Linking development of skills and perceptions of employability: the case of Erasmus students

Maria Eduarda Soares & Pilar Mosquera

To cite this article: Maria Eduarda Soares & Pilar Mosquera (2020) Linking development of skills and perceptions of employability: the case of Erasmus students, Economic Research-Ekonomska Istraživanja, 33:1, 2769-2786, DOI: 10.1080/1331677X.2019.1697330

To link to this article: https://doi.org/10.1080/1331677X.2019.1697330

© 2020 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

Published online: 18 Dec 2019.

Submit your article to this journal

Article views: 921

View related articles

View Crossmark data

Citing articles: 1 View citing articles
ABSTRACT
There is evidence that perceptions of employability lead to positive results for organizations and individuals alike. The relationship between perceptions of employability and development of skills is, although relevant, an understudied area of research. This study analyses this relationship in a sample of 196 students who participated in the Erasmus program between 2013 and 2017. Using fuzzy set qualitative comparative analysis (fsQCA), we analyse how configurations of five types of skills (Career-orientation skills, Adaptability skills, Managerial skills, Personal skills and Teamwork skills) combine to produce perceptions of employability. Results show that, although Erasmus students perceive a positive development in all groups of skills, students perceive a higher development on Adaptability skills. Results also show that there is no single type of skills that can be developed to promote perceptions of employability but, instead, there are two distinct configurational groupings of skills that lead to perceptions of employability: one configuration has two core conditions—Adaptability skills and Teamwork skills—and the other configuration includes three core conditions—Career-orientation skills, Managerial skills and Personal skills. These configurations match the two main motivations for choosing an international exchange as a strategy to enhance employability: pursuing an international career and pursuing distinction from peers.

1. Introduction
The enhancement of employability has long been a concern for policy-makers, HRM practitioners, and academic researchers (De Cuyper, Van der Heijden, & De Witte, 2011; McQuaid & Lindsay, 2005; Silla, De Cuyper, Gracia, Peiró, & De Witte, 2009). Employability has been studied from a variety of perspectives, including macro, meso, and micro levels of analysis (Berntson & Marklund, 2007; Forrier & Sels, 2003; Vanhercke, De Cuyper, Peeters, & De Witte, 2014). Our focus is on the micro level of analysis, more specifically on perceptions of employability, that is, the perceptions...
individuals have of their chances of obtaining or maintaining a position in the labour market. These perceptions are of particular importance, since individuals’ choices of behaviour are more based on their perceptions than on objective reality (Roskies & Louis-Guerin, 1990; Silla et al., 2009; Vanhercke et al., 2014). Furthermore, there is evidence that perceptions of employability lead to positive results for organizations and individuals alike. These positive results include performance (e.g., De Cuyper et al., 2011; De Cuyper & De Witte, 2011), career success (De Vos, De Hauw, & Van der Heijden, 2011), as well as well-being and life satisfaction (e.g., Berntson & Marklund, 2007; De Cuyper et al., 2011; Silla et al., 2009).

Given the importance of perceptions of employability for both organizational performance and individual satisfaction, the identification of factors that foster these perceptions becomes a relevant research question. However, there are few studies on why individuals perceive themselves as highly or less employable (Jackson & Wilton, 2017; Vanhercke et al., 2014). In particular, the relationship between perceptions of employability and development of skills, although relevant, is an understudied area of research (Akkermans, Tims, Beijer, & De Cuyper, 2019, De Vos et al., 2011; Vanhercke et al., 2014). On the other hand, studies on skills development and studies on perceptions of employability have both been mainly undertaken from the perspective of people who are already employed. In the current state-of-the-art, Vanhercke et al. (2014) argue that there is a potential for research and the development of measurement tailored towards the context of other groups, such as students and the unemployed.

The current study intends fill the above-identified research gaps by analysing the relationship between development of skills and perceptions of employability. For this, we will focus on the case of university students participating in the Erasmus program, which we believe is a rich field of research for our topic.

The Erasmus program is a student exchange program founded by the European Commission in 1987. It allows students to study abroad for up to 12 months per cycle of higher education and is probably the most famous European program. Over the first ten years, the number of participating students rapidly grew from 3,000 in 1987/88 to 86,000 in 1997/98. Thirty years later, in the academic year of 2017/18, over 300,000 students were involved in international exchanges, for an annual budget of 2.6 billion Euros (European Commission, 2019).

There is widespread agreement that international mobility, such as that of the Erasmus program, results in several benefits for students, mainly regarding their personal development and their employability (Souto-Otero, Huisman, Beerkens, de Wit, & Sun-ica, 2013). Several authors have, however, also pointed out that there is little empirical work on the link between student mobility, personal development and employability (e.g., Crossman & Clarke, 2010; Huang, 2013; Mattern, 2016; Van Mol, 2017; Wiers-Jenssen, 2008). While it is indisputable that international exchanges are very rewarding from a personal perspective, there is currently not sufficient evidence of the benefits for individual career-related outcomes (Stronkhorst, 2005; Wiers-Jenssen, 2008).

We want to know which skills may be developed in an Erasmus exchange that may affect students’ perception of employability. The current research has three main
objectives. First of all, to the best of our knowledge there is no empirical measure of perceptions of employability that is specifically tailored for the case of Erasmus students. Based on a review of the literature, we will take a few steps towards the development of such a measure. Secondly, previous studies on the development of skills by Erasmus students have used different lists of skills, which makes it difficult to build on previous results. Again, we will turn to literature review to attempt to identify a comprehensive list of skills that have been related to the Erasmus experience. Afterwards, we will attempt to devise an empirically driven typology of skills that may be used in future research. Thirdly, bearing in mind that previous research does not present a clear path linking a certain type of skills to employability we will use fuzzy set qualitative comparative analysis (fsQCA) to analyse how different skills may combine to produce perceptions of employability.

2. Literature review

2.1. Employability and perceptions of employability

Research on employability has attracted the interest of policy-makers, HRM practitioners, as well as academics (De Cuyper et al., 2011; McQuaid & Lindsay, 2005; Silla et al., 2009). This research field started to grow in the 1990s but concerns with employability started much earlier. Already in 1950s, there were explicit references to approaches on employability. These early approaches were conceived at the macro-level, with policy makers attempting to devise interventions to solve the need for manpower in the post-war period (Forrier & Sels, 2003; Vanhercke et al., 2014). These macro-level approaches still subsist in current governmental policies concerning the attempt to reach full national employment (Berntson & Marklund, 2007).

In the 1980s, employability concerns were related to increasing organizational flexibility in order to enhance fast adaptation to changes in the dynamic global environment. Organizations needed to constantly match labour demand and supply, and the main concern was having the right number of people with the necessary skills. The focus then shifted to the meso-level, i.e. the organizational level, with organizations attempting to devise policies to achieve numerical and functional flexibility (Berntson & Marklund, 2007; Forrier & Sels, 2003; Van der Heijde & Van der Heijden, 2006; Vanhercke et al., 2014).

Since the 1990s, the focus shifted to the micro-level, i.e. the individual. Current approaches generally equate employability with an individual’s possibility to find and/or maintain a position in the internal or external labour market (Forrier & Sels, 2003; Vanhercke et al., 2014). This shift to the individual as the main actor is related to major changes in the psychological contract, that is, employees’ beliefs about the mutual obligations between their employers and them (Rousseau & Tijoriwala, 1998). Over the last two decades, organizational changes lead to the erosion of the traditional psychological contract, where employers provided job security and career management, and employees reciprocated with loyalty (Rothwell & Arnold, 2007; Silla et al., 2009; Zhao, Wayne, Glibkowski, & Bravo, 2007). Employees nowadays no longer expect lifelong employment in the same company and know that they need to manage their careers themselves (Pate, Martin, & Staines, 2000; Philippaers, De
They do, however, expect their employers to provide them with opportunities for improving their employability in the labour market, such as training and development, feedback, and other support activities (Forrier & Sels, 2003; Rothwell & Arnold, 2007; Soares & Mosquera, 2019).

While there is a clear trend in recent literature to mainly examine employability at the individual level, substantial differences in meaning and measurement can still be found (Forrier & Sels, 2003; Rothwell & Arnold, 2007; Vanhercke et al., 2014). These different approaches can be classified as input or output oriented (Philippaers et al., 2016; Vanhercke et al., 2014). Some authors conceptualize employability as a list of factors affecting the chance to obtain/maintain a position in the labour market, thus emphasizing input aspects of employability (e.g., Fugate, Kinicki, & Ashforth, 2004; Peck & Theodore, 2000; Van der Heijde & Van der Heijden, 2006). Where other authors prefer to define employability based on its outcomes, that is, the individual’s chance to obtain/maintain a job in the internal and/or external job market (e.g., Akkermans et al., 2019; Berntson & Marklund, 2007; Forrier & Sels, 2003; Silla et al., 2009; Vanhercke et al., 2014). Among these, some focus on objective aspects, such as tenure or the number of career transitions made (e.g., Groot & Vann de Brink, 2000; Jackson, Tienda, & Huang, 2001; Thiessen & Looker, 1999; Van Dam, 2004). Others prefer to highlight subjectivity and use self-rated measures, such as perception of employability (e.g., Akkermans et al., 2019; Berntson & Marklund, 2007; De Cuyper et al., 2011; De Cuyper & De Witte, 2011; Jackson & Wilton, 2017; Philippaers et al., 2016; Rothwell & Arnold, 2007; Silla et al., 2009).

The current study focuses on the individual-level approach, follows the outcome-oriented conceptualization of employability, and analyses subjective employability measures, such as perception of employability. Perception of employability is defined as an individual’s perception of his/her chances of obtaining or maintaining employment in the internal and external labour market (Akkermans et al., 2019; Berntson & Marklund, 2007; De Cuyper et al., 2011; De Cuyper & De Witte, 2011; Jackson & Wilton, 2017; Philippaers et al., 2016; Rothwell & Arnold, 2007; Silla et al., 2009).

Perceptions of employability reflect both personal factors, such as education, but also context factors, such as economic conditions and their consequences for the labour market (Akkermans et al., 2019; Silla et al., 2009; Vanhercke et al., 2014). That is, an individual’s subjective assessment of his/her chance to obtain an employment is based on a personal assessment, but also on the assessment of the specific labour market context in which he/she seeks employment. Since perceptions of employability develop from the interaction between context factors (the labour market situation) and personal factors (ability to meet the requirements or challenges of that context), those subjective assessments capture the main aspects that are relevant for the employability debate (De Cuyper et al., 2011; De Cuyper & De Witte, 2011; Trevor, 2001).

Perceptions of employability are particularly relevant because individuals tend to act more upon their perceptions than upon objective reality. Objective indicators (either at the national, organizational or individual level) may enhance employability but, if people do not see themselves as employable, they may overlook those objective indicators and their feelings and actions will be congruent with that perception (De
Cuyper & De Witte, 2011; Roskies & Louis-Guerin, 1990; Silla et al., 2009; Vanhercke et al., 2014). By contrast, even in turbulent, insecure and competitive environments, individuals perceiving themselves as possessing high employability will be more likely to identify alternative job opportunities available to them (Fugate et al., 2004), which in turn fosters feelings of security and self-assurance (Berntson & Marklund, 2007; Jackson & Wilton, 2017).

Research has shown that perceptions of employability lead to positive consequences for both individuals and organization. Studies have found a positive association between perceptions of employability and organizational commitment (e.g., Akkermans et al., 2019; De Cuyper & De Witte, 2011), performance (e.g., De Cuyper et al., 2011; De Cuyper & De Witte, 2011), career success (De Vos et al., 2011), well-being and life satisfaction (e.g., Berntson & Marklund, 2007; De Cuyper et al., 2011; Silla et al., 2009), and a negative association with turnover intentions (e.g., De Cuyper et al., 2011).

Given the importance of perceptions of employability for both organizational performance and individual satisfaction, the identification of factors that foster these perceptions becomes a relevant research question. The current study focuses on the role played by the development of skills on perceptions of employability. Based on previous research (e.g., Akkermans et al., 2019; De Vos et al., 2011; Forrier & Sels, 2003; Vanhercke et al., 2014), we hypothesize that:

H1: Development of skills contributes to produce perceptions of employability.

Previous research does not present a clear path linking a certain type of skills to employability, that is, how different skills may combine to produce perceptions of employability. The current study aims to be a contribution to this issue, by using fuzzy set qualitative comparative analysis (fsQCA).

In their analysis of the current state-of-the-art regarding perceived employability, Vanhercke et al. (2014) note that studies have been almost exclusively undertaken from the perspective of people who are already employed, and argue that there is a potential for research and the development of measurement tailored towards the context of other groups, such as students and the unemployed. The current study will focus on the case of students in higher education, particularly those who have participated in the Erasmus program.

The employability of graduates is currently an important concern for higher education institutions. Over the last decades, it has become common practice for those institutions to publicize in their prospectuses and on their internet sites the employability rates of the courses and degrees they offer. These rates are usually operationalized as the percentage of students that have secured a job before graduation, or in some specific period after graduation (for example, one month, six months or one year). Besides signalling the quality of the institution to potential candidates, these indicators are sometimes used as evaluative indicators when considering the funding of higher education institutions (Jongbloed & Vossensteyn, 2001; Lindberg, 2007; Tymon, 2013).

Approaches to graduate employability also include the input-output distinction which we described previously. Most definitions of graduate employability are input-oriented, in the sense that they include the possession of skills as a requirement
Much research has been devoted to the identification of employability skills for graduates and several frameworks have been proposed, usually consisting of lists of skills of varying length. Tymon (2013) reviewed six different frameworks from different sources (employers, graduates, and universities in different countries) and found that communication/interpersonal skills and teamwork appear in all of them. A more recent study from Rima, Syeda, and Lubna (2016) corroborates the relevance of soft skills, such as teamwork and communication skills, in the current labour market. The more global the market is, the more diverse the workforce becomes, and the more organizations need employees who are capable of interacting with different cultures (Dean & East, 2019). In fact, many executive leaders emphasize the relevance of the development of soft skills because of their role in productive performance (Robles, 2012).

There are, however, considerable differences between different stakeholder groups and even within the same stakeholder group. Besides, investment in a particular set of skills does not necessarily lead to better employability prospects. Mason et al. (2009) conducted research that used a list of seven skills identified through a national enquiry in the UK—Communication, numeracy, literacy, information technology, problem-solving, understanding the world of work, and team working. Findings from his study reveal that a measure of involvement in these skills is not significantly related to labour market performance.

Tomlinson (2007) follows an output-oriented approach and argues that it is important to analyse how students understand and how they attempt to manage their employability. The author further notes that research on students’ employability has continually neglected its subjective dimension. As mentioned earlier, the current study intends to fulfil this research gap by analysing perceptions of employability of university students.

### 2.2. Perceptions of employability of Erasmus students

For the purpose of this study, we attempted to develop a measure that analyses perceptions of employability for the specific case of Erasmus students. The purpose is to measure the extent to which students perceive that participating in an Erasmus exchange enhances their employability.

The development of this measure was based on the literature review, through which four main topics for the development of items were identified—achieving distinction from national peers, meeting the requirements of national employers, enhancing the possibility of an international career, and developing career-oriented skills.

The literature on international student exchanges and employability shows that the pursuit of distinction from national peers is an important motivation underlying the choice of an international exchange as a strategy to enhance employability. Several authors have noted that, given the current congestion of the graduate labour market, students are increasingly searching for ways in which to distinguish themselves from their peers (e.g., Brooks, Waters, & Pimlott-Wilson, 2012; Brown & Hesketh, 2004; Tomlinson, 2007; Tymon, 2013).
The pursuit of distinction from national peers only leads to higher employability provided that national employers value qualifications obtained abroad and/or the development of skills resulting from the exchange experience. Therefore, meeting the requirements of national employers is another important issue related to perceptions of employability. Several studies have provided evidence on the importance employers attribute to studying abroad. The Erasmus Impact Study (European Commission, 2014) shows that the share of employers who considered experience abroad to be important for employability nearly doubled between 2006 and 2013, from 37% to 64%. By contrast, Van Mol (2017) conducted a survey with more than 7,000 employers in Europe and found that international experience was only relevant as hiring criteria for a minority of employers. The value of international experience for employers appears to be dependent upon the relevance of that experience for the activities of the company, that is, whether the company has links with the country where the exchange occurred (Crossman & Clarke, 2010). For example, Opper, Teichler, and Carlson (1990) found that the majority of exchange students were employed in firms or organizations with contacts with the country of their study abroad.

Another motivation to study abroad is anchored in the belief that participation in the exchange program enhances the chances of having an international career or obtaining employment abroad. An international exchange may be perceived as leading to the development of skills deemed relevant in international assignments, such as language proficiency and the ability to operate in culturally diverse contexts (Wiers-Jenssen, 2008). Several studies on early careers of graduates have provided evidence on the link between student mobility and international mobility. Findings from the studies of Jahr and Teichler (2002) and Wiers-Jenssen (2008) show that, when compared to nonmobile students, mobile students more often search for and gain work experience abroad. In the domestic market, mobile students hold jobs with more international assignments. Parey and Waldinger (2011) found that participating in an Erasmus exchange increases an individual’s probability of working in a foreign country by about 15 to 20 percentage points. In Bryla’s (2015a) sample of former Erasmus students from Poland, 68.6% had worked abroad in the first 5–6 years after their return from the exchange program. Bryla (2015a) also found that, when enquired about their current positions, 1/3 of respondents considered that their international experience had a very important influence on obtaining it, and almost 1/5 specified Erasmus mobility as a key factor.

Results from the 2007 Erasmus Student Network Survey (Krzaklewska & Krupnik, 2007) provide evidence on other issues underlying perceptions of employability of Erasmus students. The authors make a distinction between two groups of students: Career-oriented students, focusing on improving academic knowledge, enhancing future employment prospects and the practice of a foreign language, and Experience-oriented students, focusing on learning about new cultures, having new experiences and being independent. The first group of students are clearly more concerned with their employability. The characteristics of this group allow for the identification of developing career-oriented skills as another relevant topic for our measure of perceptions of employability. Table 1 summarizes the four topics identified and the items formulated.
2. Development of skills related to the Erasmus experience

Several studies have been undertaken with the aim of identifying skills developed by students during the Erasmus program. The Erasmus Impact Study (European Commission, 2014) is a major reference on this topic. This study analyses six factors, namely Tolerance of Ambiguity (acceptance of other people’s culture and attitudes and adaptability), Curiosity (openness to new experiences), Confidence (trust in own competence), Serenity (awareness of own strengths and weaknesses), Decisiveness (ability to make decisions) and Vigour (ability to solve problems). The relevance of these factors was confirmed by questioning a pool of 635 employers across 34 countries. To analyse the development of skills, the study used both objective measures (comparing skill levels before and after Erasmus) and subjective measures (students’ perceptions on their development of skills). Results show that 52% of Erasmus students increased their skills and 81% of students felt they had experienced an improvement in their skills. Moreover, when compared with nonmobile students, although Erasmus students showed higher values for all factors even before departure, they increased they advantage by 42% upon return. Erasmus students had particularly high results on the Confidence factor.

Besides the Erasmus Impact Study, a few other studies have also focused on the skills developed by Erasmus participants (e.g., Bryla, 2015b; Dolga, Filipescu, Popescu-Mitroi, & Mazilescu, 2015; Martínez-Usarralde, Pausá, & Lopez, 2017; Vaicekauskas, Duoba, & Kumpikaite-Valiuniene, 2013). Different studies have referred to the development of different employability skills in consequence of the mobility program. Languages, cultural and social awareness are some of the more frequently referred employability skills enhanced by the Erasmus program (Mattern, 2016). During an international mobility exchange, students face intercultural challenges when interacting with people from different cultures providing the opportunity to enhance their intercultural skills (Matei, 2019). Besides, it has also been suggested that the mobility programme increases students’ cosmopolitan orientation, European consciousness and identity (Jacobone & Moro, 2015) and it could also be an excellent way for students to learn more about host countries social and economic reality (Cairns, 2017).

Vaicekauskas et al. (2013) used a framework of eight skills, based on the 2006 recommendation of the European Parliament and of the Council regarding the key skills for lifelong learning. This framework included Communication in mother tongue, Communication in foreign languages, Mathematical skills and basic skills in science and technology, Digital skills, Learning to learn, Social and civic skills, Sense of

### Table 1. Topics in the employability scale.

| Topic | Item formulated |
|-------|-----------------|
| Achieving distinction from peers | I have more job opportunities than my colleagues who did not do Erasmus |
| Meeting the requirements of national employers | Employers in my country value CVs with an Erasmus experience when recruiting young graduates |
| Enhancing an international career | Employers in Europe value CVs with an Erasmus experience when recruiting young graduates |
| Developing career-oriented skills | I have more job opportunities than I would have if I had not done Erasmus |
| | It is easier to find a job in my field if you have an Erasmus experience |
| | I believe doing Erasmus had a positive effect on my employability |

Source: The authors.
initiative and entrepreneurship, and Cultural awareness and expression. Results show that students considered they have developed all these skills, in particular the ones related to Communication, Social and civic skills, Learning to learn, and Cultural awareness and expression.

Bryla (2015b) conducted a survey on the benefits of an Erasmus exchange as perceived by former Polish students and found that respondents emphasized improving foreign language skills, making international friends, enhancing their intercultural understanding, becoming more mobile, more independent, and more self-confident. Similarly, with a sample of Romanian former Erasmus students, Dolga et al. (2015) found that respondents perceived important impacts of the exchange for their development of relational skills, self-confidence, and independence.

The study of Martínez-Usarralde et al. (2017) is probably the one that identifies the largest set of skills associated with the Erasmus experience. This study was conducted in Spain and analysed how different agents involved in the Erasmus exchange (organizations, universities and Erasmus students) perceive the benefits of Erasmus as far as the acquisition of skills is concerned. Martínez-Usarralde et al. (2017) developed a theoretical model of six areas of capabilities: Capabilities of Context; Capabilities of Knowing; Capabilities of Social Skills; Capabilities of Citizens; Capabilities of Feeling; and Capabilities of Adaptation. A qualitative data analysis was conducted and, Capabilities of Adaptation was split in six other capabilities: Development of individual intelligence; Development of life projects; Basic needs; Mobility; Professional development; and Autonomy. Then new capabilities were drawn in the form of benefits associated with the Erasmus programme, which allowed for the identification of a comprehensive number of skills.

Given the broadness of the Martínez-Usarralde et al. (2017) study, as far as the identification of Erasmus-related skills is concerned, we will use it as the departure point for our empirical study.

3. Method

Since one of the objectives of our study is to analyse different configurational groupings of skills’ development in order to enhance employability, we decided to use fuzzy set qualitative comparative analysis (fsQCA). For this type of analysis, fsQCA presents many advantages, such as equifinality, multifinality, conjunctival causation and asymmetric causality (Fiss, 2011; Ragin, 2008). Additionally, it can also be used for medium and large samples (Grechhamer, Misangyi, & Fiss, 2013; Kraus, Mensching, Calabrò, Cheng, & Filser, 2016; Wu, Yeh, Huan, & Woodside, 2014) as is the case of our sample.

3.1. Data collection

Through contacts with the Erasmus Students Network in Lisbon and the International Mobility Office of Universidade de Lisboa, e-mails were sent to students who had an Erasmus experience between 2013 and 2017. The e-mail provided an internet link to the questionnaire, and asked recipients to forward it to their friends who also had an Erasmus experience. Between July and November 2017, a
A convenience sample of 196 students was obtained. Within the total sample, 67.2\% of participants are female and their ages range from 21 to 32 years old. As far as study areas are concerned, 65.5\% studied Social Sciences, 16.5\% Applied Sciences, 12.9\% Humanities, 3.6\% Natural Sciences and 1.5\% Arts. Most participants (87.8\%) fulfilled all the academic objectives set for their Erasmus Exchange and about half of them (51\%) were already employed when they answered the questionnaire.

### 3.2. Measures

The instrument used in this study had four main groups. The first group concerned the measure of perceptions of employability, which was developed for the purpose of the current study. This scale had 6 items, previously described. For each item, a 7-point scale is used, where 1 = strongly disagree and 7 = strongly agree. The second and third group concerned the development of skills, and we used 33 skills identified by Martínez-Usarralde et al. (2017). Participants were asked to rate themselves in those skills using a 7-point scale where 1 = extremely poor and 7 = excellent. In the second group, the rating referred to ‘before Erasmus’ and in the third group to ‘after Erasmus’. The fourth group included demographic data on participants.

Subsequently, a measure of development for each skill was computed by subtracting the rating ‘before Erasmus’ to the rating ‘after Erasmus’, and we conducted exploratory factor analyses with this result for the 33 skills.

Table 2 presents the results of the factor analysis that enabled us to group the skills into 5 factors labelled as ‘Career-orientation skills’, ‘Adaptability skills’, ‘Managerial skills’, ‘Personal skills’, and ‘Teamwork skills’. Principal components analysis was the extraction method and varimax the rotation method. The five factors explain 56.70\% of variance and the Kaiser-Meyer-Olkin test was 0.898, showing no problems of sampling adequacy. Since the Cronbach’s alpha of the factors range from 0.718 to 0.895, all factors present acceptable or good reliability (Nunnally & Bernstein, 1994).

#### 3.2.1. Outcome

The outcome of this study is perceptions of employability. The final Perceptions of Employability scoring is the mean of all the items of the scale presented in Table 1. Table 3 shows the means and standard deviations of the items. The Cronbach’s alpha coefficient of the scale is 0.867, which means that the measure is within acceptable thresholds of reliability (Nunnally & Bernstein, 1994). We repeated factor analysis with the 33 items of Development of Skills and the 6 items of Perceptions of Employability. Six factors were extracted, explaining 57.99\% of variance, and with a Kaiser-Meyer-Olkin of 0.917, indicating that there were no problems of sampling adequacy. All items of the perceptions of employability scale loaded together in an independent factor, which is an indication of validity (Nunnally & Bernstein, 1994).

#### 3.2.2. Conditions

The present study uses six conditions: five perception of skills development and gender. Gender is a dummy variable that equals one for men and zero for women.
4. Fuzzy set comparative analysis

4.1. Calibration

The present study uses three different anchors to calibrate the data, as proposed by Woodside and Zhang (2013). According to this author, the anchor points are set to 95% to specify full membership, 50% for the crossover and 5% for the full non-membership. Table 4 presents the calibration values and the descriptive statistics for the conditions and outcome.
4.2. Analysis of necessary conditions

Following Schneider and Wagemann (2010), we start fsQCA analysis by identifying whether any of the causal conditions are necessary to the outcome (employability) or its absence. According to Ragin (2000), a condition is ‘necessary’ or ‘almost always necessary’ if the consistency score exceeds the threshold of 0.9 or 0.8, respectively. Table 5 presents the results of the analysis of the necessity of conditions. According to the table, none of the conditions exceeds the proposed thresholds. Thus, there are no ‘necessary’ or almost ‘necessary conditions’.

4.3. Analysis of sufficient conditions

A condition is sufficient if the outcome always occurs in its presence, regardless of the presence of other conditions (Ragin, 2000; 2008). The sufficiency analysis was conducted with a truth table based on two criteria: frequency and consistency (Ragin, 2008). For large samples (n > 50), Greckhamer et al. (2013) recommend a frequency threshold of 3 or more best-fit cases and a consistency threshold of 0.80 at least. In our study, we set the frequency threshold at four and the consistency threshold at 0.869.

Table 6 shows the results of the fuzzy set analysis for employability, using the notation adopted by Ragin and Fiss (2008). According to the authors, black circles (●) denote the presence of a condition and circles with a cross-out (✗) denote its absence. Moreover, a large circle refers to a core condition and a small one to a peripheral condition.

According to Table 6, there are two distinct configurational groupings with both core and peripheral conditions. Both solutions exhibit acceptable consistency (≥ 0.80). The first configuration suggests the presence of first order equifinality, presenting two solutions (1a and 1b) that rely on a combination of Adaptability skills and
Teamwork skills. Both solutions also indicate the presence of second-order equifinality, showing a clear trade-off between Career skills (solution 1a) and a combination of Managerial skills and Personal skills for women (solution 1b). The second configuration suggests the presence of three core conditions—Career-orientation skills, Managerial skills and Personal skills—in two solutions that reveal a trade-off between Adaptability skills for women (solution 2a) and Teamwork skills, also for women (solution 2b).

5. Discussion and conclusion

The first objective of this study was to develop a measure of Perceptions of Employability specifically tailored to be used with Erasmus students. Although further tests are necessary, we obtained some evidence of reliability and validity that leads us to believe that this is a promising measure for further studies. Results of this measure show that students clearly perceive that the exchange has a positive effect on their employability (Table 2). Although several authors have argued that Erasmus exchanges enhance the employability of students (Bryla, 2015a; Dolga et al., 2015; Martínez-Usarralde et al., 2017; Paray & Waldinger, 2011), to the best of our knowledge no previous study has measured employability from the perspective of Erasmus students.

The second objective of the study was to identify in the literature a comprehensive set of skills that are developed by Erasmus students, and then attempt to devise an empirically driven typology of skills that may be used in future research. We used 33 skills from the framework of Martínez-Usarralde et al. (2017) and through factor analysis we identified five groups of skills—Career-orientation skills, Adaptability skills, Managerial skills, Personal skills and Teamwork skills. Results on these scales show that Erasmus students perceive a positive development in all the groups of skills used in this study. We computed a measure that subtracts ratings ‘before Erasmus’ to ratings ‘after Erasmus’ and, for all the groups of skills, the means are positive (Table 4), meaning that the ‘after Erasmus’ rating is on average higher than the ‘before Erasmus’ rating. This result is in line with previous studies on Erasmus studies who also found positive results as far as the development of skills is concerned (e.g., Bryla, 2015b; Dolga et al., 2015; Martínez-Usarralde et al., 2017; Vaicekauskas et al., 2013). Adaptability skills is the group where students perceive a higher development of
skills. This group includes the development of skills related to operating in new and culturally diverse countries, which has often been put forward as a benefit of international student exchanges (Wiers-Jenssen, 2008).

While previous research on Erasmus exchanges has widely recognized the benefits for skills development and employability, there is still a lack of research on the link between skills development and the enhancement of employability. The third objective of this study was to attempt to fill this gap by conducting a fuzzy set analysis with five types of skills that may be developed by studying abroad as sufficient conditions and students’ perceptions of employability as the outcome.

Resulting configurations of the fsQCA give a clearer understanding that there is no single type of skills that can be developed to promote employability, that is, there are no ‘necessary’ or ‘almost necessary’ conditions. Although Mason et al. (2009) has already pointed out that the investment in a specific set of skills does not necessarily lead to better employability prospects, this is, to the best of our knowledge, the first study to give an understanding of how skills combine to produce employability.

We found two distinct configurational groupings to produce employability: one configuration has two core conditions: Adaptability skills and Teamwork skills. The other configuration includes three core conditions: Career-orientation skills, Managerial skills and Personal skills. The two distinct configurations appear to match the two main motivations for the choice of an international exchange as a strategy to enhance employability: Pursuing an international career (e.g., Wiers-Jenssen, 2008) and pursuing distinction from peers (e.g., Brooks et al., 2012). The motivation to pursue an international career may result in a focus on the development of adaptability skills, related to operating in different countries and different cultural contexts, and teamwork skills, related to tolerance, respect, and adaptation to people of different backgrounds. On the other hand, a motivation for distinction from peers may result in a focus on the development of skills that are usually associated with career advancement, such as career-orientation, managerial skills and personal skills.

Given that students enter the exchange with different motivations and that these motivations are associated with different foci towards the development of skills, some managerial implications may be drawn for higher education institutions (HEI). For attracting international students and assuring that their expectations are fulfilled, HEI need to clearly analyse their strengths and weaknesses as far as the development of particular skills are concerned, to implement relevant programs, and to clearly communicate these programs and their results.

Results also evidence gender differences in the combinations of skills development that are perceived to contribute to students’ employability. Data shows that there are more possible combinations of skills development to produce employability for women (solutions 1b, 2a, 2b). Nevertheless, we did not find in the literature review other studies evidencing these differences. Therefore, we suggest that future studies should consider including gender to validate these results. We also suggest that future research further explores whether variables in the students’ background, such as nationality or area of studies, have an impact on the configurations of skills to produce employability.
The sample size is a limitation of this study, since it is relatively small for a research on students. Also, it did not allow us to undertake an analysis by nationality of participants or by country of destination in the Erasmus program. For the development of skills, it would also be interesting to have an objective measure of skills improvement, which could then be compared with self/rating.

For future research, we consider it worthwhile to replicate this study with a wider sample. The use of constructs related to Perceptions of Employability would also be relevant to allow for further validity tests. Another suggestion would be to replicate the present study with students who did not participate in international exchanges. That would allow for a better understanding on whether or not the configurations of skills found in this study are specific to students participating in Erasmus programs. Finally, we suggest that future research on the topic of Perceptions of Employability of Erasmus students includes an analysis of its consequences, such as increased job search, more confident presentation in selection processes, and positive job outcomes.

Acknowledgement

The authors would like to thank Henrique Fiadeiro for his participation in the data collection.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

The authors gratefully acknowledge financial support from FCT—Fundação para a Ciencia e Tecnologia (Portugal), national funding through research grant UID/SOC/04521/2019.

References

Akkermans, J., Tims, M., Beijer, S., & De Cuyper, N. (2019). Should employers invest in employability? Examining employability as a mediator in the HRM-Commitment relationship. *Frontiers in Psychology*, 10, 1–10. doi:10.3389/fpsyg.2019.00717

Berntson, E., & Marklund, S. (2007). The relationship between perceived employability and subsequent health. *Work & Stress*, 21 (3), 279–292. doi:10.1080/02678370701659215

Brooks, R., Waters, J., & Pimlott-Wilson, H. (2012). International education and the employability of UK students. *British Educational Research Journal*, 38 (2), 281–298. doi:10.1080/01411926.2010.544710

Brown, P., & Hesketh, A. (2004). *The mismanagement of talent: Employability and jobs in the knowledge economy*. Oxford, UK: Oxford University Press.

Bryla, P. (2015a). The impact of international student mobility on subsequent employment and professional career: A large-scale survey among polish former Erasmus students. *Procedia—Social and Behavioral Sciences*, 176, 633–641.

Bryla, P. (2015b). Self-reported effects of and satisfaction with international student mobility: A large-scale survey among polish former Erasmus students. *Procedia—Social and Behavioral Sciences*, 176, 2074–2082.

Cairns, D. (2017). The Erasmus undergraduate exchange programme: A highly qualified success story? *Children’s Geographies*, 15 (6), 728–740.
Crossman, J. E., & Clarke, M. (2010). International experience and graduate employability: Stakeholder perceptions on the connection. *Higher Education, 59*(5), 599–613. doi:10.1007/s10734-009-9268-z

Dean, S. A., & East, J. I. (2019). Soft skills needed for the 21st-century workforce. *International Journal of Applied Management and Technology, 18* (1), 17–32.

De Cuyper, N., & De Witte, H. (2011). The management paradox: Self-rated employability and organizational commitment and performance. *Personnel Review, 40* (2), 152–172. doi:10.1108/00483481111106057

De Cuyper, N., Van der Heijden, B. I. J. M., & De Witte, H. (2011). Associations between perceived employability, employee well-being, and its contribution to organizational success: A matter of psychological contract. *The International Journal of Human Resource Management, 22* (7), 1486–1503. doi:10.1080/09585192.2011.561962

De Vos, A., De Hauw, S., & Van der Heijden, B. I. J. M. (2011). Competence development and career success: The mediating role of employability. *Journal of Vocational Behavior, 70*, 438–447. doi:10.1016/j.jvb.2011.05.010

Dolga, L., Filipescu, H., Popescu-Mitroi, M. M., & Mazilescu, C. A. (2015). Erasmus mobility impact on professional training and personal development of student beneficiaries. *Procedia—Social and Behavioral Sciences, 191*, 1006–1013. doi:10.1016/j.sbspro.2015.04.235

European Commission. (2019). *Erasmus+ annual report 2017*. Brussels: Directorate General for Education, Youth, Sport and Culture.

Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal, 54* (2), 393–420. doi:10.5465/amj.2011.60263120

Forrier, A., & Sels, L. (2003). The concept of employability: A complex mosaic. *International Journal of Human Resources Development and Management, 3* (2), 102–124. doi:10.1504/IJHRDM.2003.002414

Fugate, M., Kinicki, A. J., & Ashforth, B. E. (2004). Employability: A psycho-social construct, its dimensions, and applications. *Journal of Vocational Behavior, 65*(1), 14–38. doi:10.1016/j.jvb.2003.10.005

Grechhamer, T., Misangyi, V. F., & Fiss, P. C. (2013). Chapter 3: The two QCAs: From a small-N to a large-N set theoretic approach. In P.C. Fiss, B. Cambré, & A. Marx (Eds.), *Configurational Theory and Methods in Organizational Research*. Research in the Sociology of Organizations. Bingley, UK: Emerald Group Publishing Limited, 49–75

Groot, W., & Vann de Brink, H. M. (2000). Education, training and employability. *Applied Economics, 20* (5), 573–581. doi:10.1080/0003684003224741

Huang, R. (2013). International experience and graduate employability: Perceptions of Chinese international students in the UK. *Journal of Hospitality, Leisure, Sport & Tourism Education, 13*, 87–96. doi:10.1016/j.jhlste.2013.07.001

Jackson, A. P., Tienda, M., & Huang, C. (2001). Capabilities and employability of unwed mothers. *Children and Youth Services Review, 23* (4–5), 327–351. doi:10.1016/S0190-7409(01)00140-2

Jackson, D., & Wilton, N. (2017). Perceived employability among undergraduates and the importance of career self-management, work experience and individual characteristics. *Higher Education Research & Development, 36* (4), 747–762. doi:10.1080/07294360.2016.1229270

Jacobone, V., & Moro, G. (2015). Evaluating the impact of the Erasmus programme: skills and European identity. *Assessment & Evaluation in Higher Education, 40* (2), 309–328. doi:10.1080/02602938.2014.909005

Jahr, V., & Teichler, U. (2002). Employment and work of former mobile students. In U. Teichler (Ed.), *Erasmus in the Socrates programme: Findings of an evaluation study*. Bonn, Germany: Lemmens, 117–135
Jongbloed, B., & Vossensteyn, H. (2001). Keeping up performances: An international survey of performance-based funding in higher education. *Journal of Higher Education Policy and Management*, 23 (2), 127–145.

Kraus, S., Mensching, H., Calabrò, A., Cheng, C.-F., & Filser, M. (2016). Family firm internationalization: A configurational approach. *Journal of Business Research*, 69 (11), 5473–5478. doi:10.1016/j.jbusres.2016.04.158

Krzaklewska, E., & Krupnik, S. (2007). The role of the Erasmus programme in enhancing intercultural dialogue: Presentation of results from the Erasmus Student Network Survey 2007. In *Proceedings of the 4th International Barcelona Conference on Higher Education* (vol. 6), *Higher education for intercultural dialogue and multiculturalism*. Barcelona, Spain: GUNI (Global University Network for Innovation).

Lindberg, M. (2007). At the frontier of graduate surveys: Assessing participation and employability of graduates with master's degree in nine European countries. *Higher Education*, 53(5), 623–644. doi:10.1007/s10734-005-1672-4

Martínez-Usarralde, M., Pausa, J., & Lopez, R. (2017). The Erasmus experience and its capacitating potential: Analysis of adaptive capabilities. *International Journal of Educational Development*, 5, 101–109. doi:10.1016/j.ijedudev.2017.01.001

Mason, G., Williams, G., & Cranmer, S. (2009). Employability skills initiatives in higher education: What effects do they have on graduate labour market outcomes? *Education Economics*, 17 (1), 1–30. doi:10.1080/09645290802028315

Matei, F.-L. (2019). The intercultural competence of military students in the context of international mobility. *Land Forces Academy Review*, 24 (2), 115–122. doi:10.2478/raft-2019-0013

Mattern, D. (2016). An appraisal of the importance of graduates' language skills and Erasmus experiences. *Industry and Higher Education*, 30 (5), 355–365. doi:10.1177/0950422216666877

McQuaid, R. W., & Lindsay, C. (2005). The concept of employability. *Urban Studies*, 42 (2), 197–219. doi:10.1080/0020909804200316100

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

Opper, S., Teichler, U., & Carlson, J. (1990). *Impacts of study abroad programmes on students and graduates*. London, UK: Jessica Kingsley Publishers.

Parey, M., & Waldinger, F. (2011). Studying abroad and the effect on international labour market mobility: Evidence from the introduction of Erasmus. *The Economic Journal*, 121 (551), 194–222. doi:10.1111/j.1468-0297.2010.02369.x

Pate, J., Martin, G., & Staines, H. (2000). Exploring the relationship between psychological contracts and organizational change: A process model and case study evidence. *Strategic Change*, 9 (8), 481–493. doi:10.1002/1099-1697(200012)9:8<481::AID-JSC513>3.0.CO;2-G

Peck, J., & Theodore, N. (2000). Beyond employability. *Cambridge Journal of Economics*, 24 (6), 729. doi:10.1093/cje/24.6.729

Philioppers, K., De Cuyper, N., Forrier, A., Elst, T. V., & De Witte, H. (2016). Perceived employability in relation to job performance: A cross-lagged study accounting for a negative path via reduced commitment. *Scandinavian Journal of Work and Organizational Psychology*, 1 (1), 1–15.

Ragin, C. C. (2000). *Fuzzy-set social science*. Chicago: University of Chicago Press.

Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond*. Chicago: University of Chicago Press.

Ragin, C. C., & Fiss, P. C. (2008). Net effects analysis versus configurational analysis: An empirical demonstration. In C.C. Ragin (Ed.), *Redesigning social inquiry: Fuzzy sets and beyond*. Chicago: University of Chicago Press, 190–212

Rima, H. B., Syeda, T. U., & Lubna, J. R. (2016). The big impact of soft skills in today's workplace. *Review of Public Administration and Management*, 5 (10), 165–170.

Robles, M. M. (2012). Executive perceptions of the top 10 soft skills needed in today's workplace. *Business Communication Quarterly*, 75(4), 453–465. doi:10.1177/1080569912460400

Roskies, E., & Louis-Guerin, C. (1990). Job insecurity in managers: antecedents and consequences. *Journal of Organizational Behavior*, 11 (5), 345–359. doi:10.1002/job.4030110503
Rothwell, A., & Arnold, J. (2007). Self-perceived employability: Development and validation of a scale. *Personnel Review, 36*(1), 23–41. doi:10.1108/00483480710716704

Rousseau, D. M., & Tijoriwala, S. A. (1998). Assessing psychological contracts: Issues, alternatives and measures. *Journal of Organizational Behavior, 19*(S1), 679–695.

Schneider, C. Q., & Wagemann, C. (2010). Standards of good practice in qualitative comparative analysis (QCA) and fuzzy-sets. *Comparative Sociology, 9*(3), 397–418. doi:10.1163/156913210X12493538729793

Silla, I., De Cuyper, N., Gracia, F. J., Peiró, J. M., & De Witte, H. (2009). Job insecurity and well-being: Moderation by employability. *Journal of Happiness Studies, 10*(6), 739–751. doi:10.1007/s10902-008-9119-0

Soares, M. E., & Mosquera, P. (2019). Fostering work engagement; The role of the psychological contract. *Journal of Business Research, 101*, 469–476. doi:10.1016/j.jbusres.2019.01.003

Souto-Otero, M., Huisman, J., Beerkens, M., de Wit, H., & Sunica, V. (2013). Barriers to international student mobility: Evidence from the Erasmus Program. *Educational Researcher, 42*(2), 70–77. doi:10.3102/0013189X12466696

Stronkhorst, R. (2005). Learning outcomes of international mobility at two Dutch institution of higher education. *Journal of Studies in International Education, 9*(4), 292–315. doi:10.1177/1028315305280938

Thiessen, V., & Looker, E. D. (1999). Diverse directions: Young adults multiple transitions. In W. R. Heinz (Ed.), *From education to work: Cross-national perspectives*. Cambridge: Cambridge University Press, 46–64

Tomlinson, M. (2007). Graduate employability and student attitudes and orientations to the labour market. *Journal of Education and Work, 20*(4), 285–304. doi:10.1080/13639080701650164

Trevor, C. O. (2001). Interactions among actual ease-of-movement determinants and job satisfaction in the prediction of voluntary turnover. *Academy of Management Journal, 44*, 621–638. doi:10.2307/3069407

Tymon, A. (2013). The student perspective on employability. *Studies in Higher Education, 38*(6), 841–856. doi:10.1080/03075079.2011.604408

Vaicekauskas, T., Duoba, K., & Kumpiaite-Valiuniene, V. (2013). The role of International mobility in students’ core competencies development. *Economics & Management, 18*(4), 847–856.

Van Dam, K. (2004). Antecedents and consequences of the employability orientation. *European Journal of Work and Organizational Psychology, 13*(1), 29–51. doi:10.1080/13594320344000237

Van der Heijde, C. M., & Van der Heijden, B. I. J. M. (2006). A competence-based and multidimensional operationalization and measurement of employability. *Human Resource Management, 45*(3), 449–476. doi:10.1002/hrm.20119

Van Mol, C. (2017). Do employers value international study and internships? A comparative study of 31 countries. *Geoforum, 78*, 52–60. doi:10.1016/j.geoforum.2016.11.014

Vanhercke, D., De Cuyper, N., Peeters, E., & De Witte, H. (2014). Defining perceived employability: A psychological approach. *Personnel Review, 43*(4), 592–605. doi:10.1108/PR-07-2012-0110

Wiers-Jenssen, J. (2008). Does higher education attained abroad lead to international jobs?. *Journal of Studies in International Education, 12*(2), 101–130. doi:10.1177/1028315307307656

Woodside, A. G., & Zhang, M. (2013). Cultural diversity and marketing transactions: Are market integration, large community size, and world religions necessary for fairness in ephemeral exchanges? *Psychology & Marketing, 30*(3), 263–276. doi:10.1002/mar.20603

Wu, P.-L., Yeh, S.-S., Huan, T.-C., & Woodside, A. G. (2014). Applying complexity theory to deepen service dominant logic: Configural analysis of customer experience and outcome assessments of professional services for personal transformations. *Journal of Business Research, 67*(8), 1647–1670. doi:10.1016/j.jbusres.2014.03.012

Zhao, H., Wayne, S. J., Glibkowski, B. C., & Bravo, J. (2007). The impact of psychological contract breach on work-related outcomes: A meta-analysis. *Personnel Psychology, 60*(3), 647–680. doi:10.1111/j.1744-6570.2007.00087.x