



King's Research Portal

DOI:

[10.1016/j.jvb.2018.11.003](https://doi.org/10.1016/j.jvb.2018.11.003)

Document Version

Peer reviewed version

[Link to publication record in King's Research Portal](#)

Citation for published version (APA):

Rodrigues, R., Butler, C. L., & Guest, D. (2019). Antecedents of protean and boundaryless career orientations: The role of core self-evaluations, perceived employability and social capital. *Journal Of Vocational Behavior*, 110, 1-11. <https://doi.org/10.1016/j.jvb.2018.11.003>

Citing this paper

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

General rights

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

Take down policy

If you believe that this document breaches copyright please contact librarypure@kcl.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

Accepted Manuscript

Antecedents of protean and boundaryless career orientations: The role of core self-evaluations, perceived employability and social capital

Ricardo Rodrigues, Christina L. Butler, David Guest



PII: S0001-8791(18)30133-7
DOI: <https://doi.org/10.1016/j.jvb.2018.11.003>
Reference: YJVBE 3247
To appear in: *Journal of Vocational Behavior*
Received date: 4 July 2017
Revised date: 18 August 2018
Accepted date: 5 November 2018

Please cite this article as: Ricardo Rodrigues, Christina L. Butler, David Guest , Antecedents of protean and boundaryless career orientations: The role of core self-evaluations, perceived employability and social capital. *Yjvbe* (2018), <https://doi.org/10.1016/j.jvb.2018.11.003>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Antecedents of Protean and Boundaryless Career Orientations: the Role of Core Self-Evaluations, Perceived Employability and Social Capital

Ricardo Rodrigues¹
King's Business School
King's College London
150 Stamford Street
London SE1 7NH, UK
ricardo.rodrigues@kcl.ac.uk

Christina L. Butler
Kingston Business School
Kingston Hill Campus
Kingston-Upon-Thames
Surrey KT2 7LB
United Kingdom
Christina.butler@kingston.ac.uk

David Guest
King's Business School
King's College, London
150 Stamford Street,
London, SE1 9NH, UK
david.guest@kcl.ac.uk

¹ Corresponding author

Antecedents of Protean and Boundaryless Career Orientations: the Role of Core Self-Evaluations, Perceived Employability and Social Capital

ABSTRACT

Research on protean and boundaryless career orientations has explored their consequences for individuals and organizations while largely ignoring their key antecedents. Our paper address this omission by exploring three potential antecedents of contemporary careers - core self-evaluations (CSEs), social capital and perceived employability. Findings from a longitudinal study of university students transitioning into the labour market support the role of these constructs as antecedents of both career orientations. An exception is the negative direct effect of CSEs on boundaryless career orientations; but there are positive indirect effects via perceived employability. Our paper offers one of the first longitudinal studies identifying and empirically exploring the role of antecedents of protean and boundaryless career orientations. It also contributes to establishing the conceptual and empirical distinctions between the two orientations.

Keywords:

Protean career; Boundaryless career; Core self-evaluations; Social capital; Perceived employability.

1. Introduction

Commentators have argued that the traditional organizational career is no longer viable nor desirable in a context of a turbulent competitive landscape (Arthur, 1994). An alternative model views careers as physically and psychologically independent from organizations. This has been characterised in terms of boundaryless and protean career orientations. The former captures patterns of physical and psychological (inter-organizational) career mobility while the latter reflects an attitude of “freedom, self-direction, and making choices based on one’s personal

values” (Briscoe & Hall, 2006, p.6). Their consequences for individuals and organizations have been extensively discussed and empirically explored. Research has shown that the protean career orientation is associated with a range of positive outcomes including proactivity (Porter, Woo & Tak, 2016), career adaptability (Chan, Moon-ho, Sam, Chernyshenko & Yuet, 2015), psychological well-being (Briscoe, Hanegan, Burton & Murphy, 2012), effective coping with uncertainty (Baruch, 2014), and job, career and life satisfaction (De Vos & Soens, 2008). The outcomes of the boundaryless career orientation are mixed. While some studies suggest a positive association with career satisfaction (Culié, Khapova & Arthur, 2014) others report negative outcomes including lower career, job and life satisfaction (Rodrigues, Guest, Oliveira & Alfes, 2015) and lower re-employment rates among those seeking a new job (Vansteenkiste, Verbruggen & Sels, 2013).

In contrast to the growing body of research concerning the outcomes of protean and boundaryless career orientations, few contributions have discussed their antecedents (for some exceptions see Gubler, Arnold & Coombs, 2014 and Waters, Hall, Wang & Briscoe, 2015). Our paper progresses research by proposing and empirically exploring a model, informed by theories of career orientations and the literature on the new career, of key antecedents of protean and boundaryless career orientations.

1.1 The notion of career orientations

Career orientations are fairly stable career preferences that begin to take shape relatively early in life at the intersection of individual factors, including individual dispositions and work and career-related preferences, and contextual factors, such as social background and labour market circumstances (Rodrigues, Guest & Budjanovcanin, 2013). The importance of these antecedents has been documented in the literature. In a study with Norwegian adults Nordvik

(1996) reported a relationship between personality, vocational interests and career orientations. Research has also shown that in the social and family background individuals receive “knowledge, representations, and attitudes towards work” (Cohen-Scali, 2003, p. 239) that shape their career trajectories and preferences. For example, in a longitudinal study with over 7000 individuals in the United Kingdom, Schoon (2001) reported that teenage job aspirations are predictive of their future occupations. Bourdieu’s (1973) seminal work on social reproduction has extensively highlighted the influence of family and social environment in the reproduction of inter-generational social, educational, economic, and lifestyle standards. Overall, this evidence suggests that in understanding the formation of protean and boundaryless career orientations it is important to consider the role of individual, family and social factors and to focus on individuals transitioning into the labour market.

1.2 Key antecedents of protean and boundaryless career orientations

There are a myriad of factors potentially influencing the development of protean and boundaryless orientations. In line with the literature on career orientations, the new career literature suggests the existence of three key antecedents reflecting differences in individual dispositions, education and family/social background. The first antecedent is individual dispositions. As Baruch and Vardi (2015) argue, people engaging in independent careers have to cope with the uncertainty, instability and ambiguity associated with navigating an uncertain labour market. This suggests that to develop and sustain a protean or boundaryless career orientation individuals need adequate psychological resources. These are reflected in core self-evaluations (CSEs), a meta-trait capturing a positive self-concept (Judge, Erez, Bono & Thoresen, 2003). It is argued that individuals with positive CSEs will be more likely to take ownership of their careers and cope with the uncertainty in the labour market better than people with an unfavourable self-concept (Judge & Kammeyer-

Mueller, 2011). We therefore expect CSEs to be positively associated with the development of new career orientations.

The second antecedent is perceived employability. The new career literature is permeated by the idea that employment no longer means holding a permanent job within an organization. It is instead “a temporary state, or the current manifestation of long term employability” (Arthur & Rousseau, 1996, p. 74) with workers encouraged to manage their own careers and to develop marketable skills in order to increase their employability and manage their own careers (Arthur, Khapova & Wilderom, 2005). Evidence suggests that perceptions of employability and career self-management are associated with increased career mobility (De Vos, De Hauw & Van der Heijden, 2011). Employability is therefore an essential prerequisite for those developing new career orientations. Our paper therefore explores the role of employability as an antecedent of protean and boundaryless career orientations.

The third antecedent is social capital. Social capital is the “good-will that is engendered by the fabric of social relations and that can be mobilized to facilitate action” (Adler & Kwon, 2002, p. 17). It comprises the “structure of individual’s contact networks – the pattern of interconnection among the various people with whom each person is tied” (Raider & Burt, 1996: 187). Arthur argues that a boundaryless career “is sustained by extra-organizational networks or information” (1994, p. 296) and protean career behaviour has been characterised as social networking and information seeking (Gubler et al., 2014). Our study therefore proposes that access to social capital, in the form of links to networks that can help individuals further their careers, predicts the development of protean and boundaryless career orientations.

Finally, we can also expect people with a more positive self-concept to engage in network behaviours and feel more employable when compared to those with a less favourable self-concept.

We will therefore also propose the existence of indirect effects of CSEs on new career orientations via perceived employability and social capital. We report the findings of a longitudinal study of the transition of undergraduate students into the labour market and explore the extent to which core self-evaluations, social capital and employability are associated with the development of protean and boundaryless career orientations. While both concepts are sometimes used interchangeably in the literature to describe careers that are dynamic and fluid they may be quite distinct. Unlike the boundaryless career, the protean career does not imply observable mobility and is not irreconcilable with a traditional organizational career. Despite this distinction, and given the lack of empirical research on the antecedents of protean and boundaryless career orientations, we will explore the role of antecedents that are potentially common to both. At the same time, we recognise that we may find significant differences in their antecedents. Our model is depicted in figure 1 and we will discuss the rationale and empirical support for our hypotheses in the following sections.

Insert Figure 1 about here

2. The model and hypotheses

2.1 Psychological resources and protean and boundaryless career orientations

Commentators have argued that to successfully navigate the new career landscape, people are required to possess or develop psychological resources to take ownership of their careers and cope with the uncertainty and insecurity associated with managing an independent career in a turbulent labour market (Higgins, Dobrow & Roloff, 2010). Research supports the existence of a link between personality and protean and boundaryless career orientations. Uy Chan, Sam, Ho, & Chernyshenko (2015) found an association between proactive personality and protean and

boundaryless career orientations in a cross-sectional study of undergraduate students. Psychological resources including resilience, hopefulness and optimism have been associated with proactive behaviour and confidence in one's ability to find desired career opportunities (Luthans Norman, Avolio & Avey, 2008). Reflecting these findings, we chose to focus on the role of positive core self-evaluations (CSEs) as an antecedent of protean and boundaryless career orientations. The main reason for our choice is that CSEs are a broad latent higher order personality trait capturing four relatively stable individual features - self-esteem, generalized self-efficacy, neuroticism and locus of control. These four features of personality are those that we might expect to be associated with the confidence to pursue independent career behaviour.

Research shows that CSEs are associated with a range of positive employee outcomes, including job satisfaction and general health (Judge, Ilies & Zhang, 2012) and higher salaries (Cheung, Hearndon & Dougherty, 2016). More significantly, research indicates that CSEs are associated with outcomes relevant to the development and sustainability of new career orientations. Zhang, Wu, Miao, Yan and Peng (2014) show that CSEs are associated with career commitment. In a study with high school students, Koumoundourou, Kounenou and Siavara (2012) found that CSEs were positively associated with vocational identity and career decision self-efficacy. This evidence suggests that CSEs are linked with proactivity and self-direction and may be important antecedents of a protean career orientation.

Research also shows that individuals who have a positive self-concept are likely to cope more effectively with the uncertainty and the stress associated with engaging in independent careers. The meta-analysis by Kammeyer-Mueller, Judge and Scott (2009) showed that people with high CSEs perceived fewer stressors and strain and engaged in less avoidance coping. Låstad, Berntson, Näswall and Sverke (2014) reported that CSEs were negatively associated with

perceptions of job insecurity and positively associated with problem-focused coping. This evidence suggests that individuals with a more positive self-concept should be less worried about potential job loss and job insecurity and should therefore be able to cope with increased career flexibility and instability. This is also suggested by Judge and Kammeyer-Mueller who argue that “in a world of boundaryless careers, the relationship between core self-evaluations and success will be especially strong” (2011, p. 337) as individuals with high CSEs are also more likely to pursue their own career goals. We therefore propose:

Hypothesis 1a: CSEs measured at time 1 (prior to graduation) are positively associated with a boundaryless career orientation at time 2 (one year after graduating).

Hypothesis 1b: CSEs measured at time 1 (prior to graduation) are positively associated with a protean career orientation at time 2 (one year after graduating).

2.2 Perceived employability and protean and boundaryless career orientations

The second key antecedent of protean and boundaryless career orientations is perceived employability. At the individual level of analysis employability has been studied mainly from three perspectives. Fugate and Kinicki proposed a dispositional approach to employability which identifies a range of traits, including work and career-related openness to change, proactivity and resilience, that “predispose[s] employees to (pro)actively adapt to their work and career environments” (2008, p. 504). An alternative, competence-based approach (Van der Heijde & Van der Heijden, 2006) has sought to map out the abilities and capacities that favour employment opportunities. These include occupational expertise, the ability to anticipate, prepare and adapt to changes in work and the ability to make smooth transitions between jobs and employers. Finally, the third perspective focuses on perceptions of employability which Vanhercke, De Cuyper, Peeters and De Witte define as “the individual’s perceptions of his or her possibilities of obtaining

and maintaining employment” (2014, p. 594). All these perspectives are useful and have solid empirical support. In this paper we focus on self-perceived employability as it seems better suited to address graduating students’ assessment of their chances in the labour market whereas the two other approaches are arguably better suited to capture the views of individuals who have entered the labour market and experienced work. This perspective is also broader and potentially encompasses key elements of the other two approaches (Vanharcke et al., 2014).

Evidence suggests that perceived employability conveys a belief that it is possible to leave the current employer without incurring significant losses (Rothwell & Arnold, 2007). Indeed, De Vos et al. (2011) found that perceived employability was associated with perceived marketability. Employability is therefore potentially associated with a boundaryless career orientation. While the protean career is not necessarily associated with inter-organizational career mobility, maintaining internal, but also external, employability in order to access career opportunities that fit with one’s values and goals should be of importance to those seeking to manage their own careers. This is suggested by De Vos and Soens (2008) who found a strong association between perceived employability and career self-management behaviours. We therefore propose that:

Hypothesis 2a: Perceived employability at time 1 will be positively associated with a boundaryless career orientation at time 2 .

Hypothesis 2b: Perceived employability at time 1 will be positively associated with a protean career orientation at time 2.

2.3 Social capital and protean and boundaryless career orientations

The third proposed antecedent of new career orientations is social capital. The new career literature emphasizes the importance of social capital and the central role of networks to maintain employability. There is consistent evidence linking social capital with both intra and inter-

organizational career mobility. Studies show, for instance, that individuals who are referred to a position by current employees stand a higher chance of being hired (Fernandez, Castilla & Moore, 2000). Seibert, Kraimer and Liden (2001) reported that individuals with access to broader networks of contacts benefitted from access to a number of resources, including information and career sponsorship, which resulted in higher salaries, promotion rates and career satisfaction. Lin and Huang (2005) found that individuals' social capital mediated the link between human capital and employees' potential for intra-organizational career mobility as assessed by supervisors. This evidence suggests that access to social capital should provide confidence to engage in career self-management and to craft one's career both within and outside the boundaries of one's current organization. We therefore expect social capital to be associated with the development of protean and boundaryless career orientations.

Our sample consists of students hoping to enter employment rather than people in work. However, family and social ties, sometimes linked to social class, have been found to influence graduates as they approach employment (Forrier & Sells, 2003). This is suggested, for instance, by Bathmaker, Ingram and Waller (2013) who showed that UK middle-class families mobilized social capital to ensure that their children had access to important advantages in the graduate labour market - including access to internships in leading companies - in contrast with working-class families where there was little propensity to accumulate capital beyond the completion of a university degree. We therefore propose that:

Hypothesis 3a: Social capital measured at time 1 will be positively associated with a boundaryless career orientation at time 2.

Hypothesis 3b: Social capital measured at time 1 will be positively associated with a protean career orientation at time 2.

2.4 The mediating role of perceived employability and social capital in the link between CSEs and boundaryless and protean career orientations

We also investigate the extent to which employability and social capital mediate the link between CSEs and protean and boundaryless career orientations. This analysis is justified by the fact that personality is a likely antecedent of employee attitudes and behaviours, including perceived employability and network behaviour. Looking first at employability, Onyishi, Enwereuzor, Ituma & Omenma's (2014) study of employed and unemployed graduate students showed that individuals with a more positive self-concept are likely to perceive themselves as more employable. Research also shows that individuals high on neuroticism and prone to see themselves in a negative light tend to perceive lower possibilities of finding and/or maintaining employment (Wille, De Fruyt & Feys, 2013).

Hypothesis 4a: Perceived employability measured at time 1 will mediate the link between CSEs measured at time 1 and a boundaryless career orientation at time 2.

Hypothesis 4b: Perceived employability measured at time 1 will mediate the link between CSEs measured at time 1 and a protean career orientation at time 2.

Research also seems to suggest that CSEs are associated with social capital. Individuals with a more positive self-concept should feel more comfortable engaging in proactive behaviours, including networking with others who can potentially facilitate career progression. This is suggested by Liang and Gong (2013) who found that individuals who reported higher CSEs also engaged in more network behaviours and received more informal mentoring. Cheung et al. (2016) also found that the link between CSEs and salary could vary according to the structural characteristics of developmental networks and that high-CSE individuals who identified fewer but stronger ties had higher salaries. We therefore propose that:

Hypothesis 5a: Social capital measured at time 1 will mediate the link between CSEs measured at time 1 and a boundaryless career orientation at time 2.

Hypothesis 5b: Social capital measured at time 1 will mediate the link between CSEs measured at time 1 and a protean career orientation at time 2.

3. Methods

3.1 Sample and procedure

To investigate the link between CSEs, perceived employability and social capital and protean and boundaryless career orientations we conducted a longitudinal study among a sample of final year undergraduate students at a London-based university. 3398 students across faculties were invited to participate by completing an online survey in March 2015, shortly before they graduated. 796 students (23.4%) completed the first wave of the study. Of these 51.5% were men and 68.1% were white. Mean age of participants was 24.4 years. Respondents were asked to complete a follow-up questionnaire in June 2016, approximately one year after completing their degrees. 400 participants completed the second questionnaire. Among these 62.6% had entered employment since graduating and are the focus of the present study. 62% were men and 73.1% were white. Mean age was 25.6 years. Response rates in wave 2 were therefore higher among men and whites. Participants who were not working or who had entered further study were excluded since they had not yet embarked on a career and therefore had no specific work experiences that could serve as a basis to reflect upon the extent to which they would prefer to enact a protean or a boundaryless career path; also, the measures of orientations are assessed in the context of work experience and items such as “I would feel very lost if I couldn’t work for my current organization” would not be applicable. Our final sample therefore consisted of 250 participants.

3.2 Measures

Validated measures of all constructs were used. Unless otherwise stated, responses to all items were obtained using a five-point Likert scale ranging from “1= strongly disagree” to “5 = strongly agree”.

Core self-evaluations were measured at time 1 with 12 items from the measure developed and validated by Judge et al. (2003) tapping self-esteem, self-efficacy, locus of control and neuroticism. A sample item is “I am confident I get the success I deserve in life”. The authors report reliabilities between $\alpha=.81$ and $\alpha=.87$. In our study the reliability was $\alpha=.78$.

Perceived employability was measured at time 1 with 4 items from De Witte’s (1992) perceived external employability measure. A sample item is “My qualifications and experience are in demand in the labour market”. Reliability was $\alpha=.84$ in our study and $\alpha=.89$ in the De Witte’s study.

Social Capital was measured at time 1 by adapting dimensions from two existing measures of social capital. We followed Seibert et al. (2001) and asked respondents to “**think about the people you know who have acted to help your career by speaking on your behalf, providing you with information, or with whom you have regularly spoken regarding your career goals**”. Respondents were asked to **list the number of such people up to a maximum of 10, which was considered an adequate number to capture the important contacts among this population. Building on Seibert et al. (2001) we computed a measure of network size by counting the relevant contacts reported by participants. Second, we used Moran’s (2005) measure of closeness of ties to calculate the average strength of contacts by asking participants to report how close they were to each contact on a scale from 1= not close at all to 5=very close. This aims to capture the quality of contacts reported by respondents. We**

therefore use two dimensions of social capital – number of ties (SCNT) and strength of ties (SCST).

Boundaryless career orientation was measured at time 2 with four items from Briscoe et al.'s (2006) career mobility preference scale. A sample item is “I like the predictability that comes with working continuously for the same organization (R)”. The authors report a reliability of $\alpha=.74$. In our study the reliability was $\alpha=.84$. A decision was made not to use the boundaryless mindset scale which seeks to capture one's attitudes towards working with people in different departments, functions and organizations. This is arguably a less relevant dimension to capture the core meaning of the boundaryless career and it is not clear how it resonates among people working in flatter organizations and SMEs where boundaries between jobs and departments are often unclear.

Protean career orientation was measured at time 2 with four items from Briscoe et al.'s (2006) self-directed career management scale. A sample item is “Overall, I have a very independent, self-directed career”. The authors report a reliability of $\alpha=.75$. In our study the reliability was $\alpha=.77$. The values driven scale was not used as evidence suggests that it is problematic in non-US samples (Baruch, 2014). In addition, commentators have questioned its validity as it implies that “personal values and organizational values are opposites that cannot be reconciled” (Gubler et al., 2014, p. 31).

Control variables (measured at time 1). Information was collected about participants' age in years, gender (0 = men; 1 = women), and ethnicity (0 = white; 1 = non-white) and family income (1 = less than £20,000/year to 10 = over £100,000/year) as a proxy for socio-economic status. We considered the effect of these variables on perceived employability and social capital as well as on protean and boundaryless career orientations as evidence suggests that they might affect each of

these as well as a successful transition into the labour market (see, for instance, Bathmaker et al., 2013). In the case of CSEs, given their stable and dispositional nature (Judge et al., 2012), we did not consider it relevant to control for demographic variables and socio-economic status.

4. Analyses and results

4.1 Analyses

All variables were inspected for distribution characteristics, missing values and outliers. The decision was made to test all hypotheses using structural equation models. We used Mplus, version 7, to analyse the data. Control variables were included in the regressions when exploring determinants of perceived employability, social capital, protean and boundaryless career orientations. To test for mediation, we have calculated 95% confidence intervals and applied a bootstrapping technique with 5000 bootstrapping samples as recommended (Preacher, Zyphur & Zhang, 2010).

4.2 Means, standard deviations and zero-order correlations

The means, standard deviations, reliabilities and correlations of the study variables are presented in Table 1. Participants report moderate levels of CSEs (Mean = 3.52; SD = .55) and perceived employability (Mean = 3.19; SD = .79) and an average of 5.3 (SD = 3.30) ties to influential people who can help further their careers but fairly weak links to such individuals (Mean = 2.60; SD = 1.28). Finally, participants report moderate protean (Mean = 3.75; SD = .70) and boundaryless career orientations (Mean = 3.22; SD = .88).

As expected, boundaryless career orientations are positively correlated with perceived employability ($r = .36$; $p < .01$) and number of ties ($r = .24$; $p < .01$). Surprisingly CSEs are not associated with boundaryless career orientations ($r = -.01$; ns.) but are positively correlated with protean career orientations ($r = .18$; $p < .05$). Protean career orientations are also positively

associated with perceived employability ($r = .33$; $p < .01$) and having strong ties with influential individuals ($r = .34$; $p < .01$).

Insert Table 1 about here

5. Results

Before testing the structural paths between variables we first assessed the fit of the measurement model. We included in this preliminary analysis all the variables in the study. The fit indices of this model were quite poor ($\chi^2 = 1305.49$; $df = 390$; $CFI = .66$; $TLI = .62$; $RMSEA = .07$ [90% CI: .07-.08]; $SRMR = .11$). The analysis suggested that the key problem was in the measurement of CSEs where six negatively worded items loaded weakly onto the latent variable. By eliminating these items we were able to improve the fit ($\chi^2 = 402.16$; $df = 238$; $CFI = .91$; $TLI = .90$; $RMSEA = .04$ [90% CI: .03-.05]; $SRMR = .09$). The reliability of the reduced set of items is $\alpha = .80$. We argue that the retained items still reflect the CSE construct for two reasons. First, items in the CSE construct seek to capture the commonality among the four traits and not distinctive elements of these traits. Second, this commonality was the presiding principle in the development of items in the measure. As Judge et al. highlight “many of the items cut across the four core traits such that some items may reflect a combination of two or more of the core traits. This was in keeping with the presumed nature of the core construct” (2003, p. 314).

Using structural equation modelling we have first assessed the fit of the hypothesized partially mediated model ($\chi^2 = 308.79$; $df = 216$; $CFI = .95$; $TLI = .94$; $RMSEA = .03$ [90% CI: .02-.04]; $SRMR = .05$). We have compared this model against a direct effects model where we considered only the links between the three antecedents and protean and boundaryless career orientations ($\chi^2 = 354.65$; $df = 219$; $CFI = .93$; $TLI = .91$; $RMSEA = .04$ [90% CI: .03-.05]; $SRMR = .08$) and a fully mediated model where we considered only the indirect effects of CSE on career

orientations via employability and social capital ($\chi^2 = 314.96$; $df = 218$; $CFI = .95$; $TLI = .94$; $RMSEA = .03$ [90% CI: .03-.04]; $SRMR = .06$). While all models have good fit, a chi-square difference test suggests that the hypothesized model is a better fit of the data when compared with the direct effects [$\Delta\chi^2 = 45.86(3)$, $p=.000$] and the fully mediated model [$\Delta\chi^2 = 6.17(1)$, $p=.046$]. We will therefore use the partial mediation model in our analysis. The model coefficients are reported in table 2 and the structural pathways are depicted in figure 2.

We first consider the direct pathways among the three antecedents under analysis and career orientations. Results show that CSEs are negatively associated with the boundaryless career orientation ($\beta=-.27$; $p<.05$) and are not significantly linked with the protean career orientation ($\beta=-.02$; ns.). The direct effects of CSEs on the boundaryless career orientation are surprising given the low correlation between both variables ($r=-.01$, ns.). We have conducted additional analysis to explore our findings. A step-wise regression entering all variables in the model indicates that employability has a suppressor effect by increasing the magnitude of the effect of CSEs on the boundaryless career orientation. One possible interpretation is that aspects captured by the notion of perceived employability, such as confidence in one's ability to change employers without incurring in a penalty, overlap with some of the positive dimensions in CSEs such as self-efficacy and locus of control. This would need to be further investigated. These results are unexpected and do not support hypotheses 1a and 1b.

Results in table 2 show that perceived employability is positively associated with both the boundaryless ($\beta=.52$ $p<.00$) and the protean career orientation ($\beta=.30$; $p<.01$) which supports hypotheses 2a and 2b. They also indicate that social capital is an important antecedent of both protean and boundaryless career orientations and therefore support hypotheses 3a and 3b. However, the pattern of association between the two facets of social capital and career orientations

differs. Number of ties ($\beta=.17$; $p<.05$), but not the strength of ties ($\beta=-.06$; ns), is positively associated with the boundaryless career orientation. In contrast, having strong ties with people who can further one's career is associated with a protean career orientation ($\beta=.33$; $p<.05$) while the number of ties is not significant ($\beta=-.01$; ns.).

The study explored the indirect effects of CSEs on career orientations via employability and social capital. Results in table 2 indicate that CSEs are positively associated with both the boundaryless ($\beta=.21$; $p<.01$) and the protean ($\beta=.12$ $p<.05$) career orientations via perceived employability. Hypotheses 4a and 4b are supported.

We also explored the indirect effects of CSEs on career orientations via social capital. Results in table 2 show that social capital does not mediate the link between CSEs and the boundaryless career orientation ($\beta=-.01$; ns.). Hypothesis 5a is therefore not supported. In contrast, we found significant positive indirect effects of CSEs on the protean career orientation via the strength of the relationship with individuals who can further one's career ($\beta=.07$; $p<.05$) indicating support for hypothesis 5b.

Finally, we had argued that gender, age, ethnicity and socio-economic status were important controls as they could influence both antecedents and career orientations. While we had not proposed specific hypotheses, results in table 2 show that men and participants from a more affluent socioeconomic background perceive themselves to be more employable than women and those from a lower socioeconomic background. Those who are male, white, younger and from a higher socioeconomic background generally report having higher social capital than those who are female, non-white, older and from a less affluent background.

Insert Table 2 about here

.....
Insert Figure 2 about here
.....

6. Discussion and conclusion

Over the last twenty years the careers literature has focused on discussing and empirically exploring patterns of, and motivations for, career mobility based on the argument that careers are becoming increasingly independent from any one employer and driven instead by individual career preferences and subjective notions of career success. A major influence on ability to manage effectively in the new career landscape is argued to be possession of boundaryless and protean career orientations (Arthur, 1994; Arthur et al, 2005; De Vos et al., 2011). It is therefore important to understand their correlates and their policy implications in preparing people for contemporary careers. There is some research on the outcomes of new career orientations but little is known about the factors determining them. With this in mind, the aim of this study was to investigate the antecedents of boundaryless and protean career orientations. Building on literature on career orientations suggesting that relatively stable career preferences begin to develop before people enter employment and are shaped by individual dispositions and social and family background, this paper addressed this gap in research by exploring the role of CSEs, perceived employability and social capital as key antecedents of protean and boundaryless career orientations. In addition, considering that personality influences attitudes and behaviours, the paper explored the mediating role of perceived employability and social capital in the link between CSEs and new career orientations. We explored these issues in a longitudinal study following a cohort of university students transitioning to the labour market.

Our findings broadly support the idea that boundaryless and protean career orientations are influenced by positive core self-evaluations, perceived employability and embeddedness in social

networks. However, the associations are not as straightforward as hypothesized. First, our findings reveal that, contrary to expectations and assumptions in the literature (Judge & Kammeyer-Mueller, 2011), individuals with a more positive self-concept display a more bounded career orientation. This suggests that a more independent career may be seen as less attractive and satisfying at this early stage in a career or perhaps less necessary for recent graduates. However, we found a positive indirect effect of CSEs on a boundaryless career orientation via employability. Our findings also showed that CSEs are not directly associated with the protean career orientation but that there are positive indirect effects via both employability and social capital as reflected in strength of ties.

Second, in line with the literature on career orientations and research on social capital (Bathmaker et al., 2013), our results showed the importance of social and family background in determining career preferences. More specifically, findings indicated that social capital is an important antecedent of protean and boundaryless career orientations but interesting nuances were found in the data. Having a broad range of contacts is a more important antecedent of the boundaryless career orientation whereas having strong ties with influential people is more relevant in developing a protean career orientation. This may suggest that in order to engage in inter-organizational career mobility a wider network of contacts providing access to information about career opportunities is more relevant. In contrast, in order to exert self-direction it is important to have arguably fewer but closer contacts, perhaps in the form of mentors. Future research can explore the way individuals with high boundaryless and protean career orientations develop networks of contacts and whether these are predominantly with individuals within or outside their organizations.

Finally, our findings support the literature on the new career and research on employability (De Vos et al., 2011) and highlight the importance of self-perceived employability as a key antecedent of boundaryless and protean career orientations. Indeed, the strength of the association with the boundaryless career orientation is stronger for employability than for CSEs and social capital which might suggest that perceived employability enhances one's willingness to consider inter-organizational mobility. In contrast, the association with the protean career orientation is stronger for social capital (strength of ties) than for employability and CSEs suggesting that a protean career may be more compatible with an organizational type of career. Future research can further explore the extent to which both orientations are supported by perceptions of internal and external employability.

Overall our paper contributes to the literature in three main ways. First, it offers the initial elements of a theory about the formation of protean and boundaryless career orientations building on key individual and social antecedents proposed by existing theories of career orientations and informed by the writings on the new career. Second, our findings highlight how new career orientations are shaped at the intersection between individual and situational factors and advise caution against the excessive focus on individual agency in contemporary careers research. Our study showed, for instance, that in this distinctive sample of new entrants into employment, the link between CSEs and protean and boundaryless career orientations is only positive when mediated by employability. Future research can further explore how individual (e.g. openness to experience, resilience) and contextual factors (e.g. labour market conditions, career management practices) shape and interact with new career orientations to predict outcomes.

Third, our paper demonstrates the commonalities but also the conceptual and empirical distinctions between the two orientations. The one clear finding with respect to antecedents is the

role of perceived employability as a predictor of both types of career orientation. The complex role of CSEs but particularly of social capital, with number of ties linked to a boundaryless career orientation and strength of ties linked to a protean career orientation, highlights some of the differences. Taken together with evidence about the outcomes of both orientations our paper contributes to further understanding different facets of the new career.

The study also has practical implications for higher education institutions, employers and career professionals. Educational institutions can communicate to students the value of employability and social capital, which are associated with both protean and boundaryless career orientations, as important career resources and help students to develop realistic perceptions of employability by facilitating internships and placements. For employers, an important implication from our findings is that CSEs, which are associated with a range of positive individual and organizational outcomes, are not necessarily associated with new career orientations and, in particular, with the boundaryless career orientation which has been linked with lower employee satisfaction, lower commitment and higher intention to quit (Rodrigues et al., 2015). For career counsellors and career professionals, the findings highlight a need to support career education concerning the nature of contemporary careers including contextual dynamism, and the importance of social networks and of developing and maintaining employability. The findings reinforce the view that contemporary career counselling will be aided by encouraging in those seeking advice a constructivist perspective (Patton & McMahon, 2016) which recognises the dynamic fluidity of the contemporary world of work within which careers are enacted and develops an awareness of environmental facilitators and barriers. This is likely to be easier to achieve among those with a protean career orientation who are more likely to undertake career self-management

to maintain employability but also to engage in self-construction of a career that fits within a broader subjective life view (Savickas, 2012).

Finally, our study has three relevant limitations that can be addressed in future research. First, we started following participants at university where many people lack significant work experience to judge their employability and the quality of their contact networks. However, the average sample age of over 25 suggests that many will have had some work experience and gained some sense of the labour market. Further follow-up studies or samples covering people with greater employment experience can address this issue.

Second, the time lag between surveys is just over one year and information about career orientations was collected only once which is insufficient to fully capture the formation of relatively stable career preferences. While there is some evidence that career preferences are likely to start developing prior to entering employment (Rodrigues et al., 2013) research on career anchors suggests that people's career goals and values stabilize once they have had a chance of experiencing a variety of work contexts during the first years of their careers (Schein, 1996). Longitudinal research, following individuals over a longer period of time and capturing data on career orientations, their key antecedents and work experiences, is necessary to establish the shaping and stability of protean and boundaryless career orientations. This will also help to clarify whether they can best be defined as orientations or as attitudes.

Thirdly, our model assumed that perceived employability and social capital were key antecedents of protean and boundaryless career orientations. While this is theoretically grounded, alternative models are also worth investigating. It is, for example, possible that social capital mediates the link between perceived employability and new career orientations. This is suggested by Eby, Butts and Lockwood (2003) who found that employees who were more internally and

externally connected perceived higher internal and external employability. In addition, it is also important to investigate the possibility of reverse causation as well as a recursive model. It is possible that protean and boundaryless career orientations evolve as a result of work and career experiences, including learning how to navigate a turbulent labour market. In this case, employability and engaging in network behaviours can be the result of developing new career orientations. This is suggested by Waters et al. in their discussion of the antecedents of the protean career orientation when they state they “believe that while PCO [protean career orientation] may be partly hard-wired, or personality driven, it is also open to change and can be developed” (2015, p. 245). Future longitudinal research can investigate some of these models.

References

- Adler, P. & Kwon, S. (2002). Social capital: Prospects for a new concept. *Academy of Management Review*, 27(1), 17-40. <https://doi.org/10.5465/amr.2002.5922314>.
- Arthur, M. (1994). The boundaryless career: A new perspective for organizational inquiry. *Journal of Organizational Behavior*, 15(4), 295-306. <https://doi.org/10.1002/job.4030150402>.
- Arthur, M., Khapova, S. & Wilderom, C. (2005). Career success in a boundaryless career world. *Journal of Organizational Behavior*, 26(2), 177-202. <https://doi.org/10.1002/job.290>.
- Arthur, M. & Rousseau, D. (1996). Conclusion: A lexicon for the new organizational era. In M. Arthur & D. Rousseau (Eds). *The boundaryless career: A new employment principle for a new organizational era* (pp. 370-382). Oxford: Oxford University Press.
- Baruch, Y. & Vardi, Y. (2015). A fresh look at the dark side of contemporary careers: Toward a realistic discourse. *British Journal of Management*, 26(2), 355-372. <https://doi.org/10.1111/1467-8551.12107>.

- Baruch, Y. (2014). The development and validation of a measure for protean career orientation. *The International Journal of Human Resource Management*, 25(19), 2702-2723. <https://doi.org/10.1080/09585192.2014.896389>.
- Bathmaker, A. M., Ingram, N. & Waller, R. (2013). Higher education, social class and the mobilisation of capitals: Recognising and playing the game. *British Journal of Sociology of Education*, 34(5-6), 723-743. <https://doi.org/10.1080/01425692.2013.816041>.
- Bourdieu, P. (1973). *Cultural reproduction and social reproduction*. London: Tavistock.
- Briscoe, J., Hall, D. & DeMuth, R. (2006). Protean and boundaryless careers: An empirical exploration. *Journal of Vocational Behavior*, 69(1), 30-47. <https://doi.org/10.1016/j.jvb.2005.09.003>.
- Briscoe, J. & Hall, D. (2006). The interplay of boundaryless and protean careers: Combinations and implications. *Journal of vocational behavior*, 69(1), 4-18. <https://doi.org/10.1016/j.jvb.2005.09.002>.
- Briscoe, J., Henagan, S., Burton, J., & Murphy, W. (2012). Coping with an insecure employment environment: The differing roles of protean and boundaryless career orientations. *Journal of Vocational Behavior*, 80(2), 308-316. <https://doi.org/10.1016/j.jvb.2011.12.008>.
- Chan, K., Uy, M., Moon-ho, R., Sam, Y., Chernyshenko, O., & Yu, K. (2015). Comparing two career adaptability measures for career construction theory: Relations with boundaryless mindset and protean career attitudes. *Journal of Vocational Behavior*, 87, 22-31. <https://doi.org/10.1016/j.jvb.2014.11.006>.
- Cheung, Y., Herndon, N. & Dougherty, T. (2016). Core self-evaluations and salary attainment: the moderating role of the developmental network. *The International Journal of Human Resource Management*, 27(1), 67-87. <https://doi.org/10.1080/09585192.2015.1042897>.

- Culié, J., Khapova, S. & Arthur, M. (2014). Careers, clusters and employment mobility: The influences of psychological mobility and organizational support. *Journal of Vocational Behavior*, 84(2), 164-176. <https://doi.org/10.1016/j.jvb.2014.01.002>.
- De Vos, A., De Hauw, S. & Van der Heijden, B. (2011). Competency development and career success: The mediating role of employability. *Journal of Vocational Behavior*, 79(2), 438-447. <https://doi.org/10.1016/j.jvb.2011.05.010>.
- De Vos, A. & Soens, N. (2008). Protean attitude and career success: The mediating role of self-management. *Journal of Vocational Behavior*, 73(3), 449-456. <https://doi.org/10.1016/j.jvb.2008.08.007>.
- De Witte, H. (1992) *Between Optimism and Withdrawal: An Empirical Analysis of the Long-term Unemployed in Flanders*. Leuven, Belgium: Hoger Instituut voorde Arbeid.
- Eby, L., Butts, M. & Lockwood, A. (2003). Predictors of success in the era of the boundaryless career. *Journal of Organizational Behavior*, 24(6), 689-708. <https://doi.org/10.1002/job.214>.
- Fernandez, R., Castilla, E. & Moore, P. (2000). Social capital at work: Networks and employment at a phone center. *American Journal of Sociology*, 105(5), 1288-1356. <https://doi.org/10.1086/210432>.
- Forrier, A. & Sels, L., 2003. The concept employability: A complex mosaic. *International Journal of Human Resources Development and Management*, 3(2), 102-124. <https://doi.org/10.1504/IJHRDM.2003.002414>.
- Fugate, M. & Kinicki, A. (2008). A dispositional approach to employability: Development of a measure and test of implications for employee reactions to organizational change. *Journal of Occupational and Organizational Psychology*, 81(3), 503-527. <https://doi.org/10.1348/096317907X241579>.

- Gubler, M., Arnold, J. & Coombs, C., (2014). Reassessing the protean career concept: Empirical findings, conceptual components, and measurement. *Journal of Organizational Behavior*, 35(S1), 23-40. <https://doi.org/10.1002/job.1908>.
- Higgins, M., Dobrow, S. & Roloff, K. (2010). Optimism and the boundaryless career: The role of developmental relationships. *Journal of Organizational Behavior*, 31(5), 749-769. <https://doi.org/10.1002/job.693>.
- Judge, T., Erez, A., Bono, J. & Thoresen, C. (2003). The core self-evaluations scale: Development of a measure. *Personnel Psychology*, 56(2), 303-331. <https://doi.org/10.1111/j.1744-6570.2003.tb00152.x>.
- Judge, T., Ilies, R. and Zhang, Z. (2012). Genetic influences on core self-evaluations, job satisfaction, and work stress: A behavioral genetics mediated model. *Organizational Behavior and Human Decision Processes*, 117(1), 208-220. <https://doi.org/10.1016/j.obhdp.2011.08.005>.
- Judge, T. & Kammeyer-Mueller, J. (2011). Implications of core self-evaluations for a changing organizational context. *Human Resource Management Review*, 21(4), 331-341. <https://doi.org/10.1016/j.hrmr.2010.10.003>.
- Kammeyer-Mueller, J., Judge, T. & Scott, B. (2009). The role of core self-evaluations in the coping process. *Journal of Applied Psychology*, 94(1), 177-195. <http://dx.doi.org/10.1037/a0013214>.
- Koumoundourou, G., Kounenou, K. & Siavara, E. (2012). Core self-evaluations, career decision self-efficacy, and vocational identity among Greek adolescents. *Journal of Career Development*, 39(3), 269-286. <https://doi.org/10.1177/0894845310397361>.
- Låstad, L., Berntson, E., Näswall, K. & Sverke, M., (2014). Do core self-evaluations and coping style influence the perception of job insecurity? *European Journal of Work and Organizational Psychology*, 23(5), 680-692. <https://doi.org/10.1080/1359432X.2013.800678>.

- Liang, J. & Gong, Y. (2013). Capitalizing on proactivity for informal mentoring received during early career: The moderating role of core self- evaluations. *Journal of Organizational Behavior*, 34(8), 1182-1201. <https://doi.org/10.1002/job.1849>.
- Lin, S. & Huang, Y. (2005). The role of social capital in the relationship between human capital and career mobility: Moderator or mediator? *Journal of Intellectual Capital*, 6(2), 191-205. <https://doi.org/10.1108/1469193051>.
- Luthans, F., Norman, S., Avolio, B. & Avey, J., (2008). The mediating role of psychological capital in the supportive organizational climate-employee performance relationship. *Journal of Organizational Behavior*, 29(2), 219-238. <https://doi.org/10.1002/job.507>.
- Moran, P. (2005). Structural vs. relational embeddedness: Social capital and managerial performance. *Strategic management journal*, 26(12), 1129-1151. <https://doi.org/10.1002/smj.486>
- Nordvik, H. (1996). Relationships between Holland's vocational typology, Schein's career anchors and Myers—Briggs' types. *Journal of Occupational and Organizational Psychology*, 69(3), 263-275. <https://doi.org/10.1111/j.2044-8325.1996.tb00614.x>.
- Onyishi, I., Enwereuzor, I., Ituma, A. & Omenma, J. (2015). The mediating role of perceived employability in the relationship between core self-evaluations and job search behaviour. *Career Development International*, 20(6), 604-626. <https://doi.org/10.1108/CDI-09-2014-0130>.
- Patton, W. & McMahon, M. (2016). Constructivism: what does it mean for career counselling?. In M. McMahon (Ed.). *Career counselling: Constructivist approaches* (pp. 3-16). New York, NY: Routledge.
- Porter, C., Woo, S. & Tak, J. (2016). Developing and validating short form protean and boundaryless career attitudes scales. *Journal of Career Assessment*, 24(1), 162-181. <https://doi.org/10.1177/1069072714565775>.

- Preacher, K., Zyphur, M. & Zhang, Z. (2010). A general multilevel SEM framework for assessing multilevel mediation. *Psychological Methods*, 15(3), 209–233. <http://dx.doi.org/10.1037/a0020141>.
- Rodrigues, R. & Guest, D. (2010). Have careers become boundaryless? *Human Relations*, 63(8), 1157–1175. <https://doi.org/10.1177/0018726709354344>.
- Raider, H. & Burt, R. (1996). Boundaryless careers and social capital. In M. Arthur & D. Rousseau (Eds). *The boundaryless career: A new employment principle for a new organizational era* (pp. 187-200). Oxford: Oxford University Press.
- Rodrigues, R., Guest, D., & Budjanovcanin, A. (2013). From anchors to orientations: Towards a contemporary theory of career preferences. *Journal of Vocational Behavior*, 83(2), 142-152. <https://doi.org/10.1016/j.jvb.2013.04.002>.
- Rodrigues, R., Guest, D., Oliveira, T. & Alfes, K., (2015). Who benefits from independent careers? Employees, organizations, or both? *Journal of Vocational Behavior*, 91, 23-34. <https://doi.org/10.1016/j.jvb.2015.09.005>.
- Rothwell, A. & Arnold, J. (2007). Self-perceived employability: development and validation of a scale. *Personnel Review*, 36(1), 23-41. <https://doi.org/10.1108/00483480710>.
- Savickas, M. (2012). Life design: A paradigm for career intervention in the 21st century. *Journal of Counseling & Development*, 90(1), 13-19. <https://doi.org/10.1111/j.1556-6676.2012.00002.x>
- Uy, M., Chan, K., Sam, Y., Ho, M. & Chernyshenko, O. (2015). Proactivity, adaptability and boundaryless career attitudes: The mediating role of entrepreneurial alertness. *Journal of Vocational Behavior*, 86, 115-123. <https://doi.org/10.1016/j.jvb.2014.11.005>.

- Vanhercke, D., De Cuyper, N., Peeters, E. & De Witte, H. (2014). Defining perceived employability: a psychological approach. *Personnel Review*, 43(4), 592-605. <https://doi.org/10.1108/PR-07-2012-0110>.
- Van der Heijde, C. & Van Der Heijden, B. (2006). A competence- based and multidimensional operationalization and measurement of employability. *Human Resource Management*, 45(3), 449-476. <https://doi.org/10.1002/hrm.20119>.
- Vansteenkiste, S., Verbruggen, M. & Sels, L., (2013). Being unemployed in the boundaryless career era: Does psychological mobility pay off? *Journal of Vocational Behavior*, 82(2), 135-143. <https://doi.org/10.1016/j.jvb.2012.11.007>.
- Schein, E. H. (1996). Career anchors revisited: Implications for career development in the 21st century. *The Academy of Management Executive*, 10(4), 80-88. <https://doi.org/10.5465/ame.1996.3145321>.
- Schoon, I. (2001). Teenage job aspirations and career attainment in adulthood: A 17-year follow-up study of teenagers who aspired to become scientists, health professionals, or engineers. *International Journal of Behavioral Development*, 25(2), 124-132. <https://doi.org/10.1080/01650250042000186>.
- Seibert, S., Kraimer, M. & Liden, R. (2001). A social capital theory of career success. *Academy of Management Journal*, 44(2), 219-237. <https://doi.org/10.5465/3069452>.
- Zhang, J., Wu, Q., Miao, D., Yan, X. & Peng, J. (2014). The impact of core self-evaluations on job satisfaction: The mediator role of career commitment. *Social Indicators Research*, 116(3), 809-822. <https://doi.org/10.1007/s11205-013-0328-5>.
- Waters, L., Hall, D., Wang, L. & Briscoe, J. (2015). Protean Career Orientation: A Review of Existing and Emerging Research. In R. Burke, K. Page & C. Cooper (Eds). *Flourishing in Life*,

Work and Careers: Individual Wellbeing and Career Experiences (pp. 235-260). Cheltenham, UK/Northampton, MA: Edward Elgar Publishing.

Wille, B., De Fruyt, F. & Feys, M. (2013). Big five traits and intrinsic success in the new career era: A 15- Year longitudinal study on employability and Work–Family conflict. *Applied Psychology*, 62(1), 124-156. <https://doi.org/10.1111/j.1464-0597.2012.00516.x>.

Figure 1 – Analytic Model

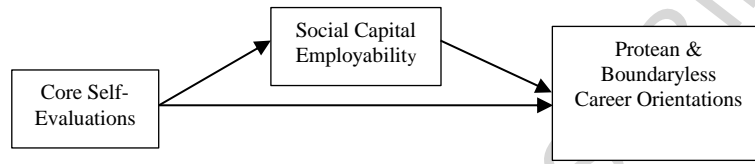
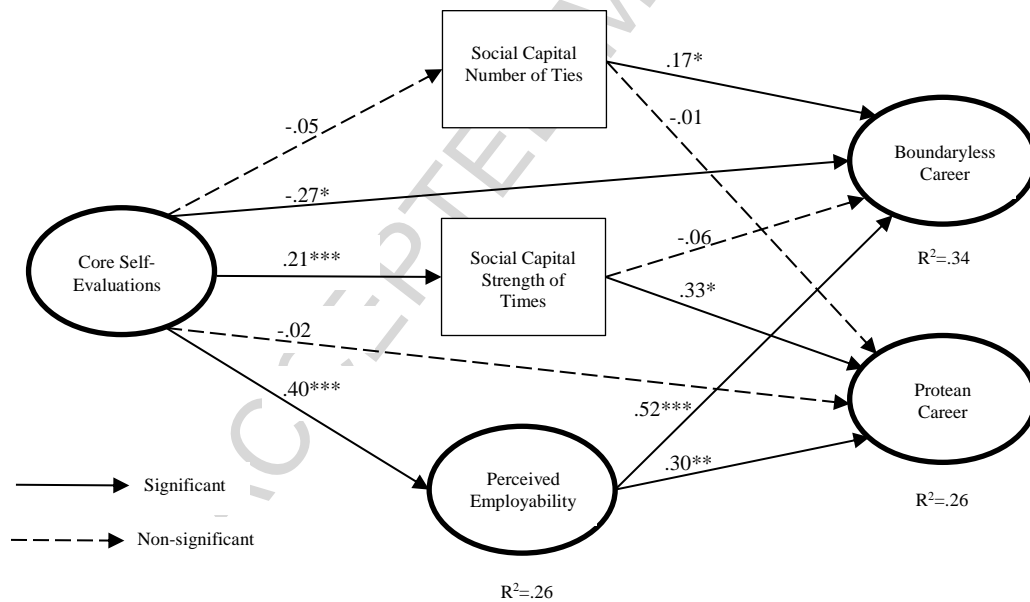


Figure 2 – Structural model of the CSE, perceived employability and social capital as antecedents of protean and boundaryless career orientations*



*Notes: Circles represent latent variables and boxes represent observed variables; Dotted lines represent non-significant pathways; Independent and dependent variables were free to correlate with each other; Standardized coefficients reported; ***p < .00, **p < .01 *p < .05.

Table 1 – Means, standard deviations, correlations and reliability of study measures

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Gender (0 = men) (T1)	.38	.48										
2. Age (T1)	25.59	4.40	-.01									
3. Ethnicity (0 = White) (T1)	.26	.44	.17**	-.15**								
4. Socio-economic status (T1)	5.38	2.39	.12*	.13*	-.20**							
5. CSEs (T1)	3.52	.55	.09	-.17**	.10	.13*	(.80)					
6. Perceived Employability (T1)	3.19	.79	.12	-.30**	-.05	.22**	.36**	(.84)				
7. Social Capital – No. Ties (T1)	5.28	3.30	-.17**	-.17**	-.13*	.09	-.03	.12*				
8. Social Capital – Strength Ties (T1)	2.60	1.28	.23**	-.55**	.17**	-.20**	.27**	.10	.13**			
9. Boundaryless Career Orientation (T2)	3.22	.88	-.27**	-.08	-.12	.24**	-.01	.36**	.24**	-.04	(.84)	
10. Protean Career Orientation (T2)	3.75	.70	-.03	-.24**	.07	.12	.18*	.33**	.04	.34**	.31**	(.77)

Note: **p < .01 *p < .05.

Table 2 – Direct and indirect effects of CSE, perceived employability and social capital on protean and boundaryless career orientations

Model Pathways	Estimated effect	95% confidence interval	
		Lower bounds	Upper bounds
Direct effects			
CSE → BCO	-.27 ^a	-.47	-.06
Emp → BCO	.52 ^a	.32	.71
CSE → PCO	-.02	-.25	.20
Emp → PCO	.30 ^a	.11	.49
CSE → Emp	.40 ^a	.27	.53
SCNT → BCO	.17 ^a	.04	.29
SCST → BCO	-.06	-.30	.17
SCNT → PCO	-.01	-.14	.11
SCST → PCO	.33 ^a	.10	.56
CSE → SCNT	-.05	-.18	.08
CSE → SCST	.21 ^a	.09	.31
Gender → Emp	-.14 ^a	-.22	-.05
Gender → BCO	-.10	-.26	.06
Gender → PCO	-.07	-.22	.07
Gender → SCNT	-.14 ^a	-.25	-.04
Gender → SCST	.16 ^a	.08	.24
Age → Emp	-.14 ^a	-.25	-.04
Age → BCO	.10	-.18	.38
Age → PCO	-.03	-.33	.26
Age → SCNT	-.23 ^a	-.36	-.10
Age → SCST	-.47 ^a	-.56	-.38
Ethnicity → Emp	-.06	-.16	.03
Ethnicity → BCO	.02	-.13	.18
Ethnicity → PCO	.14	-.00	.29
Ethnicity → SCNT	-.15 ^a	-.28	-.03
Ethnicity → SCST	.01	-.06	.09
SES → Emp	.17 ^a	.08	.26
SES → BCO	.09	-.06	.25
SES → PCO	.06	-.08	.21
SES → SCNT	.06	-.04	.17
SES → SCST	-.15 ^a	-.23	-.07
Indirect Effects			
CSE → Emp → BCO	.21 ^a	.09	.32
CSE → SCNT → BCO	-.01	-.03	.02
CSE → SCST → BCO	-.01	-.07	.04
Sum of Indirect effects from CSE to BCO	.19 ^a	.05	.31
CSE → Emp → PCO	.12 ^a	.02	.22
CSE → SCNT → PCO	.00	-.01	.01
CSE → SCST → PCO	.07 ^a	.01	.13
Sum of Indirect effects from CSE to PCO	.19 ^a	.08	.30

^a Significant coefficients; Note: Standardized coefficients reported.

Highlights

- Explores core antecedents of protean and boundaryless career orientations
- Core self-evaluations are negatively associated with BCO
- Employability and social capital mediate the link between CSE and BCO
- Employability mediates the link between CSE and PCO
- Employability and social capital are associated with BCO and PCO