Exploring sociodemographic differences in career maturity in the South African military

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Abstract

The military environment poses unique challenges regarding the career development of individuals. The challenge is to create career development practices that address the needs of culturally diverse staff members in the military environment. The objective of the study was to explore broad trends regarding how staff in the South African military differed with regard to their level of career maturity (measured by the Career Development Questionnaire). Sociodemographic variables included gender, race, age, educational level, arm of service, rank and mustering group. A quantitative survey was conducted on a non-probability sample of 333 military officers from the South African National Defence Force across the four arms of service (the South African Army, the South African Air Force, the South African Navy and the South African Military Health Services). Descriptive and inferential statistical analyses revealed significant differences among the sample of military officers in terms of a number of sociodemographic variables relating to their career maturity. The findings highlight the need to consider demographic and context-specific variables when designing and implementing career development practices in military organisations.

Key words: *career development, career maturity, career planning, South African military, military staff*

1 Introduction

Concerns about high levels of staff turnover in the military have led to a renewed interest in the continued employability and career development of diverse groups of staff members (Milgram 1991; Themba 2010). According to the Department of Defence (DOD 2009), in comparison with international trends, the South African military is experiencing a high turnover rate among all critical military occupations (turnover rate of 11.76% in 2008 and 10.58% in 2009). In order to reduce these high turnover levels, it has become important for military organisations to understand the career behaviour and development needs of their members (Milgram 1991). Furthermore, the military are

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expected not to lag behind society at large in terms of career development practices (Esterhuyse 2005; Steege & Fritscher 1991; Themba 2010). Globalisation, demographic change and the more diverse cultural contexts in which organisations conduct their business have compounded the retention challenge (Arnold & Randall 2010). Global issues such as technological advancement and economic and political developments are also having an increasing influence on the approach to the management of military careers (Esterhuyse 2005; Themba 2010). Organisations are increasingly recognising the value of attracting and retaining staff from all demographic groups in order to improve workforce performance and thereby promote their competitive position (Torrington, Hall, Taylor & Atkinson 2009).

Research has identified career maturity as an important aspect of individuals' career development and decision-making, job and career satisfaction, and retention in the contemporary world of work (Schreuder & Coetzee 2011; Swanson & D'Achiardi 2005). Career maturity relates to the readiness of individuals to engage in career decisions that influence their future occupational choices (Langley 1990). Individuals' career maturity influences their ability to master the necessary career development tasks and challenges relevant to their particular life and career stage (Coertse & Scheepers 2004). The challenge of engaging in career development practices that address the needs of culturally diverse staff members in the military environment necessitates an understanding of the career maturity of military officers (Themba 2010). Given the paucity of research on career maturity in the military environment, this research set out to explore broad trends regarding how military staff in the South African military differ with regard to their level of career maturity in terms of various sociodemographic variables.

2 Background to the study

The military environment poses unique challenges to the career development of individuals, which necessitate knowledge of their level of career maturity (Elder, Gimbel & Ivie 1991; Esterhuyse 2005; Themba 2010). The South African National Defence Force (SANDF) generally recruits young people between the ages of 18 and 22 with a Grade 12 certificate or a National Senior Certificate. New recruits are required to sign up for a period of two years to complete the Military Skills Development System (MSDS) Programme, which is a two-year voluntary service system. In their first year of service, recruits receive general military training and further functional training in areas like combat or non-combat services relating to their chosen arm of service (the South African Army, the South African Air Force, the South African Navy, or the South African Military Health Services) (MSD 2011). During their second year of service, depending on the duration of their functional orientation, they are deployed where needed in the specific arms of service and given the opportunity to apply their knowledge and further develop their skills in their chosen arm of service. Recruits who have completed the MSDS Programme receive further practical training for specialised work and are also able to further their educational qualifications as required by the occupational orientation of the specific arm of service and mustering group. These further educational and training opportunities offered by the SANDF help recruits to qualify for other careers outside the military environment. Recruits who are not considered for further service, or who do not wish to continue serving in the Regular Force as permanent staff members after the two-year voluntary service period, are required to serve part-time in the Reserve Force. This entails 30 days' service per annum over a five-year period (MSD 2011).

A military career is seen as a progression of educational experiences interspersed with operational assignments, consisting of a rotation between operational (combat) and non-combat (staff) assignments. According to Esterhuyse (2005), this rotation is rooted in the duality of a military career − the need for action and reflection, and the need for training, education and experience. As an officer moves up the military hierarchy, different types of training and education are offered at prescribed intervals to develop new skills and generate new perspectives (Esterhuyse 2005). Further education and practical training are regarded as important aspects of a military career and are aimed at rejuvenating an ageing defence force, ensuring the continuous flow of young and fit soldiers, and creating an increased state of military readiness by enlarging the South African military reserves (MSD 2011).

Military organisations have an environment with unique characteristics (that is, the combat environment). This is the environment that young military recruits are expected to adjust to during and after basic military training, because adjustment and coping with the military environment are the basis for effective military performance (Shalit 1988). Military service creates discontinuity in a person's life and exposes one to a world where one's past life or history has no importance. Elder, Gimbel and Ivie (1991) highlight three career-related aspects of military service that emanate from a person's break with the past. Firstly, basic military training makes prior identities irrelevant, requires uniformity in dress and appearance, minimises privacy and rewards performance on the basis of group achievement. Secondly, military service represents a time-out from education, work and family since the individual is released from the conventional expectations of an age-graded career. Thirdly, military service increases the scope of awareness of the self and others through an expanded range of interactional experiences, thus enhancing the acceptance of social diversity. These three aspects reflect the uniqueness of career development in the military environment (Themba 2010).

The influence of the military environment is evident when older (or more senior) military members end their military careers earlier than traditionally expected to start a second career (Baruch & Quick 2007). It may well be asked how these members deal with the transition when compelled by the nature of military service to embark on this kind of career transition (seen as a major life-course event) (McDermott 2007). These members leave their military careers, which they were pursuing in a relatively secure and stable organisation, to start a second career at an age that might place them in an early-retirement category (Baruch & Quick 2007). This means they are faced with the career task of dealing with the transition from their socialisation and indoctrination into a hierarchy-based and stable career system as they move into a civilian career system that is regarded as dynamic and devoid of boundaries (Baruch & Quick 2007). Despite the reported positive influences of the military environment on such a career transition (Baruch & Quick 2007; McDermott 2007), questions may still be raised on the portability of such findings.

Despite considerable interest in the construct of career maturity, very little research has been conducted in the military context, even though the military sector has provided an impetus to the field of career psychology since the First World War (Keene 1994; Super 1983; Themba 2010). Apart from attrition, career development issues relating to career maturity (or lack of it) manifest themselves in various ways in the South African armed forces, for example dissatisfaction with chosen military career paths and the desperate need of members of the military to change careers and services (Themba 2010).

3 Research objective

The objective of this study was to explore broad trends regarding how military staff differed with regard to their level of career maturity in terms of various sociodemographic variables (gender, race, age, educational level, arms of service, military rank and mustering. It was pointed out in the introduction that the military environment poses unique challenges to the career development of individuals and that this necessitates knowledge of their level of career maturity (Elder, Gimbel & Ivie 1991; Esterhuyse 2005; Themba 2010). Investigating sociodemographic differences in the military environment is regarded as important in view of the fact that the SANDF consists of four arms of services and combat and non-combat mustering groups. There may be considerable differences in terms of the career development opportunities offered to military staff members who, in turn, differ in terms of gender, race, age, educational level and military rank. In the light of the paucity of research on career maturity in the military environment and the increasing concerns about high levels of staff turnover (Themba 2010), this study is regarded as important.

With a younger generation entering the South African workforce, along with the changing demographic profile of racial and gender groups brought about by employment equity legislation, the findings of this study might potentially contribute to the design of career development practices that address the unique needs of diverse groups of military staff members in the various arms of service of the SANDF. The assessment of career maturity in young adults is considered to be particularly important during the career exploration and establishment phases because, at this life stage, they often have to make important career decisions that they may not be developmentally ready to make, and that may lead to job and career dissatisfaction (Swanson & D'Achiardi 2005; Themba 2010).

4 Literature review

4.1 *Career maturity*

Career maturity is a construct that was originally proposed to account for individual differences regarding readiness to make career choices, plan ahead and assume the role of a worker (Vondracek & Reitzle 1998). More recently (Swanson & D'Achiardi 2005), the concept of career maturity has been used to describe both the process by which individuals make career choices appropriate to their age and stage of career development, and their readiness and ability to successfully negotiate, resolve and deal with the specific tasks and challenges in their particular developmental stage. According to Dybwad (2008), research increasingly focuses on individuals' career readiness, career concerns and career adaptability as aspects of their career maturity in dealing with the challenges posed by the contemporary world of work, which is turbulent and uncertain.

The construct of career maturity was introduced by Donald E Super (1957) as "vocational maturity" in his career development theory more than 50 years ago. Career maturity is reflected by an individual's mature behaviour in coping with the tasks of career development when compared with the behaviour of others who are dealing with the same tasks at a particular life or career stage (Super & Bohn 1970). Career maturity focuses on the manner in which the individual responds to the emerging demands, problems, challenges and expectations that are generally associated with a particular life stage (Jordaan & Heyde 1979). This is a normative definition of the construct since

it compares an individual's career behaviour with the career behaviour that is expected at a particular life or career stage (Osipow 1973).

According to Super (1957), vocational or career maturity involves the mastery of increasingly complex tasks at different stages of career development in the course of the lifespan. In this context, career maturity is characterised by: 1) an increasing orientation to vocational choice; 2) increasing amounts of vocational information and more comprehensive and detailed planning; 3) increasing consistency of vocational preferences; 4) the crystallisation of traits relevant to vocational choices; and, consequently, 5) increasing wisdom in vocational preferences. A person who displays these qualities in the early stages of career development is regarded as career-mature and is therefore expected to be better adjusted in his or her career.

Crites (1976) described career maturity as having attitudinal and cognitive dimensions. The former refer to individuals' attitudes and feelings about making an effective vocational choice and whether they will continue to pursue their career choice as they enter the workforce. Affective variables involve individuals' planning ability and career exploration or curiosity (Herr, Cramer & Niles 2004). The cognitive dimension refers to individuals' awareness of a need to make a career decision, their understanding of their vocational preferences and the world of work, and their ability to apply their knowledge of the principles of career decision making to actual choices (Herr et al 2004; Swanson & D'Achiardi 2005). In this regard, career maturity is described as the attitudinal and cognitive readiness to cope with the developmental tasks of finding, preparing for, getting established in, pursuing, and retiring from an occupation (Herr et al 2004; Super 1990). Cognitive competencies include adequate knowledge of the world of work and personal abilities and skills, which are regarded as important in steering individuals towards decisive action (Savickas 2002). Career indecision and immaturity are often the result of failing to integrate one's interests, skills and abilities, and being unable to focus towards a particular career goal (Swanson & D'Achiardi 2005).

4.2 *Career maturity and career development*

Career development in the contemporary world of work is seen as a long-term process of development of the employee along a path of employment and experience in one or more organisations (Baruch 2006), or as significant learning and experience that characterise an individual's professional life, direction, competencies and accomplishments through positions, jobs, roles and assignments. A career is therefore more than a job that revolves around a process, an attitude, or intentional and goal-directed behaviour, more than a situation in a person's working life where set career goals have to be achieved (Schreuder & Coetzee 2011). From an individual perspective, career development is viewed as an ongoing process whereby the individual progresses through a series of life stages, each of which is characterised by a relatively unique set of issues, themes or tasks (Super 1990; 1992).

Super's (1990; 1992) career development theory identifies five career or vocational stages, namely: (1) growth (ages 4 to 13), (2) exploration (ages 14 to 24), (3) establishment (ages 25 to 44), (4) maintenance (ages 45 to 65) and (5) decline (over 65). The primary task in the first stage is to develop a picture of the kind of person one is and an understanding of the nature and meaning of work. In the second stage, the primary task is to crystallise, specify and implement a vocational preference. The third stage involves making a place for oneself in the chosen occupation and consolidating and improving one's position. The challenge of the fourth stage is to maintain and

preserve the status one has achieved. Finally, the primary task in the fifth stage is to decelerate, disengage and cope with the problems of impending or actual retirement (Sverko 2006; Themba 2010). According to Schreuder and Coetzee (2011), individual career development entails the development of appropriate work-related behaviours, developing a vocational identity (through which individuals become aware of their career interests, goals, skills and talents), engaging in effective career decision-making, and developing and sustaining one's employability.

From an organisational perspective, career development is viewed as an ongoing, formalised effort by the organisation that focuses on developing and enriching the organisation's human resources in the light of the needs of both the employee and the organisation (Byars & Rue 2004). Career development is regarded as a joint effort between the employee and the organisation and the outcome of the interaction between individual career planning and the organisational career development support system (Schreuder & Coetzee 2011). If employees are to engage in satisfactory career development, a high level of career maturity is required (Schreuder & Coetzee 2011). Career maturity implies that individuals are ready to deal with the developmental tasks that are required in their particular life stage and are ready to make career decisions (Super 1992). According to Themba (2010), military organisations need individuals with high levels of career maturity on their staff. Military staff members have to reflect decisiveness, self-reliance and independence in their career decision-making, all of which are important characteristics of the career-mature individual.

Career maturity has important implications for career development and decision-making practices (Schreuder & Coetzee 2011). It is as "applicable to the man in his 40s, who must choose between stagnating and striving for advancement, and to the 63-year-old individual approaching retirement, as to the young adolescent whose lack of readiness or maturity may be more obvious" (Jordaan & Heyde 1979:4). In career development practices, career maturity is regarded as one of the most commonly employed outcome measures (Coetzee & Roythorne-Jacobs 2007). A person is regarded as career-mature or ready to make appropriate career choices when he or she has engaged in carefully planned exploration and has appropriate occupational knowledge, self-knowledge and decision-making knowledge (Patton 2006). A clear understanding of career maturity makes it easier to identify and describe immature and mature career behaviour. Career-mature people tend to have more career information, are more likely to have been self-employed in part-time jobs, appear to be more realistic in their career aspirations, and behave in a manner that is more in keeping with their abilities and socioeconomic circumstances (Jordaan & Heyde 1979). Career-mature individuals are generally better adjusted to their careers, whereas maladjusted individuals' career choices are generally neither congruent with their field of interest nor with their level of aptitude (Crites 1971).

Langley (1990) and Langley, Du Toit and Herbst (1996) identify the following five common developmental dimensions as essential stages of individuals' career development that lead to career maturity:

1) Obtaining self-information and converting this information to self-knowledge. Information on the following career-related aspects can enhance an individual's self-knowledge and self-insight: career guidance needs, importance of life roles, work values, occupational interests, career development life stage, personality, aptitudes and family functioning.
2) Acquiring decision-making skills and applying them in effective decision making.

3) Gathering career information and converting it into knowledge of the occupational world. Useful career information would include information on different occupations, training facilities and development opportunities, and on financial support for further studies.

4) Integrating self-knowledge and knowledge of the occupational world to enable career decision-making.

5) Implementing knowledge (self-information and career information) in career planning and decision-making.

4.3 *Career maturity and sociodemographic variables*

As a multidimensional construct, career maturity is influenced by diverse demographic factors and people's unique life situations (Naidoo 1998; Raskin 1998). According to Osipow (1973), career-mature behaviour is also influenced by – and will generally reflect – the unique needs of a particular life stage. In terms of the present study it is hypothesised that there will be a significant positive difference in the career maturity of individuals who are in the establishment and maintenance phase of their careers in comparison with those who are in the entry phase of their careers as a result of their respective career experiences and career needs.

Studies on the correlates of career maturity have therefore adopted a cross-cultural and contextual approach by focusing on variables such as age, gender, ethnicity and socioeconomic status (Naidoo 1998; Patton & Creed 2001; Raskin 1998). However, research on the relation between age and ethnicity and socioeconomic status and career maturity appears to have yielded inconclusive results (Powell & Luzzo 1998; Super & Nevill 1984; Westbrook & Sanford 1991).

Research has found cognitive ability to be significantly related to career maturity, with higher levels of intelligence leading to an increased ability to deal with developmental tasks in various areas of behaviour (Super & Overstreet 1960; Westbrook, Sanford & Donnelly 1990). Research has revealed that higher educational levels resulted in higher levels of career maturity (Naidoo, Bowman & Gerstein 1998). In agreement with these findings, it is hypothesised that there will be a significant positive difference in the career maturity of highly educated military recruits in comparison with those with lower educational qualifications.

In terms of gender, research has indicated that females generally score higher than males on career maturity (Kornspan & Etzel 2001; Luzzo 1995; Naidoo et al 1998). In agreement with these findings, it is hypothesised that there will be a significant positive difference in the career maturity of males and females, with females scoring higher than their male counterparts.

Studies that were conducted by Westbrook and Sanford (1991) reported that whites have higher levels of career maturity than blacks. In agreement with these findings, it is hypothesised that there will be a significant positive difference in the career maturity of the various race groups, with whites scoring higher than their black counterparts.

Although no previous research has been reported on the differences in career maturity for arm of service, rank and mustering groups, it is hypothesised that military recruits in the South African Health and Military Services (SAHMS) will score significantly and positively differently from those in the other arms of service as a result of the educational opportunities offered by the SAHMS–opportunities which can be used externally to the military environment (MSD 2011). It is also hypothesised that there will be a significant positive difference in the career maturity of combat officers

compared to that of non-combat officers because of their exposure to the military-specific career opportunities available to them (Esterhuyse 2005). Finally, it is hypothesised that there will be a significant positive difference in the career maturity of candidate officers compared to that of higher-ranking officers. As young and new recruits, candidate officers may feel more positive about their future career prospects than do higher-ranking officers who may have reached a career plateau (Esterhuyse 2005).

5 Research design

5.1 *Research approach*

A quantitative survey design, using primary data, was used to achieve the research objective.

5.2 *Research method*

5.2.1 *Participants*

A non-probability sample of 333 military officers from the SANDF across the four arms of service (the South African Army – 43%, the South African Air Force – 21%, the South African Navy – 14% and the South African Military Health Services – 22%) participated in the study. In terms of rank, 51% of the sample held the rank of Candidate Officer, 2% the rank of Second Lieutenant, 16% the rank of Lieutenant, 8% the rank of Captain and 22% the rank of Major. Military officers from the combat musterings (such as infantry, armour, artillery, military pilots and navy combat officers) constituted 47% of the sample. Staff from the non-combat musterings (such as engineering, logistics, catering, nursing, communication and personnel) represented 51% of the sample.

The mean average age of the participants was 28 years (SD = 7.10) (early adulthood life/career stage). In terms of age, military officers in the 15-24-year category (exploratory career stage) represented 43% of the sample, while those in the 25-44-year category (establishment career stage) represented 54% of the sample. Officers in the sample who were in the 45-64-year category (maintenance career stage) represented only 2% of the sample.

In terms of racial composition, the sample consisted of 79% black members (62% Africans, 15% coloureds and 2% Indians) and 19% white members. Males comprised 60% and females 40% of the sample. The participants had a matric (50%) and higher-level qualification.

5.2.2 *Measuring instrument*

The Career Development Questionnaire (CDQ) (Langley 1990) is a self-rated multifactorial measure that was designed to determine the career maturity or readiness of adolescents and young adults to make decisions on their career in the South African context. The CDQ consists of 100 items that measure the following five dimensions of career maturity: (1) self-information (20 items), (2) decision making (20 items), (3) career information (20 items), (4) integration of career information on the self with information on the world of work (20 items) and (5) career planning (20 items). An individual's response to the items (statements) of the CDQ is a forced choice between either "True" or "False". Langley (1990) reports internal consistency reliability coefficients on the CDQ that are higher than 0.90 for the total score and higher than

0.70 for the subscales relating to university students. The internal consistency reliability coefficients that are reported in the CDQ manual for high school students across the language groups range from 0.66 to 0.82 (Langley 1990; Langley et al 1996). Langley (1990) and Langley et al (1996) reported high intercorrelations between the various scales of the CDQ. The assumption is that an individual who maintains a certain level of career maturity on one dimension would be expected to maintain a similar level on others (Langley 1990; Langley et al 1996). In terms of the present study, Table 1 shows that high internal consistency reliability coefficients (ranging between 0.70 and 0.89) were obtained for the CDQ. The intercorrelation coefficients in Table 1 indicate interdependence between the scales of the CDQ, thus providing evidence of construct validity (that is, the five scales seem to measure the same construct, namely career maturity).

Table 1

Internal consistency reliability coefficients and intercorrelations of the CDQ (*n* = 333)

CDQ	Reliability coefficient	Self-information	Decision-making	Career information	Integration	Career planning
Self-information	0.70	1.00	0.66**	0.44**	0.59**	0.62**
Decision making	0.79	0.66**	1.00	0.60**	0.67**	0.70**
Career information	0.85	0.44**	0.60**	1.00	0.64**	0.64**
Integration	0.80	0.59**	0.67**	0.64**	1.00	0.70**
Career planning	0.82	0.60**	0.70**	0.60**	0.70**	1.00
Scale overall	**0.89**					

**$p \leq 0.01$

5.2.3 *Research procedure*

Ethical clearance and written permission to conduct the study were obtained from the SANDF and from the Officer Commanding each military unit at the various military bases. Participation was voluntary and the participants were given the opportunity of attending one of several allocated sessions. At the beginning of each session, the researcher explained the purpose of the research and the participants were assured of confidentiality and anonymity and informed that participation was voluntary. A covering letter was provided that explained the purpose of the research, the procedure, the potential benefits, confidentiality, anonymity, participation and withdrawal. All the participants completed a written consent form.

5.2.4 *Statistical analysis*

The Statistical Package for the Social Sciences (SPSS 2008) was used to analyse the data. Descriptive statistics and inferential statistics were calculated. The Kuder-Richardson 20 (KR 20) was used to assess the internal consistency of the measuring instrument. Independent samples t-tests, ANOVAs and the Schèffe multiple comparison of means post-hoc test were performed to test for significant mean differences between the various sociodemographic variables. In order to counter the probability of a type I error, the significance value was set at the 95% confidence interval level ($p \leq 0.05$).

6 Results

This section reports only the significant results obtained from the statistical analyses.

6.1 *Descriptive statistics*

The descriptive statistics for the total sample (*n* = 333) on the CDQ scales are provided in Table 2. The overall mean career maturity score is *M* = 17.15, with a standard

deviation (*SD*) of 2.55. This score reflects a relatively high level of career maturity (readiness to make career-related decisions) among the participants in this study. On the self-information scale, the participants reflect a relatively high level of self-information (*M* = 17.07, *SD* = 2.58). On the decision-making scale, the participants' mean scores also reflect an ability to make effective career decisions (*M* = 17.65, *SD* = 2.84). The participants' mean scores reflect adequate knowledge of the world of work (*M* = 16.82, *SD* = 3.66) on the career information scale. Their mean scores on the integration scale reflect an ability to integrate relevant information about themselves with information on the world of work (*M* = 17.29, *SD* = 2.94).

The mean scores on the career-planning scale reflect an adequate ability to make career decisions and to implement a career plan (*M* = 16.90, *SD* = 3.21). The skewness statistic in Table 2 reflects a negative distribution of the participants' mean scores on all the CDQ scales, which indicates that the participants scored relatively high on overall career maturity and on all the CDQ scales.

Table 2
Means and standard deviations for the total sample on the CDQ (*n* = 333)

	Self-information	Decision making	Career information	Integration	Career planning	Overall
Minimum	6	7	2	4	4	**5.6**
Maximum	20	20	20	20	20	**20**
Mean	17.07	17.65	16.82	17.29	16.90	**17.15**
SD	2.58	2.84	3.66	2.94	3.21	**2.55**
Skewness	-1.14	-1.72	-1.29	-1.52	-1.55	**-1.46**
Kurtosis	1.57	2.71	1.12	2.20	2.33	**2.12**

6.1.1 *Independent samples test for significant mean differences between gender and race groups*

Overall, the statistical analyses revealed no significant differences between the male and female participants within the race and age subgroups. Table 3 shows that the male participants in both the matric and post-matric qualification subgroups achieved significantly higher scores than their female counterparts on career information (*M* = 17.25; *SD* = 3.17 vs. *M* = 16.11; *SD* = 3.65). The male participants in the matric subgroup also achieved significantly higher scores than their female counterparts on decision making (*M* = 18.11; *SD* 2.42 vs. *M* = 16.84; *SD* = 3.46) and overall career maturity (*M* = 17.54; *SD* = 2.20 vs. *M* = 16.62; *SD* = 2.57). The female participants who had a diploma/degree level qualification achieved significantly higher scores than the male participants on self-information (*M* = 17.45; *SD* = 2.22 vs. *M* = 16.31; *SD* = 2.55), decision making (*M* = 18.21; *SD* = 2.18 vs. *M* = 17.02; *SD* = 2.79), integration (*M* = 18.55; *SD* = 2.05 vs. *M* = 16.96; *SD* = 3.11) and overall career maturity (*M* = 17.81; *SD* = 2.04 vs. *M* = 16.85; *SD* = 2.41).

As shown in Table 3, the female participants in the South African Navy consistently achieved significantly higher scores than their male counterparts on self-information (*M* = 18.00; *SD* = 1.55 vs. *M* = 15.82; *SD* = 2.95), decision making (*M* = 18.64; *SD* = 1.29 vs. *M* = 17.41; *SD* = 2.55), integration (*M* = 18.36; *SD* = 1.69 vs. *M* = 16.68; *SD* = 3.36), career planning (*M* = 18.36; *SD* = 1.43 vs. *M* = 16.29; *SD* = 3.37) and overall career maturity (*M* = 18.35; *SD* = 1.23 vs. *M* = 16.59; *SD* = 2.53). No significant differences were detected between the female and male participants within the other three arms of service subgroups.

Table 3
Independent samples t-test – Summary of significant mean differences (gender and race)

Variable	CDQ scale	Gender	*N*	Mean	*SD*	Sig.
Qualification **Matric**	Decision making	Female	57	16.84	3.46	0.02*
		Male	109	18.11	2.42	
	Career information	Female	57	16.11	3.65	0.05*
		Male	109	17.25	3.17	
Post-matric certificate	Overall career maturity	Female	57	16.62	2.57	0.02*
		Male	109	17.54	2.20	
	Career information	Female	19	14.79	5.51	0.04*
		Male	33	17.73	3.20	
Diploma/ Degree	Self-information	Female	42	17.45	2.22	0.03*
		Male	48	16.31	2.55	
	Decision making	Female	42	18.21	2.18	0.03*
		Male	48	17.02	2.79	
	Integration	Female	42	18.55	2.05	0.01**
		Male	48	16.96	3.11	
	Overall career maturity	Female	42	17.81	2.04	0.05*
		Male	48	16.85	2.41	
Arm of service **SA Navy**	Self-information	Female	11	18.00	1.55	0.00**
		Male	34	15.82	2.95	
	Decision making	Female	11	18.64	1.29	0.04*
		Male	34	17.41	2.55	
	Integration	Female	11	18.36	1.69	0.04*
		Male	34	16.68	3.36	
	Career planning	Female	11	18.36	1.43	0.01**
		Male	34	16.29	3.37	
	Overall career maturity	Female	11	18.35	1.23	0.00**
		Male	34	16.59	2.53	
Military rank **Candidate Officer**	Decision making	Female	72	17.33	2.78	0.03*
		Male	99	18.24	2.36	
	Career information	Female	72	16.21	3.83	0.02*
		Male	99	17.55	3.11	
	Career planning	Female	72	16.54	3.57	0.04*
		Male	99	17.55	2.48	
	Overall career maturity	Female	72	16.86	2.51	0.02*
		Male	99	17.74	2.04	
	CDQ scale	**Mustering group**	***N***	**Mean**	***SD***	**Sig.**
Race **Africans**	Decision making	Combat	94	18.18	2.22	0.02*
		Non-combat	108	17.22	3.46	
	Career information	Combat	94	17.38	3.11	0.05*
		Non-combat	108	16.36	4.10	
	Career planning	Combat	94	17.18	2.64	0.03*
		Non-combat	108	16.23	3.65	
	Overall career maturity	Combat	94	17.47	2.14	0.04*
		Non-combat	108	16.73	2.92	

*p ≤ 0.05; **p ≤ 0.01

Table 3 shows that the male participants with the rank of Candidate Officer achieved significantly higher scores than their female counterparts on decision making (*M* = 18.24; *SD* = 2.36 vs. *M* = 17.33; *SD* = 2.78), career information (*M* = 17.55; *SD* = 3.11 vs. *M* = 16.21; *SD* = 3.83), career planning (*M* = 17.55; *SD* = 2.48 vs. *M* = 16.54; *SD* = 3.57) and overall career maturity (*M* = 17.74; *SD* = 2.04 vs. *M* = 16.86; *SD* = 2.51). No significant differences were detected between the male and female participants within the other three military rank subgroups.

In terms of race, Table 3 shows that the African participants from the combat group achieved significantly higher scores than their counterparts from the non-combat group on decision making (*M* = 18.18; *SD* = 2.22 vs. *M* = 17.22; *SD* = 3.46), career information (*M* = 17.38; *SD* = 3.11 vs. *M* = 16.36; *SD* = 4.10), career planning (*M* = 17.18; *SD* = 2.64 vs. *M* = 16.23; *SD* = 3.65) and overall career maturity (*M* = 17.47; *SD* = 2.14 vs. *M* = 16.73; *SD* = 2.92). No significant differences were detected between the race subgroups (African, coloured, Indian and white) within the two mustering subgroups.

6.1.2 *ANOVAs: Arms of service and military rank*

Table 4 indicates that the military arms of service and military rank subgroups differed significantly in terms of the career maturity variables. However, only 2% to 4% of the total variance between the scores is accounted for by the differences between the military arms of service and military rank subgroups (small effect size) respectively. In this regard, Table 5 shows that the participants in the South African Air Force achieved significantly higher scores than the participants in the other three arms of service (South African Army, South African Navy and South African Military Health Services) subgroups on self-information, career information, career planning and overall career maturity.

Table 4
ANOVAs: Summary of significant mean differences: Arm of service and military rank

CDQ scale	Source	Sum of squares	*df*	Mean square	*F*	Sig.	η^2
Arm of service							
Self-information	Between groups	52.10	3	17.37	2.68	0.05*	0.02
	Within groups	2123.19	328	6.47			
	Total	2175.29	331				
Career information	Between groups	190.84	3	63.61	4.92	0.00***	0.04
	Within groups	4241.71	328	12.93			
	Total	4432.55	331				
Career planning	Between groups	81.53	3	27.18	2.69	0.05*	0.02
	Within groups	3310.94	328	10.09			
	Total	3392.47	331				
Overall career maturity	Between groups	52.02	3	17.34	2.73	0.04*	0.02
	Within groups	2081.51	328	6.35			
	Total	2133.53	331				
Military rank							
Self-information	Between groups	74.63	3	24.88	3.83	0.01**	0.03
	Within groups	2137.64	329	6.50			
	Total	2212.27	332				

*p ≤ 0.05; **p ≤ 0.0; ***p≤ 0.00

In terms of the military rank subgroups, Table 5 shows that the participants with the rank of Candidate Officer (*M* = 17.41; *SD* = 2.21) and those with the rank of Major (*M* = 17.01; *SD* = 2.97) achieved significantly higher scores than the participants with the rank of Lieutenant (*M* = 16.81; *SD* = 2.51) and Captain (*M* = 15.70; *SD* = 3.33) on self-information.

Table 5
Means and standard deviations of significant mean differences between groups: arms of service and military rank

Variables		*N*	Mean	*SD*	*Sig.*
Arm of service					
Self-information	SA Army	142	17.23	2.62	
	SA Air Force	70	17.54	2.36	*
	SA Navy	46	16.24	2.90	
	SAMHS	74	16.93	2.31	
	Total	332	17.09	2.56	
Career information	SA Army	142	16.33	4.05	
	SA Air Force	70	18.20	2.64	***
	SA Navy	46	17.13	3.03	
	SAMHS	74	16.31	3.77	
	Total	332	16.83	3.66	
Career planning	SA Army	142	16.77	3.04	
	SA Air Force	70	17.83	2.76	*
	SA Navy	46	16.76	3.11	
	SAMHS	74	16.41	3.79	
	Total	332	16.91	3.20	
Overall career maturity	SA Army	142	16.99	2.61	
	SA Air Force	70	17.92	2.27	*
	SA Navy	46	16.96	2.40	
	SAMHS	74	16.89	2.64	
	Total	332	17.16	2.54	
Military rank					
Self-information	Candidate Officer	171	17.41	2.21	**
	Lieutenant	62	16.81	2.51	
	Captain	27	15.70	3.33	
	Major	73	17.01	2.97	**
	Total	333	17.07	2.58	

*p ≤ 0.05; **p ≤ 0.01; ***p≤ 0.001

6.1.3 *Post-hoc Schèffe multiple comparison of means test (overall career maturity according to level of education and military rank)*

Table 6 shows that the females who had a diploma/degree level qualification (*M* = 17.81) achieved significantly higher scores on overall career maturity than the females who had only a matric (*M* = 16.62) or post-matric level qualification (*M* = 15.96).

Table 6 further shows that the combat participants who had a diploma/degree level qualification achieved significantly lower scores (*M* = 16.54) on overall career maturity than the combat participants who had only a matric or post-matric level qualification (*M* = 17.74). However, the non-combat participants who had a diploma/degree level qualification achieved significantly higher scores on overall career maturity (*M* = 17.63)

than the non-combat participants who had only a matric or post-matric level qualification (*M* = 16.48).

Table 6
Summary of Schèffe post-hoc test results (CDQ overall career maturity significant mean differences according to level of education and military rank)

Overall career maturity	Matric (*n*)	Post-matric (*n*)	Diploma/ degree (*n*)		Sig.
Educational level					
Female	16.62 (*57*)	15.96 (*19*)	17.81 (*42*)		0.02*
Combat	17.74 (*101*)	17.84 (*23*)	16.54 (*25*)		0.03*
Non-combat	16.48 (*63*)	16.56 (*28*)	17.63 (*64*)		0.04*
Military rank	**Candidate Officer (*n*)**	**Lieutenant (*n*)**	**Captain (*n*)**	**Major (*n*)**	
White	17.98 (25)	16.77 (06)	14.74 (07)	17.70 (26)	0.02*
SA Army	17.52 (66)	17.22 (35)	NR	16.06 (40)	0.02*
SAMHS	16.30 (52)	NR	NR	18.29 (15)	0.00***
Combat	17.89 (100)	16.74 (37)	16.43 (14)	16.77 (07)	0.01**

***p ≤ 0.00 **p ≤ 0.01 *p ≤ 0.05

In terms of military rank, Table 6 shows that the white participants with the rank of Candidate Officer (*M* = 17.98) and Major (*M* = 17.70) achieved significantly higher scores than those with the rank of Lieutenant (*M* = 16.77) and Captain (*M* = 14.74) on overall career maturity. The participants in the South African Army with the rank of Candidate Officer (*M* = 17.52) achieved significantly higher scores on overall career maturity than those with the rank of Lieutenant (*M* = 17.22) and Major (*M* = 16.06). In the South African Health and Military Services, the participants with the rank of Major (*M* = 18.29) achieved significantly higher scores on overall career maturity than those with the rank of Candidate Officer (*M* = 17.89). Table 6 also shows that the combat participants with the rank of Candidate Officer achieved significantly higher scores than those with the rank of Major, Lieutenant and Captain on overall career maturity.

6.1.4 *Independent samples t-test (overall career maturity according to age)*

As shown in Table 7, the t-test revealed that the participants from the South African Air Force who were aged between 18 and 24 years (exploration phase of their careers) achieved significantly higher scores on overall career maturity than the older participants (aged between 25 and 44 years – establishment phase of their careers). The older participants (aged between 25 and 44 years) in the South African Navy achieved significantly higher scores than their younger counterparts on overall career maturity.

Table 7
Summary of t-tests (CDQ overall career maturity: significant mean differences according to age)

Overall career maturity age	18 to 24 years (*n*)	25 to 44 years (*n*)	Sig.
SA Air Force	18.65 (36)	17.15 (33)	0.01**
SA Navy	16.26 (23)	17.91 (21)	0.02*

***p ≤ 0.00 **p ≤ 0.01 *p ≤ 0.05

7 Discussion

Overall, the mean scores indicated that the participants seem to have achieved a relatively high level of career maturity, with their decision-making skills, the ability to apply these skills in effective decision making, and self-information being particular strengths. According to Langley et al (1996), high levels of self-information reflect an awareness of the importance of one's life roles, work values and occupational interests. Since this was a military sample, these results seem to confirm Yates's (1987) findings in a previous study, which reflected higher scores for a military sample than for a sample of college seniors on career planning, career exploration and decision making. The relatively high level of career maturity (readiness to engage in career-related decisions, plan ahead and assume the role of a staff member) may be attributed to the Military Skills Development System (MSDS) and the SANDF's emphasis on the further education and training of its staff members (Esterhuyse 2005), which may have equipped the participants with the information and knowledge they need to make appropriate career decisions.

The participants seem to be especially competent at integrating their self-knowledge and their knowledge of the occupational world, obtaining personal information about themselves and converting this information into self-knowledge. These skills have been related to inner-value capital attributes that result in career self-insight (Schreuder & Coetzee 2011). Career self-insight gives rise to career motivation, leads to greater role clarity and enhances experiences of career success (Eby, Butts & Lockwood 2003). Although the participants demonstrated an adequate ability to implement their knowledge of career planning and the gathering of career information, and to convert this into knowledge of the occupational world, these skills appear to be in need of honing. Coetzee (2008) regards these skills as important career enablers in the career decision-making process.

7.1 *Gender*

The results of the present study appear to corroborate the research finding that men and women differ significantly regarding their career maturity (Kornspan & Etzel 2001; Naidoo et al 1998; Patton & Creed 2001). The results contradict previous research, which found no significant differences between the career maturity of men and women (Beggs 1991; Lee 2001; Powell & Luzzo 1998; Van der Merwe 1993; Watson, Stead & De Jager 1995). The results indicated a number of significant differences between men and women regarding their level of career maturity. Educational level appeared to influence the maturity level of the female and male participants significantly. It appears from the findings that the female participants who had a degree/diploma level qualification are significantly better at mastering the career development tasks associated with their particular life stage than their male counterparts and the males and females with only a matric or post-matric level qualification. These findings suggest that further educational studies (diploma/degree level qualifications) contributed positively to increasing the female participants' career maturity. More specifically, the women who had a diploma/ degree level qualification appear to be better than their male counterparts at making effective career-related decisions and integrating relevant personal information with occupation-related information (decision-making and integration). These female participants also seem to have better-defined information about the self (that is, clearly defined life roles, work values and occupational interests) that have informed their career decision making than those with only a matric-level qualification. According to Pool and Sewell (2007), people who hold a higher degree tend to demonstrate high levels of self-

efficacy and self-confidence. Cocchiara, Kwesiga, Bell and Baruch (2009) found in this regard that women are positively affected by inner-value capital attributes, which people gain through increased self-awareness, self-esteem, self-efficacy and confidence.

The male participants who had a matric and post-matric level qualification seem significantly stronger than the females in career-related and occupation-related knowledge (career information). Research in this regard has shown that traditionally men tend be more strongly career-oriented than women (Sullivan & Crocitto 2007). The findings of the present study show that the male participants with a matric and post-matric qualification, and those who hold the rank of Officer Candidate, appear to be stronger in their career decision-making skills and their overall readiness to make career decisions (career maturity) than their female counterparts. These male participants also had higher levels of career-related and occupation-related knowledge and career planning skills than their female counterparts. Research by Spencer (1999) has indicated that women tend to delay their career decision making because of intense role confusion which stems from gender stereotyping early in their career development. They therefore tend to delay their career aspirations in favour of family responsibilities and their developmental patterns tend to be more individualised (Schreuder & Coetzee 2011). Moreover, the findings of the present study suggest that as women advance in further educational studies (post-matric diploma/degree level qualifications) their career maturity increases significantly.

7.2 *Race*

No significant differences between the various racial groups were detected in terms of career maturity and therefore they are not reported in the tables. This is in contrast with previous findings, which found significant differences in career maturity between racial groups (Pieterse 2005; Reid-Van Niekerk & Van Niekerk 1990; Watson et al 1995; White 1987). However, the African combat participants seem to feel significantly more positive about career-related and occupation-related information and about using these in their career planning than their non-combat counterparts. This may be attributed to the military-specific career opportunities available to participants who want to pursue a career in the military environment (Esterhuyse 2005) and the current employment equity and affirmative action legislation, which has opened up more career advancement opportunities for black people and especially African people in South African workplaces (Schreuder & Coetzee 2011).

7.3 *Age*

Overall, no significant differences in career maturity were observed among the various age groups of this adult sample. The age groups in this study represent the exploration and establishment life stages of Super's (1990) career development theory. Similar to the findings of Powell and Luzzo (1998), the results of the present study seem to confirm the view that career maturity is not related to the chronological age that is linked to individuals' particular life stage (Schreuder & Coetzee 2011). According to London (1983), individuals' career maturity reflects their career-related decisiveness, involvement, independence, task orientation and willingness to compromise between their career-related needs and reality. Career maturity also reflects individuals' readiness to deal positively with the developmental tasks of their particular life stages (Super 1992). As indicated by the research of Powell and Luzzo (1998), career maturity is not necessarily the result of a linear, steadily progressing process, but is influenced by contextual factors such as those that are indicated by the results of the present study.

7.4 *Arms of service and military rank*

Considering the significantly lower mean scores obtained on the self-information variable, the findings suggest that especially the participants with the rank of Lieutenant and Captain might be in need of career-related and occupation-related information to guide them in their career decision making. The MSDS programme may have contributed to the higher levels of career maturity and self-knowledge of the younger officers, who are generally in the exploration phase of their careers. Older officers may feel more restricted in terms of career opportunities, or may have become more disillusioned with their career opportunities in the military environment in view of the emphasis in that environment on recruiting and developing young people (Esterhuyse 2005; MSD 2011). The participants in the South African Air Force seem to be especially strong in their career decision-making abilities. In their initial training programme the South African Air Force offers a broad variety of specialised training opportunities to young recruits (MSD 2011) that can be utilised outside the military environment. They seem to feel significantly more positive about their knowledge regarding their life roles, work values and occupational interests (self-information), as well as about career-related and occupation-related information. They are better able to make career decisions and do career planning than the participants in the other arms of service. Career self-insight and career planning skills have been related to people's psychological career resources, which were found to significantly influence their job and career satisfaction and the meaning they attach to their working lives (Coetzee 2008; Coetzee & Bergh 2009).

7.5 *Overall career maturity according to level of education, military rank and age*

Educational level, like gender, appears to have influenced the overall career maturity level of the combat and non-combat groups. The non-combat groups with a diploma/degree seem to be more ready to make career decisions than the non-combat participants with only a matric or post-matric level qualification. However, the opposite was observed in the case of the combat participants, where the participants with a diploma/degree level qualification seemed to feel less ready or able to make career decisions than the combat participants with only a matric or post-matric level qualification. In view of previous research, which indicates that people with higher levels of education tend to be more career mature (Naidoo et al 1998), one can argue that the nature of the combat military environment might be incompatible with the type of educational qualification of the combat participants and that they might feel restricted in their career choices (Themba 2010).

The combat participants with the rank of Candidate Officer seem to feel better prepared to make career decisions and deal with career-related tasks than the other rank groups among the combat participants. Themba (2010) also found combat staff to be better able to do career planning than their non-combat counterparts. This may be attributed to the fact that Candidate Officers are usually young and are at the beginning or exploration phase of their military career (MSD 2011). Their career maturity levels may be enhanced by the intensive initial education and training opportunities they are exposed to as candidate officers (Esterhuyse 2005).

It appears from the findings that rank and arm of service influenced the maturity level of participants. The white participants with the rank of Candidate Officer seem to have significantly higher levels of career maturity than the higher-ranking participants. One could argue that these participants felt positively about their careers because of the

hierarchical career path possibilities in the military environment. Exposure to the initial MSDS programme and further training and educational opportunities may have increased their readiness to engage in career-related tasks and make career decisions. It is interesting to observe that in the South African Health and Military Services (SAHMS), the higher-ranking participants (especially those with the rank of Major) felt significantly more positive in engaging in career-related developmental tasks than did participants with a lower rank. One could argue that lower-ranking participants in the South African Health and Military Services might either feel less positive about their career mobility possibilities than the higher-ranking staff or might be in need of supportive career development interventions and information to enhance their career maturity. The SAHMS offers post-graduate educational opportunities (after the initial MSDS programme) which can be used outside the military environment – this may have contributed to the higher levels of career maturity of the more senior officers (Esterhuyse 2005; MSD 2011).

It is interesting to observe that the overall career maturity of the participants in the exploration phase of their careers (18-24 years) and those in the establishment phase of their careers (25-44 years) differed significantly in the South African Air Force and the South African Navy subgroups. This may be attributed to the unique career opportunities offered by these two arms of service. In their initial training programme the South African Air Force offers a broader variety of specialised training opportunities to young recruits than the South African Navy. This training is more applicable in careers outside the military than the training offered by the South African Navy (MSD 2011).

The major developmental tasks during the exploration phase of career development (late adolescence) are: developing an occupational self-image, assessing alternative occupations, developing initial occupational choice, pursuing the necessary post-school education and developing one's employability (Greenhaus, Callanan & Godshalk 2010). During the establishment phase, stabilisation, security and advancement become priorities (Schreuder & Coetzee 2011). Both of these career development phases require career maturity or a readiness to deal with the developmental life tasks that are relevant to the particular life stage. Here the participants between the ages of 18 and 24 years who are employed in the South African Air Force appeared to be more ready than those between the ages of 25 and 44 years to deal with the life tasks associated with their particular career development life stage. It appears from the findings that the older participants in the SA Air Force feel less ready to engage in career-related tasks. These results suggest that the career development of young recruits in the SA Air Force becomes less clear after the initial training phase. The opposite is observed in terms of the participants in the South African Navy. These findings suggest the need for supportive career development interventions from the SA Air Force in helping these participants to deal positively with the developmental tasks of their particular life stages.

8 Limitations and recommendations

Since the present study was limited to a relatively young sample of predominantly black and male military officers in the SANDF, the findings cannot be generalised to other occupational, race, gender, age and industry contexts. Furthermore, given the exploratory nature of the research design, this study can offer no suggestions about causation. The observed differences between the variables have therefore been interpreted rather than established. Moreover, the number of multiple comparisons that were conducted could have increased the probability of making a Type I error (that is, finding differences between subgroups that may not actually exist).

It is recommended that the study be replicated using broader samples across various occupational, race, gender and age groups and across economic sectors before final conclusions are drawn about the differences in the career maturity of military officers in the various arms of service and military ranks. Future studies also need to investigate in more depth how the technical sophistication of each of the arms of service's military environment contributed to the observed differences between the combat and non-combat mustering groups, military ranks and age groups. Owing to the exploratory nature of the research design, post-hoc power analyses were not conducted. Future studies also need to take the practical importance of the results into account by assessing the magnitude of the observed differences between the participants' mean scores on the various CDQ variables in the various arms of service, mustering and military rank groups, and age, gender and race groups.

It is recommended that this study be replicated by using other Likert-type measures of career maturity rather than the forced-choice format that was used, which might have limited the interpretation of the observed differences between the various groups. Although forced-choice measures have been shown to successfully reduce uniform response biases, research has indicated that ipsative data pose threats to construct validity and score interpretation since comparisons between people can become problematic (Brown & Bartram 2009). Moreover, considering the relatively young age of the particular sample that participated in the present study, it might be useful to conduct a longitudinal study (quantitative and qualitative) to deepen one's understanding of how people's career maturity evolves and develops over time, especially in the postmodern work context.

9 Conclusions and implications for practice

The findings that are presented highlight the need to take into consideration the demographic and context-specific variables of the various arms of service of the SANDF when designing and implementing career development practices in military organisations. Despite the fact that the military officers in this study had adequate levels of career maturity, the military should recognise that individual differences exist among its officers and that this requires career development interventions which are tailored to individual needs. The military should recognise the influence of military-specific variables and educational levels on the readiness of its members to deal with career-related tasks and challenges.

Although the context of the present study was the South African military environment, some general aspects regarding the research findings need to be pointed out. The results confirmed previous research by Powell and Luzzo (1998), which suggested that career maturity is not related to the chronological age linked to individuals' particular life stage but is rather influenced by the attitudinal and cognitive readiness of individuals to deal with and make career decisions (Herr et al 2004; Super 1990). It appears from the research findings that career maturity is also influenced by contextual variables such as the unique occupational environment, the perceived educational and training and career opportunities available in that environment, and the educational level of individuals. In terms of gender, the educational level of males and females contributed to the significant differences in career maturity between the gender groups.

Notwithstanding the research limitations that are pointed out above and given the paucity of research on career maturity in the military environment, it can be concluded that this study represents original research which contributes new knowledge to the field of career psychology that can be used to guide career development practices in the SANDF.

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