The undergraduate self-perception of employability:   
Human capital, careers advice, and career ownership

**Abstract**

This study focuses on the undergraduate self-perception of employability. We aimed to explore the impact of human capital, which incorporates social capital, cultural capital, psychological capital, scholastic capital, market-value capital, and skills. We also examined the role of careers advice and career ownership (protean career). Additionally, moderators of gender, degree subject, and year of study offer further contribution. Running a two-wave study (Model I) and a cross-sectional study (Model II) of undergraduates at a UK university, our findings draw on 387 students. Findings indicate that human capital, careers advice, and career ownership are important components of self-perceived employability. The study advances human capital theory and contemporary career theory at the transition from higher education into the labour market. Through advancing understanding of the undergraduate self-perception of employability, all stakeholders may benefit, via better-informed strategies for preparing, attracting, hiring, and retaining graduates.

**Keywords**

Employability, human capital, protean career, career management, conceptual model.

**Introduction**

Employability is a critical factor for individuals in labour markets (Fugate, Kinicki & Ashforth, 2004), and attracts high levels of attention in higher education as universities and individuals are interested in improving employability of graduates (Confederation of British Industry, 2009; Yorke, 2004). The literature calls for holistic views of employability (Holmes, 2016; Jackson & Wilton, 2017). We respond to these calls by employing Rothwell and Arnold’s (2007, p.25) definition of employability as *the individuals’ ability to keep the job one has, or to get the job one desires*, and Vanhercke, Cuyper, Peeters and De Witte’s (2014, p.594) definition of perceived employability as *the individual’s perception of his or her possibilities of obtaining and maintaining employment.* The objective of our paper is to explore the undergraduate self-perception of employability.

The theoretical underpinning we employ lies at the intersection of human capital theory (Becker, 1964) and contemporary career theory. We position the self-perceived employability debate at the transition of human capital from higher education into the graduate labour market as part of a life-long learning process, replacing a job for life as a mechanism for career sustainability. Developing an understanding through exploring the student perspective of graduate employability is crucial as their views are not well known (Jackson, 2015, Rospigliosi, Greener, Bourner & Sheehan, 2014) and outcomes of understanding the student view strategically influence organisational performance theory (Wright, Coff & Molinterno, 2014). Thus, new work arrangements continue to manifest in response to an evolving career ecosystem (Baruch, 2015; Baruch, Altman & Tung, 2016). Mass migration, globalisation, technological advancement, modernising economies, and the global financial crisis are just some of the factors influencing movement within a career ecosystem (Baruch *et al*., 2016). As stated by Jackson (2014) and Holmes (2013), employability is different to employment, since it is perfectly feasible for a graduate to be employable – capable of undertaking a job, without being employed. However, this paper explicitly focuses on individual factors rather than the structural factors of perceived employability (Vanhercke *et al*. 2014).

Our paper responds to calls from Jackson (2015) and Rospigliosi and colleagues (2014) to improve understanding of the student perception of graduate employability, and for calls from Jackson and Wilton (2017) to apply research to participants beyond business undergraduates. We advance career theory literature of human capital, careers advice, and career ownership, alongside moderators of gender, degree subject, and year of study. Furthermore we acknowledge that graduate employability is a considerably more complex research area than is sometimes portrayed (Tomlinson, 2013). Understanding the student self-perception of graduate employability is essential, to highlight areas of agreement, or potential mismatch with perceptions of other stakeholders. We thus call for a collaborative and tailored approach to graduate employability. The practical contribution of this study offers ways to prepare students for the graduate labour market, helping to enhance national competitiveness across the Organisation for Economic Co-operation and Development (OECD) through making undergraduates more employable and providing guidance to policy makers.

Our research aims were to: (i) identify the factors of human capital and explore the role of human capital on self-perceived employability, (ii) assess the role of careers advice on self-perceived employability, (iii) explore the impact of career ownership on self-perceived employability, and (iv) consider the moderating influences of gender, degree subject, and year of study on self-perceived employability. Data from 387 undergraduates at a UK university in their penultimate and final years of study (Model I), and final year of study only (Model II), addressed the research aims. Our paper reviews the relevant literature of human capital, careers advice, career ownership, and moderators of gender, degree subject, and year of study, to formulate hypotheses. This is followed by the methodology, results and discussion of findings, and theoretical and practical contributions.

**Influences on Self-Perceived Employability**

***Human Capital***

Useem and Karabel (1986) contextualised human capital theory (Becker, 1964) within the higher education arena. They stated that an educational institution could confer three distinct types of human capital onto its students; (i) social capital, (ii) cultural capital, and (iii) scholastic capital. Through looking at the contribution of higher education qualifications, Baruch, Bell and Gray (2005) extended this framework to include; (iv) inner-value capital, and (v) market-value capital. Inner-value capital, combined with a need for achievement (Cook, Hepworth, Wall & Warr, 1981) is more commonly referred to in the literature as psychological capital (Luthans, Yousef, & Avolio, 2015). A further element, (vi) skills, came to prominence following the Dearing Report (1997). Skills are positioned as a central element of human capital to employability (Jackson & Chapman, 2012; Knight & Yorke, 2004).

We propose social capital to cover areas including a network of contacts, parents, family, school friends, university friends, memberships or affiliations and LinkedIn (Baruch *et al*., 2005; Steinfield, Ellison & Lampe, 2008). Cultural capital covers traditional aspects including university reputation, extra-curricular activities, reading for enjoyment, attire, travelling, visiting cultural exhibitions, speaking an additional language, networking, and volunteering (Esson, Ertle & Holmes, 2013). In recognition of an evolving world and workplace, Jaeger (2010) extended cultural capital to include the use of social media and going to the gym. Social media is reflective of technological advancement and is increasingly used by graduate applicants in daily life and for searching for job opportunities, and by organisations to offer opportunities and to profile candidates. Going to the gym couples with attire to portray body image and increased focus on healthy lifestyle choices. This could be particularly important for client facing job roles or for graduate jobs that interact with the public. We propose that students with more social capital and cultural capital have greater social mobility and are more employable (Fuller, Heath & Johnston, 2011; Tholen, 2014).

Baruch and colleagues (2005, p.54), drawing on earlier work of Boyatzis and Renio (1989) and Baruch and Peiperl (2000), defined inner-value capital as *a high sense of self-awareness, self-esteem, self-efficacy and confidence*. Whilst these studies focused on MBA students and MBA alumni, who are likely to have considerably more life experience than their undergraduate counterparts, inner-value capital still has significant relevance to graduate employability. This is evidenced by Baruch and colleagues (2005) drawing on the ability of inner-value capital to facilitate people in their career decisions and to agree on feasible objectives, assisting individuals in matching their ability to the correct career (Super, 1990 in Baruch *et al*., 2005). Inner-value capital has significant overlap with psychological capital of high self-efficacy, optimism, hope and resilience (Luthans, Luthans, & Luthans, 2004). Both terminologies are concerned with ‘who you are’ (Kaur & Sandhu, 2016; Luthans *et al*., 2004). This research adopts the term psychological capital reflecting terminology of more recent employability literature (Luthans *et al*., 2015). We also incorporate the need for achievement into psychological capital, looking at performance on difficult assignments, past performance, attitudes to risk, desire for additional responsibility and peer rivalry in terms of performance benchmarking (Cook *et al*., 1981).

Scholastic capital explores the value of pre-university education and university education through the self-perceived value of school grades and the university degree, in determining graduate employability in the labour market. Market-value capital draws on the experiences gained from the labour market (Baruch *et al*., 2005). Undergraduate students develop market-value capital through work-integrated learning, characterised by the opportunity to participate in the labour market alongside degree studies, often for a fixed length of time (Jackson & Chapman, 2012). An extensive review of UK higher education recommended that undergraduates be given the opportunity to participate in work-integrated learning as part of their degree studies (The Wilson Review, 2012). Based on these recommendations, universities are rolling out schemes to facilitate such opportunities. Undergraduates may also have previous professional experience within the labour market prior to undertaking their degree studies, which contributes to their market-value capital. Linked to scholastic capital and market-value capital, a plethora of skills has been proposed as part of human capital and enhanced graduate employability. We conducted an extensive review of career theory literature published in the twenty years between the Dearing Report (1997) and 2017. The seven most cited skills, which we adopt for this research, were; (i) teamwork, (ii) oral communication, (iii) problem solving, (iv) time management, (v) literacy skills, (vi) numeracy skills, and (vii) IT skills. The literature review of human capital results in the following two hypotheses:

*H1: Social capital (H1a), cultural capital (H1b), psychological capital (H1c), scholastic capital (H1d), market-value capital (H1e), and skills (H1f) are factors of human capital.*

*H2: Developing human capital is positively related to self-perceived employability.*

***Careers Advice***

In addition to human capital, employability is thought to be influenced by meso-level stakeholders through informing and influencing the career decisions of prospective graduates. This paper adopts Holmes (2013) coverage of meso level stakeholders as the university careers service, faculty or subject specific careers advisors, and graduate recruiters. In addressing the impact of careers advice on undergraduates, Kumar (2007) focuses on opportunities, drawing on the need for an individual to research and explore and to determine the skills they require for their desired job. Dacre Pool and Sewell (2007) expand this to cover career development learning and Bridgstock (2009) emphasises the importance of career building skills.

The university careers service operates at an institutional level whereas faculty or subject careers advisors work at a more technical and tailored level. Each is responsible for managing relationships with industry, showcasing employer opportunities and preparing students for the application process. Managing relationships with graduate recruiters, senior managers, employed graduates, and university alumni facilitates raising awareness of these opportunities to students, often via careers fairs, employer sessions, or employer award sponsorship (Smith, 2012). Careers advisors who may work in partnership with industry, offer application skills, cover letters, curriculum vitae, and interview skills workshops. Ultimately, their purpose is to enhance the employability of undergraduates to prepare students for the transition from education into the labour market (Taylor & Hooley, 2014). The university benefits via increased league table standings, helping to attract future undergraduates, and industry benefits by giving employers who engage with universities advanced access to top talent (Teichler, 2009). This highlights the need for collaboration across stakeholders.

Gatekeepers are individuals with the power to decide whether a graduate applicant is offered a position within an organisation, or rejected and thus are ultimately in charge of providing graduate employment opportunities (Holmes, 2015). In the context of graduate recruitment, these gatekeepers are graduate recruiters, responsible for attracting, hiring, developing, and retaining graduates for their specific organisation. Recruiters also collaborate with the university careers service with the objective of making graduates more employable and accessing talent ahead of competitors. In a qualitative, interview-based study of thirty recruitment managers, Wilton (2014) highlights the often subjective and shifting criteria used in the hiring process. He states that this adds a further dimension of difficulty to applicants, as different gatekeepers and employers apply differing criteria in determining the selection outcome. This provides a further dimension of complexity that is overlooked in career studies. Given that the common function of the careers service, faculty or subject specific careers advisors, and graduate recruiters is to provide careers advice with the purpose of enhancing the employability of graduates, we deduce the following hypothesis from the student perspective:

*H3: Receiving careers advice is positively related to self-perceived employability.*

***Career Ownership (Protean Career)***

Donald, Baruch and Ashleigh (2017) highlight the multitude of pathways available to graduate employability. The transition to work has become increasingly unpredictable (Brooks, 2009; Furlong & Cartmel, 2007) and individualised (Evans, 2007; Heinz, 2009); driven by changes within society, education and the labour market (Tomlinson, 2013). The development of firm-specific skills in exchange for a job for life is being replaced by the need for employees to develop transferable skills as part of life-long learning. This reflects a shift in responsibility for career management from the organisation to the individual, reflecting increased choice compared to previous generations. An individual can either take ownership and forge a protean career or relinquish ownership and align more towards a traditional career (McKeown, 2014).

The Greek God Proteus could change shape at will, likewise, the protean careerist can change one’s self according to one’s own need. Hall (2004; 1996; 1976) offered the protean career construct, drawing on the motive of an individual to follow a particular career path, characterised by values-driven and self-directed career moves. Hall (1996) and Murphy, Lambrechts and Huybrechts (2016, pp.10-11) highlight the *repackaging of an individual’s knowledge, skills, and abilities in line with the changing work environment to remain employable*. A protean career draws on internal values such as a desire to learn (Sullivan & Baruch, 2009) and is associated with adaptability, proactivity and coping with uncertainty (Rodrigues, Guest, & Buydjanovcanin, 2016).

This research adapts seven measures of a protean career to address career ownership. Briscoe and Hall (2006) developed a measure of protean career orientation, subsequently validated by Briscoe, Hall and Frautschy DeMuth (2006). Their study suggests two dimensions of protean career attitudes; self-directed career management and values-driven predispositions. They validated those dimensions using students’ samples from the USA. In parallel, Baruch (2014) developed a unidimensional measure of protean career orientation, which was validated in the USA and globally. This study sought to provide a reliable and concise measure for use by academics and industry practitioners (Baruch, 2014). These measures have indicated support for protean career orientation when applied in empirical research to participants from MBA and Specialist Management Masters degrees (Baruch & Leeming, 2001; Cocchiara, Kwesiga, Bell, & Baruch, 2010), but have not yet been applied to cross discipline, undergraduate populations. The following hypothesis is derived from this discussion:

*H4: Holding a protean career orientation (career ownership) is positively related to self-perceived employability.*

***Moderation: Gender, Degree Subject, and Year of Study***

Gender inequality in higher education, as detailed by Sharpe (1976) and Spender and Sarah (1980) has in one aspect been addressed, in the last forty years, as female participation has risen and indeed overtaken male participation (Arnot, 2002). However, Arnot and Mac an Ghail (2006) are keen to point out that rather than a narrowing of the gender gap, males may in-fact be underperforming in education, driven by a crisis of masculinity. Males continue to earn more than their female peers in the labour market in the immediate years after graduation, despite being outperformed by females during their degree studies (Tomlinson, 2013). Career literature is somewhat divided on the moderation role of gender on self-perceived employability. Rivera (2011), Tomlinson (2012) and Tholen (2014) found males to have greater self-perceived employability than females whereas Sok, Bloome and Tromp, (2013), Morrison (2014) and Jackson and Wilton (2017) reported gender to have no impact. Our study thus starts from a position of awareness that gender may moderate self-perceived employability through the following hypothesis:

*H5: Gender is a moderator for H2, H3, and H4, such that the relationships are stronger for males than for females.*

Career theory literature examining the perception of graduate employability is dominated by business, engineering, and healthcare undergraduates, perhaps due to more predictable career paths or due to ease of access to these students (e.g. Gupta, Hays, Woolley, Kelly & Jacobs, 2014; Jackson & Wilton, 2017; Sheepway, Lincoln & McAllister, 2014). Our study reports across 19 subject areas in two groups; (i) Priority One (P1: Archaeology, Film, Music, Philosophy, Art, Ocean & Earth Sciences, Social Sciences) and Priority Two (P2: Civic & Environmental Sciences, English, History, Biological Sciences, Chemistry, Human Sciences), and (ii) Priority Three (P3: Business, Engineering, Law, Mathematics, Modern Languages). We draw on the work of Gowar (2015) to draw on two independent measures: (i) the Destination of Leavers from Higher Education (DLHE) 2015; and (ii) the Russell Group Rankings (RGR) 2015. P1 subjects have a below average DLHE score and fall in the bottom 50% of RGR. P2 subjects have either a below average DLHE score or are in the bottom 50% of RGR. P3 subjects have an average or above DLHE score and top 50% RGR score. This research adopts P3 subjects as a single group as these are most aligned to existing studies. P1 and P2 subjects are collated into a separate group. We thus form the following hypothesis based on the empirical findings by Gowar (2015) from the DLHE and RGR 2015 ranking tables:

*H6: Degree subject is a moderator for H2, H3, and H4, such that the relationships are stronger for P3 subjects than for P1 and P2 subjects.*

Intuition would suggest that undergraduates perceive themselves as more employable with each year of study. However, two recent empirical studies by Qenani, MacDougall and Sexton (2014) in the USA and Jackson and Wilton (2017) in the UK reported a negative relationship between self-perceived employability and time spent at university. Both studies speculate that as students progress through their university studies, they become more aware of the challenges of employability, particularly in their final year of study when looking for graduate job opportunities. Our research only examined year of study across wave one and wave two for human capital and self-perceived employability measures; we thus form the following hypothesis:

*H7: Year of study is a moderator of human capital and self-perceived employability, such that the mean is higher for penultimate year undergraduates than for final year undergraduates.*

**Insert Figure I About Here**

**Methodology**

***Participants***

We received completed self-reported questionnaires from 1,355 undergraduates, either online or paper-based in their penultimate year of study (2015/2016). This offered an initial response rate of 29.13%, with 1,215 of the 1,355 participants providing a valid email address. These 1,215 participants were subsequently invited to complete a second self-reporting questionnaire in their final year of study (2016/2017). Of these, 387 students completed the second questionnaire, representing a response rate of 31.85%, within the norm for studies in social science (Baruch 1999). The 387 students who participated in both waves represent the participants of this study. The sample comprised of undergraduates from a leading UK University across three subject groupings; P1 (Archaeology, Film, Music, Philosophy, Art, Ocean & Earth Sciences, Social Sciences), P2 (Civic & Environmental Sciences, English, History, Biological Sciences, Chemistry, Human Sciences), and P3 (Business, Engineering, Law, Mathematics, Modern Languages). Table I summarises the participant characteristics, which are representative of the wider student population at the university, both in terms of gender and degree subject.

**Insert Table I About Here**

***Models and Measures***

This research offers two models. Model I addresses H2 and applies moderator H7 (year of study) to compare the mean scores for human capital and employability, drawing on responses from waves one and two. Model II addresses H1-H4, and applies moderators H5 (gender) and H6 (degree subject) to hierarchical regression, drawing on wave two data only. Human capital in Model I adopts a sub-set of twenty-seven of the forty-eight items of human capital in Model II, to offer further contribution beyond the cross-sectional findings of Model II. Dummy variables were gender (male or female) and degree subject (P3 or P1/P2). For gender, the base variable was male, taking the value of 0, with female taking the value of 1. For degree subject the base variable was P3, taking the value of 0, with P1/P2 taking the value of 1. These dummy variables enabled exploration of the moderator effects of gender and degree subject, which were identified in the conceptual model from the literature review. The focus of this paper beyond traditional P3 degree subjects helps to provide an important contribution by representing the wider student perceptions of graduate employability.

Career theory literature calls for more holistic views of employability (Holmes, 2016; Jackson & Wilton, 2017). Our research responds to such calls by addressing human capital, careers advice, and career ownership (protean career). This approach is in keeping with the use of subjective measures successfully used in other studies (Jackson & Wilton, 2017). Participants responded to each item in both models on a seven-point Likert scale, as the researchers felt this offered additional insight over the five-point alternative.

Table II shows the scales, items and examples used in this study.

**Insert Table II About Here**

Data for the 387 participants who completed wave one and wave two was loaded into SPSS 22.0. Table III evidences the descriptive statistics and intercorrelations for Model I, and Table IV evidences exploratory factor analysis for Model I. Human capital has six factors including social capital, cultural capital, psychological capital, scholastic capital, market-value capital, and skills.

**Insert Table III About Here**

**Insert Table IV About Here**

Table V evidences the descriptive statistics and intercorrelations for Model II, and Table VI evidences exploratory factor analysis for Model II. Human capital has six factors including social capital, cultural capital, psychological capital, scholastic capital, market-value capital, and skills. Employability has three factors: human capital, careers advice, and career ownership (protean career).

**Insert Table V About Here**

**Insert Table VI About Here**

Whilst a Cronbach’s  reliability score of 0.7 or above is preferred, we decided to include the scores of 0.66 (Model I, wave one employability) and 0.68 (Model II, wave two career ownership – protean career), partly because they round to 0.7, and partly because in wave two, the same employability items exceeded 0.7. All other scores exceeded 0.7.

Multicollinearity was checked using the collinearity diagnostics in SPSS. Multicollinearity is considered to be present when tolerance values are less than 0.1 and the variance inflation factor exceeds 2.5 (Hair, Black, Babin & Anderson, 2010). Multicollinearity was not present in the regression model as the tolerance and variance inflation factor values were within this acceptable range. First-order linear auto-correlation was checked using the Durbin Watson test in SPSS. The results were within the accepted range of 1.5 and 2.5, indicating that no first-order linear auto-correlation was present (Podsakoff, Mackenzie, Lee & Podsakoff, 2003).

**Results and Discussion**

Our research aims were to: (i) identify the factors of human capital and explore the role of human capital on self-perceived employability, (ii) assess the role of careers advice on self-perceived employability, (iii) explore the impact of career ownership on self-perceived employability, and (iv) consider the moderating influences of gender, degree subject, and year of study on self-perceived employability. We now address these aims by discussing each of the hypotheses in turn, with continued reference to Tables III to VIII. The hierarchical regression model (Table VII) evidences the cumulative variance of human capital, careers advice, and career ownership (protean career) in multiple steps to explain the statistically significant amount of variance in the dependent variable of employability, after accounting for all other variables. The model was then run by filtering data by gender and degree subject to look at moderation (Table VIII).

**Insert Table VII About Here**

**Insert Table VIII About Here**

***H1: Social capital (H1a), cultural capital (H1b), psychological capital (H1c), scholastic capital (H1d), market-value capital (H1e), and skills (H1f) are factors of human capital.***

Our study evidences social capital, cultural capital, psychological capital, scholastic capital, market-value capital, and skills as factors of human capital (Table IV, Model I and Table VI, Model II). Students reported a below neutral mean score (3.39) for social capital. The finding provides additional support to Jackson and Wilton (2017), where student samples in the UK and Australia reported similar findings for mean measures of social capital. We concur that without significant exposure to the mechanisms of the graduate labour market, students may report lower mean scores for social capital, compared to other types of human capital.

Students reported higher mean scores for cultural capital (5.04), psychological capital (5.31), scholastic capital, (5.40), market-value capital (5.40), and skills (6.49). The findings for cultural capital and psychological capital provide further support to work by Luthans and colleagues (2015), Tholen (2014), and Fuller, Heath and Johnston (2011). We acknowledge the interaction of scholastic capital, market-value capital, and skills as factors of employability. For example, Jackson (2015) refers to classroom learning as providing the scaffolding whilst work-integrated learning helps in the development and refinement of skills. One hundred and thirty-four (34.63%) of the participants had undertaken work-integrated learning, of which thirty-four (25.37%) received a job offer as a result. These findings suggest support for the Wilson Review (2012), which called for all undergraduates to be offered the opportunity to participate in work-integrated learning. Furthermore, this research offers an initial response to calls by Edwards (2014) and Wilton (2014) for exploration of work-integrated learning benefits. This research provides evidence for support of the seven most reported skills in career literature; (i) teamwork, (ii) oral communication, (iii) problem solving, (iv) time management, (v) literacy skills, (vi) numeracy skills, and (vii) IT skills. However, we do not exclude the possibility of additional skills having an influence on employability.

***H2: Developing human capital is positively related to self-perceived employability.***

For Model I, human capital received mean scores of 5.50 and 5.66 (Table III), had a positive correlation with employability of 0.25 and 0.28, and a variance on employability of 18.3% and 13.7% for waves one and two.

For Model II, human capital received a mean score of 5.17 (Table V), was evidenced to be a factor of employability (Table VI), and as positively correlated to employability (0.29), careers advice (0.34), and career ownership (0.31). Hierarchical regression analysis showed human capital to have a 15.1% variance on employability (Table VII).

These findings are significant for the UK Government and employers as demonstrated by alignment between policy, perception, and outcome expectations. The UK Government has positioned employability outcomes of graduates as the cornerstone of higher education reform, evidenced by the Dearing Report (1997) and the Wilson Review (2012). For employers, human capital gives graduates the potential to enhance organisational capital, increase competitiveness and increase profits; all crucial for organisational survival in a competitive and globalised labour market (Campbell, Coff & Kryscynski, 2012).

***H3: Receiving careers advice is positively related to self-perceived employability.***

Model II incorporated careers advice, which received a mean score of 4.06 (Table V). This finding is unexpected, given the purpose of the meso level actors is to enhance employability (Holmes, 2013). Furthermore, the careers service and the faculty or subject specific careers advisors at the university have been shortlisted for national and international awards for their contribution to enhancing the employability of students. Graduate recruiters are regularly on campus, particularly between October and March, as part of the university employability programme. However, all three actors achieved neutral descriptive scores. Careers advice was a factor of employability (Table VI), and had a positive correlation with employability (0.17) and career ownership (0.20). Hierarchical regression analysis showed careers advice to have a 0.5% variance on employability (Table VII). Although the t score of 1.50 is low, the finding is still significant. Careers advice is therefore positively related to employability, but currently students appear to view it as ineffective in enhancing their perceived employability.

These finding are of particular significance. Perhaps students are not aware of the exact contributions of these meso level actors to their employability. It is possible that their views will change upon entry into the labour market, or retrospectively having secured employment. Alternatively, the participants in this study may have had less exposure to these actors, suggesting a divide between proactive and non-proactive students. Wilton (2014), offered a similar suggestion based on work-integrated learning and employability, by highlighting that where participation is optional, more engaged students enhance their employability, whilst less engaged students might not. In either case, the findings suggest that meso level actors must support a greater number of students, and provide additional clarity on their contribution to the students. Compulsory sessions as part of the undergraduate degree may offer success; if as suggested students’ motivation to learn is predominantly driven by setting goals, standards and the assessment of learning outcomes (Fry, Ketteridge & Marshall, 2015, p.202). The meso level actors must strive to offer tailored advice rather than a one-size-fits-all approach, and ensure contact with students throughout their studies to offer maximum time for the student to take action to enhance their employability.

***H4: Holding a protean career orientation (career ownership) is positively related to self-perceived employability.***

Model II incorporated career ownership (protean career), which received a mean score of 5.36. Career ownership was a factor of employability (Table VI), and had a positive correlation with employability (0.61). Hierarchical regression analysis showed career ownership (protean career) to have a 22.3% variance on employability (Table VII), with a t score of 13.36 and an f score of 78.15. Overall, human capital, careers advice, and career ownership account for a 37.9% variance of employability.

These findings advance career theory literature through application of protean measures beyond the usual scope of MBA and Specialist Management Masters students (Baruch & Leeming, 2001; Cocchiara *et al*. 2010). Furthermore, reliability analysis evidences support for use of Baruch’s (2014) measure in undergraduate populations. This is encouraging, as although MBA and Specialist Management Masters populations are likely to have considerably more labour market exposure, undergraduates show significant alignment through undergraduate education and the need for developing their employability to facilitate employment outcomes. Furthermore, undergraduate perceptions appear to reflect the wider stakeholder and career theory position that taking ownership of one’s career is an essential component of employability (McKeown, 2014; Rodrigues, Guest, & Buydjanovcanin, 2016). The reported awareness of career ownership appears to evidence engagement from the student population in taking responsibility for developing their own employability.

***H5: Gender is a moderator for H2, H3, and H4, such that the relationships are stronger for males than for females.***

The hierarchical regression model of human capital, careers advice, and career ownership was run based only on male participants from Model II, and then again based only on female participants from Model II (Table VIII). Males perceive human capital as having a greater influence on employability than females (20.5% v 15.4%). For careers advice there is no moderation impact of gender. Career ownership (protean career) for males is considerably higher than for females (28.9% v 18.7%). The cumulative influence of human capital, careers advice, and career ownership of 49.3% for males, is greater than the 34.1% for females. From this perspective, male participants do perceive themselves as more employable than their female counterparts, in keeping with gender moderation outcomes from Rivera (2011), Tomlinson (2012) and Tholen (2014). Our findings highlight and support the complexity of the moderator effects of gender on self-perceived employability. For example, the lack of moderation of gender on careers advice reflected the views of Sok, Bloome and Tromp, (2013), Morrison (2014) and Jackson and Wilton (2017) who evidenced gender to have no moderator impact on employability. We propose more tailored support to encourage females to take ownership of their own careers.

***H6: Degree subject is a moderator for H2, H3, and H4, such that the relationships are stronger for P3 subjects than for P1 and P2 subjects.***

The hierarchical regression model of human capital, careers advice, and career ownership was run based only on P3 participants from Model II, and then again based only on P1 and P2 participants from Model II (Table VIII). P3 students perceive human capital as having a marginally greater influence on employability than P1 and P2 students (16.5% v 14.5%). For careers advice, P3 students perceived a greater influence on employability than P1 and P2 students did (4.7% v -0.3%). Career ownership for P3 students is higher than for P1 and P2 students (24.7% v 19.3%). The cumulative influence of human capital, careers advice, and career ownership of 45.9% for P3 students, is greater than the 33.5% for P1 and P2 students.

The findings indicate that students studying P3 degree subjects (Business, Engineering, Law, Mathematics, Modern Languages) perceive themselves to be more employable than students studying P1 (Archaeology, Film, Music, Philosophy, Art, Ocean & Earth Sciences, Social Sciences), or P2 (Civic & Environmental Sciences, English, History, Biological Sciences, Chemistry, Human Sciences) degree subjects. These perceptions of employability appear to be reflective of league tables of employment outcomes, which evidence P3 students as having greater employment prospects than P1 or P2 students. Our paper contributes by advancing career theory beyond P3 students, and highlighting the need to provide more tailored careers support to P1 and P2 students. In particular, female students studying P1 or P2 degree subjects appear to need the most support, while males studying P3 subjects are likely to have the highest self-perceived employability.

***H7: Year of study is a moderator of human capital and self-perceived employability, such that the mean is higher for penultimate year undergraduates than for final year undergraduates.***

The moderation impact of year of study could only be deduced from the mean scores of human capital and employability in Model I, as these were the only measures to be repeated across both wave one and wave two (Table III). Future studies would benefit from running Model II as a two-wave model in both penultimate and final years of undergraduate study.

For human capital, the mean scores were 5.50 and 5.66, indicating slight positive moderation between penultimate and final year of study. For employability, the mean scores were 4.35 and 4.42, indicating no significant moderation by year of study. These findings are in contrast to Qenani, MacDougall and Sexton (2014) and Jackson and Wilton (2017). Perhaps students feel more employable in terms of their own personal development through each year of study, but less employable as they have greater awareness of the challenges posed by the labour market. Further research is needed to explore and explain these conflicting findings, and we propose that giving different weightings to personal or market factors of employability will determine individual study findings.

***Implications for Stakeholders***

A purpose of this paper is to shine a light on the undergraduate self-perception of graduate employability. This is particularly important, as according to Jackson (2015) and Rospigliosi and colleagues (2014) the student view is not well known. We believe that the contribution of all stakeholders helps to inform successful policy, and thus further exploration of the unique perspective of undergraduates is likely to be beneficial. The findings from this research will help to make undergraduates more employable, in part through implications to other stakeholders.

Governments across the OECD continue to task universities with providing work-ready graduates for deployment within a knowledge-based economy. This is complicated by new work arrangements continuing to manifest in response to an evolving career ecosystem (Baruch, 2015; Baruch *et al*., 2016). As previously discussed, mass migration, globalisation, technological advancement, modernising economies, and the global financial crisis are just some of the factors influencing movement within a career ecosystem (Baruch *et al*., 2016). Our findings can help to inform future policy directions and highlight areas of focus for attention, for example, careers advice. Governments and employers benefit, as understanding the student view strategically influences organisational performance and the wider economy (Wright *et al*. 2014). Universities benefit through higher league table standings, an enhanced reputation, and increased fee revenue through attracting students on a global scale.

Our paper highlights the need for collaboration between the university careers service, faculty or subject specific careers advisors, and graduate recruiters. Although focusing on employability of graduates from either the supply or the demand side, these stakeholders share a mutual interest. The development of market-value capital through work-integrated learning opportunities, a focus on encouraging female and P1 or P2 subject participants to take ownership of their careers, and the importance of raising awareness and provision of tailored careers advice offer initial avenues for collaborative pursuit.

**Conclusions, Limitations, Contributions, and Future Research**

***Conclusions***

Students reported social capital, cultural capital, psychological capital, scholastic capital, market-value capital, and skills, as factors of human capital. Overall, human capital, careers advice, and career ownership (protean career) account for a 37.9% variance of employability, rising to 45.9% for P3 students, and 49.3% for males. Career ownership (protean career) had the greatest variance on overall employability, which was also the case when applying moderators of gender and degree subject. Careers advice had the lowest variance on employability, particularly for females, and students studying P1 and P2 degree subjects. Year of study had minimal impact on human capital or self-perceived employability, although these findings were only deduced from mean scores, and therefore further research is recommended before drawing fixed conclusions. Efforts for enhancing self-perceived employability need to target females and students from P1 and P2 degree subjects.

***Limitations***

Our study shares several limitations with similar career theory publications; (i) data was collected through a single method of questionnaires (Bunce, Baird & Jones, 2016), (ii) participants self-reported their perceptions of the labour market (Benson, Morgan & Filippaios, 2014), (iii) participants came from a single university (Direito, Pereira & Duarte, 2012), and (iv) structural factors of labour market conditions and employability outcomes fall outside the scope of this research (Vanherke *et al*., 2014).

***Contributions***

Our paper improves understanding of the student perception of graduate employability, and extends the research agenda beyond business undergraduates. We have advanced career theory literature of human capital, incorporating factors of social capital, cultural capital, psychological capital, scholastic capital, market-value capital, and skills. Furthermore, we have explored the relationships of human capital, careers advice, and career ownership with self-perceived graduate employability. Final theoretical contribution is offered through the exploration of moderators of gender, degree subject, and year of study.

Graduate employability is a considerably more complex research area than is sometimes portrayed (Tomlinson, 2013). Understanding the student self-perception of graduate employability is essential, to highlight areas of agreement, or potential mismatch with perceptions of other stakeholders. We call for a collaborative and tailored approach to graduate employability, with further focuses on the nuances of gender, degree subject, and year of study. Thus, the practical contribution of this study offers ways to prepare students for the graduate labour market, helping to enhance national competitiveness across the OECD through making undergraduates more employable and providing informed guidance to policy makers.

***Future Research***

Further research should continue to focus on participants from P1 and P2 degree subjects, given their underrepresentation in career theory literature in comparison to students studying P3 degree subjects. This is important in addressing the need for a tailored approach to graduate employability. Pluralism of this research at universities across the OECD may help to build a richer understanding of self-perceived employability. Running all variables as a two-wave study to gather additional data on the effect of year or study, and exploring the effect of ethnicity could be beneficial. Following students into the graduate labour market to see how their perceptions evolve over time offers a further opportunity for research. Finally, progressing from a two-wave study to a Mixed Methods study could be significantly important for stakeholder collaboration and policy recommendation by addressing the single method limitation and developing further understanding of self-perception of employability.

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**Figure I: Conceptual Model of Self-Perceived Employability**

H1e +

H2 +

H4 +

H3 +

H1c +

Psychological Capital

Social Capital

Skills

Cultural Capital

Careers Advice

Career  
Ownership

Human   
Capital

**Self-Perceived Employability**

H1f +

H1a +

H1b +

Scholastic Capital

H1d +

*Moderators*H5 Gender  
H6 Degree Subject  
H7 Year of Study

Market-Value Capital

**Table I: Participant Characteristics**

|  |  |  |
| --- | --- | --- |
| **Characteristics** | **n** | **%** |
| Male | 253 | 65.4 |
| Female | 134 | 34.6 |
| P1 or P2 | 255 | 65.9 |
| P3 | 132 | 34.1 |
| Overall | 387 | 100 |

**Table II: Scales, Items, and Examples**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Scale** | **Items** | **Example Item** |
| *Social Capital* | Steinfield et al. (2008) | *7* | My parents will help me to get a job |
| *Cultural Capital* | Jaeger (2010) | *11* | Participating in extra-curricular activities will increase my employability |
| *Psychological Capital* | Cook et al. (1981) | *5* | I try very hard to improve on my past performances in life |
| *Scholastic Capital* | Baruch et al. (2005) | *9* | Knowledge from my degree course will improve my employability. |
| *Market-Value Capital* | Esson et al. (2013) | *9* | Undertaking a degree work placement will increase my chances of securing graduate employment |
| *Skills* | Jackson and Chapman (2012) | *6* | Oral Communication Skills are important to securing graduate employment |
| Careers Advice | Holmes (2015) | 3 | The university careers service has enhanced my employability |
| Career Ownership | Baruch (2014) | 7 | I take responsibility for my own development |
| Employability | Rothwell and Arnold (2007) | 3 | If I have to find a job, it would be easy |

**Table III: Descriptive Statistics and Intercorrelations (Model I)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Means (Wave 1)** | **Means (Wave 2)** | **Std (Wave 1)** | **Std (Wave 2)** | **1 (Wave 1)** | **1**  **(Wave Two)** | **2  (Wave One)** | **2  (Wave Two)** |
| 1. Human Capital | 5.50 | 5.66 | 0.57 | 0.56 | 0.88 | 0.86 |  |  |
| 1. Employability | 4.35 | 4.42 | 1.10 | 1.11 | 0.25\* | 0.28\* | 0.66 | 0.71 |

**N=387; internal consistency reliability coefficients (alphas) appear on the diagonal. \*p<0.05**

**Table IV: Exploratory Factor Analysis (Model I)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Factor** | **Category** | **Exploratory (Wave One)** | **Exploratory (Wave Two)** |
| Social Capital | Human Capital | 0.48 | 0.41 |
| Cultural Capital | Human Capital | 0.66 | 0.58 |
| Psychological Capital | Human Capital | 0.46 | 0.60 |
| Scholastic Capital | Human Capital | 0.72 | 0.62 |
| Market-Value Capital | Human Capital | 0.79 | 0.54 |
| Skills | Human Capital | 0.97 | 0.61 |

**Table V: Descriptive Statistics and Intercorrelations (Model II)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Means** | **Std** | **1** | **2** | **3** | **4** |
| 1. Human Capital | 5.17 | 0.46 | 0.85 |  |  |  |
| 1. Careers Advice | 4.06 | 1.20 | 0.34\* | 0.84 |  |  |
| 1. Career Ownership | 5.36 | 0.67 | 0.31\* | 0.20\* | 0.68 |  |
| 1. Employability | 4.42 | 1.11 | 0.29\* | 0.17\* | 0.61\* | 0.71 |

**N=387; internal consistency reliability coefficients (alphas) appear on the diagonal. \*p<0.05**

**Table VI: Exploratory Factor Analysis (Model II)**

|  |  |  |
| --- | --- | --- |
| **Factor** | **Category** | **Exploratory** |
| Social Capital | Human Capital | 0.68 |
| Cultural Capital | Human Capital | 0.46 |
| Psychological Capital | Human Capital | 0.51 |
| Scholastic Capital | Human Capital | 0.49 |
| Market-Value Capital | Human Capital | 0.41 |
| Skills | Human Capital | 0.63 |
| Human Capital | Employability | 0.62 |
| Careers Advice | Employability | 0.50 |
| Career Ownership | Employability | 0.46 |

**Table VII: Hierarchical Regression Model of Self-Perceived Employability (H2-H4)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Model** | **Adjusted R2** | **β** | **t** | **f** | **p** |
| Step I: Human Capital (H2) | .151 | .29 | 6.00 | 36.00 | < 0.05 |
| Step II: Careers Advice (H3) | .156 | .08 | 1.50 | 19.18 | < 0.05 |
| Step III: Career Ownership (H4) | .379 | .57 | 13.36 | 78.15 | < 0.05 |

**Table VIII: Hierarchical Regression Model of Self-Perceived Employability (H5-H6)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Model** | **Overall R2** | **Male R2** | **Female R2** | **P3  R2** | **P1 & P2 R2** |
| Step I: Human Capital (H2) | .151 | 0.205 | 0.154 | 0.165 | 0.145 |
| Step II: Careers Advice (H3) | .156 | 0.204 | 0.154 | 0.212 | 0.142 |
| Step III: Career Ownership (H4) | .379 | 0.493 | 0.341 | 0.459 | 0.335 |