

Leveraging the Psychological Well-Being among Malaysian Engineers: The Role of Protean Career Orientation and Career Strategy Implementation

(Memanfaatkan Kesejahteraan Psikologi dalam kalangan Jurutera Malaysia: Peranan Orientasi Kerjaya Protean dan Strategi Pelaksanaan Kerjaya)

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ABSTRACT

The engineers, deemed to be a protean careerist are notable for their ambitiousness and aggressiveness in pursuing their career advancement and in striving for psychological success. However, the organization's unaccommodating environment and viewpoint contradicts with this nature of working, which directly and adversely affecting this group's psychological well-being. Thus, a study on protean career orientation and career strategy implementation and their effects on the psychological well-being of the Malaysian engineers are pertinent and timely. To test the proposed hypotheses, data was collected through self-administered questionnaires. The study sample consisted of 387 engineers from various disciplines regardless of the industries. The hypotheses were analysed using the Partial Least Squares (PLS) approach. This study had found interesting results related to psychological well-being. The findings showed that protean career orientation has a positive influence on career strategy implementation. Finally, this study had found that the relationship between protean career orientation and psychological well-being are not linked through the mediating variable of career strategy implementation. Based on the findings, theoretical and practical implications of the study are discussed. The suggestion for the future research is also offered.

Keywords: Protean career orientation; psychological well-being; career strategy implementation; engineer

ABSTRAK

Jurutera, dianggap sebagai orang yang mementingkan kemajuan kerjayanya yang berubah-ubah untuk kehebatan dan sifat agresif mereka dalam mengejar kemajuan kerjaya serta berjuang untuk kejayaan psikologi. Walau bagaimanapun, persekitaran organisasi dan pandangan yang bercanggah dengan sifat bekerja, telah secara terus dan menjejaskan psikologi kesejahteraan kumpulan ini. Maka, satu kajian mengenai orientasi kerjaya yang berubah-ubah dan pelaksanaan strategi kerjaya dan kesan terhadap psikologi kesejahteraan dalam kalangan jurutera-jurutera Malaysia adalah relevan dan bertepatan pada masa. Untuk menguji hipotesis yang disarankan, data dikumpulkan melalui soal selidik urus sendiri. Sampel kajian ini terdiri daripada 387 jurutera profesional daripada pelbagai bidang tanpa mengira industri. Hipotesis telah dianalisis menggunakan pendekatan kuasa dua terkecil separa (PLS). Kajian ini telah berjaya memperoleh keputusan menarik yang berkaitan dengan psikologi kesejahteraan. Penemuan kajian menunjukkan orientasi kerjaya protean mempengaruhi strategi pelaksanaan kerjaya. Akhir sekali, kajian ini telah mendapati bahawa hubungan antara orientasi kerjaya protean dengan psikologi kesejahteraan tidak berhubung kait melalui pemboleh ubah perantara strategi pelaksanaan kerjaya. Berdasarkan dapatan kajian, implikasi teori dan praktikal kajian telah dibincangkan. Cadangan untuk penyelidikan masa depan juga dikemukakan.

Kata kunci: Orientasi kerjaya protean; kesejahteraan psikologi; strategi pelaksanaan kerjaya; jurutera

INTRODUCTION

In line with the changes of technology, globalisation, and competitive pressure in the employment, career in its essence has also simultaneously effected (Rahim & Siti-Rohaida 2015b). Consequently, the notion of the individual's careers in the context of the contemporary business world is largely influenced by the changes in the nature of work in (Park 2009; Greenhaus et al. 2000). For this reason, there is need for the changing of employees' attitude towards their career development and their own role (Zafar & Mat 2012; Briscoe & Hall 2006). Globalisation and competitive pressure in the world of employment had undergone changes due to the

constant upgrading of technology; as well as changes in the essence of career development. Thus, it is imperative that the attitude of the employees towards developing their careers and focusing on their own roles are also important. Engineers are regarded as highly ambitious, having high expectations especially in regards to their career pathway, usually managed by themselves as they feel responsible for their own future. Engineers create their own future without depending too much on their organization. Therefore, protean career orientation is an appropriate mind-set to be developed in their current work scenario for the engineers (Rahim & Siti-Rohaida 2015b). Distinctive characteristics of a protean career orientation include freedom and growth, professional commitment,

the attainment of psychological success through the pursuit of meaningful work, and the discovery of a calling (Grimland, Vigoda-Gadot & Baruch 2012).

Subsequently, Briscoe and Hall (2006), Briscoe, Hall and DeMuth (2006) and Hall (2002), who are among the pioneers of protean career, had discovered that an individual must firstly broaden their horizons by developing new competencies in regards to their careers or own self (Zafar & Mat 2012). Previous findings of De Vos and Soens (2008) have supported Hall's (2002) statement that individuals with protean career orientation are inclined to scrutinise their own career pathways, a component which is within the purview of the individuals. This is considered as being proactive which refers to actions undertaken by the employees to realize their career's objective. These high-driven employees would constantly seek opportunities in getting desired positions within the organisation, thus empowering them to lead a successful career. Supported by Colakoglu (2005), employment should not be seen as the means of income generation, but also valuable experiences, social interactions and opportunities for personal development as well as the skills useful to the individual. The individual well-being would potentially be reduced due to the loss of such psychologically important factors (Direnzo 2010). Factors such as skill utilization, professional development and social support has been observed as constantly relating to the well-being of related outcome such as psychological well-being, which is predicted by meaningful work (Halbesleben 2010). Meaningful work leads to eustress, eventually promoting engagement despite demanding situations. Engineers committed to their occupation would perceive work as important and meaningful (Rothman & Malan 2006). This would lead them to enjoy the work experience, feel important and contributing to the organisation. Unnecessary struggles would result in frustration and feeling meaningless (Schaufeli & Bakker 2001).

PROBLEM STATEMENT

In Malaysia, engineers are seen as the key players in many industries such as the construction industry, the manufacturing industry, and the agriculture-based industry (Malan 2004). The engineering sector is the key engine in achieving economic transformation (Kelly Services 2012). However, as mentioned in previous work by Mat Desa (2009), the statistics of Ministry of Human Resources Department's third quarter report (2008) had indicated that there is a drop of 20% to 25% (as compared with those of previous years) in terms of performance in the electronics sector contextually. The task performances are product knowledge, product design knowledge and the ability to ensure that all designs have considered inputs from various counterparts. Meanwhile, the contextual performances are time management, prompt decision making, being assertive, and human relations such as voluntary behaviours. Failure in meeting task performance

has caused engineers' performance to drop significantly and eventually, resulting in a defective product that does not satisfy customer needs. Other consequences are delayed project completion and failure to meet customer deadlines and requirements (Mat Desa 2009). In addition to that, the findings from survey conducted by Job Central Malaysia's Work Happiness Survey 2013 had found that engineers in Malaysia are considered as unhappy. This is a result of limited opportunities, work autonomy and work load (Boo Su-Lyn 2014). This situation would escalate if no proper attention is given to address the well-being of the engineers in an Asian setting. Thus, it is imperative to conduct a study to see whether protean career orientation influences the psychological well-being among Malaysian engineers, as well as examine the mediating effect of career strategy implementation on the relationship between protean career orientation and psychological well-being among the engineers.

LITERATURE REVIEW

PROTEAN CAREER ORIENTATION

In this modern age, the concept of career has evolved from a utilitarian, classical concept of employment to one which has a much wider meaning. As listed by Arthur, Khapova and Wilderom (2005), there are various issues that are often discussed in research on careers. These issues include status and rank, wealth, property, earning capacity; social reputation, prestige and influence, knowledge and skills, friendship and network connection, health and well-being as well as culture. This indicates that career has influenced not only an individual economically, but also physically and emotionally. The leading research focus of career research is the notion of a protean career. Briscoe and Hall (2006) described protean career orientation as a two-dimensional framework where an individual, rather than the organisation has full control over one's career development. A person who takes control of their career choice are perceived as self-directed, independent and proactive roles in managing their vocational behaviours. Furthermore, some holds the values-driven attitudes and rely on their own values, rather than copying some external standards in making career choices for themselves. In addition, as previously mentioned, Briscoe et al. (2006) have claimed protean career orientation to cause greater mobility, a more holistic perspective on life, and progresses in development. Thus, as mentioned in Hall (2004), the main criteria for career subjective are driven by personal values.

Moreover, the local and global economy is constantly changing. Previous researchers such as DiRenzo (2010) and Chan and Dar (2014), reported that retrenchments caused by company downsizing as well as intense competition in the job market, have motivated people to work harder as they believe that they will be fired if they cannot perform well in their job. Therefore, employees have developed career

strategies to be engaged more meaningful work experiences and to accommodate the growth of their individual needs (Arthur & Rousseau 1996). This is parallel to the protean career success, which as stated in Hall and Moss (1998) and Heslin (2005) is measured by feelings of personal accomplishment and career satisfaction. Furthermore, Shepard, in Hall and Moss (1998) called the protean approach the '*path with heart*' as it endeavours to integrate work with life values.

CAREER STRATEGY IMPLEMENTATION

The execution of career strategy implementation is defined as an action or behaviour that enhance one's likelihood to achieve his/her career goals (Zikic & Klehe 2006), hence, developmental behaviour can be incited by the employees' use of career strategies. For example, an employee who actively uses career strategies that involve the growth of their proficiency and networking would be keen to increase their knowledge and skills by reading technical reports and journals, attend courses and seminars, and in the process, widen their social networks in the organisation. Barnett and Bradley (2007) mentioned that an individual's career strategy refers to the behaviours that by an individual can employ to reduce the time need to achieve one's important career goals and the ambiguity surrounding them. Furthermore, Bolino, Valcea and Harvey (2010), suggested that the development and implementation of career strategy are important elements in an individual's self-control of his/her career as the development of career strategies is a string of activities that are designed to help the individuals to attain their career goals. Thus, a career strategy can be defined as the behaviours needed to accomplish a specific career goal. Meanwhile, Gould and Penley (1984) also proposed that individuals who have developed a career strategy that is parallel to their job scope and the organisation are more likely to boost their chances in getting positive reviews from superiors and earning a larger share of the organisation's salary distributions.

The same study by Bolino et al. (2010) had also found that a managers' salary progression is often linked to the application of networking and self-nomination, hence, it was suggested that managers should give employees more positive appraisal to individuals who use both interpersonal and intrapersonal career strategies. This is because such strategies can influence the managers to develop a positive view on the individual. On one hand, interpersonal career strategies are held as the most responsible in the growth these positive effects. These strategies include self-nomination, where one is communicating on the desire to take on larger responsibility as well as networking by giving access to information and resources to the superiors through developing contacts inside the company. In addition, another important intrapersonal strategy is expertise development where one cultivates the critical skills and competencies needed to lead the success of the work unit.

PSYCHOLOGICAL WELL-BEING

Many studies have kept it upon instead of focusing to only one single specific construct when a broad area of interest and feelings are looked upon. Thus, this study would concentrate on the psychological well-being as the component for well-being whereby psychological well-being is defined as the overall effectiveness of an individual's psychological functioning (Berkman 1971a, 1971b). Kahneman, Diener and Schwarz (1999) mentioned that there are two components of psychological well-being, which are hedonic and eudemonic. Hedonic is conceptualised as the experience of pleasurable feelings in one's life. This, according to Kahnemann et al. (1999) creates high level of happiness that can foster positive emotions. The second component is known as eudemonic which implies that well-being does not include maximising the positive experience. Instead, it refers to living fully or allocating for the optimal growth of human potential, as according to Ryan, Huta and Deci (2008). Hence, eudemonic is conceptualized as the experience of enriching activities and personal growth.

The concept of Hedonic has its roots in Greek philosophy. According to Ryan et al. (2008), the basic idea of hedonism is to fulfil the objective of life through having the greatest possible amount of pleasure that is oriented towards enjoyment and noble activities. According to this concept, happiness can be equated to the sum of pleasurable moments, which according to Ryan and Deci (2001), in the field of modern psychology, the prominent concept stems from the hedonic point of view is the subjective well-being. Subjective well-being usually includes two elements; firstly, the affective balance, which is obtained by deducting the rate of negative feelings from the rate of positive emotions. Meanwhile, the second element is the perception of life satisfaction, this, according to Lucas, Diener and Suh (1996), is more constant and has a greater cognitive component; furthermore, life satisfaction is a universal verdict on life itself. This, according to Keyes, Shmotkin and Ryff (2002), means that the emotional balance makes reference to the relative number of pleasant or unpleasant experiences, thus, these concepts are inexplicably linked to the hedonist perspective.

GAPS IN THE LITERATURES

There are still a limited number of studies that have been conducted to investigate the relationships between protean career orientation and psychological well-being. One example is a study by Colakoglu (2005) which investigated the effects of protean career orientation towards individual well-being from the perspectives of life satisfaction and physical well-being. However, this study has its limitation as it only focused on the samples from the specific community of MBA students and the programme's alumni that are working in a private university. Hence, the findings may not be relevant to women and other minorities whose attitudes and decisions may differ from the samples.

DiRenzo (2010) had also conducted a research to probe on the influence of one's protean career orientation on the acquisition and growth of career capital through managing career behaviours proactively. Furthermore, his study also examined the relationships between career capitals with various career and life goals such as employability, career success and work-life balance as well as the contribution of these outcomes to individual well-being. Finally, his study also examined how leadership, adaptability and a holistic perspective to life can be the moderator of these processes.

In relation to this study, there are only a few studies that have been conducted in Malaysia that had focused on the well-being of professional employees. One example is by Mahajar (2011) that had found PTD officers in the government sector can live a healthy life and are able to balance in almost every aspects, provided that their psychological well-being is well taken care of. Another study by Panatik et al. (2012) suggested that it is crucial for a university to manage and protect the well-being of its academic staff to reduce stress levels. This shows that the studies on employee's well-being are still relatively novel in Malaysia.

In terms of the government, there is a great emphasis on the employees' well-being. However, this is not reflected by private companies which still show little enthusiasm on this issue. Therefore, this study helps the Malaysian engineers in facing challenges that can jeopardise their psychological well-being, by examining the impact of protean career orientations such as self-directed and values-driven career choice on psychological well-being and how this relationship is being mediated by career strategy implementation.

HYPOTHESES DEVELOPMENT

PROTEAN CAREER ORIENTATION AND CAREER STRATEGY IMPLEMENTATION

Individuals with protean career orientation are expected to embark on career strategies in order to achieving meaningful career goals (DiRenzo 2010). These individuals would take calculated risks in ensuring their goals are achieved, being the primary drivers of career action. As a result, they are motivated to work out and execute tactics for success (DiRenzo 2010). Recent research supported this notion as protean career orientation has been shown to predict engagement in networking and visibility strategies (De Vos & Soens 2008). Moreover, the use of interpersonal strategies provides employees with valuable information and resources (Colacoglu 2005; Gould & Penley 1984). By communicating with senior staff, individuals could obtain evaluative information about themselves; information that is valuable in developing a more vocational self-concept. The greater the network, the more will be the individual's access to information about job opportunities. Network member

recommendations and internal recruitment information are beneficial for providing job opportunities (Gould & Penley 1984). With respect to intrapersonal career strategies, having a self-career strategy can encourage people to enhance their work skills and professional knowledge, and enhance their vocational self-concept. With these considerations, protean career orientation (self-directed and values-driven) is expected to have a positive influence on career strategy implementation. Therefore, drawing on this idea, the following hypotheses are formulated:

- H₁ Protean career orientation (self-directed) has a positive influence on career strategy implementation.
- H₂ Protean career orientation (values-driven) has a positive influence on career strategy implementation.

CAREER STRATEGY IMPLEMENTATION AND PSYCHOLOGICAL WELL-BEING

Individuals with specific and challenging goals will perform better than individuals without any goals (Locke & Latham 2006). Individuals with career goals are normally precise and they focus more on motivation to engage in behaviors that will help them realize their career satisfaction. Goal focus has been shown to be an important determinant of career satisfaction, career development and participation in career development activities (Sugalski & Greenhaus 1986). Noe (2002) mentioned that career goal focus is likely to be positively related to job performance. High levels of job performance are a prerequisite for achieving many career goals such as obtaining higher salary, career satisfaction and psychological well-being. Consequently, employees with specific goals should have their career satisfaction more crystallized to aim towards meeting their psychological well-being (Noe 2002). Therefore, career strategy implementation is expected to have a positive influence on career satisfaction. Thus, the following hypothesis is formed:

- H₃ Career strategy implementation has a positive influence on psychological well-being.

THE MEDIATING EFFECT OF CAREER STRATEGY IMPLEMENTATION PROTEAN CAREER ORIENTATION AND PSYCHOLOGICAL WELL-BEING

Individuals with protean career orientation are always highly optimistic (Briscoe & Hall 2006). They experience optimism when it comes to managing their careers (Lovalla & Kahneman 2003), assessing their own strengths and weaknesses objectively in order to coordinate a systematic career strategies. This is due to the tendency of individuals to choose behaviours that are in line with their attitudes the protean career attitudes leading employees to engage in certain career development behaviours that in turn result in important individual work outcomes (De Vos & Soens 2008). A career actor may cope with the constant changes where his or her job performance will almost certainly be better in relative to other employees. The ability to cope with problems has the potential to mediate between

appraisal of a situation and the resulting emotional response and could increase psychological well-being (Briscoe & Hall 2008). De Vos and Soens (2008) have proven in their research that the impact of protean career attitude on career success is indirect, in other words, it operates through career self-management. Since limited research has been conducted with regard to the mediating effect of career strategy implementation on the relationship between protean career orientation and psychological well-being, the following hypotheses are proposed:

- H₄ Career strategy implementation mediates the relationship between protean career orientation (self-directed) and psychological well-being.
- H₅ Career strategy implementation mediates the relationship between protean career orientation (values-driven) and psychological well-being.

METHODOLOGY

POPULATION

This study replicated the methodology employed by Rahim and Siti-Rohaida (2015a, 2015b). The population chosen for this study are the professional engineers registered with the Board of Engineers Malaysia (BEM). Prior to conducting the research, the statistics of registered professional engineers was obtained from the BEM's website. As of September 2016, there are 11,108 professional engineers in Malaysia (<http://www.bem.org.my>). They are from various disciplines such as aeronautical, agricultural, building services, civil, electric & electronic, civil and mining. Nevertheless, the professional engineers targeted are employed in various disciplines regardless of the industries.

In the context of Malaysia, a professional refers to an individual who belongs to a profession recognised by the Malaysian statutory legislation and belongs to a particular professional body representing the profession, or is registered with the relevant professional bodies (Abdull Rahman 2012). BEM is a statutory body formed in 1972, constituted under the Registration of Engineers Act 1977. It plays a vital role in determining the quality and professionalism of engineering practices in Malaysia. BEM determines the qualifications for registration as graduate engineers or professional engineers. It also sets the conditions for registration as corporate bodies for firms seeking to practise engineering in Malaysia. In addition, foreign engineers are also required to register with BEM. All applications are carefully scrutinised to ascertain that applicants have the right qualifications to practise a high standard of engineering in the country (Board of Engineers Malaysia 2002). BEM defines professional engineers as (i) they are graduate engineers who have satisfied the training requirements of BEM; (ii) they have passed BEM's Professional Assessment Examination (PAE) or have been elected as a corporate member of the Institution of Engineers Malaysia (IEM); and (iii) they need

to accumulate 50 Continuing Professional Development (CPD) training hours conducted by IEM per year to maintain their professional engineer status.

The aforementioned requirements for professional engineers are similar to the idea proposed by Hall (1976: 201) about protean career orientation. According to Hall (1976: 201), protean career orientation consists of all the person's verified experience in education, training and working in several organisations, which includes changes in the occupational fields. In addition, the protean career approach is based on continuous learning (Hall 2002). Accordingly, these professional engineers have met the criteria of protean career orientation, and thus, they have been chosen as the sample for this study.

SAMPLE SIZE

For the purpose of determining the minimum sample size, this study follows Roscoe's (1975) rule of thumb, which states that "sample sizes larger than 30 and less than 500 are appropriate for most researchers." Since professional engineers are known to be hectic workers, it is anticipated that they have limited time in answering the questionnaires. In addition, according to many researchers, average rate of return is not more than 10%. By taking into consideration of work environment and the nature of engineer's job, it is estimated that a response rate of 6% would be achieved. According to Gunalan (2002), professional workers are mobilized and always have hectic work. Thus, suggested rate of return is expected only at 6%. However, since the researcher has meet the respondents face-to-face and the questionnaires were hand delivered to the respondents during the CPD activities, the rate of return was expected to be higher, which is more than 50%. Judgement sampling was utilised as it involves the choice of subjects who are most advantageously placed or in the best position to provide the information required (Sekaran & Bougie 2010).

DATA COLLECTION PROCEDURES

All variables were measured at the individual level. To collect data, a self-administered questionnaire was applied. A drop-off/pick-up method was applied in this study. This method provides the opportunity for the researcher to convey the message personally to the respondents. It ensures the presence of the respondent to answer the questions because the questionnaires are hand delivered by the researcher (Steele et al. 2001). As mentioned earlier, the respondents in this study are professional engineers who are registered with BEM. Since they need to chalk up an average of 50 hours of CPD per year to renew their practicing certificate, they have to participate in the CPD activities. The CPD is a systematic maintenance, improvement and broadening of knowledge as well as skill and development of personal qualities for execution of professional and technical duties throughout the engineer's working life (Continuing Professional Development Policy 2004). The CPD activities are organized by IEM

which is a local professional engineering institution established in 1959 (Board of Engineers Malaysia 2002). IEM's primary function is to promote and advance the science and profession of engineering in any or all of its disciplines. IEM also facilitates the exchange of information and ideas related to engineering. Activities such as meetings, exhibitions, visits and other activities to promote the profession of engineering are also organized by IEM. Therefore, since IEM has been performing all these functions, the researcher has approached IEM to seek their permission to distribute the questionnaires to the professional engineers during the CPD activities. The questionnaires were distributed according to the scheduled activities. The scheduled activities were retrieved from the IEM's website. Altogether, 600 sets of questionnaires were distributed to the respondents during the CPD activities at IEM. Out of 600 sets of questionnaires, only 387 sets of questionnaires were received from the respondents, yielding a response rate of 65%.

MEASURES

All measurement items were adopted from previous studies with acceptable reliabilities. Protean career orientation was measured using the 14-item scale developed by Briscoe et al. (2006). Based on the first protean scale, self-directed was used to assess the degree to which people believe that they can act independently in managing their career. This scale consisted of 8 items. Based on the second protean scale, values-driven was designed to determine the degree to which people use personal versus external values to define career priorities and goals. It consisted of 6 items. Briscoe et al. (2006) reported that the alpha coefficients for the two subscales are 0.81 and 0.69, respectively. Meanwhile, career strategy implementation was measured using four questions developed by previous researchers (Noe 2002; Zikic & Klehe 2006). The Cronbach's alpha for career strategy implementation was 0.86. Finally, psychological well-being was measured using the 8-item Index of Psychological Well-Being developed by Berkman (1971a, 1971b). Ratings were made on the 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree for all the variables in this study. In this study, the coefficient alpha was 0.72.

DATA ANALYSIS

Data were analyzed using SmartPLS software which was developed in the late seventies by Wold (1975). It is a covariance-based structural equation modelling (SEM) technique, widely used to model the relationship between multiple independent variables and dependent variables in technology acceptance studies. Unlike traditional regression techniques, PLS is not only capable of assessing the causation among a set of dependent and independent variables (structural model), but also determining the validity and reliability of latent variables

(measurement model). It is particularly useful for analyzing models and theory building due to its minimal demand on measurement scales, sample size, and residual distributions (Chin 1998).

RESULTS

DESCRIPTIVE FINDINGS

The demographic profile of the respondents is presented in this segment. Male respondents made up 82% (319), while the female respondents were 18% (68) of the total sample. More than half (55%, 212) of the respondents were master's degree holders; the degree holders were the second largest number (38%, 147), while a small number (7%, 28) of respondent were PhD holders. The respondents selected (100%, 387) for this study were professional engineers (PE) registered with the BEM. The accumulated CPD hours of the professional engineers (PE) for the year 2013 exceeded 50 hours (100%). See Table 1 for demographic characteristics of the respondents in this study.

TABLE 1. Demographic profile of respondents

Demographics	Categories	Frequency	(%)
Gender	Male	319	82
	Female	68	18
Level of education	Bachelor's degree	147	38
	Master's degree	212	55
	Doctoral degree	28	7
Registered as professional engineer (PE) with BEM	Yes	387	100
Total CPD hours collected for the year 2013	More than 50 hours	387	100

N = 387

MODEL TESTING

To test the conceptual model of the study, this study used the two-step approach as suggested by Anderson and Gerbing (1988) and Chin (2010) to analyse measurement model first, and then the structural model. The purpose of this approach is to assess the fit and construct validity of the measurements before assessing the structural model for path coefficients or relationships between the constructs. Therefore, "convergent validity" and "discriminant validity" will be assessed next to confirm "construct validity" by looking at the measurement model results. Figure 1 shows the measurement model in this study. Meanwhile, Figure 2 shows the structural model in this study.

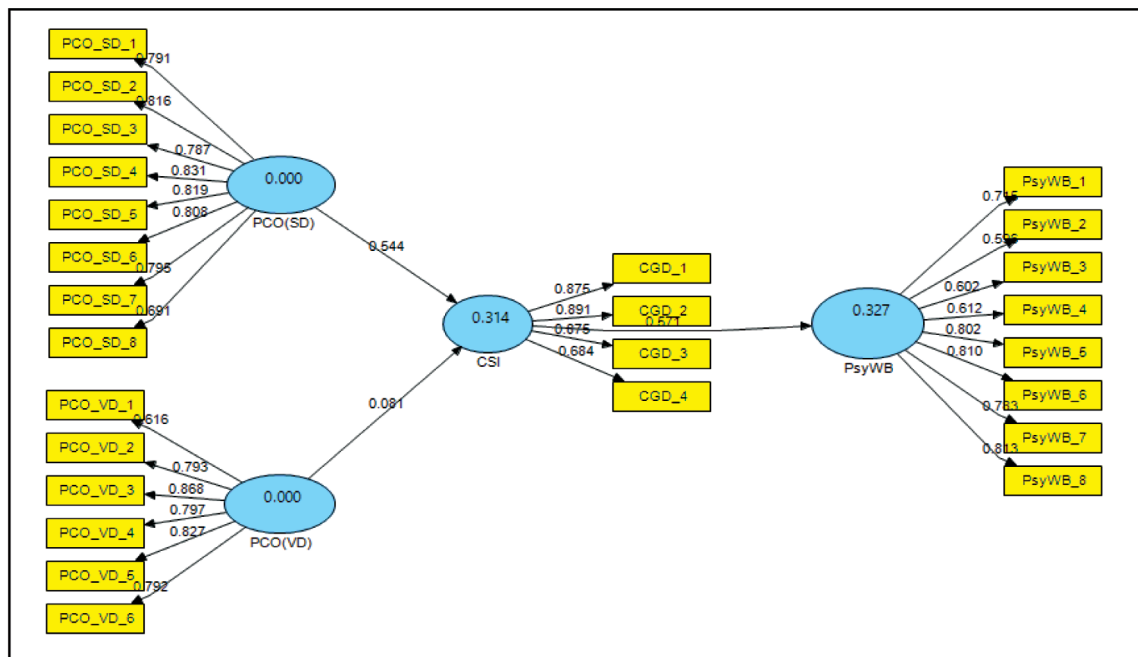


FIGURE 1. Results of path analysis

CONVERGENT VALIDITY

As depicted in Table 2, cross-loadings, AVE (Average Variance Extracted), and composite reliability can be assessed to confirm the convergent validity. AVE is the mean variance extracted for the items loading on a construct and is a summary indicator of convergence (Fornell & Larcker 1981). AVE value of at least 0.5 indicates sufficient convergent validity, meaning that a latent variable is able to explain on average, more than half of the variance of its indicators (Götz, Liehr-Gobbers & Krafft 2010). Next, composite reliability was assessed for reliability, which is a measure of convergent validity. The composite reliability value should be above 0.7 in order to assure an accurate scale (Nunnally & Bernstein 1994). Based on this guideline, the CR values as per Table 1 are satisfactory and it can be concluded that the reliability of the measures used is satisfactory. In view of the aforementioned results of factor loadings, AVE and composite reliability, adequate evidence of convergent validity is established. To confirm the construct validity, the results of discriminant validity will be discussed next. Table 2 illustrates the items loading, CR and AVE in this study.

DISCRIMINANT VALIDITY

Hair, Black, Babin and Anderson (2010) suggested that discriminant validity is the extent to which a construct is fully distinct from other constructs. It is investigated to indicate to what extent measures in the model are different from other measures in the same model. Discriminant validity is investigated by comparing the square root of the AVE with the correlations between the variables. Chin

(2010) suggested that discriminant validity is established if the square root of the AVE exceeds the values of correlations. As depicted in Table 3, the square root of the AVE is placed in the diagonal. It can be noted that the correlations for each construct is less than the square root of the AVE by the indicators measuring that construct, indicating adequate discriminant validity. Based on the reported results, the measurement model confirms the construct validity, which shows that the hypotheses testing can proceed to prove the research model.

HYPOTHESIS TESTING

The relationships of the direct paths among the exogenous variables and the endogenous variables are explicitly described in this section.

HYPOTHESES TESTING: PROTEAN CAREER ORIENTATION AND CAREER STRATEGY IMPLEMENTATION

On the relationship between protean career orientation (self-directed and values-driven) and career strategy implementation, two hypotheses were proposed. The two hypotheses were supported by the results. Protean career orientation (self-directed) has revealed to have a positive influence on career strategy implementation ($\beta = 0.065$; $p < .01$). Likewise, protean career orientation (values-driven) was shown to have a positive influence on career strategy implementation ($\beta = 0.775$; $p < .05$). Therefore, H_1 and H_2 are supported. See Table 4 for the results of path coefficient for protean career orientation and career strategy implementation.

TABLE 2. Results of items reliability, internal consistency and convergent validity

Constructs	Factor loadings, average variance explained, and composite reliability
<i>Protean Career Orientation (Self-Directed)</i> <i>AVE = 0.644; CR = 0.944</i>	
1. I am in charge of my own career.	0.789
2. Ultimately, I depend upon myself to move my career forward.	0.811
3. I am responsible for my success or failure in my career.	0.788
4. Where my career is concerned, I am very much "my own person".	0.821
5. Overall, I have a very independent, self-directed career.	0.823
6. In the past I have relied more upon myself than others to find a new job when necessary.	0.811
7. Freedom to choose my own career path is one of my most important values.	0.787
8. When development opportunities have not been offered by my company, I've sought them out on my own.	0.693
<i>Protean Career Orientation (Values-Driven)</i> <i>AVE = 0.638; CR = 0.912</i>	
1. I'll follow my own guidance if my company asks me to do something that goes against my values.	0.578
2. In the past I have sided with my own values when the company has asked me to do something I don't agree with.	0.777
3. What I think about what is right in my career is more important to me than what my company thinks.	0.868
4. It doesn't matter much to me how other people evaluate the choices I make in my career.	0.834
5. I navigate my own career, based upon my personal priorities, as opposed to my employer's priorities.	0.868
6. What's most important to me is how I feel about my career success, not how other people feel.	0.823
<i>Career Strategy Implementation</i> <i>AVE = 0.794; CR = 0.922</i>	
1. I always attempt to learn more new knowledge and skills to realize my career objective.	0.845
2. I try to let my boss know about what I am doing to pursue my career and career objectives.	0.888
3. I have established a helpful interpersonal network inside my company which can promote my career development.	0.894
4. I usually consult with my boss and experienced colleagues for helpful career guidance.	0.856
<i>Psychological Well-Being</i> <i>AVE = 0.645; CR = 0.888</i>	
1. I often feel very lonely or remote from other people.	0.698
2. I often feel depressed or very unhappy.	0.634
3. I often feel bored.	0.645
4. I often feel so restless; I couldn't sit long in a chair.	0.667
5. I often feel vaguely uneasy about something without knowing why.	0.834
6. I often feel on top of the world.	0.832
7. I often feel particularly excited or interested in something.	0.786
8. I often feel pleased about having accomplished something.	0.849

TABLE 3. Discriminant validity

	Protean Career Orientation (Self-Directed)	Protean Career Orientation (Values-Driven)	Career Strategy Implementation	Psychological Well-Being
Protean Career Orientation (Self-Directed)	0.846			
Protean Career Orientation (Values-Driven)	0.831	0.862		
Career Strategy Implementation	0.184	0.131	0.817	
Psychological Well-Being	0.531	0.452	0.153	0.736

Note: Diagonal values (in bold) represent the square root of the AVE, while off-diagonals represent the correlations

TABLE 4. Path coefficient for protean career orientation and career strategy implementation

Hypothesis	Relationship	Path Coefficient (β)	SE	t-value	Results
H ₁	Protean Career Orientation (Self-Directed) → Career Strategy Implementation	0.065	0.032	1.997**	Supported
H ₂	Protean Career Orientation (Values-Driven) → Career Strategy Implementation	0.775	0.030	25.733***	Supported

Note: *** $p < .01$ (2.33), ** $p < .05$ (1.645), * $p < .1$ (1.28)

HYPOTHESES TESTING: CAREER STRATEGY IMPLEMENTATION AND PSYCHOLOGICAL WELL-BEING

A hypothesis was posited for the relationship between career strategy implementation and psychological well-being. The career strategy implementation was found to

have a negative influence on psychological well-being. Thus, H₃ was not supported ($\beta = 0.001$, $p > .1$). See Table 5 for the results of path coefficient for career strategy implementation and psychological well-being.

TABLE 5. Path coefficient for career strategy implementation and psychological well-being

Hypothesis	Relationship	Path Coefficient (β)	SE	t-value	Results
H ₃	Career Strategy Implementation → Psychological Well-Being	0.001	0.074	0.006	Not Supported

Note: *** $p < .01$ (2.33), ** $p < .05$ (1.645), * $p < .1$ (1.28)

HYPOTHESIS TESTING: THE MEDIATING EFFECT OF CAREER STRATEGY IMPLEMENTATION BETWEEN PROTEAN CAREER ORIENTATION AND PSYCHOLOGICAL WELL-BEING

Two hypotheses were postulated for the mediating effect of career strategy implementation between protean career orientation (self-directed and values-driven) and psychological well-being. It was found that career strategy implementation did not mediate the relationship between protean career orientation (self-directed and values-driven) and psychological well-being. Therefore, H₄ ($\beta = 0.000$, $p > .1$) and H₅ ($\beta = 0.001$, $p > .1$) were rejected. See Table 6 for the results of path coefficient for mediation path between protean career orientation, career strategy implementation and psychological well-being.

DISCUSSION

The present study was designed to investigate the specified objectives. First, the study was set out to determine the influence of protean career orientation (self-directed and values-driven) on psychological well-being. Next, the study aims to evaluate whether the career strategy implementation mediates the relationship between protean career orientation (self-directed and values-driven) on psychological well-being.

Empirically, it was revealed by the findings that both dimension of protean career orientation (self-directed and values-driven) have a positive influence on career

strategy implementation. This finding suggests that the behavioural component of career strategy implementation is within the control of engineers. The positive relationship between protean career orientation and career strategy implementation supports the idea that those individuals with protean career attitudes strive actively for their career success by translating the management of their careers into concrete actions (Hall 2004). DiRenzo (2010) mentioned that individuals with protean career orientations initiate various career strategies to help them achieve their personal goals which are meaningful to them. Their personal values serve as the primary drivers of career action. These self-directed individuals are likely to take calculated measures to ensure they fulfil these goals. The greater the network, the more access they get to information about job opportunities. As a result, they engage themselves in career strategy implementation, thus engaging themselves in career strategies. This finding is in line with that of an earlier work by De Vos and Soens (2008) who had found that protean career orientation is positively associated with career strategy implication. This finding is also in line with the result by DiRenzo (2010) who opined that protean career orientation has a positive influence on career strategy implication.

The result of this study showed that career strategy implementation did not have a positive influence on psychological well-being. One possible reason for this finding might be the boss takes advantage on the engineers since they always let their boss know about

TABLE 6. Path coefficient for mediation path between protean career orientation, career strategy implementation and psychological well-being

No.	Relationship	Path a (β)	Path b (β)	Indirect Path (β) (a*b)	Bootstrapped Std. Dev (a*b)	t-values	Decision
H ₄	Protean Career Orientation (Self-Directed) → Career Strategy Implementation → Psychological Well-Being	0.065	0.001	0.000	0.005	0.013	Not Supported
H ₅	Protean Career Orientation (Values-Driven) → Career Strategy Implementation → Psychological Well-Being	0.775	0.001	0.001	0.058	0.013	Not Supported

Note: *** $p < .01$ (2.33), ** $p < .05$ (1.645), * $p < .1$ (1.28) (based on one-tailed test)

what they are doing to pursue their career objectives (Malan, 2004). Supported by other findings by De Sousa and Matos (2017), engineers always attempt to learn more new knowledge and skills. As a result, the boss takes advantage over them. Thus, such findings in the current study clearly suggest that engineers might be required to work extra hours than they traditionally do, without extra pay. Furthermore, in line with the findings by Boyatzis, Rochford and Cavanagh (2017), this could be because their companies have laid off another employee (or someone else left), and they are now being made responsible for doing their own job as well as the job of others, thus, there is a good chance that their boss or the company might be taking advantage over them. De Sousa and Matos (2017) added that if the boss believes that they will consistently do someone else's work (with no end in sight), the boss has no reason to hire anyone new, even though this is unethical. To solve these problems, the engineers are required to devise a solution and make it applicable. The results reported here agree with the findings by De Sousa and Matos (2017) that had claimed the engineers have established a helpful interpersonal network inside the company, so the boss expects them to be friends with co-workers and they are able to work together on their projects. All these reasons are considered as a job burden and would bring negative effects to the psychological well-being of the engineers. Therefore, the result of this new finding contributes to the literature by acknowledging that career strategy implementation has a negative influence on psychological well-being.

Finally, the result of this study showed that career strategy implementation did not mediate the relationship between protean career orientation (self-directed and values-driven) and psychological well-being. This means that this study did not find any mediating effects of career strategy implementation on the relationship between protean career orientation and psychological well-being. The possible explanation for this finding could be that the source of tension and potential conflict between management and technical professionals is the

management's perception of engineers which failed to differentiate between knowledge employees and non-knowledge employees.

Managerial practices relating to this aspect include the inappropriate use of traditional techniques of work organization and bureaucratic controls as well as an autocratic system. Thus, management's understated perception of engineers emerges from the failure to differentiate between engineers as knowledge employees and other non-knowledge employees. These practices are dysfunctional and could lead to the erosion of the engineers' sense of professionalism. Supported by Rothman and Malan (2006), the important theme of the engineers' transition into management may be located in this area. This transition is described as difficult for those who can make it as well as for those who can't. Abdull Rahman (2012) claimed that the perceptions of engineers as managers were derived from the way the company defines the profession by the qualifications required and the boundary established between them and other technical employees. As a result, this study had found that the career strategy implementation did not mediate the relationship between protean career orientation and psychological well-being.

CONCLUSION

While the majority of previous literature in well-being had originated from western backgrounds with industrial context, this paper has been one of the few studies which have investigated the interaction among career strategy implementation on psychological well-being in Malaysian context. This paper intends to contribute to the literature regarding the relationship between protean career orientation, career strategy implementation and psychological well-being among engineers in Malaysia.

Theoretically, the findings in this study are in line with the results by DiRenzo (2010) who opined that protean career orientation has a positive influence on career strategy implementation. In addition, the findings

of this study contributes to an interesting new finding to the literature by acknowledging that career strategy implementation has a negative influence on psychological well-being. Finally, it was proven that career strategy implementation did not mediate the relationship between protean career orientation and psychological well-being. The findings of the present study are also in line with the concept of goal setting theory (Locke & Latham 1990). According to goal setting theory, individuals' desire will influence their work behaviour such as their efforts to succeed. Employees who achieve excellent results are constantly involved in goal setting because goals represent the motivation tools for the individuals in hunting for effective strategies to achieve their desired goals efficiently (Locke & Latham 2002; Pua & Ananthram 2006). In the context of Malaysia, this study sheds light on understanding the influence of protean career orientation towards psychological well-being, mediated by career strategy implementation among professional engineers. There are three results of the new findings in this study that can contribute to the literature. First, protean career orientation (self-directed and values-driven) has a positive influence on career strategy implementation. Second, career goal development was found not to have a positive influence on psychological well-being. Third, career strategy implementation did not mediate the relationship between protean career orientation (self-directed and values-driven) and psychological well-being.

Practically, it is justified to claim that despite the type of protean career orientation, the engineers in Malaysia are still looking forward to achieve certain activities or behaviours that can increase the likelihood of attaining their career strategies. Engineers are the group of employees who always attempt to acquire new knowledge and skills in order to keep up with the development of their work throughout their working life (Muthuveloo & Che Rose 2005). Therefore, it does not matter to the engineers as to how other people evaluate the choice they make in their career because engineers let the bosses know what they are doing to pursue their career objectives. In addition, they establish a helpful network inside their company which can promote their career development (Abdull Rahman 2012). Furthermore, as protean careerists, the engineers also consult their bosses and experienced colleagues for a helpful career guidance. As mentioned earlier, it is compulsory for the professional engineers to collect an average of 50 hours of CPD activities per year to renew their practicing certificate. By attending the CPD activities, indirectly, they could establish useful interpersonal networks inside or outside their company, through which they can promote their career development. Therefore, graduate engineers are strongly recommended to broaden their external contacts by upgrading themselves as professional engineers with BEM, through their participation in networking events provided by BEM, and their involvement in community based organizations and associations. For these reasons, despite the type of protean career orientation, the engineers in Malaysia are engaged

in career strategy implementation behaviour. In addition, the findings of this study encourage engineers to have a high level of career goal development so that they will be inspired to use or develop newly acquired skills to the fullest. The implication is that individuals will then find their jobs to be more meaningful and enjoyable. The findings also suggest that organisations need to revise their employees' key performance areas so that employees will feel that their own goals and expectations are aligned with that of their employers. In addition, organisations must provide opportunities that allow engineers to fully use their acquired skills or to develop new ones.

In conclusion, engineers are the key players in the Malaysian economy, and make a large contribution to the economic development of Malaysia. They also play a key role in wealth creation and help the country become an active player in the global economy. Although the government has placed considerable effort into promoting employee well-being, such research is still relatively new in the Malaysian context. Therefore, this study calls for organisations and the Malaysian government to look into enhancing the well-being of engineers in order to improve their image, reputation and sustainability.

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