of apartheid sparked significant social identity transformation (Mayer & Louw, 2011) amongst South African citizens undergirded by a significant change in power and relations between races (Nkomo & Kriek, 2011), a process which has as of yet not entirely run its course. Consequently, many South African senior leadership teams remain challenged (i.e. valuing diversity, inclusivity, etc.) in their workplaces by significant tensions in employee–employer relationships (Eustace & Martins, 2014), cultural conflict and identity issues (Mayer & Louw, 2011). Furthermore, the country is plagued by skills shortages, with the general state of its human capital described as low on productivity, motivation and work ethics (Kleynhans, 2006; Rasool & Botha, 2011). This tasks the senior leadership of organisations to become the architects and drivers of basic workforce capability as well. All of these challenges require strong leadership and high-quality relations between leaders and employees so that they can work together to find the appropriate solutions (Eustace & Martins, 2014):

It is essential to improve leadership... (it is) necessary for improved productivity, market share growth and profitability. This is important, given South Africa's unique position of being an emerging market economy with a diverse workforce, ... and an open economy that gives its workforce little protection. (pp. 1–2)

## Leadership theory is still evolving

The level at which organisational leadership performs is not the outcome of a random event nor a static condition. It is rather systematically determined by a complex nomological network of latent variables characterising the (graduate) leader and characterising the environment in which the (graduate) leader must operate. Effective organisational leadership results from a persistent, purposeful and holistic HR strategy, provided it is rooted in a valid understanding of this nomological network. Valid performance theory must guide HR in this leadership development strategy and inform the various HR interventions through which it is implemented to attract, select, engage, develop and retain the services of Gen Y leadership talent. Moreover, such a performance theory will add value to the extent that it can firstly identify the competencies required of future South African leaders (to be used as a competency benchmark or tool for the identification and development of future leaders<sup>3</sup>), and secondly, if it can empirically link these competencies with a

3. We firstly target the development of a competency questionnaire for future graduate leaders. As will be explained in more detail later in the article, the development of such a questionnaire is necessary first in order to collect data with which we can validate the internal nomological validity of our new proposed competency model. Once the hypothesised internal structure has been validated, this will open the possibility of generalising the findings to a competency tool that will have numerous applications in the leadership development space.

set of generic strategic outcomes that are required of future leaders in organisational settings (to be added to the competency tool in measuring leadership performance and providing formative developmental feedback to burgeoning leaders) too. Nevertheless, to inform selection methodologies for more accurate Gen Y talent selection decisions, to create an employer brand that is attractive and aspirational to Gen Y, to create leadership development simulations and content that resonate with Gen Y and to employ engagement and retention strategies that are effective in motivating and retaining the services of this generation, the complex nomological net comprising the inter-related person and contextual variables that influence graduate leader performance must be explicated first. McCracken, Currie and Harrison (2016) also argue persuasively for the explication of the 'modern' graduate nomological network as follows:

[G]raduates are often seen as an enigma because their potential is offset by specific challenges such as poor work readiness and unrealistic expectations about the world of work. Recent graduates also fall into the Generation Y category which has different characteristics from other workforce generations... This means those tasked with designing and implementing the right Talent Management strategy for graduates need to understand the specific nature of the graduate talent pool. (p. 2731)

Yet, such a network has not been explicated and it is uncertain whether (all of) the Gen Y trends discerned in the developed world apply to South Africa as our society is unique in that it has been socially divided and fragmented, with not all our population groups equally affected by historical events (Jonck, Van der Walt, & Sobayeni, 2017) in the past. As a result, we are currently still no closer to a point where we understand what aspects of our leadership development policies and practices should evolve to be effective with this generation in this country, and how Gen Y employees will respond to such reforms. In the end, given Gen Y's potential to affect the wider society, the economy and the political order as they increasingly start taking on influential roles in these domains (Holmes, 2013), the paucity of valid scientific knowledge and understanding of this performance relationship between the characteristics and needs of Gen Y and our leadership development systems is perhaps one of the most important questions perplexing the HR profession in South Africa today.

Nevertheless, it must be noted that many failings of the leadership development systems of today can also be traced back to the fact that most of the research on leadership performance traditionally has been *context free* (Gordon & Yukl, 2004; Liden & Antonakis, 2009; Osborn, Uhl-Bien, & Milosevic, 2014; Zaccaro & Klimoski, 2001). Studies investigating the leadership phenomenon as isolated, role-based actions on the part of individuals that 'exogenously' impact organisations (Lichtenstein et al., 2006, p. 2) in a vacuum (Porter & McLaughlin, 2006) explain only a part of the leadership puzzle (Gordon & Yukl, 2004) and the critical question of how leaders can 'build and maintain a group (or organisation) that performs well relative to its competition' (Hogan & Kaiser, 2005, p. 172) accordingly remains largely

unanswered. However, despite many calls for researchers to adopt a more sophisticated and practical perspective by studying leadership in organisational settings and by conceptualising the organisation (or work unit) as an open system entailing complex interactions within larger systems... within which the organisation (or work unit) is embedded, and within which leaders operate as the critical boundary spanners (Cross, Erns, & Pasmore, 2013), 'such research is rare' (Carter et al., 2020, p. 1).

Conversely, research that focuses exclusively on the interpersonal processes that take place between leaders and followers, which simply attempt to distil the traits required of effective leaders, or which investigate the most effective leadership styles in relation to different contingencies contributes to fragmentation in the field and fails to describe for industry and organisational leadership development practitioners the richness of the construct in a way that really matters to the bottom line. We are of the belief that this fragmented, context-free approach to leadership research represents the major reason for why industry has never really excelled in producing effective leaders (Moldoveanu & Narayandas, 2019) as industry looks to academia for guidance on such matters and our response to this hitherto has been at best limited (Kragt & Guenter, 2018) and incomplete. Below we turn to a discussion on how leadership development is routinely implemented in industry, draw attention to some of the current shortcomings of this methodology and offer some suggestions for improvement that ultimately culminates into our suggested approach and framework for the development of a modern graduate leader performance construct.

## Leadership competency models are defective and incomplete

Competency models are the most frequently used method for informing leadership development (Barrett & Beeson, 2002; Conger & Ready, 2004; Croft & Seemiller, 2017), and in combination with the rise in the popularity of 360-degree feedback, which is built entirely around competencies, these two tools provide the development architecture for most if not all executive fast-track programmes today. Simply put, practitioners frequently use the term *competency model* to refer to a set of competencies (rather broadly defined as attributes, knowledge, skills and abilities) used to align individual behaviour with organisational goals, create clear expectations and guide (by way of 360-degree feedback) development as leaders (in training) progress along the organisational (Croft & Seemiller, 2017; Spencer & Spencer, 1993) hierarchy. The general presumption is that the demonstration of the competencies included in the 'model', and at the required level, will lead to performance in the job or role for which the model was created, which in effect equates to a (rather frail it must be said) job performance theory. Conger and Ready (2004) explain that competency models provide at least three other critical benefits, namely *clarity* (clear expectations of the behaviours for those in leadership roles), *consistency* (a common framework for communicating and implementing

leadership development) and *connectivity* (foundational metrics for informing many of the other HR interventions such as remuneration, succession, etc.).

One major problem with the contemporary use of competency models for leadership development, however, is the fact that there is a discrepancy between the leadership competencies that organisations need, and those that executive development programmes often target to enhance or develop (Fernandez-Aroaz, Graysberg, & Nohria, 2011; Narayandas & Moldoveanu, 2019). This dilemma is fuelled by two inefficient practices of contemporary competency modelling methodology. Firstly, there are multitudes of different leadership competency models in circulation, and whilst some might be well-researched and of a high standard, many unfortunately are not. Much of the blame for the diluted proliferation of competency models can be placed on the training providers, digital start-ups and a host of other newcomers to the leadership development industry who offer quick-fix, customisable solutions that lack depth and substance. Disintermediation has occurred (Narayandas & Moldoveanu, 2019), according to which universities, business schools and management consultancies that served as able intermediaries (or gatekeepers) of research on leadership competencies in the past, is now bypassed altogether.

Secondly, executive education often also targets the development of the *incorrect* (i.e. criterion deficient or criterion contaminated) competencies because of the use of competency libraries that are used as input to 'develop' leadership competency sets. These are universal lists of competencies typically created by consulting houses that are assumed to be related, in some way or another, to all conceivable jobs and organisational roles, and practitioners frequently use these to select the competencies that they deem relevant when 'developing' a competency model (Campion et al., 2011) for a job or leadership role. However, it is highly unlikely that the human mind can project, process, comprehend and integrate all the relevant factors that impact leadership performance based on this haphazard approach in such a way so as to distil from the competency models that are optimal for impacting (leadership) performance on the job. Conversely, it is also highly likely that the (definitions of the) competencies included in competency libraries are too broad and, as such, fail to effectively capture the intricacies of the performance domain of a leadership role. Within this context, competency models are thus essentially used as lexicons or semantic frameworks, and certainly do not constitute validated psychometric measures. From a pure (performance) measurement and prediction perspective, many contemporary competency models, therefore, lack both validity and reliability in the work environment and there is a substantial and questionable gap between the many claims and actual measurement and prediction benefits delivered by such (limited) models. Excluded here of course are the competency model variants that have been developed for specific work contexts and that manage to combine the various elements of competency frameworks into more meaningful, persuasive job performance hypotheses (Bartram, 2005).

Regardless, the development of competency models in general is difficult and time-consuming, and the derivation of leadership competencies particularly challenging, because the focus here is not on functional competencies, but rather on meta-competencies (competencies that underpin or allow for the development of other competencies; Van Der Merwe & Verwey, 2007), affective and perceptual competencies (e.g. regulating affective states and moods in response to the context, content and constraints of the situation; Boyatzis, Goleman and Rhee, cited in Bar-On and Parker [2000]) and self-regulation or self-command competencies (i.e. do-THIS-now, do-THIS-first or do-THAT-not-THIS, Stuss, 2011).

Maybe more importantly, a second problem with the use of competency models in general, irrespective of the quality of research and explication methodologies underlying it, relates to structural conjectural shortcomings. Competency models in their simplest form are often (too narrowly) described as 'a simple list or catalogue, specifying desirable competencies' (Markus, Cooper-Thomas, & Allpress, 2005, p. 117). The underlying goal is then for this 'dictionary' of competencies or competency model to be used as the foundation for HR departments to plan and guide leadership development interventions. It is, however, highly doubtful that a simple list of competencies that are assumed to all be equally significant in describing success in a job provides a true reflection of the leadership performance domain (and all others for that matter). With reference to the nomological net of employee performance mentioned earlier, modelled as a complex (abstract) network comprising malleable and non-malleable variables characterising employees and malleable (and possibly non-malleable) variables characterising the organisational context that are richly interconnected, we remain unconvinced that a simple list of competencies that are assumed to all be equally significant in describing leadership performance provides a penetrating, valid insight into the nature of the psychological mechanism that regulates success in a leadership role. As a prediction about how complex human and organisational behaviour will interact to affect leadership performance, the assumption of a simple, linear, bivariate and one-way relationship between competencies and leadership success simply does not hold ground.

Related to this is the problem of deficiency with regard to the performance theory underlying competency models' performance (outcomes) criterion. Despite some support for the notion that there might be a 'general' factor in performance that corresponds to the 'g' factor in cognitive intelligence (Arvey & Murphy, 1998; Serpico, 2018), here we point to the progress made with regard to the taxonomic structure of job performance growing the awareness that job performance is multidimensional in nature (e.g. Borman & Brush, 1993; Campbell, McCloy, Oppler, & Sager, 1993; Fay & Sonnentag, 2010), assert that such an understanding of job performance is beneficial for the evaluation and deeper understanding of leadership performance as well and accordingly plead for such differentiated performance

outcomes to be accommodated in the structure of (leadership) competency models. The 18-factor structure of Borman and Brush (1993), for example, referencing training, coaching, developing subordinates and so on, is particularly attractive when considering how to differentiate the outcome component of leadership performance in terms of various (qualitatively distinctive) outcomes and is, moreover, aligned with contemporary conceptualisations of the role of leaders in organisations (e.g. servant leadership, Sendjayay, Sarros, & Santora, 2008; the human capital developer role of the leadership code, Ulrich et al., 2008, etc.) as well. A further possibility within the context of organisational performance, specifically, would be to explicate the various outcomes that leaders should be made responsible for in a business and to then map the competency hypotheses (or model) in relation to each outcome.

Such a framework would accordingly link a leadership competency model (or explanatory performance model) with an 'in-series' work unit (organisation, team or group) competency model, thereby articulating leadership performance from the perspective of *what the (graduate) leader does and consequently achieves within the organisational system constitute enabling physical and psychological conditions that augment the performance of the work unit as a whole*. Regardless, the goal of leadership development cannot be fully attained if feedback on the development of competencies is not directed at specific leadership outcomes and vice versa and competency models that treat leadership performance as an undifferentiated criterion embed this debility in industry. To accurately model this interaction and in line with extant research or thoughts on job performance theory that acknowledges both an outcome and behavioural (or process) component (Borman & Motowidlo, cited in Borman & Schmitt, 1993; Campbell et al., cited in Borman & Schmitt, 1993; Roe, cited in Cooper & Robertson, 1999) of job performance, we therefore suggest that an additional domain should be formally added to (leadership) competency models, namely a differentiated (competency) outcomes domain.

A further, perhaps lesser, scourge of competency models that are negatively impacting on our leadership development efforts relates to the conceptualisation of competencies (see Table 1). Regardless of whether authors refer to competencies as skills, knowledge, abilities, values or behavioural repertoires, however, a specific disagreement exists here in one key matter, namely whether competencies refer to non-malleable factors such as traits or attributes, to malleable or learnable behaviour or both. Yet as we have discussed earlier, many HR practitioners and consultants involved with leadership development do not shy away from a 'mixing and matching' approach by co-opting various competencies from various off-the-shelf competency libraries, and it is, therefore, very likely that one will encounter many competency models in use today that include a combination of both competencies framed as 'innate' performance constructs and competencies framed as 'learned constructs'. In our opinion, the inclusion of non-malleable factors (i.e. innate traits or attributes) in a

**TABLE 1:** Influential competency definitions.

Definition	Authors
Competencies can be described as underlying characteristics of individuals, which are causally related to effective job performance	Boyatzis (1982)
Competencies can be viewed as a cluster of related knowledge, attitudes and skills that affect a major part of one's job (i.e. one or more key responsibilities), that correlates with performance on the job, that can be measured against well-accepted standards and can be improved by way of training and or development interventions	Parry (1998)
Competencies are sets of observable performance dimensions, including knowledge, skills, attitudes and behaviours of individuals as well as collective team, process and organisational capabilities that are linked to high performance, and provide the organisation with some forms of competitive advantage.	Athey and Orth (1999)
Competencies are sets of behaviours or repertoires of capabilities that are instrumental in the delivery of the desired outcomes or enable a range of work demands to be met more effectively by some people than others	Bartram (2004)
Competencies refer to underlying work-related characteristics on an individual level (e.g. skills, knowledge, attitudes, beliefs, motives and traits) that enable success in a job as it relates to the strategy of an organisation	Chen and Naquin (2006)
Competencies can be viewed as collections of knowledge, skills, abilities and other characteristics that are required for superior performance in the job in question	Campion et al. (2011)
The varied knowledge, values, abilities and behaviours that people need to possess and exercise to achieve the strategic objectives, goals and performance expectations of the organisation	Croft and Seemiller (2017)

competency model (narrowly defined) confounds its use and poses an ethical dilemma, particularly within the context of leadership development. For one, if leadership development depends on feedback on the demonstration of competencies, and competencies are defined in terms of non-malleable constructs, then the feedback mechanism becomes moot as innate traits are quasi-impossible to learn or teach (Buckingham & Vosburgh, 2001; Wortman, Lucas, & Donellan, 2012). Trait theory at least has demonstrated that personality traits (e.g. conscientiousness or extraversion), as one example of how the competency construct can be misconstrued, remain relatively stable over time (Terracciano, McCrae, & Costa, 2008) and we, therefore, question the effectiveness of competency models (narrowly defined) that articulate leadership competencies in terms of innate cognitive ability (Tansley, Harris, Stewart, & Turner, 2006), attitude or character (Michaels, Handfield-Jones, & Axelrod, 2001) on this basis.

Moreover, if antecedent variables such as personality traits are included under the banner of competencies for the purpose of leadership development, the entire endeavour could be seen to promote indoctrination, as the purpose then shifts to the conditioning of trainees to (in a sense) operate in a way that might be completely internally self-conflicting. For example, if a trainee naturally has a very humble disposition and leadership development training emphasises the demonstration of an 'assertiveness' competency, tacitly this implies behavioural conditioning (especially if rewards and salary increases are dependent on this) in that it prompts him or her to behave in ways that are contrary to or incompatible with who he or she really is. This naturally has ethical and moral implications for leadership development,

which ultimately will affect the success of leadership development programmes as well.

Having said this, we acknowledge that many authors propose that knowledge, skills, attitudes, motives, beliefs, traits and other underlying characteristics should also (or should rather) be considered as competencies. However, our belief is that these factors should not be explicitly included under the definition of competencies, but rather be modelled as antecedents to competencies and as a qualitatively distinct category of latent variables forming part of a (broader and overarching) competency model. A too-encompassing definition of competencies precludes the possibility of utilising the distinction between latent variables characterising what the leader does and (antecedent) latent variables characterising who the leader is, for the purpose of explanation and measurement. Conversely, these factors should rather be regarded as an individual's potential to perform certain behaviours (or *master* behavioural repertoires) well – and is thus argued to logically fall within a different, 'up-stream' domain of a leadership competency model, a domain we refer to as the competency potential domain. In following this line of reasoning, we further contend that competencies should thus be defined along the lines proposed by Bartram (2005), namely that competencies 'are sets of behaviours (that are influenced by competency potential variables and) that are instrumental in the delivery of the desired results or outcomes' (p. 1187). This line of reasoning accordingly also implies a competency model constituted by a three-domain 'in-series' chain of variables that logically flows from competency potential to competencies, and finally to competency results or outcomes – that all combine into a more meaningful, persuasive job performance hypothesis.

## The way forward: The development of a comprehensive graduate leader competency model

Whilst there is a plethora of research available that rather disjointedly explain or describe the leadership phenomenon in terms of who the leader is, what the leader does or from the perspective of the processes by which leaders shape or influence followers, we target a unique perspective on the development of a 'functional approach' to leadership that unpacks all of the possible variables relevant to a leaders' enabling roles as (senior) business managers in generic organisational settings, thus answering the call from a number of authors who have bemoaned the lack of depth in research in this particular area (Carter et al., 2020; Hogg & Van Knippenberg, 2003; Howell & Shamir, 2005; Rosenbach, Taylor, & Yound, 2018). At the same time, the intention is to evolve contemporary practices of competency modelling by unpacking all the performance variables that are relevant to a (graduate) leader's performance at work and carefully arranging these into a conceptually broader and shrewder (job performance hypothesis) framework reflecting our

blueprint for a more advanced 'competency model', thereby marrying the traditional (narrowly defined) concept of competency models with the idea of a nomological network of performance constructs that can be simultaneously tested, an analysis for which structural equation modelling (SEM) is ideally suited. As opposed to univariate and bivariate statistical techniques that are limited in examining relationships between different constructs because of leaving some interactions unexplained (Crowley & Fan, 1997), SEM allows researchers to answer complex research questions and test multivariate models (Weston & Gore, 2006) by analysing different independent and dependent variables and their effects in a network simultaneously (Nunkoo & Ramkissoon, 2011).

## A new structure for (leadership) competency models: The nomological network

In terms of a theoretical performance theory framework, we aim to utilise a progressive interpretation of competency modelling based on an expansion of Bartram's (2005) interpretation of a competency model to map the net of performance requirements for effective business leaders (see Figure 1) onto the behaviours and outcomes constituting performance in a multi-domain job performance hypothesis (or competency or explanatory structural model). Accordingly, leadership performance is conceptualised in terms of a structurally interrelated set of competencies, and outcome variables where the level of competence achieved is determined by a structurally interrelated network of competency potential variables. As depicted in Figure 1, each set or domain in the competency model is, moreover, interpreted as representing a qualitatively distinct network of cause-and-effect variables in itself.

According to this interpretation then, competency potential variables (referring to rather inflexible *dispositions* such as intelligence or different aspects of personality, and more malleable *attainments* such as knowledge or attitudes) are hypothesised to structurally affect competency variables (referring to more malleable behavioural patterns), which in turn, are hypothesised to affect competency results variables (referring to the actual outcomes of leadership behaviour within organisational contexts such as increased follower

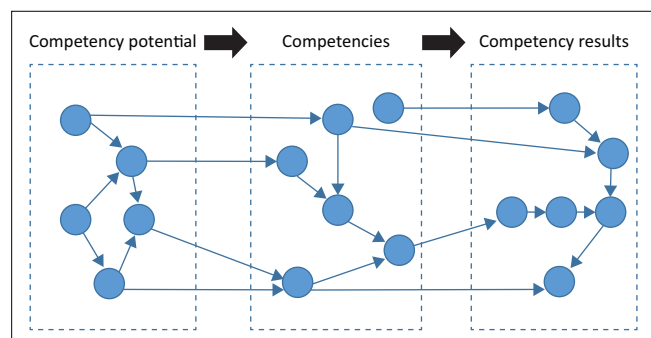


FIGURE 1: A graphical representation of a chain of cause-and-effect relationships between variables mapped in a three-domain competency model.

motivation or follower cohesion). However, this three-domain competency model still fails to acknowledge all of the relevant factors that impact leadership performance as employees do not act in a vacuum but operate within the broader work environment system that are characterised by certain 'facilitators' that will assist them in their efforts or indeed also 'obstacles' that might make it more difficult for them to behave or perform optimally. In this regard, Bartram, Robertson and Callinan (cited in Robertson & Callinan, 2002) make reference to *competency requirements* as well as *contextual and situational factors*, with the former referring to some of the demands made upon employees to behave in certain ways or to avoid specific behaviours (i.e. the line manager setting goals for an employee) and the latter to other factors in the work environment that shape and direct an employee's efforts and that ultimately affect his or her ability to demonstrate or produce the desired sets of behaviour (i.e. organisational structure, job characteristics, remuneration systems, etc.). Consequently, it can be argued that competency requirements (as influenced by an organisation's strategy) can exert a main effect on the success with which competencies are displayed at work and it is secondly proposed that different latent variables that define the work environment can exert a main effect on the success with which competencies are displayed at work and also further moderate the impact of competency potential latent variables on the level at which competencies are displayed at work. Similarly, it is argued that latent variables that define the work environment can exert a main effect on the outcome (i.e. competency results) latent variables as well as moderate the impact of competencies on outcomes. This line of reasoning is depicted in Figure 2.

The argument thus far assumes an essentially uni-directional, albeit complex, causal flow in which competency potential latent variables and situational characteristics affect the level of competence that is achieved on competencies, which in turn, affect the standards that are achieved on the outcome latent variables. It, however, seems unlikely that employees (and even possibly the nature of the organisational environment) will remain psychologically unaffected by the success or failures achieved on the outcome latent variables. For example, Porter and Lawler's (1968) interpretation of the expectancy theory on motivation suggests that the psychological state of job

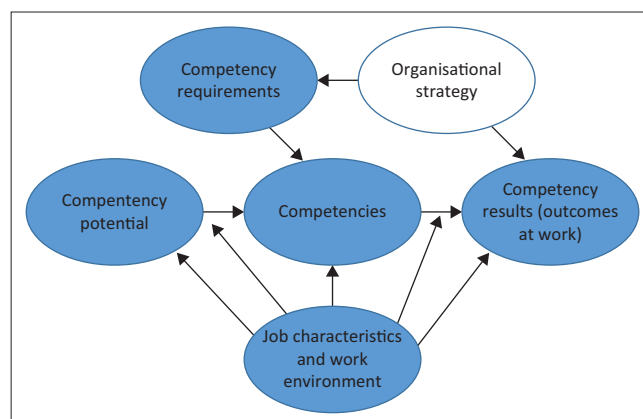


FIGURE 2: A five-domain representation of a competency model.



satisfaction flows from job performance but at the same time also determines performance through its feedback effect on the expectancies and valences associated with performance and with performance outcomes. Similarly, it is doubtful whether the psychological state of *empowerment*, which is defined as an active motivational orientation with regard to an individual's work role emanating, at least in great part, from an individual's feeling of being in control at work (Boudrias, Morin, & Lajoie, 2014) can be achieved in the absence of acceptable (or above average to superior) work performance. The position that psychological states and other malleable competency potential variables (as well as malleable situational variables, like a high-performance culture) may in part develop through performance need therefore be captured through feedback loops from the competency and outcome domains to the competency potential domain. This line of reasoning is depicted in Figure 3.

## The integration of theory on leadership performance

The research framework as depicted in Figure 3 represents a comprehensive blue print for the nomological network constituting the (graduate) leader competency model and defines broad causal pathways between various psychological domains – to be populated by richly connected and multiple antecedent, mediator and outcome variables – that will all draw from a large number of scattered, fragmented theories on leadership performance (e.g. contingency theory, trait theory, transformational theory, etc.) as well as job performance, to articulate a system of intertwined laws (Cronbach & Meehl, 1955), or an overarching theory that generates testable predictions about (graduate) leader performance. The idea is to set a standard and encourage its universal application and provide scaffolding to elicit future theory-building, thus establishing an evolving knowledge base from which manipulable factors can be identified in various domains (e.g. competency potential, competency and contextual variables) to enhance (graduate) leader performance.

At the same time, the new theory will also investigate the leadership phenomena within the context of work unit (organisation, function or team) performance in a way that matters to the organisation's bottom line, thereby bridging

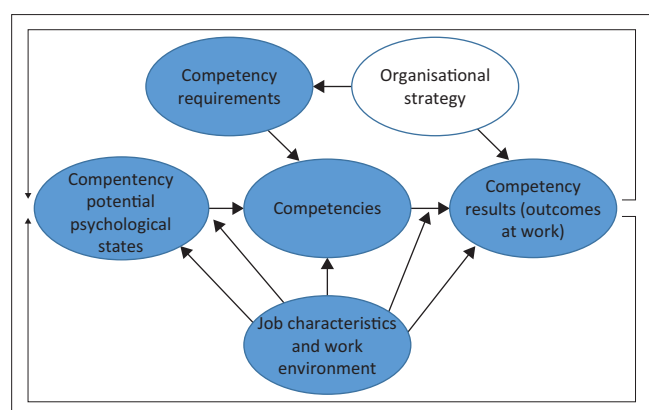


FIGURE 3: A five-domain representation of a competency model.

across the different theories on leadership effectiveness to provide context to the leader's role within organisational settings, a research agenda which to date has been rare (Carter et al., 2020). In fact, despite the wealth of leadership performance literature at our disposal, to our knowledge, such a quantitative synthesis of the (graduate) leadership performance nomological network has not yet been conducted at all, at least not in modelling how leadership performance is interlinked with and embedded in the same nomological system as a work unit. In this regard, we intend to conceptually link the leadership competency model with an 'in-series' work unit competency model 'down-stream', where the competency outcome domains of the leadership competency model double as the competency potential domain of a work unit competency model, that is, the outcomes achieved by the graduate leader (i.e. competency results) simultaneously constitute the levels of malleable work unit competency potential (i.e. collective attitudes, psychological states, cohesion, communication flow, etc.) and the malleable work unit environment characteristics (via competency requirements and situational characteristics) so as to synergistically amplify the collective outcomes (i.e. competency results) eventually achieved by the work unit as a whole. Such a model would ultimately constitute an *a priori* specification of sets of relations amongst competency potential, competency, competency outcome and contextual variables as antecedents, mediators and consequents, allowing for subsequent simultaneous tests of the leadership performance network via confirmatory factor analyses of the structural paths and measurement hypotheses implied by its structure by way of SEM.<sup>4</sup>

Finally, the explanatory model is to be tested and validated on Gen Y (leader) trainees in ascertaining precisely how this generation's psycho-graphic attributes articulate with the psychological mechanism that regulates (graduate) leader performance in furthering our understanding of how we can ensure the availability of future leaders. For example, Gen Y's reported need for rapid career growth (Rheeder, 2015) and exposure to challenging and meaningful assignments (Baruch, 2004) appear to be naturally compatible with the spirit of graduate acceleration programmes, which should work to the advantage of leadership development interventions that aim to accelerate fresh graduates' transition into leadership positions in shorter periods of time. If this is true, then some of the traditional contextual variables (e.g. accelerating learning curve, incremental promotions, etc.) under which leadership development takes place would organically capitalise on this type of Gen Y (competency potential and competency) profile. Yet, the reported transactional, medium- and short-term orientation of the modern graduate employee in terms of the psychological contracts they now enter with employers (Beddingfield, 2005; Kelley-Patterson & George, 2002) as well as their

<sup>4</sup>Leaders are responsible not only for the performance of their work unit as a collective but also for the performance of their individual followers. A similar sequential linkage exists between the proposed graduate leader competency model and an individual employee competency model, where the malleable individual employee competency potential latent variables simultaneously are latent outcome variables in the graduate leader competency model.

demand for greater work or life balance (Dwyer & Azevedo, 2016) rather strikingly opposes such congruity and makes one wonder whether leadership development programmes that rely on many sacrifices from the side of trainees, including the time and effort associated with intensive and extra-curricular training and a longer-term commitment to stay on in one organisation, will gain traction with this generation at all. If the demand for greater work or life balance, for instance, contributes to Gen Y not being taken with the idea of becoming part of leadership development programmes in the first place, effort must be put into an investigation into whether other contextual variables (e.g. pay incentives, online self-learning, etc.) can be altered or introduced to counteract or compensate for this Gen Y (competency potential) preference. Ultimately, the systematic exploration of this entire cause and effect system in terms of its compatibility with Gen Y and its implications for managing Gen Y are equally vital in leveraging this critical leadership resource for the country's future.

## Future aims

We are arguing in favour of a comprehensive conceptualisation of the (graduate) leader performance construct that encompasses a structurally interrelated competency domain structurally interlinked with a structurally interrelated latent outcome domain as part of a larger explanatory structural model that will provide a valid description of the psychological mechanism that regulates differences in performance across (graduate) leaders. The purpose of the model is to inform proactive and reactive attempts to influence the performance levels of (graduate) leaders. Such proactive and reactive interventions must focus on the competencies, the competency potential, the outcomes and the situational variables simultaneously. However, the development and testing of such a comprehensive (five domain) graduate leader competency model is a massive and ambitious undertaking and implies the development of several structural domain models, several to-be-tested hypotheses on how the variables in these different domains relate to each other, as well as the development of construct valid and unbiased measures of the behavioural competencies, competency potential, the outcomes of (graduate) leaders and the contextual variables that impact leadership performance at work, respectively. Consequently, and in order to prioritise a comprehensive explication of one of these domains as the starting point for a future larger set of studies, a decision was made to focus on the (1) derivation of a structural model depicting the *competency domain (behaviour)* of graduate leader performance, (2) development of an instrument (the Pienaar Graduate Leader Competency Questionnaire – or PGLCQ) that can be used to measure graduate leaders' standing on these graduate leader competencies and (3) examining the psychometric properties of the PGLCQ.

The competency domain of this broader competency model is the logical starting point as the explication of the domain positioned in the middle of the broader

nomological network would yield important information to in future explicate the other two domains lying 'up-stream' (i.e. competency potential) and 'down-stream' (i.e. competency outcomes) of it, and inform hypotheses about the contextual variables that could facilitate or hinder performance on these competency, competency potential and competency outcome variables. However, despite the focus on the competency domain and the validation of the PGLCQ, it will nonetheless be necessary to explicate the partial competency model that maps the competencies on the competency results (outcomes) of graduate leader performance too, that is, one cannot hypothesise on the behaviours (i.e. the independent variables) required of leaders if one does not have clarity on what generic outcomes leaders should be responsible for in organisational settings (i.e. the dependent variables) and setting the benchmark for this first. Consequently, the enabling physical and psychological conditions that would facilitate superior performance in collective groups (or organisations) and how we can merge this in coming to a meeting point with the literature on leadership (process or behavioural) performance will need to be factored into the new leadership performance theory as well.

The research initiating questions associated with the explication of the graduate leader performance construct can consequently be framed as follows:

- What is the connotative meaning of the graduate (leader) performance construct interpreted behaviourally?
- What is the denotative meaning of the graduate (leader) performance construct interpreted behaviourally?
- Does the PGLCQ<sup>5</sup> utilising these denotations as stimuli provide a reliable and construct valid measure of the to-be-measured construct as constitutively defined?

## Conclusion

With the imminent retirement of the Baby Boomers and thus the loss of the world's most senior management talent, a global leadership crisis is unfolding. Human Resource practitioners and researchers have a vital role to play in assisting industry to improve the attraction, selection, development and engagement of the newest generation to enter the workplace so as to maximise the potential of this critical leadership talent pool. Although a mature field, the leadership discourse nonetheless remains fragmented and is limited in respect to valid theories on how leaders, as boundary spanners within organisational systems, can positively impact the fortunes of collective groups or teams. In South Africa, the absence of such research is particularly disparaging given the unique challenges our economy is facing and the wealth of untapped potential that can be unlocked by effective leadership. The lack of a coherent theory on leadership performance in organisational settings

<sup>5</sup>The PGLCQ measuring the level of competence that graduates achieve on the graduate competencies that constitute success will form the first subscale of an eventual two-scale Graduate leader performance Battery (GLPB), namely the first part. The second subscale of the GLPB will be the Graduate Leader Outcome Questionnaire (GLOQ) that will measure the graduate (leader) outcomes achieved at work. This scale will be developed as part of a future study.

is also preventing us from gaining a more accurate picture of how our leadership development technology should be adapted to resonate with and capitalise on the competency potential and competency profiles of prospective Gen Y leaders in the country. Consequently, in this article, we outlined a proposal for the development of a modern graduate leader performance construct as one HR solution for dealing with these challenges. We outlined a broad structure for research on all of the variables that impact on leadership performance by suggesting the use of an expanded form of a competency model that is merged with the concept of a nomological network to comprehensively model the psychological mechanism that regulates (graduate) leader performance at work. At the same time, the intention is to contextualise the leadership phenomenon by conceptualising the construct 'in-series' with a work unit competency model, thereby factoring in an explanation for the manner in which leaders can optimise and synergise team or group functioning, or performance at a collective (work unit) level. Such a broader study that accurately maps the competency potential, competency, competency results and contextual variables and the manner in which they simultaneously impact on leadership performance, however, is ambitious and will be time-consuming. We suggest that the explication of this entire graduate leader performance space, therefore, be approached in phases, commencing with the explication of the competency domain first. Insight into this domain will not only extemporarily provide a scaffolding with which to explicate the other domains in the comprehensive model but will also provide clarity on the competency set (measurements) that need to be targeted for leadership development interventions as the main short-term gain to be derived from such a study. Moreover, clarity on the competency set (measurements) underlying successful leadership will serve to inform the identification and utilisation of specific contexts and environments (i.e. *fidelity*, Meyer, Wong, Timson, & Prefect, 2012) that will make the transfer of training and learning more likely and effective.

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## Competing interests

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

## Authors' contributions

J.S.P. and C.C.T. were responsible for conceptualisation, methodology, formal analysis, investigation, visualisation, project management, writing of the original draft, reviewing and editing thereof. C.C.T. was the supervisor for this research spanning from 2016 to 2020 and assisted with resources.

## Ethical considerations

Approval to conduct the study was obtained from Stellenbosch University's research ethics committee. No ethical certificate was required. This article followed all ethical standards for research without direct contact with human or animal subjects.

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## Data availability

Data are available on secure servers at the Stellenbosch University. The purpose of this article is to argue the need for the development of a competency measure of graduate leader performance. The actual results (data) of the psychometric evaluation of the instrument will be provided in a future article (not necessarily to be published in AJOPA).

## Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

## References

- Arvey, R.D., & Murphy, K.R. (1998). Performance evaluations in work settings. *Annual Review of Psychology*, 49, 141–168. <https://doi.org/10.1146/annurev.psych.49.1.141>
- Athey, T.R., & Orth, M.S. (1999). Emerging competency models for the future. *Human Resource Management*, 38(3), 215–226. [https://doi.org/10.1002/\(SICI\)1099-050X\(199923\)38:3<215::AID-HRM4>3.0.CO;2-W](https://doi.org/10.1002/(SICI)1099-050X(199923)38:3<215::AID-HRM4>3.0.CO;2-W)
- Barrett, A., & Beeson, J. (2002). *Developing business leaders for 2010*. New York, NY: The Conference Board.
- Bartram, D. (2004). Assessment in organisations. *Applied Psychology: An International Review*, 53(2), 237–259. <https://doi.org/10.1111/j.1464-0597.2004.00170.x>
- Bartram, D. (2005). The great eight competencies: A criterion-centric approach to validation. *Journal of Applied Psychology*, 90(6), 1185–2103. <https://doi.org/10.1037/0021-9010.90.6.1185>
- Bartram, D., Robertson, I.T., & Callinan, M. (2002). A framework for examining organisational effectiveness. In I.T. Robertson, M. Callinan, & D. Bartram (Eds.), *Organisational effectiveness: The role of psychology* (pp. 1–10). Chichester: John Wiley and Sons.
- Baruch, Y. (2004). Transforming careers: From linear to multidirectional career paths: Organisational and individual perspectives. *Career Development International*, 9(1), 58–73. <https://doi.org/10.1108/13620430410518147>
- Beddingfield, C. (2005). Transforming the ROI of your graduate scheme. *Industrial and Commercial Training*, 37(4), 199–203.
- Bencsik, A., Horváth-Csikós, G., & Tímea, J. (2016). Y and Z generations at workplaces. *Journal of Competitiveness*, 8(3), 99–106. <https://doi.org/10.7441/joc.2016.03.06>
- Borman, W.C., & Brush, D.H. (1993). More progress toward a taxonomy of managerial performance requirements. *Human Performance*, 6(1), 1–21. [https://doi.org/10.1207/s15327043hup0601\\_1](https://doi.org/10.1207/s15327043hup0601_1)
- Borman, W.C., & Motowidlo, S.J. (1993). Expanding the criterion domain to include elements of contextual performance. In W.C. Borman & N. Schmitt (Eds.), *Personnel selection in organizations* (pp. 71–98). San Francisco, CA: Jossey-Bass Publishers.
- Boudrias, J., Morin, A.J.S., & Lajoie, D. (2014). Directionality of the associations between psychological empowerment and behavioural involvement: A longitudinal autoregressive cross-lagged analysis. *Journal of Occupational and Organisational Psychology*, 87(3), 437–462. <https://doi.org/10.1111/joop.12056>
- Boyatzis, R.E. (1982). *The competent manager: A model for effective performance*. New York, NY: Wiley-Interscience.
- Boyatzis, R.E., Goleman, D., & Rhee, K.S. (2000). *Clustering competence in emotional intelligence: Insights from the emotional competence inventory*. In R. Bar-On & J.D.A. Parker (Eds.), *The handbook of emotional intelligence: Theory, development, assessment, and application at home, school, and in the workplace* (pp. 343–362). New York, NY: Jossey-Bass.

- Buckingham, M., & Vosburgh, R.M. (2001). The 21st century human resources function: It's the talent, stupid! *Human Resource Planning*, 24(4), 17–23.
- Campbell, J.P., McCloy, R.A., Oppler, S.H., & Sager, C.E. (1993). A theory of performance. In W.C. Borman & N. Schmitt (Eds.), *Personnel selection in organisations* (pp. 35–70). San Francisco, CA: Jossey-Bass.
- Campion, M.A., Carr, L., Fink, A.A., Ruggerberg, Phillips, G.M., & Odman, R.B. (2011). Doing competencies well: Best practices in competency modelling. *Personnel Psychology*, 64(1), 225–262. <https://doi.org/10.1111/j.1744-6570.2010.01207.x>
- Caraher, L. (2015). *Millennials & management: The essential guide to making it work at work*. New York, NY: Routledge.
- Carter, D.R., Cullen, K.L., Jones, J.M., Gerbasi, A., Chrobot-Mason, D., & Nae, E.Y. (2020). Functional leadership in interteam contexts: Understanding 'what' in the context of why? Where? When? And Who? *The Leadership Quarterly*, 31(1), 101378. <https://doi.org/10.1108/CDL-10-2014-0143>
- Chen, H.C., & Naquin, S.S. (2006). An integrative model of competency development, training design, assessment center, and multi-rater assessment. *Advances in Developing Human Resources*, 8(2), 265–282. <https://doi.org/10.1177/1523422305286156>
- Chin, W.S., & Rasdi, R.M. (2014). Protean career development: Exploring the individuals, organizational and job-related factors. *Asian Social Sciences*, 10(21), 203. <https://doi.org/10.5539/ass.v10n21p203>
- Clarke, M. (2015). Dual careers: The new norm for Gen Y professionals? *Career Development International*, 20(6), 562–582. <https://doi.org/10.1108/CDI-10-2014-0143>
- Combes, B. (2009). Generation Y: Are they really digital natives or more like digital refugees? *Synergy*, 7(1), 401–408.
- Conger, J.A., & Ready, D.A. (2004). Rethinking leadership competencies. *Leader to Leader*, 2004(32), 41–47. <https://doi.org/10.1002/ltl.75>
- Connor, H., & Shaw, S. (2008). Graduate training and development: Current trends and issues. *Education & Training*, 50(5), 357–365. <https://doi.org/10.1108/00400910810889048>
- Cook, V.S. (2016). *Engaging generation Z students*. Retrieved from [https://sites.google.com/a/uis.edu/colrs\\_cook/home/engaging-generation-z-students](https://sites.google.com/a/uis.edu/colrs_cook/home/engaging-generation-z-students)
- Croft, L., & Seemiller, C. (2017). Developing leadership competencies. *New Directions For Student Leadership*, 2017(156), 7–18. <https://doi.org/10.1002/nd.20267>
- Cronbach, L.J., & Meehl, P.E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52(4), 281–302. <https://doi.org/10.1037/h0040957>
- Cross, R., Ernst, C., & Pasmore, B. (2013). A bridge too far? How boundary spanning networks drive organisational change and effectiveness. *Organisational Dynamics*, 42(2), 81–91. <https://doi.org/10.1016/j.orgdyn.2013.03.001>
- Crowley, S.L., & Fan, X. (1997). Structural equation modelling: Basic concepts and applications in personality assessment research. *Journal of Personality Assessment*, 68(3), 508–531. [https://doi.org/10.1207/s15327752jpa6803\\_4](https://doi.org/10.1207/s15327752jpa6803_4)
- Crumpacker, M., & Crumpacker, J.M. (2007). Succession planning and generational stereotypes: Should HR consider age-based values and attitudes a relevant factor or passing fad? *Public Personnel Management*, 3(4), 349–369.
- Cullberg, B., & Mihelič, K.K. (2016). Three ethical frames of reference: Insights into Millennials' ethical judgements and intentions in the workplace. *Business Ethics: A European Review*, 25(1), 94–111. <https://doi.org/10.1111/beer.12106>
- D'Amato, A., & Herzfeldt, R. (2008). Learning orientation, organizational commitment and talent retention across generations: A study of European managers. *Journal of Managerial Psychology*, 23(8), 929–953. <https://doi.org/10.1108/02683940810904402>
- Dwyer, R.J., & Azevedo, A. (2016). Preparing leaders for the multigenerational workforce. *Journal of Enterprising Communities: People and Places in the Global Economy*, 10(3), 281–305. <https://doi.org/10.1108/JEC-08-2013-0025>
- Erickson, T. (2008). *Plugged in: The Generation Y guide to thriving at work*. Boston: Harvard Business Press.
- Erikson, T., Alsop, R., Nicholson, P., & Miller, J. (2009). Gen Y in the workforce. *Harvard Business Review*, 87(2), 43–49.
- Eustace, A., & Martins, N. (2014). The role of leadership in shaping organisational climate: An example from the fast-moving consumer goods industry. *South African Journal of Industrial Psychology*, 40(1), 1–14. <https://doi.org/10.4102/sajip.v40i1.1112>
- Fay, D., & Sonnentag, S. (2010). A look back to move ahead: New directions for research on proactive performance and other discretionary work behaviours. *Applied Psychology*, 59(1), 1–20. <https://doi.org/10.1111/j.1464-0597.2009.00413.x>
- Fernandez-Araoz, C., Graysberg, B., & Nohria, N. (2011). How to hang on to your high potentials. *Harvard Business Review*, 81(2), 76–83.
- Financial executives research foundation (FERF). (2016). *Creating a leadership pipeline: Developing the millennial generation into finance leaders*. Morristown: Financial executives research foundation Robert Half.
- Francis, T., & Hoefel, F. (2018). 'True Gen': Generation Z and its implications for companies. McKinsey&Company. Retrieved August 1, 2020 from <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/true-gen-generation-z-and-its-implications-for-companies>
- Gilbert, J. (2011). The millennials: A new generation of employees, a new set of engagement policies. *Ivey Business Journal*, 75(5), 26–28.
- Glass, A. (2007). Understanding generational differences for competitive success. *Industrial and Commercial Training*, 39(2), 98–103. <https://doi.org/10.1108/00197850710732424>
- Gordon, A., & Yukl, G. (2004). The future of leadership research: Challenges and opportunities. *German Journal of Human Resource Research*, 18(3), 359–365.
- Graen, G.B., & Schiemann, W.A. (2013). Leadership-motivated excellence theory: An extension of LMX. *Journal of Managerial Psychology*, 28(5), 452–469. <https://doi.org/10.1108/JMP-11-2012-0351>
- Hackman, J.R., & Wageman, R. (2005). When and how team leaders matter. *Research in Organisational Behaviour*, 26, 37–74. [https://doi.org/10.1016/S0191-3085\(04\)26002-6](https://doi.org/10.1016/S0191-3085(04)26002-6)
- Hagemann, B., & Stroope, S. (2013). Developing the next generation of leaders. *Industrial and Commercial Training*, 45(2), 123–126.
- Hanson, A.R., & Gulish, A. (2016). From college to career: Making sense of the post-millennial job market. *The George Town Public Policy Review*, 21(1), 1–22.
- Hershatler, A., & Epstein, M. (2010). Millennials and the world of work: An organisation and management perspective. *Journal of Business and Psychology*, 25, 211–223. <https://doi.org/10.1007/s10869-010-9160-y>
- Hills, C., Ryan, S., Smith, D.R., & Warren-Forward, H. (2012). The impact of 'generation Y' occupational therapy students on practice education. *Australia Occupational Therapy Journal*, 63(6), 391–398.
- Hira, N. (2007). You raised them now manage them. *Fortune*, 155(9), 38–48.
- Hogan, R., & Kaiser, R.B. (2005). What we know about leadership. *Review of General Psychology*, 9(2), 169–180. <https://doi.org/10.1037/1089-2680.9.2.169>
- Hogg, M.A., & Van Knippenberg, D. (2003). *Social identity and leadership processes in groups*. In M.P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 35, pp. 1–52). San Diego: Elsevier Academic Press.
- Holmes, A., & Miller, S. (2000). A case for advanced skills and employability in higher education. *Journal of Vocational Education and Training*, 52, 653–664. <https://doi.org/10.1080/1363682000200145>
- Holmes, L. (2013). Competing perspectives on graduate employability: Possession, position, or process? *Studies in Higher Education*, 38(4), 538–554.
- Howell, J.M., & Shamir, B. (2005). The role of followers in the charismatic leadership process: Relationships and their consequences. *Academy of Management Review*, 30(1), 96–112. <https://doi.org/10.2307/40251>
- Hurst, J.L., & Good, L.G. (2009). Generation Y and career choice: The impact of retail career perceptions, expectations and entitlement perceptions. *Career Development International*, 14(6), 570–593.
- Jonck, P., Van der Walt, F., & Ntomozodwa, C.S. (2017). A generational perspective on work values in a South African sample. *SA Journal of Industrial Psychology*, 43(1), 1–9. <https://doi.org/10.4102/sajip.v43.1393>
- Karefalk, A., Petterson, M., & Zhu, Y. (2007). *How to motivate generation y with different cultural backgrounds*. Unpublished doctoral dissertation. Kristianstad: Kristianstad University.
- Kelley-Patterson, D., & George, C. (2002). Mapping the contract: An exploration off the comparative expectations of graduate employees and human resource managers within the hospitality, leisure and tourism industries in the United Kingdom. *Journal of Services Research*, 2(1), 55–74.
- Kleynhans, E.P.J. (2006). The role of human capital in the competitive platform of South African industries. *SA Journal of Human Resource Management*, 4(3), 55–62.
- Kragt, D., & Guenter, H. (2018). Why and when leadership training predicts effectiveness: The role of leader identity and leadership experience. *Leadership & Organisational Development Journal*, 39(3), 406–418.
- Kupperschmidt, B.R. (2000). Multigeneration employees: Strategies for effective management. *The Health Care Manager*, 19(1), 65–76. <https://doi.org/10.1097/00126450-200019010-00011>
- Lacey, M.X., & Groves, K. (2014). Talent Management collides with corporate social responsibility: Creation of inadvertent hypocrisy. *Journal of Management Development*, 33(4), 399–409.
- Laundrum, S. (2016). *How millennials are changing how we view success*. Retrieved from <http://www.forbes.com/sites/sarahlaundrum/2016/12/30/how-millennials-are-changing-how-we-view-success/>
- Lichtenstein, B.B., Uhl-Bien, M., Marion, R., Seers, A., Orton, J.D., & Schreiber, C.J. (2006). Complexity leadership theory: An interactive perspective on leading in complex adaptive systems. *Emergence, Complexity, and Organisations*, 8(4), 2–12.
- Liden, R.C., & Antonakis, J. (2009). Considering context in psychological leadership research. *Human Relations*, 62(11), 1587–1605. <https://doi.org/10.1177/0018726709346374>
- Mangelsdorf, M. (2015). *Von Babyboomer bis Generation Z: Der richtige Umgang mit unterschiedlichen Generationen im Unternehmen*. Offenbach: Gabal.
- Martin, C.A., & Tulgan, B. (2011). *Managing Generation Y: Global Citizens Born in the Late Seventies and Early Eighties*. Amherst: HRD Press.
- Markus, L.H., Cooper-Thomas, H.D., & Allpress, K.N. (2005). Confounded by competencies? An evaluation of the evolution and use of competency models. *New Zealand Journal of Psychology*, 34(2), 117–126.
- Martin, C.A. (2005). From high maintenance to high productivity: What managers need to know about Generation Y. *Industrial and Commercial Training*, 37(1), 39–44.
- Mayer, C.H., & Louw, L. (2011). Managerial challenges in South Africa. *European Business Review*, 23(6), 572–591. <https://doi.org/10.1108/09555341111175417>
- McCracken, M., Currie, D., & Harrison, J. (2016). Understanding graduate recruitment, development and retention for the enhancement of talent management: Sharpening 'the edge' of graduate talent. *International Journal of Human Resource Management*, 27(22), 2727–2752. <https://doi.org/10.1080/09585192.2015.1102159>
- McCrindle, M. (2006). *New generations at work: Attracting, recruiting, retraining, and training Generation Y*. New South Wales: McCrindle Research.

- Meyer, G.F., Wong, L.T., Timson, E., & Prefect, P. (2012). Objective fidelity evaluation in multisensory virtual environments: Auditory cue fidelity in flight simulation. *PLoS One*, 7(9), 1–14. <https://doi.org/10.1371/journal.pone.0044381>
- Michaels, E., Handfield-Jones, H., & Axelrod, B. (2001). *The war for talent*. Brighton, MA: Harvard Business Press.
- Miner, N. (2019). *As Baby Boomers near retirement, companies risk a leadership shortage*. Retrieved from <http://www.forbes.com/sites/forbescoachescouncil/2019/10/15/as-baby-boomers-near-retirement-companies-risk-a-leadership-shortage/?sh=502efbc51f9a>
- Moldoveanu, M., & Narayandas, D. (2019). The future of leadership development. *Harvard Business Review*, 97(4), 40–48.
- Naim, M.F., & Lenka, U. (2018). How does mentoring contribute to Gen Y employees' intention to stay? An Indian perspective. *Europe's Journal of Psychology*, 13(2), 314–335. <https://doi.org/10.5964/ejop.v13i2.1304>
- Nkomo, S.M., & Kriek, D. (2011). Leading organisational change in the 'new' South Africa. *Journal of Occupational and Organisational Psychology*, 84(3), 453–470. <https://doi.org/10.1111/j.2044-8325.2011.02020.x>
- Nunkoo, R., & Ramkissoon, H. (2011). Residents' satisfaction with community attributes and support for tourism. *Journal of Hospitality & Tourism Research*, 35(2), 171–190.
- Olišovská, A., Mura, L., & Švec, M. (2015). The most recent legislative changes and their impact on interest by enterprises in agency employment: What is next in human resource management? *Problems and Perspectives in Management*, 13(3), 47–54.
- Osborn, R., Uhl-Bien, M., & Milosevic, I. (2014). The context ad leadership. In D. Day (Ed.), *The Oxford handbook of leadership and organisations* (pp. 589–612). Oxford: Oxford University Press.
- Park, Y., & Rothwell, W.J. (2009). The effects of organizational learning climate, career-enhancing strategy, and work orientation on the protean career. *Human Resource Development International*, 12(4), 387–405. <https://doi.org/10.1080/13678860903135771>
- Parry, S.B. (1998). Just what is a competency? (And why should you care?). *Training*, 35, 58–64.
- Pauw, K., Bhorat, H., Goga, S., Ncube, L., Oosthuizen, M., & Van der Westhuizen, C. (2006). *Graduate Unemployment in the context of skills shortages in education and training: Findings from a firm survey*. Retrieved from [http://open.uct.ac.za/bitstream/handle/11427/7345/DPRU\\_WPO6-115.pdf?sequence=1](http://open.uct.ac.za/bitstream/handle/11427/7345/DPRU_WPO6-115.pdf?sequence=1)
- Peterson, R.S., Smith, D.B., Martorana, P.V., & Owens, P.D. (2003). The impact of chief executive officer personality on top management team dynamics: One mechanism by which leadership affects organizational performance. *Journal of Applied Psychology*, 88(5), 795–808. <https://doi.org/10.1037/0021-9010.88.5.795>
- Pihlak, K. (2018). *The relationship between employer brand and intention to apply*. Published honours dissertation. Manchester: University of Manchester.
- Porter, L.W., & Lawler, E.E. (1968). *Managerial attitudes and performance*. Homewood, IL: Dorsey.
- Porter, L.W., & McLaughlin, G.B. (2006). Leadership and the organisational context: Like the weather? *Leadership Quarterly*, 17(6), 559–576. <https://doi.org/10.1016/j.leaqua.2006.10.002>
- Premsky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5), 1–6. <https://doi.org/10.1108/10748120110424816>
- PWC. (2011). *Millennials at work: Reshaping the workplace report*. Retrieved August 1, 2020 from <https://www.pwc.com/co/es/publicaciones/assets/millennials-at-work.pdf>
- Rasool, F., & Botha, C.J. (2011). The nature, extent and effect of skills shortages on skills migration in South Africa. *SA Journal of Human Resource Management*, 9(1), 1–12.
- Rheeder, K. (2015). *Leadership it is a changing!* [Paper presentation]. International conference on Economic, Finance and Management Outlooks, 27–28 July 2015. Bangkok, Thailand.
- Risher, H. (2008). Planning and managing tomorrow's pay programs: Demographic shifts may trigger deep changes in traditional pay plans. *Compensation and Benefits Review*, 40(4), 30–36. <https://doi.org/10.1177/0886368708321524>
- Roe, R.A. (1999). Work performance: A multiple regulation perspective. In C.L. Cooper, & I.T. Robertson (Eds.), *International review of industrial and organisational psychology* (Vol. 14, pp. 231–335). Chichester: Wiley.
- Rosenbach, W.E., Taylor, R.L., & Youndt, M.A. (2018). *Contemporary issues in leadership* (7th ed.). New York: Routledge.
- Schwab, K., & World Economic Forum. (2019). *Global Competitiveness Report 2019*. Retrieved August 1, 2020 from [http://www3.weforum.org/docs/WEF\\_TheGlobalCompetitivenessReport2019.pdf](http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf)
- Seemiller, C., & Grace, M. (2019). *Generation Z: A century in the making*. Oxon: Routledge.
- Sendjajay, S., Sarros, J.C., & Santora, J.C. (2008). Defining and measuring servant leadership behaviour in organisations. *Journal of Management Studies*, 45(2), 402–424.
- Serpico, D. (2018). What kind of kind is intelligence? *Philosophical Psychology*, 31(2), 232–252. <https://doi.org/10.1080/09515089.2017.1401706>
- Sharma, L. (2012). Generation Y at workplace. *Human Resource Management*, V, 74–78.
- Silvestri, R.F. (2013). Building leaders through planned executive development. *Leader to Leader*, 2013(68), 19–26. <https://doi.org/10.1002/ltl.20070>
- Smith, S.D., & Galbraith, Q. (2012). Motivating millennials: Improving practices in recruiting, retaining, and motivating younger library staff. *The Journal of Academic Librarianship*, 38(3), 135–144.
- Spencer, L.M., & Spencer, S.M. (1993). *Competence at work: Models for superior performance*. New York, NY: John Wiley & Sons.
- Squires, D. (2020). Prioritising the forgotten generation: Why organisations should make boomers a key part of their talent acquisition strategy in 2020. *Strategic HR Review*, 19(3), 99–102.
- Stuss, D.T. (2011). Functions of the frontal lobes: Relation to executive functions. *Journal of the International Neuropsychological Society*, 17, 1–7. <https://doi.org/10.1017/S1355617711000695>
- Sylvester, J. (2015). Creating and maintaining an engaged Generation Y workforce – Why it matters and what to do. *Strategic HR Review*, 14(4), 151.
- Tansley, C., Harris, L., Stewart, J., & Turner, P. (2006). *Talent management: Understanding the dimensions. Change agenda*. London: Chartered Institution of Personnel and Development (CIPD).
- Terracciano, A., McCrae, R.R., & Costa, P.T. (2008). Personality traits: Stability and change with age. *Geriatrics and Aging*, 11(8), 474–478.
- Toor, S.R., & Ofori, G. (2008). Leadership vs. management: How they are different and why! *Journal of Leadership and Management in Engineering*, 8(2), 61–71. [https://doi.org/10.1061/\(ASCE\)1532-6748\(2008\)8:2\(61\)](https://doi.org/10.1061/(ASCE)1532-6748(2008)8:2(61))
- Ulrich, D., Smallwood, N., & Sweetman, K. (2008). *The leadership code: Five rules to lead by*. Boston, MA: Harvard Business Press.
- Van der Merwe, L., & Verwey, A. (2007). Leadership meta-competencies for the future world of work. *SA Journal of Human Resource Management*, 5(2), 33–41. <https://doi.org/10.4102/sajhrm.v5i2.117>
- Van der Wal, Z. (2017). *The 21st century public manager: The public management and leadership series*. London: Palgrave.
- Vanmeter, R.A., Douglas, G.B., Chonko, J.W., & Roberts, J.A. (2013). Generation Y's ethical ideology and its potential workplace implications. *Journal of Business Ethics*, 117(1), 93–109. <https://doi.org/10.1007/s10551-012-1505-1>
- Van Vugt, M. (2006). Evolutionary origins of leadership and followership. *Personality and Social Psychology Review*, 10(4), 354–371.
- Van Vugt, M., & Ronay, R. (2013). The evolutionary psychology of leadership: Theory, review, and roadmap. *Organisational Psychology Review*, 4(1), 74–95. <https://doi.org/10.1177/2041386613493635>
- Weston, R., & Gore, P.A. Jr. (2006). A brief guide to structural equation modelling. *The Counselling Psychologist*, 34(5), 719–751. <https://doi.org/10.1177/00110006286345>
- Wong, M., Lang, W., Gardiner, E., & Coulon, L. (2008). Generational differences in personality and motivation: Do they exist and what are the implications for the workplace? *Journal of Management Psychology*, 23(8), 878–890. <https://doi.org/10.1108/02683940810904376>
- Wortman, J., Lucas, R.E., & Donnellan, M.B. (2012). Stability and change in the Big Five personality domains: Evidence from a longitudinal study of Australians. *Psychology and Aging*, 27(4), 867–874. <https://doi.org/10.1037/a0029322>
- Yrle, A.C., Hartman, S.J., & Payne, D.M. (2005). Generation X: Acceptance of others and teamwork implications. *Team Performance Management*, 11(516), 188–199. <https://doi.org/10.1108/13527590510617765>
- Zaccaro, S., & Klimoski, R. (2001). *The nature of organizational leadership: An introduction*. San Francisco, CA: Jossey-Bass.
- Zang, T., Lu, C., & Murat, K. (2017). Engaging Generation Y to co-create through mobile technology. *International Journal of Electronic Commerce*, 21(4), 489–516. <https://doi.org/10.1080/10864415.2016.1355639>