The relationship between personality characteristics and career anchors of pharmacists

S. van Rensburg
J.C. Rothmann
S. Buys Group, Carletonville

S. Rothmann
Potchefstroom University for CHE

ABSTRACT

The objective of this study was to assess the relationship between personality characteristics and career anchors of pharmacists. A cross-sectional survey design was used. The study population consisted of pharmacists (n = 56) in a corporate environment. The Myers-Briggs Type Indicator, the NEO Personality Inventory (Revised), and the Career Anchor Inventory, were used as measuring instruments. The results of the empirical study showed that personality characteristics of pharmacists were related to their career anchors. Extroversion and emotional stability were positively related to general management, service, pure challenge, and entrepreneurial challenge. Introversion, neuroticism and low openness were related to technical/functional competence and security as career anchors.

INTRODUCTION

Since the late 1970s, economic recessions, industrial restructuring, technological change, and intensified global competition have dramatically changed the nature of work (Sverke and Hellgren, 2002). There is also substantial evidence to suggest that the nature of work has changed dramatically for those who remain employed. These changes imply that employees have to remain flexible in making career decisions. However, employees' ability to remain flexible may be influenced by their career anchors and personality characteristics (Andersen, 2000; Rothmann, 2001).

The idea that personality relates meaningfully to the kinds of careers people choose and how they perform in these careers, has a long history in career psychology. According to Tokar, Fischer and Subich (1998), a large body of empirical evidence suggests that assessment of personality is significantly predictive of career choice behaviour, other career-relevant individual difference variables (e.g. vocational interests and work values), and aspects of career adjustment (e.g. satisfaction, performance and stress). Increasing research is being done on the role of personality in adapting effectively to new career demands (De Fruyt and Merviele, 1999; Rust, 1999; Tokar and Subich, 1997). Measuring instruments that are often used in this regard are the Myers-Briggs Type Indicator (MBTI) (Myers, McCaulley, Quenk and Hammer, 1998), the NEO Personality Inventory (Revised) (NEO-PI-R) (Costa and McCrae, 1992), and the Career Orientation Inventory (COI) (Schein, 1996). The MBTI is used to measure personality preferences, while the NEO-PI-R measures personality traits. The COI is used to measure an individual's career anchors.

According to Schein (1996), career anchor refers to a person's self-concept, consisting of self-perceived talents and abilities, basic values, and the developed sense of motives and needs applicable to his or her career. Once the self-concept has been formed, it serves as a stabilising force, an anchor, which can be regarded as values that a person will not give up if he or she is forced to choose. According to Greenhaus (1987), career anchors are decisive when a career decision has to be made. Employees' career anchors play a role in making decisions about what they want from their jobs and from the organisation which employs them. It is clear from the work of Derr (1986), that a career anchor evolves with time. This evolution is a process in which an anchor pattern differentiates systematically and culminates in late mid-career as a stable pattern (Van Vuuren, Fouche and Verwey, 1989). Schreuder and Flowers (1992) argued that an individual can associate himself or herself with
various career anchors, depending on circumstances. However, each individual has a dominant career anchor that will not change.

Career anchors seem to be related to personality characteristics of employees. For example, it was found that managers who value security tend to be practical and organised, which could result in their resisting change (Rothmann, 2001). Therefore, to understand the career anchors of employees, it is essential to understand the relationship of career anchors with personality characteristics. Knowledge of the relationship between personality characteristics and career anchors could influence employees' career planning, as well as organisations' career development decisions (e.g. regarding selection, placement, promotion, training and development).

The purpose of this study was to assess the relationship between personality preferences and traits on the one hand, and career anchors on the other, among pharmacists.

CAREER ANCHORS


Individuals with a technical/functional career anchor want to be experts in a specific field. They are concerned about the intrinsic content of a job, prefer a professional promotional ladder parallel to the managerial ladder, relate promotion to an increase in the scope of the job rather than to rank, and value opportunities for self-development in their field of expertise (Allen and Katz, 1986; Lee and Wong, in press). Individuals anchored in technical/functional competence gradually become aware of the increasing importance of knowledge and skill, but are confused because it is not entirely acceptable to have competence as one's anchor. The world will always need experts in specific functions, and as technological complexity increases, the need for technical experts will increase. But as technologies in all the functions themselves change more rapidly, expertise will become obsolete more and more rapidly. To remain technically/functionally competent will require constant updating and relearning in an organisational world that will not bear the costs in terms of money and time for this updating process (Schein, 1996).

Individuals who have general management as a career anchor want to manage. They are motivated by types of work which are characterised by high levels of responsibility, which are challenging and varied, which require leadership skills, and which provide opportunities to contribute to the success of the organisation (Lee and Wong, in press). The general managerial competence anchor will continue to attract its share of career incumbents. Team managers, project managers and programme managers will have to have general management and leadership skills above and beyond their technical understanding of the tasks at hand. In the future, managerial ladders may become fuzzier, and status will be defined more by the number of skills a given manager has, than by a position in a hierarchy (Schein, 1996).

Individuals who value autonomy as a career anchor prefer doing things their own way. They need variable jobs, which enable them to decide what to do and when to do it. They do not like controls and regulations, and will turn down a rank promotion if autonomy is to be restricted by it (Feldman and Bolino, 2000). Individuals anchored in autonomy find the occupational world of the future an easier place to navigate (Schein, 1996). The autonomy anchor is aligned with most organisational policies of promising only employability. The self-reliance that may be needed in future is already part of the psychological make-up of this group of individuals.

Individuals with security as a career anchor organise their careers in such a way that safety and security are guaranteed (Kolvereid, 1996). They are prepared to carry out work in the manner required by their employer; they want stability and predictability, and they want to be recognised for loyalty and steady performance. Schein (1996) suggested that individuals anchored in security will find it difficult to adapt to the current world of work policies, which have shifted from guaranteeing employment security/organisational security to touting employability security. This shift implies that the only thing the employee can really expect of an organisation is the opportunity to learn and gain experience, which presumably makes him/her more employable in some other organisation. This means that the base of stability and security for an individual with security as an anchor, will be shifting from dependence on an organisation to dependence on oneself.

Individuals who have service as a career anchor want to help people. They want the types of work that permit them to influence their employing organisation in the direction of their values. They often feel a need for the recognition and support of their values by colleagues and superiors, wanting them to have a
similar value system. There are an increasing number of people revealing service/dedication to a cause. More and more young people, as well as employees in their mid-career, report that they are feeling the need not only to maintain an adequate income, but to do something meaningful in a larger context (Schein, 1996).

Individuals with organisational identification as a career anchor identify with an organisation. They want to identify with, and gain status from, their occupations, want to be recognised by title and status, and want to identify with a powerful and prestigious employer.

Individuals who have pure challenge as a career anchor want to overcome obstacles. They get satisfaction out of trying to solve seemingly unsolvable problems, and coping with the most difficult tasks. In discussing pure challenge as a career anchor, Schein (1996) indicates that there will always be a small group of people who will define their careers in terms of overcoming impossible odds, solving unsolved problems, and winning out over competitors. Schein (1996) predicts that there will not be a shortage of challenges to be met in the future. As long as this group is willing to become active learners, the nature of these challenges will evolve rapidly with technological change.

Individuals with entrepreneurial creativity as a career anchor want to create a new business by developing a new product or service. They perform work that is characterised by originality of thought, which continually requires risk and presents new challenges (Feldman and Bolino, 2000). They find ownership most important. In recent times, more individuals are being drawn to the idea that they can develop their own business, and, as the world becomes more dynamic and complex, the opportunities for individuals with entrepreneurial creativity as an anchor will increase. The dynamic complexity of industry will put a premium on creativity, and it is creativity that is at the core of this anchor (Schein, 1996).

In summary, Schein (1996) claims that, in the future, each career anchor category will still attract people. However, having a specific career anchor (e.g. security) may become problematic as the world of work and organisational structures changes. The main effect of the new world or work is that people will have to become more self-reliant and flexible. Therefore, if a career anchor (e.g. security) is related to specific personality characteristics (e.g. neuroticism and/or dependency), an individual may experience problems in adapting to the world of work.

PERSONALITY CHARACTERISTICS AND CAREER ANCHORS

In this study personality characteristics were conceptualised from two perspectives, namely personality preferences (Myers et al., 1998) and the big five personality dimensions (McCrae and Costa, 1997).

Personality preferences are defined by Myers et al. (1998) as reflections of habitual choices between the rival alternatives in the ways information is received (Perception) and decisions are made (Judgement). The MBTI measures the following preferences of people (Myers et al., 1998):

The way individuals prefer to relate to others: Extraversion (E) - Introversion (I).

The way individuals prefer to attend and gather data: Sensing (S) - Intuition (N).

The way individuals prefer to make decisions: Thinking (T) - Feeling (F).

The way individuals prefer to organise themselves: Judgement (J) - Perception (P).

Regarding personality preferences, Rothmann, Basson and Rothmann (2000) found that preferences for Sensing, Thinking and Judgement were most prevalent in students and lecturers at a pharmacy school in South Africa. They concluded that these preferences were favoured during the training of pharmacists, and could result in inefficiency when the students were confronted by new demands.

Garden (1997) investigated MBTI profiles of software developers, and found that Extraverts preferred managerial careers, while Introverts preferred paths oriented towards technical positions. Feeling types reported preferring moves from one challenging project to another regardless of promotional opportunity, more than did Thinking types. Judging types reported managerial preferences, while Perceiving types preferred a path where one owned the company.

One South African study was found which focused on the relationship between personality preferences and career anchors. Rothmann (2001), who conducted the only study related to personality preferences and career anchors, found significant relationships between preferences for Sensing and Judgement and the career anchor security/stability, as well as a preference for Thinking and the career anchor pure challenge in a sample of South African managers.

The big five personality dimensions are the following (McCrae and Costa, 1989):
**Neuroticism.** Neuroticism is a dimension of normal personality, indicating the general tendency to experience negative affects such as fear, sadness, embarrassment, anger, guilt, and disgust.

**Extraversion.** Extraversion includes traits such as sociability, assertiveness, activity, and talkativeness.

**Openness.** Openness includes active imagination, aesthetic sensitivity, attentiveness to inner feelings, a preference for variety, intellectual curiosity, and independence of judgement.

**Agreeableness.** An agreeable person is fundamentally altruistic, sympathetic to others and eager to help them, and in return believes that others will be equally helpful.

**Conscientiousness.** Conscientiousness refers to self-control and the active process of planning, organising and carrying out tasks.

Despite the paucity of studies regarding the relationship between personality variables and career anchors, empirical evidence exists of a relationship between other career variables. Spector, Jex and Chen (1995) reported that individuals high in anxiety tend to be in jobs characterised by low autonomy, variety, identity, significance, and complexity. Holland, Johnston, Asama and Polys (1993) found that neuroticism correlated negatively with beliefs about the importance of risking, working hard, and persisting in the face of obstacles. Furthermore, neuroticism correlated negatively, and extraversion and conscientiousness positively, with beliefs about the importance of achievement.

**METHOD**

**Research design**

A survey design was used to address the research objectives. The specific design chosen was the cross-sectional survey design, in which a sample is drawn from a population at a particular point in time. According to Shaughnessy and Zechmeister (1997), this design is ideally suited to the descriptive and predictive functions associated with correlational research.

**Sample**

The total population of pharmacists in a corporate pharmacy group (N = 62) was included in the empirical study. A total of six (10%) pharmacists were either unwilling to complete the questionnaires or unavailable at the time of testing. The sample therefore consisted of 56 volunteer pharmacists. The study population included hospital pharmacists, retail pharmacists, and executive pharmacists (functioning at the head office of the Group). The sample was a convenience sample, which implies that the results of this study could not be generalised to other contexts than the one included here.

**Measuring instruments**

The **Myers-Briggs Type Indicator (MBTI)** (Myers et al., 1998) was used to measure the pharmacists’ personality preferences. Form G of the MBTI consists of 126 items measuring the four bipolar personality dimensions. Myers et al. (1998) found internal consistencies of the MBTI subscales varying between 0.83 (for Thinking-Feeling) and 0.86 (for Judgement-Perception). Few or no differences in internal consistency reliabilities were found across age, gender and ethnic groups in the United States of America (Myers et al., 1998). Furthermore, higher reliabilities were found in groups with higher average intelligence (compared with groups with lower average intelligence) and in university samples (compared with high school samples). The test-retest reliabilities of the MBTI continuous scores are also satisfactory and vary between 0.59 en 0.63 after a nine-month interval (Myers et al., 1998). The scales of the MBTI are related to traits as measured by respected trait-based instruments (Deller, 1997; Frazer, 1994; Furnham, 1996). Several large international samples, using exploratory techniques, have supported the postulated factor structure of the MBTI (Rytting and Ware, 1993).

The **NEO Personality Inventory (Revised)** (NEO-PI-R) (Costa and McCrae, 1992) was used to measure the personality of individuals, based on the five-factor model of personality, which includes the dimensions of Extraversion, Neuroticism, Agreeableness, Openness to experience, and Conscientiousness. The Cronbach coefficient alphas of the personality dimensions vary from 0.86 (Openness) to 0.92 (Neuroticism). Costa and McCrae (1992) report test-retest reliability coefficients (over six years) for Extraversion, Neuroticism and Openness varying from 0.68 to 0.83 and for Agreeableness and Conscientiousness (over three years) of 0.63 and 0.79 respectively. Costa and McCrae (1992) provided evidence for the construct validity of the NEO-PI-R for different gender, race and age groups. The convergent validity of the NEO-PI-R is evident from the fact that all the factors have shown substantial correlation coefficients upon alternative measurements (Costa and McCrae, 1992).

The **Career Orientation Inventory (COI)** (Schein, 1996) was used to measure the career anchors of participants. The COI consists of 40 items, which measure by using a six-point scale. Boshoff, Kaplan and Kellerman (1988) found Cronbach alpha coefficients of 0.70 and higher for the COI, except for Challenge, which returned an alpha
coefficient of 0.45. The test-retest reliabilities of the COI vary from 0.71 to 0.91 (DeLong, 1982). With regard to construct validity, it was found that about 90% of the items of the COI loaded on the correct constructs (Kaplan, 1990). Slabbert (1978) confirmed the construct validity of the COI for South African managers.

**Statistical analysis**

The statistical analysis was carried out by means of the SAS programme (SAS Institute, 1996). When conducting correlational research with the MBTI, it is useful to treat the dichotomous preference scores as if they were continuous scores. Continuous scores are a linear transformation of the preference scores, using the following convention (Myers et al., 1998):

For E, S, T or J preference scores, the continuous score is 100 minus the numerical portion of the preference score.

For I, N, F or P preference scores, the continuous score is 100 plus the numerical portion of the preference score.

Cronbach alpha coefficients were calculated to assess the internal consistency of the measuring instruments. Pearson product-moment correlation coefficients and multiple regression analyses were used to assess the relationships between the variables. Effect sizes (Cohen, 1988; Steyn, 2002) rather than statistical significance were used to assess the significance of relationships. A reason for the use of effect sizes (which indicate the practical significance of findings) is that inferential statistics cannot be used because the study population could not be regarded as a probability sample (Steyn, 2000). Effect sizes indicate whether obtained results are important (while statistical significance may often show results which are of little practical relevance). Another reason for the use of effect sizes is that the use of statistical significance testing in a routine manner has been criticised (Cohen, 1990; Cohen 1994; Huysamen, 1999), and from editors of some periodicals there have been appeals to place more emphasis on effect sizes (Bartlett, 1997; Thompson, 1994; Thompson, 1996).

A cut-off point of 0.30, which is regarded as a medium effect (Cohen, 1988), was set for the practical significance of correlation coefficients. A stepwise multiple regression analysis was conducted to determine the proportion of variance in the dependent variable (career anchors) that is predicted by the independent variables (personality preferences and traits). The effect size (which indicates practical significance) in the case of multiple regression is given by the following formula (Steyn, 1999):

\[ f^2 = R^2 / (1 - R^2) \]

A cut-off point of 0.35, regarded as a large effect (Steyn, 1999), was set for the practical significance of \( f^2 \).

**RESULTS**

Table 1 reports the descriptive statistics of the MBTI.

The continuous scores in Table 1 show a tendency towards preferences for Introversion, Sensing, Thinking and Judgement. The results also show that the scores on the MBTI are relatively normally distributed, with a low skewness and kurtosis in the direction of Introversion and Judgement.

Table 2 reports the descriptive statistics and the Cronbach alpha coefficients of the NEO-PI-R.

### Table 1

**DESCRIPTIVE STATISTICS OF THE CONTINUOUS SCORES OF THE MBTI**

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>( r ) (Mean)</th>
<th>alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion - Introversion</td>
<td>107.84</td>
<td>31.32</td>
<td>98.00</td>
<td>-0.37</td>
<td>-1.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensing - Intuition</td>
<td>79.29</td>
<td>25.38</td>
<td>118.00</td>
<td>0.58</td>
<td>-0.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinking - Feeling</td>
<td>84.16</td>
<td>24.17</td>
<td>112.00</td>
<td>-0.14</td>
<td>0.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Judgement - Perception</td>
<td>76.75</td>
<td>25.51</td>
<td>108.00</td>
<td>1.37</td>
<td>1.87</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 2

**DESCRIPTIVE STATISTICS AND CRONBACH ALPHA COEFFICIENTS OF THE NEO-PI-R**

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>( r ) (Mean)</th>
<th>alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>77.51</td>
<td>22.44</td>
<td>106.00</td>
<td>-0.11</td>
<td>-0.00</td>
<td>0.36</td>
<td>0.78</td>
</tr>
<tr>
<td>Extraversion</td>
<td>119.71</td>
<td>26.62</td>
<td>107.00</td>
<td>0.28</td>
<td>-0.66</td>
<td>0.55</td>
<td>0.88</td>
</tr>
<tr>
<td>Openness</td>
<td>112.27</td>
<td>17.94</td>
<td>80.00</td>
<td>0.39</td>
<td>0.10</td>
<td>0.39</td>
<td>0.80</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>130.55</td>
<td>22.60</td>
<td>95.00</td>
<td>-0.05</td>
<td>-0.38</td>
<td>0.52</td>
<td>0.86</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>140.35</td>
<td>17.82</td>
<td>83.00</td>
<td>-0.41</td>
<td>-0.06</td>
<td>0.40</td>
<td>0.79</td>
</tr>
</tbody>
</table>
Table 2 shows that acceptable Cronbach alpha coefficients varying from 0.78 to 0.88 were obtained for all the factors (Nunnally and Bernstein, 1994). The mean inter-correlation between the items is also acceptable (0.15 ≤ r ≤ 0.50) (Clarke and Watson, 1995). Table 2 shows that the scores on the NEO-PI-R are relatively normally distributed, with low skewness and kurtosis.

Table 2 shows that the scores on the NEO-PI-R are relatively normally distributed, with low skewness and kurtosis. Table 2 shows that acceptable Cronbach alpha coefficients varying from 0.78 to 0.88 were obtained for all the factors (Nunnally and Bernstein, 1994). The mean inter-correlation between the items is also acceptable (0.15 ≤ r ≤ 0.50) (Clarke and Watson, 1995). Table 2 shows that the scores on the NEO-PI-R are relatively normally distributed, with low skewness and kurtosis.

Table 3 reports the descriptive statistics and the Cronbach alpha coefficients of the COI.

Table 3 reports the descriptive statistics and the Cronbach alpha coefficients of the COI.

Table 4 reports the product-moment correlation coefficients between the MBTI and the COI.

According to the results in Table 4, Introversion correlates significantly with Technical/ Functional and Security, while Extraversion correlates significantly with General Management, Service, Pure Challenge and Entrepreneurial Creativity (all medium effects). Sensing correlates with Technical/Functional and Security (both large effects). Intuition correlates with Autonomy, Service, Pure Challenge and Entrepreneurial Creativity (all medium effects). Furthermore, it is evident that Thinking correlates with General Management. Lastly, it seems that Judgement correlates with Technical/Functional (medium effect) and Security (large effect), while Perception correlates with Challenge (medium effect).

### Table 3
**DESCRIPTIVE STATISTICS AND CRONBACH ALPHA COEFFICIENTS OF THE COI**

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>r (Mean)</th>
<th>alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical/Functional</td>
<td>17.75</td>
<td>3.91</td>
<td>18.00</td>
<td>-0.38</td>
<td>0.02</td>
<td>0.23</td>
<td>0.62</td>
</tr>
<tr>
<td>General Management</td>
<td>23.38</td>
<td>4.27</td>
<td>19.00</td>
<td>-0.58</td>
<td>-0.08</td>
<td>0.58</td>
<td>0.87</td>
</tr>
<tr>
<td>Autonomy</td>
<td>17.00</td>
<td>3.91</td>
<td>21.00</td>
<td>0.34</td>
<td>1.66</td>
<td>0.26</td>
<td>0.64</td>
</tr>
<tr>
<td>Security</td>
<td>21.86</td>
<td>4.93</td>
<td>24.00</td>
<td>-0.93</td>
<td>1.25</td>
<td>0.47</td>
<td>0.81</td>
</tr>
<tr>
<td>Service</td>
<td>25.86</td>
<td>2.53</td>
<td>10.00</td>
<td>-0.10</td>
<td>-0.82</td>
<td>0.30</td>
<td>0.66</td>
</tr>
<tr>
<td>Organisational Identi</td>
<td>19.64</td>
<td>5.51</td>
<td>24.00</td>
<td>-0.23</td>
<td>-0.23</td>
<td>0.57</td>
<td>0.87</td>
</tr>
<tr>
<td>Challenge</td>
<td>23.88</td>
<td>4.31</td>
<td>17.00</td>
<td>-0.42</td>
<td>-0.48</td>
<td>0.54</td>
<td>0.85</td>
</tr>
<tr>
<td>Entrepreneurial</td>
<td>20.25</td>
<td>4.61</td>
<td>17.00</td>
<td>0.35</td>
<td>-0.64</td>
<td>0.41</td>
<td>0.78</td>
</tr>
</tbody>
</table>

It is clear from Table 3 that acceptable Cronbach alpha coefficients were obtained for all the factors (Nunnally and Bernstein, 1994), although the values for Technical/Functional (α = 0.62) and Autonomy (α = 0.64) are somewhat lower. The mean correlation coefficients between the items of scales (0.15 ≤ r ≤ 0.50) are also acceptable if one considers the specificity of the constructs (Clarke and Watson, 1995). It is evident from Table 3 that the pharmacists obtained the highest scores on Service, Pure Challenge and General Management. The lowest scores were obtained on the Technical/Functional and Autonomy career anchors.

### Table 4
**PRODUCT-MOMENT CORRELATION COEFFICIENTS BETWEEN THE MBTI AND THE COI**

<table>
<thead>
<tr>
<th>Item</th>
<th>Extraversion - Introversion</th>
<th>Sensing - Intuition</th>
<th>Thinking - Feeling</th>
<th>Judgement - Perception</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical/Functional</td>
<td>0.32</td>
<td>-0.55</td>
<td>0.11</td>
<td>-0.44</td>
</tr>
<tr>
<td>General Management</td>
<td>-0.39</td>
<td>0.20</td>
<td>-0.33</td>
<td>0.01</td>
</tr>
<tr>
<td>Autonomy</td>
<td>-0.03</td>
<td>0.31</td>
<td>0.09</td>
<td>0.13</td>
</tr>
<tr>
<td>Security</td>
<td>0.35</td>
<td>-0.60</td>
<td>0.14</td>
<td>-0.51</td>
</tr>
<tr>
<td>Service</td>
<td>-0.48</td>
<td>0.34</td>
<td>0.07</td>
<td>0.24</td>
</tr>
<tr>
<td>Organisational Identi</td>
<td>-0.15</td>
<td>-0.21</td>
<td>-0.17</td>
<td>-0.24</td>
</tr>
<tr>
<td>Challenge</td>
<td>-0.44</td>
<td>0.38</td>
<td>-0.29</td>
<td>0.39</td>
</tr>
<tr>
<td>Entrepreneurial</td>
<td>-0.30</td>
<td>0.44</td>
<td>-0.14</td>
<td>0.22</td>
</tr>
</tbody>
</table>

** Practically significant correlation (large effect): d ≥ 0.50
* Practically significant correlation (medium effect): d ≥ 0.30
The product-moment correlation coefficients between the NEO-PI-R and the COI are shown in Table 5.

**TABLE 5**

PRODUCT-MOMENT CORRELATION COEFFICIENTS BETWEEN THE NEO-PI-R AND THE COI

<table>
<thead>
<tr>
<th>Item</th>
<th>Neuroticism</th>
<th>Extraversion</th>
<th>Openness</th>
<th>Agreeableness</th>
<th>Conscientiousness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical/Functional</td>
<td>0.47</td>
<td>-0.42</td>
<td>-0.33</td>
<td>0.02</td>
<td>-0.15</td>
</tr>
<tr>
<td>General Management</td>
<td>-0.32</td>
<td>0.44</td>
<td>0.14</td>
<td>-0.30</td>
<td>0.51</td>
</tr>
<tr>
<td>Autonomy</td>
<td>-0.06</td>
<td>0.15</td>
<td>0.37</td>
<td>-0.06</td>
<td>0.05</td>
</tr>
<tr>
<td>Security</td>
<td>0.44</td>
<td>-0.39</td>
<td>-0.50</td>
<td>0.19</td>
<td>0.09</td>
</tr>
<tr>
<td>Service</td>
<td>-0.39</td>
<td>0.55</td>
<td>0.22</td>
<td>0.26</td>
<td>0.23</td>
</tr>
<tr>
<td>Organisational Identification</td>
<td>0.11</td>
<td>0.10</td>
<td>-0.23</td>
<td>-0.30</td>
<td>0.26</td>
</tr>
<tr>
<td>Challenge</td>
<td>-0.45</td>
<td>0.56</td>
<td>0.43</td>
<td>-0.11</td>
<td>0.26</td>
</tr>
<tr>
<td>Entrepreneurial Challenge</td>
<td>-0.42</td>
<td>0.41</td>
<td>0.53</td>
<td>-0.23</td>
<td>0.25</td>
</tr>
</tbody>
</table>

**Practically significant correlation (large effect): d ≥ 0.50**

**Practically significant correlation (medium effect): d ≥ 0.30**

Table 5 indicates practically significant positive correlations (of medium effect) between Neuroticism on the one hand and Technical/Functional and Security on the other hand. Neuroticism also correlated negatively with General Management, Service, Challenge and Entrepreneurial Challenge (all medium effects). Extraversion correlates negatively with Technical/Functional and Security (both medium effects), while it correlates positively with General Management and Entrepreneurial Challenge (both medium effects), as well as Service and Challenge (both large effects).

Openness correlates negatively with Functional Competence (medium effect) and Security (large effect), while it correlates positively with Autonomy (medium effect), Challenge (medium effect) and Entrepreneurial Creativity (large effect). Practically significant negative correlation coefficients (of medium effect) exist between Agreeableness on the one hand and General Management and Organisational Identification (both medium effect) on the other hand. A practically significant positive correlation (of large effect) exists between Conscientiousness and General Management.

Table 6 shows the results of a multiple regression analysis with personality preferences (as measured by the MBTI) and traits (as measured by the NEO-PI-R) as independent variables and career anchors (as measured by the COI) as dependent variables.

**TABLE 6**

MULTIPLE REGRESSION OF PERSONALITY VARIABLES AND THE COI

<table>
<thead>
<tr>
<th>Career Anchor</th>
<th>Adjusted R²</th>
<th>f²</th>
<th>R</th>
<th>Best Predictor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical/Functional</td>
<td>0.32</td>
<td>0.47</td>
<td>0.57</td>
<td>Sensing, Conscientiousness</td>
</tr>
<tr>
<td>General Management</td>
<td>0.41</td>
<td>0.69</td>
<td>0.64</td>
<td>Intuition, Agreeableness (-), Conscientiousness</td>
</tr>
<tr>
<td>Autonomy</td>
<td>0.06</td>
<td>0.06</td>
<td>0.24</td>
<td>Openness</td>
</tr>
<tr>
<td>Security</td>
<td>0.44</td>
<td>0.79</td>
<td>0.66</td>
<td>Openness (-), Neuroticism</td>
</tr>
<tr>
<td>Service</td>
<td>0.28</td>
<td>0.39</td>
<td>0.53</td>
<td>Agreeableness, Conscientiousness</td>
</tr>
<tr>
<td>Organisational Identification</td>
<td>0.24</td>
<td>0.32</td>
<td>0.49</td>
<td>Openness (-), Agreeableness (-), Neuroticism, Sensing, Conscientiousness</td>
</tr>
<tr>
<td>Challenge</td>
<td>0.40</td>
<td>0.67</td>
<td>0.63</td>
<td>Perception, Openness, Conscientiousness</td>
</tr>
<tr>
<td>Entrepreneurial Creativity</td>
<td>0.40</td>
<td>0.67</td>
<td>0.63</td>
<td>Agreeableness (-), Neuroticism (-), Openness</td>
</tr>
</tbody>
</table>

**Practically significant: Large effect f² ≥ 0.35**
Table 6 shows that the personality characteristics predict significant percentages of the variance in six of the eight career anchors (as measured by the COI). The multiple correlation coefficients in the case of these career anchors are practically significant (large effect). Multiple correlation coefficients varying between $R = 0.24$ and $R = 0.66$ were obtained.

**DISCUSSION**

It was found that most of the pharmacists who participated in this study preferred *Introversion*, *Sensing*, *Thinking* and *Judgement*. Pharmacists who prefer *Introversion* are energised by what goes on in their inner world, and they will be comfortable when their work requires a good deal of their activity to take place quietly inside their heads. Pharmacists who prefer *Sensing* will tend to dislike new problems, like an established order of doing things, enjoying using previously learned skills, working steadily within realistic time frames and reaching conclusions step by step. Most of the pharmacists prefer *Thinking*, and will tend to decide objectively, based on cause and effect (Myers et al., 1998). Many pharmacists prefer *Judgement* and prefer to live in a planned, orderly way, wanting to regulate life and control it.

The strongest career anchors in this study were *Service*, *Challenge*, and *General Management*. Pharmacists who have *General Management* as a career anchor are motivated by types of work which are characterised by high levels of responsibility, which are challenging and varied, which require leadership skills and which provide opportunities to contribute to the success of the organisation. Those who have *Service* as a career anchor respond best to a system that recognises contributions and feel a need for the recognition and support of their values by colleagues and superiors. Pharmacists who have *Challenge* as a career anchor get satisfaction out of trying to solve difficult problems and coping with the most difficult tasks.

Furthermore, the results showed that pharmacists who measured higher on *Introversion*, *Sensing*, *Neuroticism* and *Judgement* and lower on *Openness to Experience* tend to have *Technical/Functional competence* and *Security* as career anchors. They prefer to focus on their own inner world, experience negative affects such as fear, sadness, embarrassment, anger, guilt and disgust, and they tend to be conventional in behaviour and conservative in outlook, use their senses to gather information and live in a planned and orderly way. These pharmacists are prepared to carry out work in the way required by their employers, but they expect stability and predictability, probably because this will help them manage their anxiety and other negative affects.

The empirical relationships between *Security* and *Technical/Functional competence* on the one hand and personality characteristics such as *Introversion*, *Sensing*, *Neuroticism*, low *Openness* and *Judgement* on the other hand, are of concern. Schein (1996) indicated that employees with security as career anchor would experience the most severe problems because of the shift in organisational policies, from guaranteeing employment security, to touting employability security. Pharmacists with these personality characteristics might find it difficult to become motivated to ensure their own employability. Furthermore, because of the specific personality characteristics that are related to *Technical/Functional competence*, pharmacists need to become constantly motivated to update and realign in an organisational world that will not bear the costs for this updating process (Schein, 1996). Experience in the pharmacy group indeed confirms that pharmacists with the above-mentioned pattern of personality characteristics associated with these career anchors, tend to experience job dissatisfaction (Coetzer and Rothmann, 2002), perform relatively poorly, (Rothmann and Coetzer, 2003) and are susceptible to burnout (Basson and Rothmann, 2002).

Pharmacists who measured higher on *Extraversion* and lower on *Neuroticism* and *Agreeableness* tend to have *General Management* as a career anchor. They prefer to focus on the outer world of people, enjoy the company of others, are more emotionally stable, make decisions by analysing logical consequences, are less agreeable and are conscientious. When pharmacists who have *General Management* as a career anchor are placed in managerial positions, they should be sensitive towards their tendency not to be agreeable. The latter trait may lead to difficulties in creating a motivational climate.

Pharmacists who measured higher on *Extraversion* and lower on *Neuroticism* and *Agreeableness* as a career anchor. They prefer to focus on the outer world of people and are affectionate, friendly, gregarious, assertive and energetic. They are more emotionally stable, and tend to be unconventional, willing to question authority, and prepared to entertain new ethical, social and political ideas. They tend to use their intuition to gather information which provides meanings, relationships, and possibilities beyond information from the senses.

Pharmacists who measured lower on *Agreeableness* tend to have *Organisational Identification* as a career anchor. Therefore, it seems that those pharmacists who want to identify with a powerful and prestigious employer are less altruistic, sympathetic to others, and eager to help them, probably because of their own power needs. Pharmacists who measured higher on *Openness to Experience* and who
preferred Intuition tend to have Autonomy as a career anchor. It makes sense that pharmacists who prefer to look at meanings, relationships and possibilities beyond the information from the senses, and who are open to experiences, need a variable work situation, and regard autonomy as important.

LIMITATIONS

A limitation of this study is that the research design does not allow one to determine the direction of the relationship between the personality variables and career anchors. In addition, because the pharmacists in this study were relatively young, their career anchors may not be fully developed. Lastly, a non-probability sample was used, which implies that the findings of this study cannot be generalised to other settings.

MANAGERIAL IMPLICATIONS

This study leads to several application-oriented suggestions. Firstly, pharmacists should be trained in identifying their own and others' personality preferences, and the development areas arising from these. Pharmacists should therefore learn not only to identify and accept their real personality preferences, but also to develop their skills in the opposite or shadow preference (Myers et al., 1998). They should be trained in MBTI terminology, so that they will be empowered to work on the development areas arising from the MBTI. This will facilitate their adaptation to new career demands, especially for those with Security/Stability and Technical/Functional competence as career anchors.

Secondly, effective selection and placement practices should be implemented in the pharmacy group. Pharmacists' career anchors and personality characteristics should be considered when these practices are implemented. However, more research is needed before the results of this study can be used for selection purposes, because these results were not obtained in a selection context.

Thirdly, the career anchors of pharmacists should be considered in their training and development. A career anchor may provide a way to "persuade" a pharmacist to engage in competence development from the perspective of self-perceived talents and abilities, basic values, motives and needs applicable to the career. Career anchors are related to personality preferences and traits, a fact which makes it necessary to facilitate self-development as a prerequisite for pharmacist competence.

More effective utilisation of their potential could result from adapting their job demands to their career anchors, personality preferences and personality dimensions. Older pharmacists, whose career anchors have stabilised, may find it difficult to change, and to adapt to new organisational and professional demands.

Future research should focus on the relationship between personality preferences, dimensions and career anchors, on the one hand, and measures of organisational effectiveness on the other hand.

REFERENCES


Rytting, M., and Ware, R. 1993. Reinterpreting the NEO-PI from the Perspective of Psychological Type. In Proceedings of APT-X. Biennial Conference of the Association of Psychological Type, Beach, CA.


