Donald, W., Ashleigh, M., & Baruch, Y. (2019). **Sustainability through employability and competitive advantage: Individual and organizational perspectives of graduates' careers**. *Career Development International*,

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**Abstract**

**Purpose** – The purpose of this paper is to conceptually articulate the differing needs of graduates and graduate employers, which can be competing or complementary in nature. Drawing from theoretical frameworks of career ecosystems and the new psychological contract, a set of propositions are presented using three themes: career management, development of talent, and technological change.

**Design/methodology/approach** – A conceptual design, offering a conceptual model through adopting the career ecosystem and new psychological contract as a framework.

**Findings/practical implications** – These propositions offer a new conceptual model, which provides a practical contribution by articulating sustainability of graduates’ careers through employability at the graduate level and competitive advantage at the employer level.

**Originality/value** – The paper offers important contributions to theory by connecting career management and vocational career literature through acknowledging shared constructs of life-long learning and sustainable employability for graduates. These two streams are often developed in parallel, thus this paper helps to bridge the gaps in respective research agendas. This paper therefore has the originality of helping to advance the fields of career theory and sustainable human resource management.

**Keywords** – Sustainable Careers, Graduates, Career Management, Human Resource Management, Career Ecosystems, New Psychological Contract, Conceptual Model.

**Introduction**

To date, career theory literature has failed to articulate fully the differing needs of graduates and graduate employers, which can be competing or complementary in nature. We believe that a failure to address this challenge risks the sustainability of graduates’ careers (Donald, Ashleigh and Baruch, 2018). A key contribution of this paper is therefore the development of propositions and a conceptual model for understanding the needs of micro-level graduates and macro-level graduate employers. The findings offer managerial implications as called for by Cohen (2015) and Gill (2018) in terms of how to make graduates more employable, and how organizations may gain sustainable human resource management (HRM) and competitive advantage in dynamic global labour markets via strategic utilization of human capital (Hatch and Dyer, 2004).

The career management literature (Arthur, Hall and Lawrence, 1989; Gunz and Peiperl, 2007) and the vocational career literature (Patton and McMahon, 2006) tend to develop in parallel, being isolated from each other (Inkson and King, 2011). They do however share certain constructs such as life-long learning and sustainable employability (De Vos and Van der Heijden, 2017a; Koivisto, Vinokur, and Vuori, 2011). Vanhercke et al (2015) argue how the benefits of Higher Education (HE) can be used as an appropriate mechanism for lifelong learning and career sustainability within a knowledge-based economy. Our paper endorses such views and contributes to the integration and association between the career management and vocational career literatures, by looking at the university to work transition of graduates into the labour market.

The core theme of this paper and key point of value is the interconnected relationships between sustainable careers for graduates through employability and sustainable HRM for organizations through competitive advantage adopting the theoretical frameworks of career ecosystems (Baruch, 2013; Baruch 2015; Inansiti and Levien 2004) and the new psychological contract (Baruch and Rousseau, 2019; Rousseau 1995). For the purpose of this paper, we define graduates as having just completed their undergraduate degree who are seeking to enter the graduate labour market. Whilst our focus is primarily on graduates from undergraduate degrees, many of our propositions remain valid to graduates from postgraduate degrees. This is especially relevant in disciplines where a postgraduate degree leads to a similar level of entry into the labour market as an undergraduate degree (e.g. business). Employability is the ability to acquire employment when needed, or, as Rothwell and Arnold (2007) suggested, it is the ability to keep the job one has or to get the job one wants. Employability continues to be of significant relevance to graduates as they transition from HE into the labour market (Donald, Baruch and Ashleigh, 2019; Donald et al., 2018; Fugate, Kinicki and Ashforth, 2004; Stiwne and Alves, 2010), with organizations increasingly expecting individuals to take ownership of their career planning and management, and developing their career resilience (Baruch, 2001; Freudenberg, Cameron and Brimble, 2011). The HE sector can serve as a change agent for sustainability across cultures and contexts, as its role is consistent in developing talent (Stephens, Hernandez, Román, Graham and Scholz, 2008).

At the individual micro-level, sustainability may refer to the notion of employability and life-long learning, including competency development and job crafting as a strategy for career success (Akkermans, Schaufeli, Brenninkmeijer and Blonk, 2013; Akkermans and Tims, 2017; De Vos, De Hauw, and Van der Heijden, 2011). Increasingly, graduates are expected to possess previous work experience, often through undertaking work-integrated learning alongside their degree studies (Guilbert, Bernaud, Gouvernet and Rossier, 2016; Wilton, 2014), and also via internships and placements during their studies (Mandilaras, 2004) and in entering the labour market (Helyer and Lee, 2014). They are also expected to continue to learn in the workplace (Hall, 2004; Trede and McEwen, 2015; Van der Heijden, Gorgievski and Lange, 2016).

At the organizational macro-level, sustainability is expected to lead to gaining and maintaining competitive advantage, for example via talent management, or by developing organizational or firm-specific capital as a strategy for enhancing organizational performance (Campbell, Coff and Kryscynski, 2012; Wright, Coff and Molinterno, 2014). In order to make sense of the developments in career studies and HE literature, we examine the interactions between the micro and macro perspectives within a career ecosystem, offering future directions for sustainable careers and HRM research.

At the national level, the combination of individual and organizational sustainability can help nations to improve their competitive advantage within the global labour market (Smith 1950, origin 1776). Investment in national education, in particular the HE, may lift national competitiveness – because of having a stronger and more sustainable business environment. From a resource-based view, this can be achieved through innovation (Porter, 1990), drawing on organizational capabilities, competencies, and organizational knowledge and learning (Grant 1996). Furthermore, the utilization of human factors leads to competitive advantage of nations through the mass migration of talent (e.g. brain-drain, brain-gain, and brain-circulation), driven by globalization and technological advancement (Baruch, Altman and Tung, 2016).

The relevance of sustainability is a relatively recent concept for employees within organizations (Pfeffer, 2010), and is reflected by employability, work motivation, and health (Semeijn, Van Dam, Van Vuuren and Van der Heijden, 2015). Although some research exists relating to advances in the business environment emphasizing the relevance of building a sustainable workforce (Ybema, Van Vuuren and Van Dam, 2017), there is limited literature relating to sustainability, in how new graduates entering the global workforce can gain competitive advantage for themselves and the organizations employing them.

With the aim of filling this gap and drawing together career management and vocational career literature, we offer three inquiry questions:

1. What factors are important from a graduate perspective when striving for a sustainable competitive advantage within the labour market?

2. What factors are important from a graduate employer perspective when striving for a sustainable competitive advantage?

3. How can graduates and graduate employers use a push-pull framework to overcome some of their differences in order to optimize their respective needs?

We also develop a set of propositions to better conceptualise and advance our collective understanding of sustainable careers and corporate performance. Career ecosystems (Baruch, 2015; Inansiti and Levien, 2004) and the new psychological contract (Baruch and Hind, 1999; Baruch and Rousseau, 2019; Rousseau, 1995) offer a fresh perspective of employability as a competitive advantage and have the potential to represent the true value of employability for both individuals and organizations. The new psychological contract (Rousseau, 1995) is different from the traditional psychological contract (Schein, 1978), where the individual tended to be passive, and the organization was in full charge of career planning and management. The new psychological contract offers a system where the individual takes responsibility for their future career, where commitment and loyalty are bounded, and career trajectory can change in line with individual needs and values (Herriot and Pemberton, 1995). We discuss both theories and the push-pull framework in the theoretical framework section.

This paper focuses on the university to work transition. Therefore, discussions around access to HE or the funding of HE have been excluded (see Donald et al., 2018 for coverage). We also only specifically explore three themes (career management, development of talent, and technological change), however, this is not an exhaustive list, and future research could expand on our conceptual model from this base set of propositions. Furthermore, for the purpose of this paper we focus on graduates as a collective to develop propositions and a conceptual model at a holistic view. However, we acknowledge that graduates are not a homogeneous group and a range of factors are likely to influence the lived experience (e.g. country of study, institution of study, degree programme, degree classification, age, gender, ethnic background, sexual orientation, and disability). Future research can build on our conceptual findings to investigate these aspects at a more granular level.

**Literature Review**

*Theoretical Framework*

This conceptual paper adopts two key theoretical frameworks; career ecosystems (Baruch, 2013; 2015; Inansiti and Levien, 2004) and the new psychological contract (Baruch and Rousseau, 2019; Rousseau, 1995) for exploring the university to work transition and the sustainability of graduates’ careers through employability and competitive advantage.

With specific relevance to the planning and management of careers, Baruch conceptualized contemporary labour markets as ‘*ecosystems*’ (2013, p.197). An ecosystemcomprises of multiple relationships across the actors, as suggested by Muller (2000) and can be applied within the study of careers and labour markets (Baruch, 2015). The theory of ecosystems was presented to the field of business management by Iansiti and Levien (2004). They defined an ecosystem as “*a system that contains a large number of loosely coupled (interconnected) actors who depend on each other to ensure the overall effectiveness of the system*” (p.5). A business ecosystem as a whole was defined in a complementary manner as “*an economic community supported by a foundation of interacting organizations and individuals – the organisms of the business world*” (Moore, 1996, p.9). One characteristic of a career ecosystem is having multiple entities - actors, interconnectedness, interactions and interdependencies. In the case of graduates entering the labour market, the principal actors are individuals – the graduates, institutions – both their universities (past) and employers (future); and societal entities, like governments and other national agencies. The graduates communicate, act, react, and, in the context of careers, make career decisions such as look for work, start an entrepreneurial activity, continue formal studies, to name a few options. Institutions are the university that continue relationship with the graduates (e.g. via alumni network), but mostly the employers – that plan and manage the careers of their employees, in particular their new talent. At a national level, governments, educational and employment agencies set and apply procedures for the system (e.g. how students’ loans will be paid back) with the vision to develop human capital at the national level. As in any career ecosystem, the actors are interconnectedvia complex structures, for example both legal and psychological contracts (Rousseau, 1996). Similar to employment, progress, unemployment or taking a gap year, career outcomes like are the result of interactions between the actors, where the graduates offer skills, knowledge and competence to their employers. Organizations need to develop policies and strategies to lure and retain this talent. There is a clear interdependency across the actors: graduates, academic institutions and nations.

New work arrangements continue to develop in response to an evolving career ecosystem. Mass migration, globalization, 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; Baruch, Szücs and Gunz, 2015). A challenge of career ecosystems is to understand how individuals and organizations may each benefit in terms of sustainability. For sustainability of the career ecosystem, individuals and organizations need to work collaboratively and recognize their interrelated dependencies (Nagarajan and Edwards, 2015; Tams and Arthur, 2011). However, the trajectory to achieving interdependence within a career ecosystem is not yet clear – an area we hope to advance with our propositions and conceptual model.

The second element of our theoretical framework is the new psychological contract. Organizations historically adopted a predictable, stable and predefined structure, offering an authority based hierarchical career system (Wilensky, 1961). In exchange for loyalty, the organization offered job security, often through the provision of a job for life, as part of an unwritten and unspoken agreement termed a psychological contract (Schein, 1980). The general view since the end of the 20th Century is that a major shift has taken place about the nature of the psychological contract (Baruch and Hind, 1999; Rousseau, 1995) and its impact, for example, engagement (Soares and Mosquera, 2019) or subjective wellbeing (Li, 2018). A new psychological contract sees stability, loyalty, and mutual commitment replaced with dynamism, breach of the old contract, and competence based relationships. This view was captured by Rousseau (1995, p.9) who defined the psychological contract as

*Individual beliefs, shaped by the organization, regarding terms of an exchange agreement between individuals and their organizations.*

Yet, this definition refers only to the employee side, whereas ‘contract’ means that there are two sides. Baruch and Hind (1999, p.299) define the new psychological contract as

*The unspoken promise, not present in the small print of the employment contract, of what the employer gives, and what employees give in return.*

A further dimension of this paper used to address Inquiry Question 3 is the application of the push-pull framework to sustainable graduate careers, underpinned by the interconnected and interdependent nature of a career ecosystem and the role of the new psychological contract in looking at sustainable ways to balance graduates and graduate employers interests. Ernst Ravenstein coined the term push-pull theory in the 19th Century in relation to Ravenstein’s Law of Migration, which continues to be used by economists and mathematicians to study migrations patterns (e.g. Dorigo and Tobler, 1983). The concept was later applied to supply chain and logistics management (e.g. Zmud, 1984), where it gained further prominence. From the perspective of graduates, push factors are deterrents related to joining or remaining with an employer (e.g. poor work-life balance – see Perrigino, Dunford, and Wilson, 2018), whilst pull factors are incentives for a graduate to join or remain with an employer (e.g. above market rate compensation package).

The next section focuses on development of propositions through exploring three themes: career management, development of talent, and employment opportunities. For each theme we explore factors from a graduate perspective (Inquiry Question 1), graduate employer perspective (Inquiry Question 2), and how graduates and graduate employers can use a push-pull framework to overcome some of their differences in order to optimize their respective needs (Inquiry Question 3). Career ecosystems and the new psychological contract therefore offer an excellent theoretical framework for this purpose by capturing the shift from traditional to contemporary careers.

**Conceptual Themes**

*Theme I: Career Management*

Using the metaphor based on the Greek God Proteus who could change shape at will, Hall (1996; 2004) introduced the protean career, suggesting that the protean careerist can change him or herself according to their own drive and in line with career needs. The protean career is drawing on the motive of an individual to follow a particular career path, characterised by values-driven and self-directed career moves. A protean career draws on internal values such as a desire to learn (Sullivan and Baruch, 2009) and is associated with adaptability, proactivity and coping with uncertainty (Porter, Woo and Tak, 2016; Rodrigues, Guest and Budjanovcanin, 2016). Furthermore, as the changing nature of careers evolves (Feldman, 1999) a need arises for the individual to adapt to this changing environment (Hall, 2004).

At the personal level, holding a protean career orientation (Gubler, Arnold, and Coombs, 2014; Hall, 2004; 1996) and being proactive (Seibert, Kraimer and Crant, 2001) are factors that positively influence employability and career sustainability (Donald, Baruch and Ashleigh, 2017). For example, a study by Forrier, Verbruggen and De Cuyper (2015) found that graduates in the labour market perceived that movement between organizations could enhance their career. A further study of undergraduates in the UK by Donald et al. (2019) found career ownership to account for 23% variance on perceived employability – highlighting that perceptions of career ownership are in fact held prior to entry to the graduate labour market.

*Proposition 1 (Career Ownership): Graduates who take ownership of their career are more likely to maximise their employability and their career sustainability.*

Data published by the Association of Graduate Recruiters (2018) indicates that 16% of graduates leave an employer within the first two years, up from 9% in 2017 and that 46% of the graduate workforce leaves an employer within five years, up from 39% in 2017. To highlight this turnover, the latest published statistics show that an average USA employee changes employment every four years and seven months (Bureau of Labour Statistics, 2014), and in the UK every six years (Job Satisfaction Survey, 2014). These figures capture the uncertainty and complexity of graduate employability within a dynamic labour market, and the need for graduates to achieve career satisfaction to maximise their employability as part of a sustainable career (Bennet et al., 2015; Brooks, 2009).

A large array of factors are identified in career theory literature as promoting career satisfaction: salary advancement due to rising levels of student debt (Esson and Ertle, 2016), career progression (Dries, Pepermans and De Kerpfel, 2008), job security (De Cuyper, Bernhard-Ottel, Bernston, Witte and Alarco, 2008), meaningful work (Okay-Somerville and Scholarios, 2013), engaging in worthwhile relationships and networks within the organization (Coates, 2017), mentoring (Jackson, 2015), employee benefits (De Cuyper and Witte, 2011), and work-life balance (Burke, Page and Cooper, 2015). Work-life balance, a factor that is considered positive that improves culture and sustainability within organization, might also backlash when poorly implemented and under certain organizational practices (Perrigino et al., 2018). Perrigino and colleagues indicated how ideas and practices that are supposed to lead to positive outcomes can have a dark-side to them that put sustainability under risk, as suggested by Baruch and Vardi (2016).

*Proposition 2 (Career Satisfaction): Graduates who achieve career satisfaction are more likely to maximise their employability and their career sustainability.*

Attraction and retention of future graduates is important for organizations and their performance (Adams, Pryor, and Adams, 1994). Graduate employers often face a war-for-talent as they battle with competitors to secure talented graduates (Bills, 2003). Attracting these graduates is essential for the competitive advantage and financial performance of an organization (Brown and Hesketh, 2004). Organizations must thus use the aforementioned factors of career satisfaction for graduates as pull factors. Failure to provide these pull factors is likely to lead to reduced career satisfaction and acts as push factors to graduates, whereby prospective employees opt to take up offers of employment from competitors who appear more attractive by offering stronger pull factors.

However, employers need to attract talented graduates who align to the needs of their organization. This can often be a balancing act. For example, a graduate with a first class degree from a top ranking university may appear to be classified as a talented graduate, especially when compared to another graduate applicant from a lower ranked university with a lower degree classification. However, Hinchliffe and Jolly (2011) found that the best-performing graduates in academic terms were not necessarily the best performing talent in the workplace environment and that talent pipelines from universities do not always fulfil industry expectation. It is therefore crucial to look at candidates in their entirety, not just at academic achievement in isolation. Furthermore, examining and establishing the motivation of the candidate for applying to the organization is crucial during the attraction and hiring process. Offering internship opportunities, for example, gives organizations earlier and prolonged access to the applicant talent pool and enables the employer to run an extended interview process to test motivation, with the best performers offered a contract for a graduate level job and the weaker performers discarded without further repercussion (Wilton, 2012). The more motivated candidates are likely to show greater commitment to the organization, boosting competitive advantage and financial performance through productivity and loyalty/retention (Adams et al. 1994; Brown and Hesketh, 2004).

*Proposition 3 (Attraction of Talent): Graduate employers who attract talented graduates aligned to the needs of their organization are more likely to maximise their competitive advantage and financial performance.*

Talent retention is an important challenge for organizations for maximizing competitive advantage and financial performance (Brown and Hesketh, 2004; Tholen, 2014). Aspects of talent retention actually begin in the attraction and hiring phase where, as previously discussed, organizations should check for motivation in the applicant to work in the industry and for the specific organization. This view is supported by Kumari and Saini (2018) and Dries, Forrier, De Vos and Pepermans (2014) who argue that employers should communicate clearly and look to manage expectations as a mechanism for employees’ attraction and retention.

Following completion of the hiring phase, career satisfaction is a key determinant of length of time spent with an employer. Employees in different sectors may however have different notions of the concept of career satisfaction. As an example, Baruch and Reis (2016) cited poor salary advancement and lack of career progression as the top reasons for leaving an employer. In contrast, Van Harten, Knies, and Leisink (2016) found that healthcare workers actually valued work-life balance over salary advancement, but their findings did show consensus of the need for career progression linked to challenging roles and managerial support. Organizations that correctly identify the relevant aspects of career satisfaction for their specific employees are often rewarded by employees through organizational commitment and enhanced organizational performance (De Cuyper and Witte, 2011).

*Proposition 4 (Retention of Talent): Graduate employers who retain their graduate hires are more likely to maximise their competitive advantage and financial performance.*

*Theme II: Development of Talent*

Human capital theory emerged in neoclassical economic literature, becoming prominent through Becker (1964) who suggested that an organization’s investment in human capital could create value for it. This labour economist position was further adopted by Mincer (1958), Schultz (1971), and Bowles and Gintis (1975). These scholars observed the value of human capital in the marketplace through increased profitability of a firm; subsequently profiting educated workers through increased wages. For the purpose of this paper, we define human capital as per Donald et al. (2019), as an accumulation of five types of capital (social capital, cultural capital, scholastic capital, psychological capital, and market-value capital). We now justify the inclusion of these types of capital.

Graduates initially develop human capital from their life experiences prior to entry into the labour market. Useem and Karabel (1986) contextualized human capital within the education arena. They stated that an educational institution could confer three distinct types of human capital onto its students: social capital, cultural capital and scholastic capital. Baruch, Bell and Gray (2005) extended this framework to include inner-value capital and market-value capital, through looking at the contribution of HE qualifications. Donald and colleagues (2019) further developed this framework to incorporate inner-value capital and the need for achievement (Cook, Hepworth, Wall and Warr, 1981) as part of psychological capital.

Graduate’s capacity to continue to self-learn is crucial, both in terms of developing human capital and in terms of signalling theory, relates to the employers’ perception of the graduate (Rospigliosi, Greener, Bourner and Sheehan, 2014). Furthermore, graduates need to continue to build human capital throughout their careers. At the individual actor level, human capital is an empirically validated determinant of employability for graduates entering the labour market and throughout their careers (Donald et al., 2019). This captures the significance of life-long learning to employability outcomes of graduates.

*Proposition 5 (Human Capital): Graduates who develop their human capital as part of a commitment to life-long learning are more likely to maximise their employability and their career sustainability.*

Career theory research at the end of the 20th century and the early part of the 21st century focused heavily on the role of transferable skills in determining employability (e.g. Knight and Yorke, 2002). Transferable skills encompass abilities that an individual can possess and apply to a variety of different contexts. A recent review of career theory literature by Donald and colleagues (2019) identified seven regularly cited transferable skills: oral communication, teamwork, IT skills, problem solving, time management, literacy skills, and numeracy skills. In the last twenty-five years, scholars have recognised the need for a more holistic approach (Holmes, 2017), often characterised by a focus on conceptual models of graduate employability (e.g. Donald et al., 2019). However, transferable skills remain a key component of employability and career sustainability of graduates, which can be taken with the individual from job to job, and developed and refined as part of a commitment to life-long learning (Jackson and Chapman, 2012; Wilton, 2014; 2012).

Therefore, for the purpose of clarity, we add a further proposition that specifically addresses transferable skills, which are critical for employers (Bennett, 2002). This enables a clearer comparison of human capital versus organizational capital, and transferable skills versus job specific skills in relation to the development of talent within a career ecosystem.

*Proposition 6 (Transferable Skills): Graduates who develop their transferable skills as part of a commitment to life-long learning are more likely to maximise their employability and their career sustainability.*

Prescott and Visscher (1980) coined the term organizational capital: the way in which an organization accumulates information and knowledge as critical assets and subsequently provides a competitive advantage. This, in turn, contributes to organizational performance (Wright et al., 2014) via appropriate utilization of HRM practices (Jiang, Lepak, Hu and Baer, 2012; Tzabbar, Tzafrir and Baruch, 2017). Graduates have the potential to enhance organizational capital, increase competitiveness and increase profits; all crucial for organizational survival in a competitive, globalized labour market (Campbell et al., 2012).

However, organizations face a dilemma, which again highlights the relevance of push/pull theory, career ecosystems and the new psychological contract. On one hand, extant strategy theory recognizes the importance to an organization of developing the human capital of its staff, in this case, the graduates (Coff, 1997; Hall, 1993). Conversely, developing generic human capital and transferable skills makes the graduates more attractive to competitors, as it is often cheaper for competitors to acquire talent from other competitors, rather than to invest in training talent. Organizations may opt to develop organizational capital and firm-specific skills, limiting the mobility of their employees (Campbell et al., 2012). Organizational strategies for limiting the mobility of graduates are important to address the uncertainty and complexity of graduate employability, and employee retention challenges (Bennet et al., 2015; Brooks, 2009; Van Buren, 2013). Furthermore, influencing career planning and management of graduates to remain with an organization offers organizational capital and sustainable competitive advantage (Campbell et al., 2012; Prescott and Visscher, 1980).

Employers, therefore, desire universities to produce graduates who are already in possession of adequate human capital; termed work-ready (Oliver, Freeman, Young, Yu and Verma, 2014), or work-ready plus graduates (Scott, 2014). Nevertheless, organizations may need to invest in human capital through increased remuneration, employee benefits, and training (Becker, 1964; Tymon, 2013). We thus argue that organizations who develop their organizational capital and focus on providing job-specific skills to their graduate hires are more likely to maximise their competitive advantage (through strategic success and sustainable HRM) and financial performance (through retention of talent and future profitability).

*Proposition 7: (Organizational Capital): Graduate employers who develop their organizational capital are more likely to maximise their competitive advantage and financial performance.*

*Proposition 8: (Job Specific Skills): Graduate employers who encourage their graduate employees to develop job specific skills are more likely to maximise their competitive advantage and financial performance.*

*Theme III: Technological Change*

Technology has a crucial role to play in maximizing career satisfaction and career sustainability through promoting employee wellbeing and work-life balance (Burke et al., 2015). Graduates increasingly seek flexible work arrangements from their employer, either in working hours, or in working location (Baruch et al., 2016). Examples of potential benefits to graduates include (i) avoiding commuting in rush hour, (ii) balancing employment and care needs of family, and (iii) participating in other non-work activities, e.g. sports, music, or charity commitments. The push/pull framework helps to understand why employers should provide such benefits to improve the general health and well-being of their graduate employees.

In the UK, latest figures for the period 2013/2014 to 2015/2016 from Health and Safety Executive (2018) estimate that 528,000 workers in Great Britain suffered from a new case of work-related illness at a cost of £9.3 billion. This figure rises to £14.1 billion when adding the cost of workplace injury, with 30.4 million working days lost, which appears consistent with other countries across Europe. The majority of these costs fall on the individual (£8 billion), but employers (£2.8 billion), and the Government (£3.3 billion) are also significantly impacted. Career ecosystems and the new psychological contract are particularly relevant. Graduates who have access to flexible working conditions are more likely to maximise their personal wellbeing and their career sustainability. In return, graduate employers who invest and use technology to improve employee health and wellbeing are likely to be compensated via reduced staff illness, increased productivity, and staff retention (Bennet et al., 2015).

*Proposition 9 (Flexible Working): Graduates who have access to flexible working conditions are more likely to maximise their personal wellbeing and their career sustainability.*

Technological advances in computing power, data mining, and algorithms enable organizations to process more data at a faster pace. Automation and artificial intelligence (AI) can help organizations to make predictions, aid decision making, improve accuracy and reporting of operations, and help to achieve scalability. Technology therefore enables businesses to learn from the past and forecast the future (Ranjan, 2009) and graduate employers who embrace automation and AI are more likely to maximise their competitive advantage and financial performance, in particular in the service industry. However, it is important that organizations ensure that application of their technological strategy aligns with their business vision and capabilities (Venkatraman, 1994).

Automation and AI is often associated with reduced employment opportunities in low skill, low wage work. However, Chui, Manyika and Miremadi (2015) claim that skill or wage level do not necessarily determine employment risk. For example, they found that 20% of CEO roles can in-fact be automated (e.g. analyzing reports and data to inform operational decisions, preparing staff assignments, and reviewing status report). Instead, they call on employees and employers to shift their thinking and move away from viewing automation at the job level, and instead focus on automation in terms of work activities.

Organizations should thus look to re-structure their operations in such a way that maximises the benefits of automation and AI to boost competitive advantage and financial performance. Simultaneously, organizations must acknowledge their operation within a career ecosystem and their responsibilities under the new psychological contract. For example, organizations may consider investing some of the profits of automation and AI into wellbeing and work-life balance initiatives (e.g. flexible working), as a mechanism for career satisfaction and increased productivity in the workforce. An additional strategy could be to offer career advancement opportunities as part of any organizational restructure linked to automation and AI, and to re-define job roles to replace mundane and repetitive tasks with more complex tasks requiring greater levels of responsibility and input. Through such an approach, organizations can embrace automation and AI and maximise their competitive advantage and financial performance, without alienating their workforce.

*Proposition 10: (Automation and AI): Graduate employers who embrace automation and artificial intelligence are more likely to maximise their competitive advantage and financial performance.*

**Conceptual Model**

Figure I offers a structured overview of this paper by capturing the three themes and the ten propositions discussed so far in relation to a desired state of sustainable careers. The figure also helps to capture the framework of career ecosystems and the new psychological contract by evidencing the interconnected and interdependent aspects of graduates and graduate employers. Whilst Figure I is most likely to be of interest to practitioners, Figure II captures graduates and graduate employers as separate actors and offers a deeper and more complex view. This conceptual model is more likely to be of interest to academics and captures the interconnectedness of different aspects of sustainable careers for each actor. Together, Figures I and II offer a platform for practical application and/or empirical testing, helping to maximise the potential contributions of this paper to a wider audience.

*---------- Insert Figure I and Figure II About here ----------*

**Conclusions: Inquiry Questions 1-3**

*Inquiry Question 1: What factors are important from a graduate perspective when striving for a sustainable competitive advantage within the labour market?*

At the individual level, employability and life-long learning are the new proxy for job security and career sustainability within a volatile and dynamic labour market (De Vos and Van der Heijden, 2017a; Koivisto, Vinokur, and Vuori, 2011). Graduates need to take ownership of their careers and strive for career satisfaction as part of their career management (Baruch, 2001; Donald et al., 2019; Freudenberg et al., 2011). They should also look to maximise their human capital and transferable skills set in relation to development of talent (Becker, 1964; Baruch et al., 2005; Donald et al., 2019; Useem and Karabel, 1986). Finally, graduates want to share in the benefits that technological change brings to organizations. For example, the option for flexible working arrangements, a 4-day working week, or other strategies which maximise employee wellbeing and productivity (Baruch et al., 2016; Bennet et al., 2015; Burke et al., 2015). We develop these factors further in response to Inquiry Question 3 by drawing on push/pull factors, career ecosystems, and the new psychological contract.

*Inquiry Question 2: What factors are important from a graduate employer perspective when striving for a sustainable competitive advantage?*

At the organizational level, competitive advantage and financial performance are the new proxy for career sustainability (Brown and Hesketh, 2004; Tholen, 2014). Employers need to attract and retain talented graduates as part of a career management approach (Baruch and Reis, 2016; Dries et al., 2014; Markoulli, Lee, Byington and Felps, 2017). They should also look to maximise their organizational capital and focus on providing graduates with a job-specific skills set in relation to development of talent (Campbell et al., 2012; Prescott and Visscher, 1980; Tzabbar et al., 2017; Wright et al., 2017). Finally, organizations need to utilize automation and AI in a manner that aligns with their business vision and capabilities (Venkatraman, 1994). We develop and articulated these factors further by looking at the interdependency and interconnectedness of graduates and graduate employers in response to Inquiry Question 3 by drawing on push/pull factors, career ecosystems, and the new psychological contract.

*Inquiry Question 3: How can graduates and graduate employers use a push-pull framework to overcome some of their differences in order to optimize their respective needs?*

A sustainable career system should be seen as a dynamic process, where all parties involved endeavour to create an enduring system which is sustainable over time, giving new opportunities for employees to continuously regenerate and learn, through flexibility and balance (De Vos and Van der Heijden, 2017b; Newman 2011). For sustainability of the career ecosystem, individuals and organizations therefore need to work collaboratively within a multiple stakeholder constellation and recognize their interrelated dependencies (Baruch, 2015; Nagarajan and Edwards, 2015; Tams and Arthur, 2011). Each actor must be aware of the needs of other actor(s), which can be conflicting or complementing, particularly in terms of the evolvement of the traditional psychological contract (Schein, 1980) into the new one (Rousseau, 1995). For example, graduates want to optimize their employability and life-long learning whilst employers want to optimize competitive advantage and financial performance. Graduates want career ownership and satisfaction, flexible work arrangements, and to develop human capital and transferable skills (Inquiry Question 1). In contrast, employers want to attract and retain graduates, to gain benefits through use of automation and AI, and to develop job-specific skills and organizational capital (Inquiry Question 2). This evolving landscape of careers raises issues for individuals and organizations, which need to be acknowledged and addressed via the push/pull framework to facilitate sustainability by optimizing the respective needs of all stakeholders.

In the short-term, providing pull factors and minimizing the opposing push factors to graduates requires investment, which can appear to be conflicting with the drive for financial performance. Associated costs include ensuring career satisfaction, facilitating flexible work arrangements, providing employee benefits related to work-life balance, capital and skill development, and sharing the benefits that automation and AI offer to the organization (Baruch et al., 2016; Bennet et al., 2015; Burke et al., 2015). Furthermore, organizations may need to reduce profit margins to absorb the costs of graduates in the short-term during lean times, instead of making them redundant and effectively losing their talent to competitors. This approach is likely to optimize the needs of the graduate employees in a sustainable way – albeit with short-term impacts to profitability of the organization. However, these short-term impacts may offer long-term optimization and sustainability for the organization through increased competitive advantage and long-term financial performance (Brown and Hesketh, 2004; Tholen, 2014).

Organizations generate competitive advantage by investing in their employees – their most important asset (Pfeffer, 1994), and as a result improve their ability to either initiate changes or to react to environmental changes. With a stronger portfolio of competent graduate employees and the right management of them via appropriate and sustainable system of HRM practices, organizations achieve better performance (Jiang et al., 2012; Tzabbar et al., 2017). For example, the organization may appear a more attractive place for prospective graduates to apply to, aiding in attraction of talent. The graduates will feel they have ownership of their career decisions to apply and subsequently are likely to be retained for longer – particularly if areas of career satisfaction and flexible work arrangements are supported. Graduates are typically cultivated as high-potential and future talent of organizations in both a global context (Scullion and Collings, 2011) and from an employability perspective (Nilsson and Ellström, 2012), and it is better to cultivate them within the organization rather than head-hunting talent that may not fit in a different culture and system (Groysberg, 2010). Encouraging graduates to stay with the organization also offers a greater representation of opinions and perspectives (Clarke, 2013) and increases competitive advantage by reducing the opportunity for competitors to steal talent from the organization.

Subsequently, organizations may benefit from modifying cultures and work environments based on values and work preferences to improve satisfaction, commitment, and performance at the employee level (Westerman and Vanka, 2005; Westerman and Yamamura, 2007). Graduates may also be happier to focus their efforts on developing job-specific skills and boosting organizational capital. Furthermore, better work-life balance may facilitate graduate employees to develop their human capital and transferable skills through participation in extra-curricular activities or charity work in their own time.

**Theoretical and Practical Contribution**

*Theoretical Contribution*

Although some research exists relating to advances in the business environment emphasizing the relevance of building a sustainable work force (e.g. Ybema et al., 2017), there is limited literature relating to sustainability, in how new graduates entering the global workforce can gain competitive advantage for themselves and their organizations. The propositions (Figure I), conceptual model (Figure II), and the three inquiry questions help to articulate the differing needs of graduates and graduate employers. This address the aforementioned gap in the literature by better conceptualising our understanding of sustainable careers and corporate performance. Furthermore, by applying a framework of career ecosystems (Baruch, 2013; 2015; Inansiti and Levien, 2004) and the new psychological contract (Baruch and Rousseau 2019; Baruch and Hind, 1999; Rousseau, 1995), and drawing on push-pull theory (Inquiry Question 3), we help to highlight the interconnected and interdependent relationships between graduates and graduate employers.

A further contribution comes from connecting career management literature (Arthur et al., 1989; Gunz and Peiperl, 2007) and vocational career literature (Patton and McMahon, 2016) by acknowledging shared constructs of life-long learning and sustainable employability (Ghoshal, Bartlett and Moran, 1999). These two streams are often developed in parallel (Inkson and King, 2011), thus this paper helps to bridge the respective research agendas. We also respond to calls by Markoulli et al. (2017) and Van der Heijden and De Vos (2015) to advance understanding of sustainability in the wider HRM field.

Finally, we lay the foundations for placing employability as a critical factor for career management across the individual level (graduates), the organizational level (graduate employers), and at the national level (the graduate labour market). At the individual level, we explain why employability is the new proxy for job security in a volatile labour market. At the organizational level, we address the meaning of investment in the human asset, human capital, and talent management. Finally, at the national level, we bridge sustainability across the individual and organizational level by evidencing the outcome of national competitive through utilization of human factors.

*Practical Contribution*

This paper offers managerial implications as called for by Cohen (2015) and Gill (2018) in terms of how graduates and graduate employers can each realize the benefits of sustainable graduate careers. Graduates strive for employability, life-long learning, and financial and personal wellbeing, whilst graduate employers strive for competitive advantage and financial and social performance. We articulate how this can be achieved through strategic utilization of human capital (Hatch and Dyer, 2004) within the framework of career ecosystems and the new psychological contract (Baruch, 2015; Baruch and Rousseau, 2019; Inansiti and Levien, 2004; Rousseau, 1995).

Graduates need to be aware of a lack of job security, given that organizations can no longer commit to a job-for-life promise, and remaining at a single organization may not be the desired option for life-long learning and realization of potential within the labour market (De Cuyper et al., 2008; Van der Heijden et al., 2016). Taking ownership of their own career is essential to ensure career sustainability within a competitive and globalized graduate labour market, in recognition of the need for collaboration with organizations operating as loosely coupled and dependent actors within a career ecosystem. Graduates need to feel the benefits of technological change through flexible working conditions and work-life balance, as well as focusing on job crafting while in the labour market to increase career sustainability and job satisfaction (Akkermans et al. 2013; Akkermans and Tims, 2017; De Vos et al., 2011). Furthermore, the development of human capital through the process of life-long learning begins at school, through university, and must continue through the graduates’ participation in the labour market (Donald et al., 2019; Trede and McEwen, 2015; Van der Heijden et al., 2016).

At the organizational level, sustainability may refer to gaining and maintaining competitive advantage, for example via talent management, and developing organizational or firm-specific capital as a strategy for enhancing organizational performance (Campbell et al., 2012; Wright et al., 2014). This highlights the importance of strategic HRM relating to the attraction, hiring, development, and retention of graduate talent. From a development and retention perspective, organizations must show an awareness of operating within a career ecosystem by working collaboratively with graduates. Organizations can no longer expect previous levels of loyalty from their employees, and need to guard themselves against increased career mobility of their employees (Baruch et al., 2016; Van Buren, 2013). Organizations should look to maximise pull factors and reduce push factors to graduates by investing in the provision of salary advancement, career progression, mentoring, work-life balance, and employee benefits (Baruch and Reis, 2016; Jackson, 2015; Tymon, 2013). Furthermore, organizations may benefit from modifying cultures and work environments based on values and work preferences to determine satisfaction, commitment, and performance at the employee level (Westerman and Vanka, 2005; Westerman and Yamamura, 2007).

In return, organizations gain sustainable HRM, and in the wider context, sustainable business performance, as these derive from people impact, and are concerned with employee satisfaction, commitment, and performance (De Cuyper and Witte, 2011). The prioritization of long-term strategic objectives over short-term profit margins will help to maximise organizational effectiveness and sustainable profitability – highlighting the importance of the new psychological contract, career ecosystems, and the associated push/pull factors.

**Future Research**

Future work may (i) build on the propositions we offered, (ii) continue to examine the interplay between actors within a career ecosystem, (iii) identify further collaborative strategies whereby both employers and employees can gain from such relationships, (iv) further explore at the granular level a range of factors that are likely to impact on the lived experience of graduates (e.g. country of study, institution of study, degree programme, degree classification, age, gender, ethnic background, sexual orientation, and disability), and (v) explore the impact of professional career management and talent management on the future performance of organizations.

Additionally, research could explore the development of employability and sustainability over time (Dries, 2013, Wilton, 2014; Van der Heijden and De Vos, 2015). For example, by drawing on emergent identity through the shifting and evolving nature of identity construction (Brown, 2015; Donald et al., 2019; Holmes, 2017; 2015; 2013; Jackson, 2015), underpinned by social identity theory (Ashforth and Mael, 1989) and working identity theory (Ibarra, 2003).

Finally, future research could explore further the role of meso-level actors, referred to by Holmes (2015; 2013) as the gatekeepers to graduate employability. For example, by building on the work of Donald et al. (2019) to understand the role of university careers services and firm-specific graduate recruiters in providing careers advice as a mechanism for career sustainability, and the role of other agencies that bridge the gap between individual graduates and organizations (e.g. graduate recruitment firms) at a local, national, and international level.

**Conclusion**

Drawing on a theoretical framework of career ecosystems and the new psychological contract, this conceptual paper has articulated the differing needs of graduates and graduate employers, which can be competing or complementary in nature. A set of propositions were articulated by drawing on three themes: career management, development of talent, and technological change. These propositions offered a new conceptual model, which offers practical contribution by articulating sustainability of graduates’ careers through employability at the graduate level and competitive advantage at the employer level. The paper also offers contributions to theory by connecting career management and vocational career literature through acknowledging shared constructs of life-long learning and sustainable employability for graduates. These two streams are often developed in parallel, thus this paper helps to bridge the respective research agendas. Directions for future research agendas are considered, helping to advance the fields of career theory and sustainable human resource management.

**References**

Adams, S. J., Pryor, L. J. and Adams, S. L. (1994), “Attraction and retention of high-aptitude students in accounting: An exploratory longitudinal study”, *Issues in Accounting Education*, Vol. 9 No. 1, pp. 45-58.

Akkermans, J., Schaufeli, W. B., Brenninkmeijer, V. and Blonk, R. W. B. (2013), “The role of career competencies in the Job Demands – Resources model”, *Journal of Vocational Behavior*, Vol. 83 No. 3, pp. 356-366.

Akkermans, J. and Tims, M. (2017), “Crafting your career: How career competencies relate to career success via job crafting”, *Applied Psychology*,Vol. 66 No. 1, pp. 168-195.

Arthur, M. B., Hall, D. T. and Lawrence, B. S. (1989), *Handbook of Career Theory*. Cambridge, UK: Cambridge University Press.

Ashforth, B. E. and Mael, F. (1989), “Social Identity Theory and the Organization”, *Academy of Management Review*, Vol, 14 No. 1, pp. 20-39.

Association of Graduate Recruiters (2018), “Graduate employment retention in sharp decline as younger workers grow restless, research reveals”, available at https://www.agr.org.uk/

News/graduate-employment-retention-in-sharp-decline-as-young-workers-grow-restless-research-reveals#.WSQwuevyvIU (accessed March 11 2019).

Baruch, Y. (2001), “Employability: a substitute for loyalty?”, *Human Resource Development International*, Vol, 4 No. 4, pp. 543-566.

Baruch, Y. (2013), “Careers in academe: the academic labour market as an ecosystem”, *Career Development International*, Vol. 18 No. 2, pp.196-210.

Baruch, Y. (2015), “Organizational and labor markets as career ecosystem”, In A., De Vos and B. I. J. M. Van der Heijden (Eds.), *Handbook of Research on Sustainable Careers* Edward Elgar, Cheltenham, pp. 365-380.

Baruch, Y., Altman, Y. and Tung, R. L. (2016), “Career mobility in a global era – advances in managing expatriation and reputation”, *Academy of Management Annals*, Vol. 10 No. 1, pp.841-849.

Baruch, Y., Bell, M. P. and Gray, D. (2005), “Generalist and specialist graduate business degrees: Tangible and intangible value”, *Journal of Vocational Behavior*, Vol. 67 No. 1, pp. 51-68.

Baruch, Y. and Hind, P. (1999), “Perpetual Motion in Organizations: Effective Management and the impact of the new psychological contracts on ‘Survivor Syndrome’”, *European Journal of Work and Organizational Psychology,* Vol. 8 No. 2, pp. 295-306.

Baruch, Y. and Reis, C. (2016), “How global are boundaryless careers and how boundaryless are global careers? Challenges and a theoretical perspective”, *Thunderbird International Business Review,* Vol. 58 No. 1, pp. 13-27.

Baruch, Y. and Rousseau, D. M. (2019), “Integrating Psychological Contracts and their Stakeholders in Career Studies and Management”, *The Academy of Management Annals*, Vol.13 No. 1, pp.84-111.

Baruch, Y., Szücs, N. and Gunz, H. (2015), “Career studies in search of theory: the rise and rise of concepts”, *Career Development International*, Vol. 20 No. 1, pp. 3-20.

Baruch, Y. and Vardi, Y. (2016), “A fresh look at the dark side of contemporary careers: Toward a realistic discourse”, *British Journal of Management,* Vol. 27 No. 2, pp. 355-372.

Becker, G. S. (1964), *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*. University of Chicago Press, Chicago.

Bennet, D., Richardson, S., Mahat, M., Coates, H., MacKinnon, P. and Schmidt, L. (2015), Navigating uncertainty and complexity: Higher education and the dilemma of employability, in T. Thomas, E. Levin, P. Dawson, K. Fraser & R. Hadgraft (Eds), *Research and Development in* *Higher Education: Learning for Life and Work in a Complex World*, Conference Proceedings, Australia, Vol. 38 No. 1, pp. 1-10.

Bennett, R. (2002), “Employers' demands for personal transferable skills in graduates: A content analysis of 1000 job advertisements and an associated empirical study”, *Journal of Vocational Education and training*, Vol. 54 No. 4, pp. 457-476.

Bills, D. B. (2003), “Credentials, signals, and screens: Explaining the relationship between schooling and job assignment”, *Review of Educational Research*,Vol. 73 No. 4, pp. 441-449.

Bowles, S. and Gintis, H. (1975), “The problem with human capital theory – a Marxian critique”, *The American Economic Review*, Vol. 65 No. 2, pp. 74-82.

Brooks, R. (2009), *Transitions from education to work: new perspectives from Europe and beyond*. Palgrave Macmillan, London.

Brown, A. D. (2015), “Identities and identity work in organizations”, *International Journal of Management Reviews*, Vol. 17 No. 1, pp. 20-40.

Brown, P. and Hesketh, A. (2004), *The Mismanagement of Talent: Employability and Jobs in the Knowledge Economy,* Oxford University Press, Oxford..

Bureau of Labor Statistics (2014), *Employee Tenure in 2014*, available at http://www.bls.gov/news.release/tenure.nr0.htm (accessed March 11 2019).

Burke, R. J., Page, K. M. and Cooper, C. L. (2015), *Flourishing in Life, Work and Careers: Individual Wellbeing and Career Experiences*, Edward Elgar, Cheltenham.

Campbell, B. A., Coff, R. and Kryscynski, D. (2012), Rethinking Sustained Competitive Advantage from Human Capital. *Academy of Management Review*, Vol. 37 No. 3, pp. 376-395.

Chui, M., Manyika, J. and Miremadi, M. (2015). Four Fundamentals of Workplace Automation. *McKinsey Quarterly,* Vol. 2015 No. 4, pp. 7-9.

Clarke, M. (2013), “The organizational career: Not dead but in need of redefinition”, *The International Journal of Human Resource Management*, Vol. 24 No. 4, pp. 684–703.

Coates, T. K. L. (2017), “Hearing the voices of Generation Y employees: a hermeneutic phenomelogical study”, *Human Resource Development International*,Vol. 20 No. 1, pp. 37-67.

Coff, R. W. (1997), “Human Assets and Management Dilemmas: Coping with Hazards On the Road to Resource-Based Theory”, *Academy of Management Review*, Vol. 22 No. 2, pp. 374-402.

Cohen, D. J. (2015), “HR past, present and future: A call for consistent practices and a focus on competencies”, *Human Resource Management Review*, Vol. 25 No. 2,pp.205-215.

Cook, J. D., Hepworth, S. I., Wall, T. D. and Warr, P. T. (1981), *The experience of work: A compendium and review of 249 measures and their use*. Academic Press, London, New York.

De Cuyper, N., Bernhard-Oettel, C., Bernston, E., Witte, H. D. and Alarco, B. (2008), “Employability and Employees’ Well-Being: Mediation by Job Insecurity”, *Applied Psychology: International Review*, Vol. 57 No. 3, pp. 488-509.

De Cuyper, N. and Witte, H. D. (2011), “The management paradox: Self-rated employability and organizational commitment and performance”, *Personnel Review*, Vol.40 No. 2, pp. 152-172.

De Vos, A., De Hauw, S. and Van der Heijden, B. I. J. M. (2011), “Competency Development and Career Success: The Mediating Role of Employability”, *Journal of Vocational Behavior*, Vol. 79 No. 2, pp. 438–447.

De Vos, A. and Van der Heijden, B. I. J. M. (2017), “Current thinking on contemporary careers: the key roles of sustainable HRM and sustainability of careers”, *Current Opinion in Environmental Sustainability*, Vol. 28 No. 1, pp. 41-50.

De Vos, A. and Van der Heijden, B. I. J. M. (Eds.) (2017), *Handbook of Research on Sustainable Careers*, Edward Elgar, Cheltenham.

Donald, W. E., Baruch, Y. and Ashleigh, M. J. (2017), “Boundaryless and protean career orientation: a multitude of pathways to graduate employability”, in: Tomlinson, M. and Holmes, L. (Eds), *Graduate Employability in Context: Theory, Research and Debate*, Palgrave Macmillan, London, pp. 129-150.

Donald, W. E., Ashleigh, M. J. and Baruch, Y. (2018), “Students’ perceptions of education and employability: Facilitating career transition from higher education into the labor market.” *Career Development International,* Vol. 23 No. 5, pp. 513-540.

Donald, W. E., Baruch, Y. and Ashleigh, M. J. (2019), “The undergraduate self-perception of employability: Human capital, careers advice, and career ownership”, *Studies in Higher Education,* Vol. 40 No. 4, pp. 599-614.

Dorigo, G. and Tobler, W. (1983), “Push-Pull Migrations Laws”, *Annals of the Association of American Geographers,* Vol. 73 No. 1, pp. 1-17.

Dries, N. (2013), “Career stages and anchors”, in Kessler, E. (Eds), *Encyclopedia of Management Theory*, SAGE Publications, Thousand Oaks, CA, pp. 105-108.

Dries, N., Forrier, A., De Vos, A. and Pepermans, R. (2014), “Self-perceived employability, organization-rated potential, and the psychological contract”, *Journal of Managerial Psychology*, Vol. 23 No. 8, pp. 907-928.

Dries, N. Pepermans, R. and De Kerpfel, E., (2008), “Exploring Four Generations’ Beliefs about Career: Is ‘Satisfied’ the New Successful’?”, *Journal of Managerial Psychology* Vol. 23 No. 8, pp. 907-928.

Esson, J. and Ertl, H. (2016), “No point worrying? Potential undergraduates, study-related debt, and the financial allure of higher education”, *Studies in Higher Education,* Vol. 41 No. 7, pp. 1265-1280.

Feldman, D. C. (1999), “What everyone knows to be true about careers, but isn’t: Why common beliefs about managing careers are frequently wrong”, *Human Resource Management Review*, Vol. 9 No. 3, pp. 243-246.

Forrier, A., Verbruggen, M. and De Cuyper, N. (2015), “Integrating different notions of employability in a dynamic chain: The relationship between job transitions, movement capital and perceived employability”, *Journal of Vocational Behavior*, Vol. 89 No. 1, pp. 56-64.

Freudenberg, B., Cameron, C. and Brimble, M. (2011), “The Importance of Self: Developing Students’ Self-Efficacy through Work Integrated Learning”, *The International Journal of Learning*, Vol. 17 No. 10, pp. 479-496.

Fugate, M., Kinicki, A. J. and Ashforth, B. E. (2004), “Employability: A psycho-social construct, its dimensions, and applications”, *Journal of Vocational Behaviour*, Vol. 65 No. 1, pp. 14-38.

Ghoshal, S. Bartlett, C. A. and Moran, P. (1999), “A new manifesto for management”, *Sloan Management Review*, Vol. 40 No. 3, pp. 9-22.

Gill, C. (2018), “Don't know, don't care: An exploration of evidence based knowledge and practice in human resource management”, *Human Resource Management Review*, Vol. 28 No. 2, pp.103-115.

Grant, R. M. (1996), “Prospering in Dynamically-Competitive Environments: Organizational Capability as Knowledge Integration”, *Organization Science,* Vol.7 No. 4*,* pp.375-387.

Groysberg, B. (2010), *Chasing stars: The myth of talent and the portability of performance*. University Press, Princeton..

Gubler, M. Arnold, J. and Coombs, C. (2014), “Reassessing the protean career concept: Empirical findings, conceptual components, and measurement”, *Journal of Organizational Behavior*, Vol. 35 No. S1, S23-S40.

Guilbert, L., Bernaud, J-L., Gouvernet, B. and Rossier, J. (2016), “Employability: review and research prospects”, *International Journal for Education and Vocational Guidance*, Vol. 16 No. 1, pp. 69-89.

Gunz, H. P. and Peiperl, M. (2007), *Handbook of Career Studies*, SAGE Publications, Thousand Oaks, CA.

Hall, D. T. (1996), “Protean careers of the 21st century”, *The Academy of Management Executive*, Vol. 10 No. 4, pp. 8-16.

Hall, D. T. (2004), “The protean career: A quarter-century journey”, *Journal of Vocational Behavior*, Vol. 65 No. 1, pp. 1-13.

Hall, R. (1993), “A framework linking intangible resources and capabilities to sustainable competitive advantage”. *Strategic Management Journal*, Vol. 14 No. 8, pp. 607-618.

Hatch, N. W. and Dyer, J. H. (2004), “Human capital and learning as a source of sustainable competitive advantage”, *Strategic Management Journal*, Vol. 25 No. 1, pp.1155–1178.

Health and Safety Executive (2018), *Costs to Britain of workplace injuries and new cases of work-related ill health,* <http://www.hse.gov.uk/statistics/cost.htm#ft3> (accessed March 11 2019).

Helyer, R. and Lee, D. (2014), “The role of work experience in the future employability of higher education graduates”, *Higher Education Quarterly,*Vol. 68 No. 3*,* pp.348-372.

Herriot, P. and Pemberton, C. (1995), *New Deals*, Chichester: John Wiley.

Hinchliffe, G. W. and Jolly, A. (2011). Graduate identity and employability. *British Educational Research Journal*, Vol. 37 No. 4, pp. 563–584.

Holmes, L. M. (2013), “Competing perspectives on graduate employability: possession, position or process?”, *Studies in Higher Education*, Vol. 38 No. 4, pp. 538-554.

Holmes, L. M. (2015), “Becoming a graduate: the warranting of an emergent identity”, *Education and Training*, Vol. 57 No. 2, pp. 219-238.

Holmes, L. M. (2017), “Graduate Employability: Future Directions and Debate”, in: Tomlinson M. and Holmes, L. (Eds), *Graduate Employability in Context: Theory, Research and Debate*, Palgrave Macmillan, London, pp. 359-370.

Ibarra, H. (2003), *Working Identity: Unconventional Strategies for Reinventing Your Career*. Harvard Business School Press, Boston.

Inansiti, M. and Levien, R. (2004), “Strategy as ecology”, *Harvard Business Review*, Vol. 82 No. 3, pp. 66-81.

Inkson, K. and King, Z. (2011), “Contested terrain in careers: A psychological contract model”, *Human Relations*, Vol. 64 No. 1, pp. 37-57.

Jackson, D. (2015), “Employability skill development in work-integrated learning: Barriers and best practice”, *Studies in Higher Education,* Vol. 40 No. 2, pp. 350-367.

Jackson, D. and Chapman, E. (2012). Empirically derived competency profiles for Australian business graduates and their implications for industry and business schools. *The International Journal of Management Education*, Vol. 10 No. 2, pp. 112-128.

Jiang, K., Lepak, D. P., Hu, J. and Baer, J. C. (2012), “How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms”, *Academy of Management Journal*, Vol. 55 No. 1, pp. 1264-1294.

Job Satisfaction Survey (2014), *Job Satisfaction Survey Infographic, Robert Half UK*, available at <http://www.roberthalf.co.uk/job-satisfaction-infographic> (accessed March 11 2019).

Knight, P. T. and Yorke, M. (2002). Employability through the curriculum. *Tertiary Education and Management*, Vol. 8 No. 4, pp. 261-276.

Koivisto, P., Vinokur, A. D. and Vuori, J. (2011), “Effects of career choice intervention on components of career preparation”, *The Career Development Quarterly,* Vol.59 No. 4, pp. 345-366.

Kumari, S., and Saini, G. K. (2018), “Do instrumental and symbolic factors interact in influencing employer attractiveness and job pursuit intention?.” *Career Development International*, Vol.23 No. 4, pp. 444-462.

Li, Y. (2018), “Linking protean career orientation to well-being: the role of psychological capital.” *Career Development International*, Vol. 23 No. 2, pp. 178-196.

Mandilaras, A. (2004), “Industrial placement and degree performance: Evidence from a British higher institution”,*International Review of Economics Education,* Vol.3 No. 1, pp. 39-51.

Markoulli, M., Lee, C. I., Byington, E., and Felps, W. A. (2017), “Mapping Human Resource Management: Reviewing the field and charting future directions”, *Human Resource Management Review*, Vol. 27 No. 3, pp. 367-396.

Mincer, J. (1958), “Investment in Human Capital and Personal Income Distribution”,   
*Journal of Political Economy*, Vol. 1958 No. 66, p. 281.

Nagarajan, S. V. and Edwards, J. (2015), “The Role of Universities, Employers, Graduates and Professional Associations in the Development of Professional Skills of New Graduates”, *Journal of Perspectives in Applied Academic Practice*, Vol. 3 No. 2, pp. 26-37.

Newman, K (2011), “Sustainable careers: lifecycle engagement in work”, *Organizational Dynamics*, Vol. 40 No. 1, pp. 136-143.

Nilsson, S. and Ellstöm, P. E. (2012), “Employability and talent management: Challenges for HRD practices”, *European Journal of Training and Development*, Vol. 36 No. 1, pp.26-45.

Okay-Somerville, B. and Scholarios, D. (2013), “Shades of grey: Understanding job quality in emerging graduate occupants”, *Human Relations*, Vol. 66 No. 4, pp. 555-585.

Oliver, D., Freeman, B., Young, C., Yu, S. and Verma, G. (2014), *Employer Satisfaction Survey: Report for the Department of Education*, available at https://www.qilt.edu.au/

docs/default-source/default-document-library/ess\_final\_report\_june\_14\_0.pdf?sfvrsn=

7417e23c\_2 (accessed March 11 2019).

Patton, W. A. and McMahon, M. L. (2006), “The Systems Theory Framework of career development and counseling: Connecting theory and practice”, *International Journal for the Advancement of Counselling*, Vol. 28 No. 2, pp. 153-166.

Perrigino, M. B., Dunford, B. B., and Wilson, K. S. (2018), “Work–Family backlash: The “Dark Side” of Work–Life Balance (WLB) policies”, *Academy of Management Annals*, Vol. 12 No. 2, pp. 600-630.

Pfeffer, J. (1994), *Competitive Advantage through People: Unleashing the Power of the Work Force*, Harvard Business School Press, Boston, MA.

Pfeffer, J. (2010), “Building sustainable organizations: The human factor”, *Academy of Management Perspectives,* Vol. 24 No.1, pp. 34–45.

Porter M. E. (1990), “Competitive Advantage of Nations”,. *Harvard Business Review*, Vol. 1990, No. March-April, pp. 73-91.

Porter, C., Woo, S. E. and Tak, J. (2016),” Developing and Validating Short Form Protean and Boundaryless Career Attitude Scales”, *Journal of Career Assessment*, Vol. 24 No. 1, pp. 162-181.

Prescott, E. C. and Visscher, M. (1980), “Organizational capital”, *The Journal of Political Economy*, Vol. 88 No. 3, pp. 446-461.

Ranjan, J. (2009), “Business Intelligence: Concepts, components, techniques and benefits”, *Journal of Theoretical and Applied Information Technology*, Vol. 9 No. 1, pp. 60-70.

Rodrigues, R., Guest, D. and Budjanovcanin, A. (2016), “Bounded or boundaryless? An empirical investigation of career boundaries and boundary crossing”, *Work, Employment and Society*, Vol. 30 No. 4, pp. 669-686.

Rospigliosi, A. P., Greener, S., Bourner, T. and Sheehan, M. (2014), “Human capital or signalling, unpacking the graduate premium. *International Journal of Social Economics*, Vol. 41 No. 5, pp. 420-432.

Rothwell, A. and Arnold, J. (2007), “Self-perceived employability: development and validation of a scale”, *Personnel Review*, Vol. 36 No. 1, pp. 23-41.

Rousseau, D. M. (1995), *Psychological contracts in organizations: Understanding written and unwritten agreements*, Sage, NY.

Schein, E. H. (1978), *Career dynamics: Matching individual and organizational needs* (Vol. 6834). Addison Wesley Publishing Company.

Schein, E. H. (1980), *Organizational Psychology*. (3rd Ed), Prentice-Hall, Englewood Cliffs, NJ.

Schultz, T. W. (1971), *Investment in Human Capital. The Role of Education and of Research*, The Free Press, New York.

Scott, B. (2014), “Graduate attributes and talent perceptions: Reflections on the first year of graduate employment”, *International Journal of Employment Studies*. Vol. 22 No. 1, pp. 39.

Scullion, H. and Collings, D. (2011), *Global Talent Management*, Routledge, New York.

Seibert, S. E., Kraimer, M. L. and Crant, J. M. (2001), “What do proactive people do? A longitudinal model linking proactive personality and career success”, *Personnel Psychology*, Vol. 54 No. 4, pp. 845-874.

Semeijn, J. H., Van Dam, K., Van Vuuren, T. and Van der Heijden, B. I. J. M. (2015),“Sustainable labour participation for sustainable careers”, In: De Vos, A. and Van der Heijden, B. I. J. M. (Eds), *Handbook of research on sustainable careers*, Edward Elgar Publishing, Cheltenham, UK, pp. 146–160.

Smith, A. (1950), *An Inquiry into the Nature and Causes of the Wealth of Nations, (1776).* Liberty Fund Inc., Indianapolis.

Soares, M. E., & Mosquera, P. (2019), “Fostering work engagement: The role of the psychological contract.” *Journal of Business Research*, doi: 10.1016/j.jbusres.2019.01.003

Stephens, J. C., Hernandez, M. E., Román, M., Graham, A. C., and Scholz, R. W. (2008), “Higher education as a change agent for sustainability in different cultures and contexts”, *International Journal of Sustainability in Higher Education*, Vol. 9 No. 3, pp. 317-338.

Stiwne, E. F. and Alves, M. G. (2010), “Higher education and employability of graduates: will Bologna make a difference?”, *European Educational Research Journal*, Vol. 9, No.1 pp. 32-44.

Sullivan, S. E. and Baruch, Y. (2009), “Advances in Career Theory and Research: A Critical Review and Agenda for Future Exploration”, *Journal of Management*, Vol. 35, No. 6, pp. 1542-1571.

Tams, S. and Arthur, M. B. (2011), *Career Communities: Examining Learning through the Culture-as-Practice Lens*. International Critical Management Studies 2011, Conference Proceedings, Naples, pp.1-23.

Tholen, G. (2014). *The Changing Nature of the Graduate Labour Market: Media, Policy and Political Discourse in the UK,* Palgrave MacMillan, London.

Trede, F. and McEwen, C. (2015), “Early workplace learning experiences: what are the pedagogical possibilities beyond retention and employability?” *Higher Education*, Vol. 69 No. 1, pp. 16-32.

Tymon, A. (2013). The student perspective on employability. *Studies in Higher Education*, Vol. 38 No. 6, pp. 841-856.

Tzabbar, D., Tzafrir, S. and Baruch, Y. (2017), “A bridge over troubled water: Replication, integration and extension of the relationship between HRM practices and organizational performance using moderating meta-analysis”, *Human Resource Management Review*, Vol. 27 No. 1, pp. 134-148.

Useem, M. and Karabel, J. (1986), “Pathways to top corporate management”, *American Sociological Review*, Vol. 51 No. 2, pp. 184-200.

Van Buren, H. J. (2013), “Boundaryless careers and employability obligations”, *Business Ethics Quarterly*, Vol. 13 No. 1, pp. 131-149.

Van der Heijden, B. I. J. M. and De Vos, A. (2015), Sustainable careers: Introductory chapter, in: De Vos A. and Van der Heijden B. I. J. M. (Eds), *Handbook of Research on Sustainable Careers,* Edward Elgar, Cheltenham, pp. 1-19.

Van der Heijden, B. I. J. M., Gorgievski, M. J. and Lange, A. H. (2016), “Learning at the workplace and sustainable employability: a multi-source model moderated by age”, *European Journal of Work and Organizational Psychology*, Vol. 25 No. 1, pp. 13-30.

Van Harten, J., Knies, E. and Leisink, P. (2016). Employer’s investments in hospital workers’ employability and employment opportunities. *Personnel Review*, Vol. 45 No. 1, pp. 84-102.

Vanhercke, D., Kirves, K., De Cuyper, N., Verbruggen, M., Forrier, A. and De Witte, H. (2015), “Perceived employability and psychological functioning framed by gain and loss cycles”, *Career Development International*, Vol. 20 No. 2, pp. 179-198.

Venkatraman, N. (1994), “IT-Enabled Business Transformation: From Automation to Business Scope Redefinition”, *Sloan Management Review,* Vol. 35 No. 1, pp. 73-87.

Westerman, J. W. and Vanka, S. (2005), “A Cross-Cultural Empirical Analysis of Person-Organization Fit Measures as Predictors of Student Performance in Business Education: Comparing Students in the United States and India”, *Academy of Management Learning and Education*, Vol. 4 No. 4, pp. 409-420.

Westerman, J. W. and Yamamura, J. H. (2007), “Generational preferences for work environment fit: effects on employee outcomes”, *Career Development International*, Vol. 12 No. 2, pp. 150-161.

Wilensky, H. L. (1961), “Orderly Careers and Social Participation: The Impact of Work History on Social Integration in the Middle Mass”, *American Sociological Review,* Vol. 26 No. 4, pp. 521-539.

Wilton, N. (2012). The impact of work placements on skills development and labour market outcomes for business and management graduates. *Studies in Higher Education*,   
Vol. 37 No. 5, pp. 603-620.

Wilton, N. (2014), “Employability is in the eye of the beholder. Higher Education”, *Skills and Work-Based Learning*, Vol. 4 No. 3, pp. 242-255.

Wright, P. M., Coff, R. and Moliterno, T. P. (2014), “Strategic Human Capital Crossing the Great Divide”, *Journal of Management*, Vol. 40 No. 2, pp. 353-370.

Ybema, J. F., Van Vuuren, T. and Van Dam, K, (2017), “HR practices for enhancing sustainable employability: implementation, use, and outcomes”, *The International Journal of Human Resource Management*, available at: DOI: 10.1080/09585192.2017.1387865.

Zmud, R.W. (1984), “An Examination of “Push-Pull” Theory Applied to Process Innovation in Knowledge Work”, *Management Science*, Vol. 30 No. 6, pp. 727-738.

**Figure I: Individual and Organizational Level Propositions for Sustainable Graduate Careers**

*Individual Level*

Flexible   
Working

Career Ownership

Transferable Skills

Human   
Capital

Career Satisfaction

Life-Long  
Learning

Employability

P9

P3

P4

P7

P8

P6

P2

P5

P1

*Organizational Level*

Organizational Capital

Competitive Advantage

Financial Performance

Job Specific Skills

Retention of Talent

Attraction of Talent

**Theme 3  
Technological Change**

**Theme 1  
Career Management**

**Theme 2  
Development of Talent**

**Figure II: Conceptual Model for Graduates and Graduate Employers**

**Desired State  
Sustainable Careers**

Automation  
and AI

P10

Flexible Working

Career Satisfaction

Human Capital

Life-Long Learning

Graduate Employers

Graduates

Financial and Personal Well-being

Automation   
and AI

Financial and Social Performance

Competitive Advantage

Transferable Skills

Job Specific Skills

Organizational Capital

Retention of Talent

Attraction of Talent

Career Ownership

Employability