

The Construction Manager's Mask: A More Purpose-Fit Selection for South Africa

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Abstract. The construction manager requires an educational background, technical skills, practical experience with specific soft skills in the competency domain and a specific personality profile – in order to ensure the success of a project. To enroll the correct profile student for construction management can reduce the probability of skills lost over time. The South African Personality Inventory (SAPI) was used to test the personality profiles of construction management industry participants sample (N = 10). The student group sample (N = 16) included students in their 3rd year of construction management studies enrolled at three different universities in South Africa. The online SAPI personality results suggested a remarkably similar profile between the industry group and the students' group. The online SAPI personality tests' main dimension results scored the highest in Intellect/Openness, followed by Conscientiousness, the lowest were Neuroticism and Negative Social Relational Disposition. Construction management students need to do practical work for a year before they start their studies. This will give them a better understanding of the work conditions, pressure and work-life balance associated with the construction industry, as this is not tested in the online SAPI personality test.

Keywords: Construction Manager · Personality · South African Personality Inventory · South Africa

1 Introduction

In a perfect world, one would like to use an instrument that could test an individual's personality profile – in order to try to forecast the probability of that person being a purpose-fit candidate for the position. The real benefit would then depend on the quality of the fit that is formed between the employee, their work, the organisation and the environment [1][2].

It is pivotal for the construction industry, and even more so for individual construction companies, to retain critical skills. To enroll the correct profile student for construction management can reduce the probability of skills being lost over time, provided that purpose-fit student enters the industry. Companies can improve their systems and processes and apply new technology, but this would all be fruitless if they do not invest their efforts in their intellectual capital. It would be even worse if a construction company invests resources in the development of an individual, only for that

individual to leave the industry and apply their skills and knowledge somewhere else [3][4][5].

2 Literature

Every individual who has worked on a construction project knows the impact that a key person has on the success of such a project and the opposite reaction if that key person decides to resign [6]. The expensive replacement cost, disruption of the project and involved team members typically create frustration within the organisation [7]. Some sources indicate that to replace a professional individual can cost as much as one and a half times their annual salaries. The bulk of the cost of recruiting or replacing management is in the cost of training the new employee; furthermore, there is the cost involved with the loss of work by the outgoing employee [1].

The research of Guion and Gottier [8] concluded that personality measurements should not be used when selecting personnel. This view was only contested a few years later by other researchers [9]. Previous research studies indicated that if a test is intended to specifically measure personality within a work context, the criterion-related validity escalates and this increases the value of personality constructs from an industrial and organisational perspective [2].

Schmidt and Hunter [10] were involved in a meta-study that stretched over 100 years to scrutinise the predictive validity of various instruments. The research findings concluded that different methods and combinations of methods have very different validities for predicting future job performance i.e. General Mental Ability (GMA) combined with a structured interview increased in terms of their prediction. Their research also concluded that methods, such as personal-job fit, personal-organisational fit and the amount of education have little validity and graphology has in essence no validity. During their research, they realised that the combination of two predictors is practical for use in recruiting and it has a high composite validity. GMA and above-an integrity test and GMA and above-a structured interview, both proved to be good predictors of performance in job-training program. These two combinations can also be used for recruiting both entry-level and expert-job applicants.

Thus, when the HR manager recruits by using GMA, the probability is good that they will select an employee who has a high level of performance on the job. This recruited individual will learn mostly from job-training programs on the job, as well as acquiring job knowledge more quickly from experience on the job [10]. The research also indicated that even personality has a certain predictive validity. In a local meta-study conducted in South Africa on personality, the results indicated that students with an education lower than grade 12 on the Big Five, were found to be low in conscientiousness. However, extraversion is a good predictor for overall job performance. Conscientiousness proved to be the best predictor for task performance in the South African context [11].

In an academic environment, conscientiousness also proved to be an important predictor but combined with an introverted personality. As such, an individual is more focused and not easily distracted from the task at hand. To predict overall performance, extraversion, emotional stability and openness proved to be the best predictors.

According to Holland's theory "personality is an important determinant of career choice and that career choice is an expression of personality". It was further explained that the interaction which individuals experience when they embrace their environments, which correlates with their personal orientation [1].

An instrument in South Africa based on the Five-Factor Model (FFM) considered the importance of local context. Strong psychometric properties across the ethnic groups were found through using their Basic Traits Inventory (BTI). Although the BTI instrument was not designed to assess indigenous personality concepts, it was commonly used in South Africa as an FFM instrument [12].

The South African Personality Inventory Instrument (SAPI) was constructed around the main ethnos cultural groups of South Africa. Embracing a combined emic etic approach includes measures of the Big Five traits and social-relational traits that are particularly striking in South Africa's Bantu ethnic groups. Parallel scales were concurrently developed in the eleven official South African languages [2][11][12]. The SAPI was based on the same principle as the Chinese Personality Assessment Inventory (CPAI) that was designed with the whole concept of the indigenous perspective [13].

With the development of this instrument, more focus was given to culturally specific indices and ideas more specific in certain cultures, since previous instruments neglected this area [12].

SAPI's blueprint did not start from a predefined model, such as the FFM, but it opted for a more all-inclusive reportage of the personality ideas relevant across the different groups. The SAPI instrument was developed in two stages: (1) "the qualitative stage of a conceptual model development; and (2) the quantitative stage of instrument development". The latter stage was broadly conceptual and it tried to disentangle the implied personality structure dimensions reflected in natural language by speakers of all eleven official languages in South Africa. The second part ultimately concentrated on the empirical validation of the preliminary personality inventory [13]. During the instrumental development stage, ethnographic data were collected from all eleven languages [12]. Characteristics of translated items and factor replicability across groups were used as the main criteria of selection. In their research they further stated that replicability across ethnic groups can increase the probability of succeeding factor duplication, and lessen the existence of distinctive elements. It was also suggested that structure replicability must be increased if cross-cultural comparisons are visualised [12].

They further suggested that during social desirability, a distinction must be retained between impression-management-focused aspects (associated with personality in different cultural groups) and lying aspects (more circumscribed effects) [12].

Although there are noticeably different ethno-cultural groups within the South African context, the model development was allowing for transcendence from narrow emic constructs. Cross-cultural personalities, where the emic-etic was combined in a balanced manner were represented in the instrument. From a local perspective, this gave rise to an analogous structure to the Big Five form, although not all of these factors looked as if they were equally replicable [12].

3 Methodology

An interpretivism philosophy was followed through a deductive approach and action research strategy. A multi-method was utilized over a cross-section period. In the data collected for the construction management industry participants the sample (N = 10) included both males and females from the general population in Gauteng, South Africa. These industry individuals were selected based on their experience in specific construction sectors, their age and the fact that they operate in the Gauteng area. The sample consisted of 10 white participants (9 males; 1 female; age 32 to 71 years).

The student group sample (N = 16) included students in their 3rd year of construction management studies enrolled at the University of Pretoria, University of the Free State and Nelson Mandela University. The students participated voluntarily and therefore, not all four of the major ethnic groups could be tested. This sample consisted of 13 white participants (12 males; 1 female; age 21 to 22 years), 2 black participants (1 male; 1 female; age 21 to 23 years) and 1 Indian participant (1 male; 0 females; age 22 years). The SAPI instrument was administered in English and it consisted of 188 questions. A 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree) was used. The SAPI version that was used contained seven main dimensions. Under each of the seven main dimensions was a variation of the sub-dimensions, which contained typical SAPI questions in the text.

4 Discussion and Findings

The main dimensions within SAPI that proved to be the most important sections were: (1) openness/intellect; (2) conscientiousness; and (3) positive social-relational disposition.

The construction manager must be someone who is well-informed and observant of external [outside the company] and internal [within the company] issues that could influence the outcome of the project. He/she must be a progressive and rational thinker to find practical solutions for difficult problems. To effectively improve a construction project, this individual must constantly seek new experiences, knowledge, skills and ideas. Every day is different and plans can typically change a few times during a day. Obstacles and challenges occur on a daily basis; consequently, it is important to be adaptable to constant change, with never a boring moment. The construction manager cannot have all the resources that he/she always needs on a project; and he/she must therefore be innovative and continuously able to find new ways to achieve the project goals within these constraints. A construction manager with more experience should have the ability to find more solutions to solve a problem, make better decisions, and resort to the best possible outcome.

In this environment of constant change, the construction manager must be able to learn and adapt to new information rapidly. The lack of necessary skills forces young construction managers to tackle the huge responsibility of managing relatively large construction sites. This can create even more stress in an already very stressful environment.

Conscientiousness was also indicated as a strong predictor for a construction manager. It is important for such an individual to persevere, to be ambitious and to be

hard-working. The construction manager must be self-driven and pro-active, in order to minimise possible problems that could occur on the project. Construction projects always have deadlines, problems and difficulties that need to be resolved under tremendous pressure. He/she must keep everybody motivated, who is involved in the project.

Construction projects are most of the time very difficult to manage; and it is not always easy to motivate individuals in the robust construction site environment. Being organised, neat, precise and punctual with managing all aspects of a construction site is very important. Most construction managers fail in their paper work, especially when claims and disputes arise. This typically has a definite negative impact on the outcomes of the dispute, as well as on the progress and motivational climate of the project.

In the multi-cultural context of the South African industry, the construction manager must also respect different cultural and religious aspects. Although religion would not determine whether such an individual is successful or not on a project, it does indicate that such an individual would probably be more trustworthy.

Construction managers must understand and be sensitive towards the needs of everybody on the construction site. If the construction site is situated in an area, where it is very cold or hot, working hours should be adapted, as required. In some instances, the people involved in the project go through difficult family issues, where a more sensitive approach is required. Construction managers must be approachable at all times during the project, to give advice and instructions, as and where needed. If the project is running into trouble and it falls behind schedule, people might have to work over weekends for long periods. In some cases, the construction site is lit-up and construction work continues until late at night.

The stress levels increase; as quality becomes an issue people get tired and demoralised. During these difficult times, the construction manager must have the ability to give the necessary guidance, upliftment and motivation, as and when needed. He/she must be able to forgive people if mistakes occur, and accommodate sub-contractors in tight schedule situations. Construction managers must create a site culture of being dependable, loyal, honest and fair. He/she must be fair towards everybody, and create loyalty between teams. With the responsibility-assigned matrix (RAM) the construction manager can empower dependable individuals to take responsibility and be accountable for their actions.

Table 1. SAPI: Most important personality traits for a construction manager

SAPI [Main Dimensions]	SAPI [Sub-dimensions]	SAPI [Characteristics]
Openness [1] <i>(The quality of being well-informed and observant of external and internal things, being a rational and progressive thinker and acquir-</i>	Broad-Mindedness <i>Being imaginative and seeking new experiences and ideas)</i>	Imaginative, seeking new experiences, seeking new ideas, inquisitive, investigative, eager to acquire new information, knowledgeable, quick learner, adapta-

<p><i>ing new experiences, knowledge, skills and ideas)</i></p>	<p><i>Epistemic Curiosity</i></p> <p><i>(Being inquisitive, investigative and eager to acquire new information)</i></p> <p><i>Intellect</i></p> <p><i>(Being knowledgeable, a quick learner, adaptable, articulate, innovative and perceptive)</i></p>	<p>ble, articulate, innovative, perceptive.</p>
<p>Conscientiousness [2] <i>(Orientation toward achievement, order and traditionalism)</i></p>	<p><i>Achievement Orientation</i></p> <p><i>(Being motivated, perseverant, ambitious and hard-working towards achieving things in life)</i></p> <p><i>Orderliness</i></p> <p><i>(Being organised, neat, punctual, precise and thorough in everything one does)</i></p> <p><i>Traditionalism-Religiosity</i></p> <p><i>(Being traditional by respecting one's own culture and being religious)</i></p>	<p>Being motivated, perseverant, ambitious, hard-working, focus to achieve things, organised, neat, punctual, precise, thorough, being religious, respect own culture.</p>
<p>Positive Social-Relational Disposition [3] <i>(Positively managing relations)</i></p>	<p><i>Empathy</i> <i>(Valuing and showing compas-</i></p>	<p>Value compassion, sensitivity towards needs & emotions, guiding, uplifting,</p>

<p>with others)</p>	<p><i>sion to others by showing sensitivity towards their needs and emotions)</i></p> <p>Facilitating</p> <p><i>(Guiding, uplifting and motivating others through their lives by giving them advice, instructions and encouragement)</i></p> <p>Integrity</p> <p><i>(Being consistently dependable, loyal, honest and fair towards others)</i></p> <p>Interpersonal Relatedness</p> <p><i>(Being accommodating in one's relationships and actively maintaining relationships through forgiveness, helpfulness and by preserving peace)</i></p> <p>Social Intelligence</p> <p><i>(Relating to others by being understanding of them and their feelings)</i></p> <p>Warm-Heartedness</p> <p><i>(Being considerate, protective, supportive of others as well as being approachable and attentive to others' needs)</i></p>	<p>motivating, give advice, instructions, encouragements, dependable, loyal, honest, fair, accommodating, forgive, helpfulness, peace, understand feelings, considerate, protective, supportive, approachable, attentive.</p>
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Extraversion and social desirability did not feature as important as the last main dimensions, but they did prove to be positive additional personality traits. Without a tendency to be sociable and talkative, much-needed interaction might be hampered. Personality traits for a construction manager are of paramount importance.

Construction managers must also have the ability to see the comical side of life, to survive every day. If he/she is not approachable and does not enjoy having people around all the time, it would be difficult to operate in the construction industry.

Again, although being playful and sociable has their place on a construction site, they are not critical personality traits that one would need on a daily basis.

It is necessary for a construction manager to have a positive self-image as this will reflect well for the company and to an extent give security to everybody involved on the project. The construction manager would also have to be able to absorb vast critique that flows from various decisions that have been made. One should, however, be careful that this does not spill over to becoming an arrogant person.

Extraversion and social desirability are additional personality traits for a construction manager to possess. Extraversion is the tendency to be sociable and playful. The characteristics are the ability to see the positive side of life, being lively and being able to make people laugh. With social desirability, the tendency to give a negative or positive self-description is emphasised. These characteristics consist of being easy-going, talkative and enjoying being around people.

There are certain personality traits that are not favourable for a construction manager to possess; these are neuroticism and negative social-relational disposition. Neuroticism indicates the tendency for a person to be impulsive and to fluctuate between emotions. The construction manager must not have the tendency to be impulsive. He/she must not always have all the answers, but within a reasonable timeframe to resolve the issue. This individual should reflect back before they reply to claims and issues. Construction manager's emotions should not fluctuate and easily be aggravated during negotiations, meetings and general labour issues.

Because the construction industry is so complex, the construction manager must be able to handle stress well. If he/she is a very nervous individual, worried all the time and afraid to make important decisions, he/she would fail as a construction manager. The construction manager must rather show respect, knowledge and acceptance, where needed, and be composed in difficult situations, to be able to make rational decisions and conduct educated calculations.

A negative social-relational disposition is also a main dimension that should not be part of the personality of a construction manager. The construction manager needs to work with people all the time for the duration of the project and build relationships for possible future projects.

There is, consequently, no place for an individual that thinks he/she is better or more important than another person or team member, neither would it be good if the construction manager is actively deceiving others or cheating them. Integrity in the industry is highly valued and a deceitful individual could do irreparable damage to the project and the construction company's image. Being disruptive, intrusive and indiscreet about the private affairs of others would break the trust, and be detrimental to the trustful relationships cultivated between teams and individuals.

5 Conclusions

The construction management students need to do practical work for a year before they start their studies. This will give them a better understanding of the work conditions, pressure and the work-life balance associated with the construction industry, as this is not tested in the online SAPI personality test. The difficulty of working in the construction industry can only be experienced during practical work. The difficulty

when starting a family, managing stress and to leave work-related problems at work and prevent them from spilling over to your personal life, can create further conflict. For female construction managers, there is the issue of cultures that do not accept female authority and that makes it even more difficult to be successful. It is obvious that the construction manager has a special character with a specific educational background, knowledge and the experience needed to ensure the success of a project. This person would also need a personality trait or traits that will assist him/her on the road to the successful completion of projects.

During the selection process, personality traits associated with the profile of a successful construction manager would assist in selecting a purpose-fit candidate. This could not only assist in successful projects, but also increase the probability that the construction manager would be satisfied on a construction site for a longer sustainable period.

Fewer construction managers leaving the industry (taking their experience and expertise to their new workplace) should slowly create an elite pool with the appropriate levels of critical skill sets.

This retained expertise would be vital to the survival and even the expansion of the South African construction industry. After the relevant literature study was scrutinised and the SAPI results were received, a possible profile for a construction manager could be formulated.

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