Assessing the Effect of Management Education on Vocational Behaviour

https://doi.org/10.36369/2616-9045/2024/v13i1a6
Online ISSN: 2616-9045.Print ISSN: 2218-5615

LEHLOHONOLO MAKHABANE TABANE
Wits Business School
University of the Witwatersrand
Lehlohonolo.tabane@wits.ac.za

OPHILLIA LEDIMO
College of Economic and Management Sciences
University of South Africa
manetom@unisa.ac.za

Abstract

This article presents a two-phase longitudinal study on the effect of management education on vocational behaviour, using Holland's Typology to test Congruence as a moderator. The Phase 1 sample was 360 male and female South African MBA/MBL and Specialised Master's university students; the Phase 2 sample was 103 students. The study was conducted in Gauteng Province, South Africa, with participants from Johannesburg and Pretoria. A within- and between-subjects design was employed. The vocational behaviour indicators were career decision-making self-efficacy, vocational identity, work identity, career commitment, and vocational interest/personality. Discriminant Function Analysis identified the Enterprising personality type as the best predictor of the Enterprising type and Social type environments in South Africa. Holland's fourth working assumption was partially supported. Congruence did not predict vocational behaviour, but *t*-test results established significant within- and between-group differences in vocational behaviour due to Congruence. Incongruence was not always linked to negative outcomes; nor was Congruence always linked to positive outcomes. Management education did not change students' vocational behaviour.

Keywords: Management education, Vocational behaviour, Holland's Typology, Congruence (P-E fit)

Introduction

This article seeks to establish whether management education can catalyse vocational behaviour change amongst post-graduate management students, or in other words, influence career-related behaviour that includes vocational choice. The paper seeks to address a gap in literature on the impact of interest congruence on psychological behaviour, responding to Chernyshenko, Stark, and Nye's (2019) call for an exploration of "the utility of vocational interest measures for predicting academic performance, work performance, and how interest congruence affects psychological well-being" (p. 92).

The article considers how congruence affected vocational behaviour in a two-phase longitudinal study on the effect of management education on vocational behaviour. The study focused on a cohort of male and female MBA/MBL and Specialised Master's university students in Johannesburg and Pretoria (Gauteng Province), in South Africa, where management education pertained to advanced education in business. In Phase 1 of this study, "congruence (P-E fit)" was the predictor variable and "vocational behaviour" was the outcome variable. In Phase 2 of the study, the "academic environment" was the predictor variable, "congruence (P-E fit)" was the moderator variable, and "vocational behaviour change" was the outcome variable. The study used Holland's Typology as a theoretical model.

Holland's Typology (1985)

Holland (1985) describes six vocational personalities, which he terms the Realistic, Investigative, Artistic, Social, Enterprising and Conventional (RIASEC) types, as well as subtypes (personality patterns) and outlines their development, formulation and assessment. A type is a theoretical or ideal model against which to measure a real person. Types can be seen as the outcome of interaction between personal and cultural forces (parents, peers, biological heredity, culture, social class and the physical environment). People initially learn preferences for certain activities, but later these preferences may metamorphose into strong interests. Acting on these interests results in the development of a unique group of competencies. Individuals' interests and competencies produce personal dispositions that influence their behaviour in relation to their thinking, perceiving and acting in unique ways. Holland (1985) posits that,

> each type has a characteristic repertoire of attitudes and skills for coping with environmental problems and tasks. Different types select and process information in different ways, but all types seek fulfilment by exercising characteristic activities, skills, and talents and by striving to achieve special goals. Consequently, types are often active rather than passive recipients of environmental influence, for they both seek and avoid environments, problems and tasks. (p.3).

According to Holland (1985), people who closely represent a specific RIASEC type are likely to display the personal behaviours and traits of that type. The person-environment link leads to outcomes such as a person's vocational choice, vocational stability and achievement, personal competence, educational choice and achievement, susceptibility to influence, and social behaviour. Congruence is the degree of fit between an individual's personality type and the environment (P-E fit). Different types require different environments that offer specific opportunities and rewards to match the type.

Three assumptions are common to congruence (P-E fit) theories. The first is that people seek and create environments that enable them to display their traits behaviourally (for example, creative people seek eclectic positions). The second is that there are consequences attached to the degree of fit between individuals and their work environments – positive consequences for their well-being such as productivity, satisfaction, turnover and performance, and negative consequences such as stress. Better fit is associated with matching outcomes. The third assumption is that adjusting a person's P-E fit is an ongoing and reciprocal process through which people are shaped by their environments, whilst also shaping those environments. Thus P-E fit is integral to career interventions such as decision-making, career planning and adjustment (Su, Murdock, & Rounds, 2015).

Congruence (Person-Environment Fit)

This paper seeks to contribute to the conversation about congruence research concerning Holland's (1985) Typology by testing an alternative statistical direction of his fourth main assumption, that is, behaviour is determined by an interaction between personality and environment. A key question is whether exposure to post-graduate management education (an academic environment) produces changes in students' vocational behaviour.

The Need for a Paradigmatic Shift Towards Experimental Research and Increased Rigour in Congruence Research Design

With a revised research agenda of Holland's theory in mind, Spokane, Meir, and Catalano (2000) have called for "more direct tests of the interactive propositions of the theory, and a more appropriate balance between correlational and experimental designs" (p. 179). These authors assert that the assumption of linearity which is embedded in the traditional paradigm of congruence must be questioned. They see mediator and moderator designs as a step forward in congruence research (Spokane et al., 2000). Cross-paradigm research is a further recommendation to improve congruence research. This paper draws on the fields of psychology, as well as management and leadership development. As far as could be ascertained, there is a dearth of studies examining the moderating role of congruence (P-E Fit) within Holland's Typology for the variables considered in this article. The

anticipated psychological impact of post-graduate management education was explored as a way to measure the return on investment of such academic programmes. The inclusion of traditional MBA samples (core courses) and a selection of Specialised Master's programme samples was inspired by the traditional MBA vs Specialised Master's debate in management and leadership literature (Barber, 2018; Baruch, Bell, & Gray, 2005; Kumar, 2015; Pounder & Ross, 2018; Stoten, 2018).

Management Education and Leadership Development

According to Boyce, Zaccaro, and Wisecarver (2010), leader development for professional self-development has been given little research attention. They concur with Maurer and Tarulli (1994, as cited in Boyce et al., 2010) and Maurer, Weiss and Barberite (2003, as cited in Boyce et al., 2010) that few empirical studies have examined the links between career development constructs and voluntary participation in self-development initiatives in an organisational context. There has also been little research on variables linked to work-related learning and development activities. Responding to these gaps in the literature, this paper focused on MBA/MBL and Specialised Master's candidates who chose formal training to trigger their leader development process. Although the studies reviewed below do not provide answers regarding management education and leadership development, they do present recent attempts to link career development constructs such as proactive personality, "grit", career exploration and career calling with self-development initiatives.

Career Development Constructs and Self-development Initiatives

Using a sample of 905 post-graduates in China, a study by Zhang, Xin, Wang, Li, Du, and Wang (2023) explored the link between students' proactive personality and academic procrastination. They found that a proactive personality was associated with higher research self-efficacy and learning adaptability. The relationship between a proactive personality and academic procrastination was mediated by learning adaptability. Academic performance was a focus in a study by Guo, Luo and Tan (2023), who investigated the mediating role of "grit" (consistency of interest, perseverance of effort) in relation to academic performance and purpose in life (meaningfulness and goal orientation). Superior academic performance was associated with higher purpose in life. Grit (perseverance of effort) appeared to mediate the relationship between academic performance and purpose in life (goal orientation), as well as the association between higher purpose in life (beyond-the-self) and academic performance.

Zhang and Zhang (2022) assessed the impact of work passion and career exploration behaviour on the "family influence and career calling" relationship. They found that a high sense of a career calling was predicted by a positive family influence; and the relationship between work passion and career calling was mediated by career exploration. Blair,

Gorman, Helland, and Delise (2014) report that members of different professions responded differently to leader development interventions. They note that the mean goal quality and goal-feedback correspondence scores were lower for Physician MBA students than for Senior-Executive MBA or Aeronautical Engineer MBA students. Furthermore, their goal quality measure revealed these differences to be significant.

Of particular interest for this article, Prince, Burns, and Manolis (2014) explored the following burning question: "Does an MBA education, for instance, uniquely affect students with different backgrounds (i.e., educationally, extent of business experience, or culturally)?" (p. 308). This question, which echoes the position of Blair et al. (2014), is the crux of the current article's argument that MBA education by design benefits some students more than others. There seems to be consensus amongst authors such as Blair et al. (2014) Brown, Warren, and Khattar (2016) and Prince et al. (2014) that management education should catalyse behaviour change, but that management development interventions appear to affect individuals differently. The current paper anticipated vocational behaviour change amongst the MBA group after exposure to the MBA core courses, based on the assumption that MBA programmes are designed in ways that benefit some students (those whose vocational personality types are receptive to the influence of the training content) more than others, thereby affecting recipients of this kind of education differently.

Behaviour Change and Related Psychological Constructs

The studies discussed below attempted to account for behaviour change (employability, job crafting, increased confidence, job carry-over strain, employee innovative behaviour and well-being) and attendant psychological constructs.

Kulbo, Wen, and Addo (2020) explored graduate employability and attendant resource capitals, notably the human, personal-social and organisational capitals. Using a sample of 743 final-year students in Kenya and Ghana, their study found that organisational capital predicted graduates' employability. Kulbo et al. (2020) concluded that the social capital benefit emanating from a graduate qualification and institutional affiliation is also linked to employability. Focusing on training feedback and vocational behaviour, Guo, Xiong, and Liao (2022) investigated the relationship between employee job crafting and developmental feedback. Hierarchical regression analysis indicated that supervisor developmental feedback enabled employee job crafting: the relationship was observed within the boundaries of "openness to experience" and "conscientiousness".

Ekele, Onodugo, Okwo, Ogba, Onodugo, and Chukwu (2022) explored psychosocial mentoring and job satisfaction as moderators of the relationship between job demands and job carry-over strain among medical interns. Their findings suggest that excessive job demands heightened job carry-over into the employee's non-work life, but that job satisfaction and psychosocial mentoring were linked to reduced levels of job carry-over

strain. Heyns, McCallaghan, and Roos (2021) explored "perceived supervisor support" as an explanatory variable in the relationship between "creative leadership" and "employee work wellness", amongst South African agricultural workers. Heyns et al. (2021) concluded that perceived supervisor support and creative leadership are vital to employee well-being, but that creative leadership alone cannot subvert burnout; instead, a supportive supervisor may be beneficial.

Coetzee and Govender (2020) argue that career development initiatives should be included in the workplace to enable workers to take advantage of their psychological career resources (career preferences and values) as they move through their careers. These resources function to expand people's thought-action repertoire and improve their confidence in participating in adaptive career behaviour. Ding, Yu, and Li (2022) examined the role of emotional factors (trait emotional intelligence and emotional exhaustion) in employees' innovative behaviour as it relates to their core self-evaluation. Using a sample of 299 workers from China's manufacturing sector, they found that innovative behaviour was positively associated with employee core self-evaluations. However, the direct relationship between trait emotional intelligence and innovative behaviour was reduced by emotional exhaustion. Ding et al. (2022) recommended interventions targeting emotional exhaustion to promote employees' innovative behaviour.

An Account of Studies that Focus on MBA Programmes

Gupta and Bennett (2014) examined the impact of the MBA educational experience on four types of human capital: social, administrative, ingenious, and logical capital. The findings suggested that qualitative MBA courses were significantly related to ingenious, logical, and social capital, whereas quantitative courses were related to administrative and ingenious skills. Baruch et al. (2005) conducted a longitudinal study using alumni of MBA and specialised Master's programmes to compare the outcomes of a generalist MBA with those of specialised programmes. Findings suggest that these programmes were similar in terms of the performance, self-efficacy, income, and career success of alumni. Some studies indicate that an MBA is more geared to promote graduates' career development, whereas Professional Master's programmes are designed to deepen students' knowledge and competence in a specific area (Baruch et al., 2005; Gupta, Saunders, & Smith, 2007; Kumar, 2015).

Aim of the Study

The impact of post-graduate education is usually seen mainly after a graduate has obtained the qualification and uses it as personally intended, for example, to secure a job, to advance to a higher organisational rank, or to acquire and apply a special skillset. There was therefore room for research on the immediate impact and psychological effect of an

MBA/MBL programme beyond the classroom (managerial skillset). Hence, this study aimed to ascertain the association between MBA/MBL core courses (and Specialised Master's programmes, including a governance programme) and the vocational behaviour of university students whilst they were still engaged in the learning process. Holland's (1985) Typology was used to examine the role of P-E Fit (Congruence) in the relationship between management education and students' vocational behaviour. The study followed two phases, as depicted in Figures 1 and 2. The relationship between the variables is illustrated in Figure 3.

Phase 1 Hypotheses

The following assumptions and attendant hypotheses are based on Holland's (1985) theory of vocational choice:

Assumption 1: Students' personality type is associated with the academic environment.

H1a: Enterprising personality type ('E-type') is associated with Enterprising academic environment ('E-type academic environment code'), viz., MBA/MBL, Specialised Master's e.g., MCom. (Financial Management Sciences and Marketing Management).

H1b: Social personality type ('S-type') is associated with Social academic environment ('S-type academic environment code') viz., Governance programme (Public Administration & Management).

The association of vocational behaviour indicators with congruence (P-E fit) would be established, whereafter congruence (P-E fit) as a predictor of vocational behaviour indicators would be investigated.

Assumption 2: A high level of vocational behaviour is associated with congruence (P-E fit).

H2a: Career commitment is positively associated with congruence amongst post-graduate management students.

H2b: Career decision-making self-efficacy is positively associated with congruence amongst post-graduate management students.

H2c: Vocational identity is positively associated with congruence amongst post-graduate management students.

H2d: Work identity is positively associated with congruence amongst post-graduate management students.

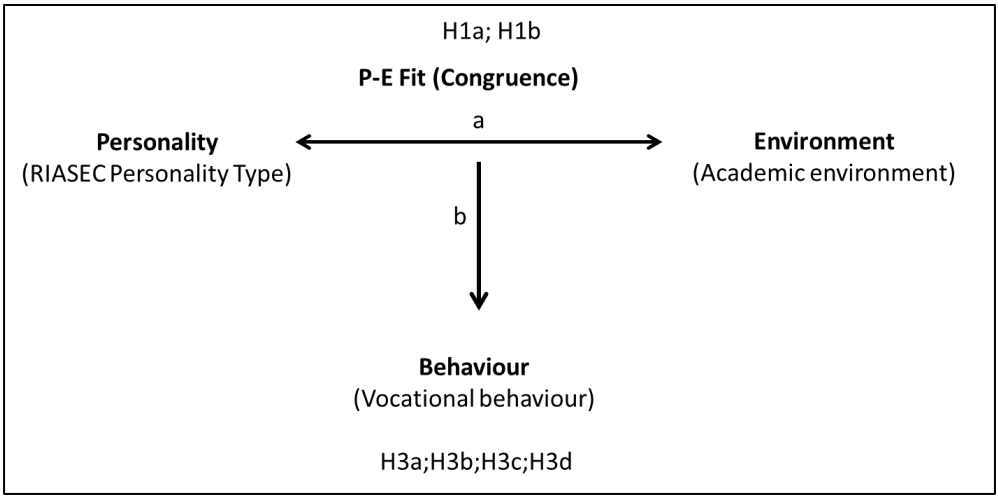
Assumption 3: Congruence (P-E fit) predicts vocational behaviour.

H3a: Congruence among post-graduate management students predicts career commitment.

H3b: Congruence among post-graduate management students predicts career decision-making self-efficacy.

H3c: Congruence among post-graduate management students predicts vocational identity.

H3d: Congruence among post-graduate management students predicts work identity.



Note. a = Hypothesis 1 (H_{1a} & H_{1b}); b = Hypothesis 3 (H_{3a}; H_{3b}; H_{3c}; H_{3d}).

Figure 1: Hypothesised model for Phase 1 study

The research intention of Phase 2 was to investigate the immediate impact and psychological effect of an MBA/MBL programme beyond the classroom (managerial skillset). Based on the Phase 2 conceptual model, the following hypotheses were proposed:

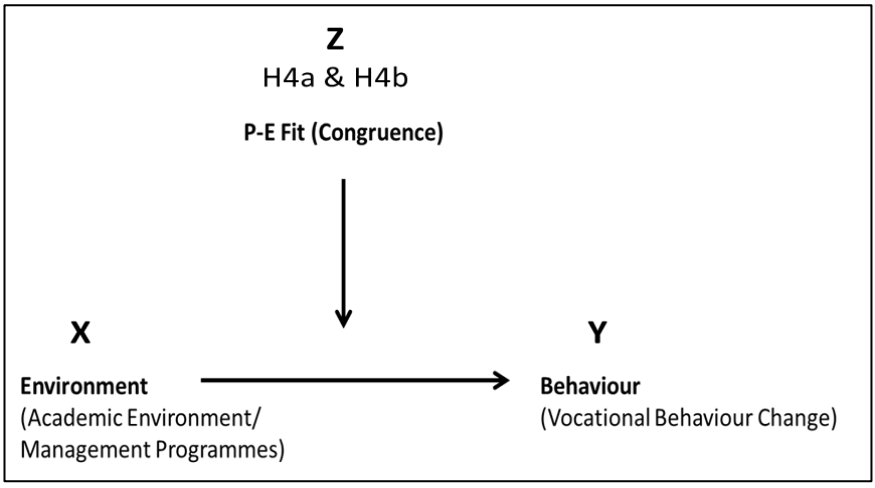
Phase 2 Hypotheses

The following hypotheses were tested, with congruence (P-E fit) as a moderator variable, academic environment as a predictor variable, and vocational behaviour change as an outcome variable.

H4: Academic environment (management education) changes the levels of post-graduate management students' vocational behaviour indicators.

H4a: The relationship between academic environment (management education) and vocational behaviour change will be *high* for congruent management students.

H4b: The relationship between academic environment (management education) and vocational behaviour change will be *low* for incongruent management students.



Note. Z represents Hypotheses H_{4a} & H_{4b}

Figure 2: LM Tabane's Model (Hypothesised model for Phase 2 study)

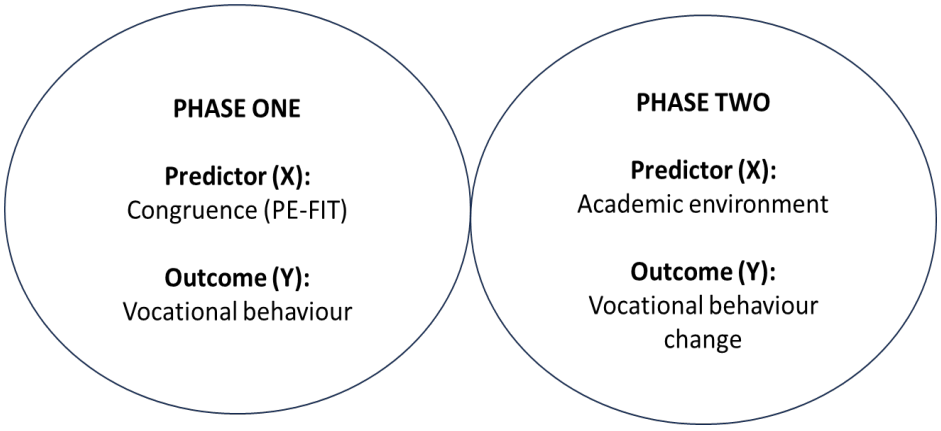


Figure 3: LM Tabane's construct – Relationship between variables of the study

The cross-sectional study (Phase 1) was intended to establish the baseline vocational behaviour. Phase 2 determined the effect of the independent variable – "environment' (management education) – on vocational behaviour change, and the effect of congruence (P-E fit) as a moderating variable. A comparison between the Phase 1 outcome variable (measured baseline vocational behaviour) and the Phase 2 outcome variable (measured

vocational behaviour change) would indicate a function of exposure to management education over time.

Methodology

Participants

Phase 1 of the study used a purposive sample of 360 male and female South African university students studying towards a post-graduate management qualification: an MBA or MBL, or Specialised Master's degree. In Phase 1, the final sample size was 370, and for Phase 2, the final sample was 103, after missing data had been controlled for. From the initial sample of 360 respondents in the Phase 1 study, there were additional respondents that provided data on academic institution, academic programmes and academic environment choice. Accordingly, the sample size of N = 370, rather than N = 360 was reported. Only 133 respondents participated in the Phase 2 (longitudinal) study. Moreover, for 29 of these respondents, significant data were missing from their responses. In Phase Two of the study there was data missing for one respondent on academic programmes and academic environment. Accordingly, the final sample size of N = 103, rather than N = 104 was reported. However, the changes in sample size did not significantly affect the overall results.

Measures

Participants self-reported their demographic information. Five measuring instruments on indicators of vocational behaviour were administered to the participants to obtain data on two occasions (Time 1 and Time 2), separated by a period of five to six months. Participants completed the following instruments: the *South African Career Interest Inventory* (*SACII*) (Morgan, De Bruin, & De Bruin, 2014), *My Vocational Situation* (*MVS*) (Holland, Daiger, & Power, 1980), the *Career Commitment Scale* (*CCS*) (Blau, 1988), the *Career Decision-making Self-efficacy* (*CDMSE*) *Scale* (Taylor & Betz, 1983), and the *Work-Based Identity Scale* (Roodt, De Braine, Bothma, & Jansen, 2009). The respective vocational behaviour indicators (vocational interest, vocational identity, career commitment, career decision-making self-efficacy, and work identity) were measured as latent variables. These are described next.

- *Vocational personality/interest*

The South African Career Interest Inventory (SACII) outlines six vocational personality/interest types found in South Africa. Holland's theory formed the underlying construct domain of the *SACII* (Morgan et al., 2014). Accordingly, six primary RIASEC scales and six secondary scales are represented in the inventory. *SACII* items are presented as statements to which respondents indicate agreement or disagreement on a 5-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5). Morgan et al. (2014)

obtained satisfactory Cronbach's α coefficients (>.90) for the six scales of the total sample in Study 2 of their research.

- *Vocational identity*

My Vocational Situation (MVS) was developed by Holland et al. (1980). It is a self-administrable diagnostic tool. The measure has three scales that measure the constructs of vocational identity (V.I.), occupational information (O.I.) and barriers (B.). The V.I. scale consists of 18 items, has a true-false response format, and is scored in terms of the total number of false responses obtained. A high score indicates a strong sense of vocational identity in the respondent. The O.I. is a 4-item scale that measures the person's need for vocational information. High scores on the 4-item B. scale indicate the absence of perceived external obstacles. Using a sample of high school students, Holland, Gotfredson and Power (1980) obtained the following scale reliabilities (K-R 20s): .89 for the Vocational Identity scale, .23 for the Barriers scale, and .39 (males) and .44 (females) for the Occupational Information scale.

- *Career commitment*

The Career Commitment Scale (CCS) was developed by Blau (1988). It has seven items, measuring the extent to which individuals are committed to their career. The *CSS* uses a 5-point scale response format, ranging from 1 ("strongly agree") to 5 ("strongly disagree") at the opposite end (Southgate, 2005). Items 1, 3 and 7 are reverse-scored. This scale has a Cronbach's α coefficient of .83 (Blau, 1988).

- *Career decision-making self-efficacy*

The Career Decision-making Self-Efficacy scale (CDMSE) measures self-efficacy expectations pertaining to the successful completion of 50 career decision-making tasks or behaviours. Items are rated on a 10-point scale, ranging from 0 ("No confidence") to 9 ("Complete confidence"). Low self-efficacy expectations indicate high levels of perceived task difficulty and vice versa. The short version of this scale was used. Betz, Klein and Taylor (1996) established coefficient alpha values above .70 for all 5-item subscales of the 25-item short form. Accordingly, the following Cronbach's α coefficient values were obtained: .73 for Self-Appraisal; .78 for Occupational Information; .83 for Goal Selection; .81 for Planning; and .75 for Problem Solving.

- *Work identity*

The Work-Based Identity Scale is a 36-item scale developed in South Africa to measure the work identity of individual employees (Roodt et al., 2009). Reliability and validity of the instrument were determined by submitting the 36-item questionnaire to a first- and second-level factor analysis to determine factor structure, yielding a 28-item, unidimensional scale with a Cronbach's α coefficient of .95 (Roodt et al., 2009, see also Bothma & Roodt, 2012, p. 7).

Procedure

For both phases of the study, ethical clearance was granted by the targeted business schools, school of governance and universities (all located in Gauteng, South Africa) to conduct the study at the premises of these institutions. Consent was sought from the students in the relevant academic programmes to participate in the study, using a participant information letter and consent form. The research instruments were compiled into a booklet and were used to measure the participants' vocational behaviour. The survey containing the scales for the study was administered in hard copy and in person to participants at Time 1 (at the beginning of the academic programme) for Phase 1 of the study, and at Time 2 (six months into the academic programme) for Phase 2. Electronic versions of the survey were also administered via Qualtrics links for some institutions when the COVID-19 pandemic struck, preventing the researcher from administering the Phase 2 survey to the participants in person. Due to the low response rate (sample attrition) to the Qualtrics survey, reminder emails were sent to Phase 1 participants to encourage their participation in Phase 2 of the study. Data were consolidated into Excel files prior to analysis.

Data Analysis

A quantitative method was used to analyse the data, which were captured, cleaned, coded, scored and analysed using the SPSS programme.

Phase 1 entailed a cross-sectional study design involving post-graduate management students in various programmes (MBA/MBL, Specialised Master's programmes, and a sample from a School of Governance). Data from all the subgroups of the study were collected at one point (Time 1 data collection) over a short period. Participants' vocational behaviour was the variable of interest. Participants' responses were measured to determine whether their choice of academic environment (IV) is associated with their vocational behaviour (DV). A cross-sectional data analysis was conducted. This involved testing P-E fit (Congruence) as an antecedent of vocational behaviour.

Phase 2 entailed a longitudinal study design (repeated application of the same measures) in which the groups that were initially measured on instruments of vocational behaviour were again measured after a time lapse of five to six months (repeated treatment design). This included the same students in the business schools, universities and School of Governance enrolled for either MBA/MBL or Specialised Master's degrees. The purpose was to evaluate the independent variable (management education) in relation to the dependent variable (vocational behaviour change), whilst observing the hypothesised moderating effect of P-E fit (Congruence). A longitudinal data analysis was completed. This involved testing the moderating effect of P-E fit (Congruence) on the hypothesised relationship between academic environment (management programmes) and vocational behaviour change.

Discriminant Function Analysis was conducted to establish objective fit. This entailed the operationalisation of congruence (prediction of academic environment "group membership" based on participants' RIASEC person scores).

Findings

Descriptive Statistics

The results of descriptive statistical analysis are presented below. The remaining tables represent inferential statistical analysis outcomes.

Most participants fell into the Enterprising Type environment (62.1%). Those in the Social Type environment constituted 37.9% of the sample. The data analysis focused on demographic information regarding participants' education, employment sector, job level, and academic programmes. Frequency distributions were used to analyse the demographic variables. Central tendency measures (mean, median, and standard deviation) were used to conduct the descriptive analysis of the constructs of vocational behaviour indicators. Considering the longitudinal nature of the study and the space limitations, the results for Phase 1 of the study are not reported here but can be requested from the authors.

Phase 2 participants were a subsample of the Phase 1 sample. However, the demographic make-up of the subsample did not necessarily mirror the Phase 1 demographic profile, as most participants in Phase 1 did not respond to the Phase 2 survey. Thus, the demographic information below is not reflective of the Phase 1 sample. The results of descriptive statistical analysis for the Phase 2 study are presented below.

Of the participants in the study, 55% were women and 45% were men (four participants omitted information on gender), of which 58.4% held an Honours degree. The lowest qualification was Matric/Grade 12 (only 1%). The highest qualification held by participants was a Master's degree (23.8%). The junior management job level/status was endorsed by 32% of respondents. The middle management category was also endorsed by 32% of respondents. Only 23% were in senior management. The C-Suite category was noted by a mere 2% of respondents. Prevalent employment sectors amongst the sample were Accountancy (18.6%) and Banking and Finance (18.6%), followed by Engineering and Manufacturing (16.3%), Business, Consulting and Management (14%), and Recruitment and HR (8.1%). Most respondents (44.6%) reported having 11 to 20 years of work experience, followed by 26.7% of respondents with five to ten years of work experience. A minority of respondents (3%) had already worked for 31 to 40 years. Of the respondents, 37.9% were studying in the Specialised Master's Group in Governance while a larger number (43.7%) of participants were registered for the varied MBA programme. The smallest number of respondents (18.4%) belonged to the Specialised Master's group in the Business Sector.

Central Tendency Measures

Central tendency measures were used to conduct a descriptive analysis of some of the constructs of the study For the *CDMSE* scale, on a 5-point Likert scale, the mean score of 4.05 (*SD* = .57) suggests that most respondents were strongly confident in their ability successfully to complete tasks which are vital to the career decision-making process. In terms of career commitment, measured using Blau's (1988) *Career Commitment Scale*, on a 5-point Likert scale, the mean score of 3.43 (*SD* = .72) suggests that most respondents tended to be neutral regarding their career commitment. This result indicates ambivalence regarding the respondents' willingness to stay in their current occupations. In terms of work identity, measured using the *Work-Based Identity Scale* (Roodt et al., 2009), on a 7-point Likert scale, the mean score of 4.84 (*SD* = .91) implies that most respondents had a salient "work-based self-concept", which informs their job performance and how they conduct their careers. Note that vocational identity, measured using *My Vocational Situation* (Holland et al., 1980) is a categorical variable for which measures of central tendency were not calculated.

Inferential Statistics

Inferential statistical analyses were performed to address the research questions and test the hypotheses of the current longitudinal study. For the purposes of this article (and given the space limitations), only the results of the second phase of the longitudinal study are reported.

Regarding the influence of the academic environment (management education) on changes in the levels of vocational behaviour of management students, the research question was restated as follows: *What is the effect of MBA/MBL core courses and the Specialised Master's programmes on students' vocational behaviour change?* The following hypothesis was tested, in which academic environment (management education) was the independent variable and vocational behaviour change was the dependent variable: H_4: Academic environment (management education) changes the levels of post-graduate management students' vocational behaviour. The Independent Samples Test was employed to test H_4. The results are presented in Table 1.

Table 1: T-tests Effect of academic environment on levels of Vocational Identity of post-graduate management students

Levene's Test for Equality of Variances		*t*-test for Equality of Means			
F	*Sig*	*t*	*df*	*P value*	Mean Difference
.801	.373	-1.518	97	.132	-.922

Effect of academic environment on levels of Career Decision-Making Self-Efficacy of post-graduate management students

Levene's Test for Equality of Variances		*t*-test for Equality of Means			
F	*Sig*	*t*	*df*	*P value*	Mean Difference
1.565	.214	-1.650	93	.102	-4.356

Effect of academic environment on levels of Work Identity of post-graduate management Students

Levene's Test for Equality of Variances		*t*-test for Equality of Means			
F	*Sig*	*t*	*df*	*P value*	Mean Difference
1.682	.198	-.769	78	.444	-3.667

Effect of academic environment on levels of Career Commitment of post-graduate management students

Levene's Test for Equality of Variances		*t*-test for Equality of Means			
F	*Sig*	*t*	*df*	*P value*	Mean Difference
.295	.588	-.100	99	.921	-.095

Effect of academic environment on Vocational Interest/Personality of post-graduate management students

Levene's Test for Equality of Variances		*t*-test for Equality of Means			
F	*Sig*	*t*	*df*	*P value*	Mean Difference
.431	.514.	-1.575	73	.120	-10.663

The analysis showed that significant changes in the Vocational identity of post-graduate management students were not observed. The *t*-test results were not statistically significant (t (97) = -1.518, p = .132). Management education thus did not have a significant effect on vocational identity or on the levels of Career decision-making self-efficacy of post-graduate management students. The *t*-test results for Career decision-making self-efficacy were statistically not significant (t (93) = -1.650, p = .102). Significant changes in levels of Work identity of post-graduate management students did not occur either: the *t*-test results were statistically not significant (t (78) = -.769, p = .444). There were no significant changes in levels of Career commitment among post-graduate management students; the *t*-test results were statistically not significant (t (99) = -.100, p = .921). No significant change in Vocational interest/personality of post-graduate management

students occurred; the *t*-test results were statistically not significant (*t* (73) = -1.575, *p* = .120).

Tests of Between-Subjects Effects

Research Question 2 enquires: *What is the effect of congruence (P-E Fit) on the vocational behaviour change of post-graduate management students in different academic environments?* The following hypotheses were tested in which congruence (P-E fit) was framed as a moderator variable, academic environment as a predictor variable and vocational behaviour change as an outcome variable:

H4a: The relationship between academic environment (management education) and vocational behaviour change is high for congruent management students.

H4b: The relationship between academic environment (management education) and vocational behaviour change is low for incongruent management students.

Vocational behaviour change scores were subjected to a two-way analysis of variance, with two levels of P-E fit (congruent, incongruent) and two levels of academic environment code (E-type, S-type). All effects were statistically insignificant as shown below, with the overall outcome that H_{4a} and H_{4b} were rejected (see Tables 2 to 6).

Table 2: Tests of between-subjects effects: Vocational Identity

Dependent Variable: Vocational identity

Source	Type III Sum of Squares	*df*	*F*	*Sig.*
Corrected Model	34.356[a]	3	1.309	.276
Intercept	13.736	1	1.570	.213
Congruence (P-E fit)	.168	1	.019	.890
Academic Environment Code	13.138	1	1.502	.223
Congruence (P-E fit) * Academic Environment Code	14.073	1	1.609	.208

Note: R^2 = .040 (Adjusted R^2 = .009)

From Table 2, it can be concluded that for Congruence (P-E fit), the main effect of Congruence yielded an *F*-ratio of *F*(1) = .01*, p* > .05, indicating that students who experienced congruence did not differ significantly from those who experienced

incongruence in terms of their vocational identity change scores. The main effect of Academic Environment yielded an *F*-ratio of $F(1) = 1.50$, $p > .05$, indicating that Enterprising and Social environments did not differ significantly regarding their impact on vocational identity change scores. For Congruence (P-E fit)* Academic Environment, the interaction effect was non-significant ($F(1) = 1.60$, $p > .05$). This indicates that congruence did not moderate the effect of academic environment on *vocational identity* change.

Table 3: Tests of between-subjects effects: Career Decision-making Self-efficacy

Dependent Variable: Career Decision-making Self-efficacy				
Source	Type III Sum of Squares	*df*	*F*	*Sig.*
Corrected Model	877.752[a]	3	1.876	.139
Intercept	537.441	1	3.446	.067
Congruence (P-E fit)	262.152	1	1.681	.198
Academic Environment	312.201	1	2.002	.161
Congruence (P-E fit) * Academic Environment	99.381	1	.637	.427

Note: $R^2 = .058$ (Adjusted $R^2 = .027$)

From Table 3, it can be concluded that the main effect of P-E fit yielded an *F*-ratio of $F(1) = 1.68$, $p > .05$, indicating that students who experienced congruence did not differ significantly from those who experienced incongruence in relation to their career decision-making self-efficacy change scores. The main effect of Academic Environment yielded an *F*-ratio of $F(1) = 2.00$, $p > .05$, indicating that Enterprising and Social environments did not differ significantly in terms of their impact on career decision-making self-efficacy change scores. For Congruence (P-E fit)* Academic Environment, the interaction effect was not significant at $F(1) = .63$, $p > .05$. This indicates that congruence did not moderate the effect of academic environment on *career decision-making self-efficacy* change.

Table 4: Tests of between-subjects effects: Work Identity

Dependent Variable: Work identity				
Source	Type III Sum of Squares	*df*	*F*	*Sig.*
Corrected Model	745.276[a]	3	.577	.632

Intercept	10.671	1	.025	.875
Congruence (P-E fit)	1.178	1	.003	.958
Academic Environment	344.863	1	.801	.374
Congruence (P-E fit)* Academic Environment	476.302	1	1.106	.296

Note: R^2 = .022 (Adjusted R^2 = -.016)

It can be concluded from Table 4 that the main effect of congruence yielded an *F*-ratio of *F*(1) = .00, *p* > .05, indicating that students who experienced congruence did not differ significantly from those who experienced incongruence in terms of their work identity change scores. The main effect of Academic Environment yielded an *F*-ratio of *F*(1) = .80, *p* > .05, indicating that Enterprising and Social environments did not differ significantly in terms of their impact on work identity change scores. For Congruence (P-E fit)* Academic Environment, the interaction effect was non-significant, *F*(1) = 1.10, *p* > .05 indicating that congruence did not moderate the effect of academic environment on *work identity* change.

Table 5: Tests of between-subjects effects: Career Commitment

Dependent Variable: Career Commitment

Source	Type III Sum of Squares	*df*	*F*	*Sig.*
Corrected Model	33.462[a]	3	.514	.674
Intercept	10.998	1	.506	.478
Congruence (P-E fit)	25.190	1	1.160	.284
Academic Environment	.206	1	.010	.923
Congruence (P-E fit)* Academic Environment	15.302	1	.705	.403

Note: R^2 = .016 (Adjusted R^2 = -.015)

From Table 5, it can be concluded that the main effect of congruence yielded an *F*-ratio of *F*(1) = 1.16, *p* > .05, indicating that students who experienced congruence did not differ significantly from those who experienced incongruence in terms of their career commitment change scores. The main effect of Academic Environment yielded an *F*-ratio

of $F(1) = .01$, $p > .05$, indicating that Enterprising and Social environments did not differ significantly in terms of their impact on *career commitment* change scores. For Congruence (P-E fit) * Academic Environment, the interaction effect was again not significant ($F(1) = .70$, $p > .05$). This indicates that congruence did not moderate the effect of academic environment on *career commitment* change.

Table 6: Tests of between-subjects effects: Vocational Interest/Personality

Dependent Variable: Vocational Interest/Personality

Source	Type III Sum of Squares	*df*	*F*	*Sig.*
Corrected Model	2082.858[a]	3	.829	.482
Intercept	548.840	1	.656	.421
Congruence	.933	1	.001	.973
Academic Environment	2062.788	1	2.464	.121
Congruence* Academic Environment	59.968	1	.072	.790

Note: $R^2 = .034$ (Adjusted $R^2 = -.007$)

From Table 6 above, it can be concluded that the main effect of congruence yielded an *F*-ratio of $F(1) = .00$, $p > .05$, indicating that students who experienced congruence did not differ significantly from those who experienced incongruence in terms of vocational interest/personality change scores. The main effect of Academic Environment yielded an *F*-ratio of $F(1) = 2.46$, $p > .05$, indicating that Enterprising and Social environments did not differ significantly in terms of their impact on *vocational interest/personality* change scores. For Congruence (P-E fit)* Academic Environment, the interaction effect was insignificant ($F(1) = .07$, $p > .05$). This indicates that congruence did not moderate the effect of academic environment on vocational interest/personality change.

Discriminant Function Analysis

Discriminant Function Analysis established that the Enterprising personality type was the best predictor of both the Enterprising type (E-type) and Social type (S-type) environments in South Africa. The Discriminant Function Analysis procedure involved computing the Box's M test. The results suggest that the assumption of equal co-variance matrices should be rejected, as the *p*-value for the test was lower than 0.01. Therefore, discriminant analysis was run, assuming unequal co-variances. Regarding Eigenvalues, a canonical correlation coefficient of 0.386 was observed, meaning that the variance explained by the model was 14.8% (the squared value of the canonical correlation coefficient). The

statistical validity of the discriminant function was established using Wilks' Lambda Chi-square test. This test was significant ($p < .05$), thus confirming the validity of the discriminant function. The discriminant equation is described as follows: *D= 0.015 Investigative score – 0.071 Realistic score – 0.019 Artistic score – 0.054 Social score + 0.307 Enterprising score – 0.075 Conventional score – 3.249.* The effect of the RIASEC scores in predicting the E-type or S-type environment depended on the group centroids. The mean discriminant score for the group of E-type environment was positive (.361). The mean discriminant score for the S-type environment was negative (-.481). This implies that the higher the E-type personality score, the more likely the person is to be in the E-type environment. Alternatively, the higher the S-type personality score, the higher the chances of finding the person in the S-type environment. However, it must be noted that this is merely a probability assessment regarding group membership (belonging to one of the two groups). It does not assess actual belonging to the respective groups.

The Moderating Role of Congruence

The results of testing the moderating effect of congruence (P-E fit), by summarising the sample's characteristics through frequency analysis via the SPSS programme and a repeated measures *t*-test within-subjects design, showed that the salient difference between the groups was that some fell into the Traditional Master's category (MBA/MBL core courses) whilst the other groups (MM in Innovation Studies/MCom in Financial Management Sciences, Governance) did not. A comparison of the post-test results of the groups indicated that P-E fit (congruence) did not have a moderating effect.

Discussion

This study's contribution to theory advancement and clarification is discussed below, indicating the performance of the hypothesised models for both study phases. Chernyshenko et al. (2019) called for investigation into how interest congruence affects psychological well-being, suggesting that "focusing on interest congruence can dramatically increase the magnitude of relationships and may help to clarify and advance theory" (p. 92). In this study, vocational behaviour indicators represented "psychological well-being" in the career context. Responding to Chernyshenko et al.'s (2019) call for exploration of the relationship between congruence and psychological well-being, this study revealed various ways in which congruence and its absence (incongruence) are associated with positive outcomes, including psychological well-being premised on congruence. Within and between group differences amongst Business Management and Governance students were found. This study established objective fit by using Discriminant Function analysis to operationalise congruence (predicting academic environment "group membership" based on participants' RIASEC person scores). Holland's (1985) Congruence theory was found valid for the Enterprising group (E-type) but was not confirmed for the Social group (S-type), as a substantial number of the S-type respondents were found in the

E-type environment. In this study, the Enterprising personality type was the best predictor of both the E-type and S-type environments in South Africa.

The cross-sectional study tested Holland's (1985, p. 4) fourth working assumption, that is, "behaviour is determined by an interaction between personality and environment". In this regard, what Antonakis (2017) calls "theorrhea" (a mania for new theory) was evaded. In line with Sutton and Staw (1995), Antonakis (2017) argues that theory development requires explanation of phenomena through descriptions of the way variables are causally related, reasons for their connectedness and the boundary conditions encapsulating these relations. Accordingly, the relationships between this study's variables were explained and reasons for the connectedness provided. Sutton and Staw (1995) assert that theory development requires the provision of a logical reason why certain empirical relationships are anticipated. The logic underlying the aim of the current study, namely a demonstration that MBA/MBL core courses have a psychological impact beyond the technical training provided to students, has been provided. In summary, exposure to academic training that is job-related can catalyse critical thinking within the student, who juxtaposes the academic learning experience with the practical conditions in the student's current or most recent occupation.

Carstens, Koekemoer, and Masenge (2021) have assessed the role of resilience as a moderator in the relationship between person-environment fit and subjective career success. Their results revealed that subjective career success was predicted by person-environment fit and resilience. Specifically, personal resilience strengthened the relationship between person-organisation fit and subjective career success, where highly resilient workers enjoyed higher levels of subjective career success. In line with the assertion of Sutton and Staw (1995), Carstens et al. (2021) explain that the following logic underpinned their study: 'PE-fit affects individuals' perception of subjective career success'. A good fit between workers' and the organisation promotes their exploration of development opportunities which are linked to performance and achievement on the job, ultimately engendering feelings of subjective career success.

Limitations and Future Recommendations

The findings should only be extrapolated to a sub-group of the population that is similar to the sample, that is, South African post-graduate management education students and graduates (MBA/MBL and Specialised Master's programmes), from business and governance schools of universities that are comparable to those targeted by this study in terms of the selection criteria used to admit students onto these academic programmes, the institutions' international accreditation status and academic rigour. The generalisability of the findings could be enhanced if it were found that LM Tabane's Model (hypothesised model of the Phase 2 study) operated in a similar way across different groups of post-graduate management students. In this study, exposure to management education did not lead to changes in students' vocational behaviour. Furthermore,

congruence (P-E fit) did not moderate the effect of academic environment on the vocational behaviour of the students. The Phase 2 hypothesised model was not supported. This finding is important for researchers and theorists, as LM Tabane's Model is an original model which could benefit from being tested using a larger sample (an identical sample for the Time 1 and Time 2 data collection). Severe sample attrition and data collection delays due tohe COVID-19 pandemic may have compromised the outcome of this research. Future studies should employ incentives to attract and sustain research participation.

Conclusion

Theory was advanced by way of some contradictory findings. Discriminant Function Analysis established the E-type as the best predictor of both the E-type and S-type environments in the South African context. Holland's (1985) congruence (P-E fit) theory was valid for the Enterprising group: respondents with an E-type personality were associated with an Enterprising academic environment (Business Management programmes). However, the theory was not supported by the Social group, because a substantial number of respondents with the S-Type personality were found in an Enterprising academic environment.

The findings regarding the assumption that students' personality type is associated with their chosen academic programme were inconsistent. P-E fit should result in positive outcomes for people with vocational personalities that closely match their vocational environments – Holland (1985) asserts that "vocational satisfaction, stability, and achievement depend on the congruence between one's personality and the environment in which one works" (p. 10). However, this "positive" outcome expectation was not consistently confirmed in this study, as a negative and significant relationship between career commitment and congruence was found. Furthermore, the hypothesis testing of the bivariate relationship between congruence and other vocational behaviour indicators did not produce the expected outcomes. Instead, the relationships did not reach significance, resulting in the rejection of the assumption that a high level of vocational behaviour is associated with congruence.

Holland (1985) argues that when the "content and structure of incongruent interactions [are] taken together, these negative interactions should result in gross dissatisfaction, ineffective coping behaviour and probably leaving the environment" (pp. 48-49). Contrary to this perspective, within the Governance group, students who scored as incongruent had significantly higher levels of career decision-making self-efficacy and a more pronounced Enterprising interest/personality than students who were scored as congruent. Thus, this study established that incongruence is not always associated with negative outcomes; similarly, congruence is not always linked to positive outcomes.

Holland's (1985) fourth working assumption, that "behaviour is determined by an interaction between personality and environment" (p. 4), was not fully supported. P-E fit did not predict vocational behaviour; however, the *t*-test results established some significant within- and between-group differences in vocational behaviour as a function of P-E fit.

Theory was clarified in this study, responding to Chernyshenko et al. (2019). This paper's exploration of the relationship between congruence and psychological well-being revealed findings which have clarified and advanced Holland's Theory of Vocational Personalities and Work Environments in the South African context. According to Holland (1985), "each model environment attracts its associated personality type" (p. 44). This study clarifies that Holland's theory of P-E fit (environments attract personalities) does apply in that the E-type personality was associated with an E-type academic environment. Post-graduate management programmes were differentially associated with RIASEC interest/personality types. Holland (1985) argues that "each environment repels some types more than others" (p. 44). One finding accords with Holland's sentiment on repelling environments: within the Governance group, incongruent students had significantly higher levels of career decision-making self-efficacy and higher Enterprising interest/personality scores than congruent students.

With respect to abilities and competencies, "different types have developed different kinds of abilities and competencies, and these differences correspond in a diffuse way to the demands of the occupation a particular type engages in" (Holland, 1985, p. 69). All the academic programmes investigated (both the Business Management and Governance groups) had their own learning outcomes and competency requirements for the students admitted. This accords with Holland's perspective on abilities and competencies. Furthermore, this study revealed measured vocational behaviour that was associated with Business Management and Governance post-graduate students. It was therefore considered that different types of students (with their respective abilities and competencies) stand to benefit from suitable academic environments (management programmes) that appeal, *inter alia*, to their vocational personalities.

The perspective that "closely related types (adjacent on the hexagon) tend to share similar competencies" (Holland, 1985, p. 70) explains the result that a significant percentage of respondents with the S-type personality were found in an E-type environment (the Business Management programme). It also supports the suggestion that Governance is partly an Enterprising activity, as much as it is a Social one. It follows that Management as a skillset (competency) may be shared by both Business Management students (largely E-type) and Governance students (typically S-type) and applied in their respective organisations/employment sectors.

The discussion above reveals how the hypothesised model (Phase 1) operates within the South African context and highlights the extent to which Holland's Typology (1985) (P-E fit

assumptions) was supported by the sample. Shortcomings of the theory in describing the behaviour of South African post-graduate management students are indicated. The Phase 2 hypothesised model was not supported. No significant differences were observed in the impact of academic environments on students' vocational behaviour scores, after exposure to management programme content.

References

Antonakis, J. (2017). On doing better science: From thrill of discovery to policy implications. *The Leadership Quarterly, 28*, 5-21. https://dx.doi.org/10.1016/j.leaqua.2017.01.006

Barber, S. (2018). A truly "transformative" MBA: Executive education for the Fourth Industrial Revolution. *Journal of Pedagogic Development, 8*(2), 44-55. http://hdl.handle.net/10547/622822

Baruch, Y., Bell, M. P., & Gray, D. (2005). Generalist and specialist graduate business degrees: Tangible and intangible value. *Journal of Vocational Behavior, 67*(1), 51-68. https://doi.org/10.1016/j.jvb.2003.06.002

Betz, N. E., Klein, K. L., & Taylor, K. M. (1996). Evaluation of a short form of the career decision-making self-efficacy scale. *Journal of career assessment*, *4*(1), 47-57.

Blair, C. A., Gorman, C. A., Helland, K., & Delise, L. (2014). The smart leader: Examining the relationship between intelligence and leader development behaviour. *Leadership & Organization Development Journal, 35*(3), 241-258. https://doi.org/10.1108/LODJ-06-2012-0078

Blau, G. J. (1988). Further exploring the meaning and measurement of career commitment. *Journal of Vocational Behavior, 32*, 284-297. https://doi.org/10.1016/0001-8791(88)90020-6

Bothma, F. C., & Roodt, G. (2012). Work-based identity and work engagement as potential antecedents of task performance and turnover intention: Unravelling a complex relationship. *SA Journal of Industrial Psychology*, *38*(1), 27-44. https://doi.org/10.4102/sajip.v38i1.893

Boyce, L. A., Zaccaro, S. J., & Wisecarver, M. Z. (2010). Propensity for self-development of leadership attributes: Understanding, predicting, and supporting performance of leader self-development. *The Leadership Quarterly, 21*, 159-178. https://doi.org/10.1016/j.leaqua.2009.10.012

Brown, T. C., Warren, A. M., & Khattar, V. (2016). The effects of different behavioural goals on transfer from a management development program. *Human Resource Development Quarterly, 27*(3), 349-372. https://doi.org/10.1002/hrdq.21257

Carstens, Z., Koekemoer, E., & Masenge, A. (2021). Sustainable person-environment fit and subjective career success: The moderating role of resilience. *Journal of Psychology in Africa*, *31*(6), 572-579. https://doi.org/10.1080/14330237.2021.2001919

Chernyshenko, O. S., Stark, S., & Nye, C. D. (2019). Interest measurement. In C. D. Nye & J. Rounds (Eds.), *Vocational interests in the workplace: Rethinking behavior at work* (pp. 80-96). New York, NY: Routledge. https://doi.org/10.4324/9781315678924

Coetzee, M., & Govender, A. (2020). Psychological career resources as explanatory mechanisms of employee adaptive career concerns across the career-life period. *Journal of Psychology in Africa*, *30*(3), 225-230. https://doi.org/10.1080/14330237.2020.1744301

Ding, H., Yu, E., & Li, Y. (2022). Exploring the relationship between core self-evaluation and employee innovative behaviour: The role of emotional factors. *Journal of Psychology in Africa*, *32*(5), 474-479. https://doi.org/10.1080/14330237.2022.2120700

Ekele, R., Onodugo, V., Okwo, H., Ogba, S., Onodugo, C., & Chukwu, B. (2022). Medical intern job demands and job carry-over strain: The moderating role of psychosocial mentoring and job satisfaction. *Journal of Psychology in Africa*, *32*(4), 347-352. https://doi.org/10.1080/14330237.2022.2031625

Guo, Y., Luo, S., & Tan, Y. (2023). Purpose in life and academic performance: Grit mediation among Chinese college students. *Journal of Psychology in Africa*, *33*(1), 69-74. https://doi.org/10.1037/edu0000699

Guo, Y., Xiong, G., & Liao, J. (2022). Stimulating employee job crafting by providing developmental feedback. *Journal of Psychology in Africa*, *32*(1), 33-37. https://doi.org/10.1080/14330237.2021.2017150

Gupta, A., & Bennett, S. E. (2014). An empirical analysis of the effect of MBA programs on organizational success. *International Journal of Educational Management, 28*(4), 451-460. https://doi.org/10.1108/IJEM-10-2012-0114

Gupta, P. B., Saunders, P. M., & Smith, J. (2007). Traditional master of business administration (MBA) versus the MBA with specialization: A disconnection between what business schools offer and what employers seek. *Journal of Education for Business, 82*(6), 307-312.

Hair, J. F. Jr, Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis*. (7th ed.). Upper Saddle River, NJ: Pearson Education.

Heyns, M. M., McCallaghan, S., & Roos, C. E. (2021). Creative leadership and employee work wellness: Supervisor support as a mediator. *Journal of Psychology in Africa*, *31*(1), 12-18. https://doi.org/10.1080/14330237.2020.1871233

Holland, J. L. (1985). *Making vocational choices: A theory of vocational personalities and work environments* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Holland, J. L., Daiger, D. C., & Power, P. G. (1980). *My vocational situation: Description of an experimental diagnostic form for the selection of vocational assistance.* Palo Alto, CA: Consulting Psychologists Press.

Holland, J. J., Gottfredson, D. C., & Power, P. G. (1980). Some diagnostic scales for research in decision making and personality: Identity, information, and barriers. *Journal of Personality and Social Psychology*, *39*(6), 1191.

Kulbo, N. B., Wen, X., & Addo, P. C. (2020). Organisational capital and graduate employability: A serial mediation analysis of human and personal-social capital. *Journal of Psychology in Africa*, *30*(6), 500-506. https://doi.org/10.1080/14330237.2020.1842461

Kumar, B. N. (2015). Tailoring an MBA degree with a difference in a new university case: Université des Mascareignes, Mauritius. *International Letters of Social and Humanistic Sciences, 56*, 35-43. https://doi.org/10.18052/www.scipress.com/ILSHS.56.35

Morgan, B., De Bruin, G. P., & De Bruin, K. (2014). Constructing Holland's hexagon in South Africa: Development and initial validation of the South African Career Interest Inventory. *Journal of Career Assessment, 23*(3), 493-511. https://doi.org/10.1177/1069072714547615

Pounder, P., & Ross, R. (2018). Developing global leaders: A study of MBA programs in the Caribbean and Central America. *Advances in Global Business and Economics, 1*, 31-42.

Prince, M., Burns, D.J., & Manolis, C. (2014). The effects of part-time MBA programs on students: The relationships between students and their employers. *Journal of Education for Business, 89*(6), 300-309. https://doi.org/10.1080/08832323.2014.900470

Roodt, G., De Braine, R., Bothma, F.C., & Jansen, P.G. (2009). *The Work-based Identity Questionnaire.* Unpublished questionnaire. University of Johannesburg, South Africa.

Southgate, N. (2005). *An exploration of career salience, career commitment, and job involvement*. (Unpublished doctoral dissertation) University of the Witwatersrand, Johannesburg, South Africa.

Spokane, A. R., Meir, E. I., & Catalano, M. (2000). Person-environment congruence and Holland's theory: A review and reconsideration. *Journal of Vocational Behavior, 57*(2), 137-187. https://doi.org/10.1006/jvbe.2000.1771

Stoten, D. W. (2018). Reforming the MBA: A survey of elite British universities. *Journal of Management Development*, *37*(5), 397-408. https://doi.org/10.1108/JMD-08-2017-0264

Su, R., Murdock, C. D., & Rounds, J. (2015). Person-environment fit. In P. J. Hartung, M. L. Savickas, and W. B. Walsh (Eds.). *APA Handbook of Career Intervention, 1* (pp. 81-98). Washington, DC: American Psychological Association.

Sutton, R. I., & Staw, B. M. (1995). What theory is not. *Administrative Science Quarterly, 40* (3), 371-384. https://doi.org/10.2307/2393788

Taylor, K.M., & Betz, N.E. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. *Journal of Vocational Behavior, 22*(1), 63-81. https://doi.org/10.1016/0001-8791(83)90006-4

Zhang, H., Xin, Z., Wang, Q., Li, Q., Du, J., & Wang, M. (2023). Proactive personality and academic procrastination in graduate students: Their chain-mediation by research self-efficacy and learning adaptability. *Journal of Psychology in Africa*, *33*(1), 63-68.

Zhang, L., & Zhang, Y. (2022). Family influence and career calling: The mediating role of work passion and career exploration. *Journal of Psychology in Africa*, *32*(1), 66-72. https://doi.org/10.2989/16073614.2021.2017160