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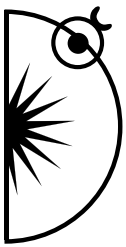

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Employability of University Students: Introduction of the Concept and the Psychometric Properties of the Polish Self-Perceived Employability Scale

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Abstract

Higher education has been undergoing a number of changes in recent years, and its effect is to be not only the diploma but the competencies needed for professional work. The employment model has also changed – currently, employees change jobs more often, contracts are rather short-term, and work requires the acquisition of new competencies in line with the idea

of lifelong learning. The Covid-19 reality complicated the job market, even more, making people to lose and change their jobs much more often and be prepared to work constantly in unstable hybrid reality. Consequently, studies should not so much prepare to undertake a specific job but provide competences that build "employability".
The aim of the research presented in the article is to adapt and prepare the Polish version of *The Self-Perceived Employability Scale* of Rothwell & Arnold (2007). 600 first-year students took part in the study. The research results indicated a significant two-factor model, and therefore a Polish version of the scale based on two subscales was developed, which has good psychometric properties. The scale differs from the original British version, which may be related to social and cultural differences. The changes have been discussed and approved by the team and consulted with the author of the original version. The scale can be used to assess the perceived level of own employability for students of different years of study. Its results may form the basis for making decisions regarding the design of study programs and their evaluation in longitudinal studies.

Keywords: employability, first year students, Self-Perceived Employability Scale, university education, career paths scale adaptation.

Introduction

There have been significant changes in the tertiary education sector in the last three decades in Poland. In 1991 the first private higher education institutions were funded. Since that time, there has been a systematic growth of the number of Higher Education Institutions (HEI's) and students up to the academic year 2011/2012. While in the early 1990's only about 7% of the population graduated from HEIs, nowadays, this number for the population of people of 25–54 years old is 21%. Participation is higher for the younger generation: in 2002, only 14.4% of young adults (aged 25–34) earned higher education. In 2018, it was 45.7%, which is even higher than the average for the OECD countries (39.9%).

Poland is generally regarded as a country with a stable economy: the level of unemployment is relatively low (2.9% in February 2020, Eurostat). However, the number of graduates has outgrown social and economic needs, and higher education no longer guarantees good employment opportunities: underemployment of university graduates is a common fact. In the last ten years, the graduation rate has been systematically decreasing (e.g., for 2.2% between 2014/15 and 2018/2018, GUS 2019). This systemic decline in the number of students and graduates is connected both with demographic issues and young adults' more diverse choices concerning their future career. Higher education

is no longer a priority for many young people in Poland, and less desirable employment conditions (casual employment opportunities) are replacing full-time positions, in common with many European countries (Akkermans et al., 2013). This situation creates new challenges for universities, especially their humanistic and social faculties: the teaching programs have to be carefully tailored so as to not only equip the students with general knowledge and social skills but also with state-of-the-art vocational and employability skills to be used in the labor market throughout their life. Sadly, there appears to be a lack of countermeasures to address the deepening gap between the skills and capabilities of graduates and the requirements and demands of the work environment in an increasingly mobile and globalized society (King, 2003).

Recent research and practice in many HEIs have been focused on preparing students as they transfer through and out of their degrees. On the contrary, little is understood and implemented to prepare students for the labor market as they transfer into their degrees. First-year students, though they have chosen their university and study program, are facing numerous decision-making situations. They need support to make informed career choices (Harris-Reeves & Mahoney, 2017) and navigate the range of courses and workshops, both discipline-specific and non-discipline specific (like time management or communication skills) to build their employability skills.

For these reasons, this paper considers the possibility of using employability measures for first-year students to assess their employability skills, making a first step in designing a support model to enable students to make informed decisions during their studies. Since there are no suitable employability measures available in Poland, the aim of this study (which is a part of a wider project) is to validate a Polish adaptation of the *Self-Perceived Employability Scale* (Rothwell et al., 2008), to utilize this to evaluate the level of self-perceived employability of Polish first-year students of humanities and social sciences faculties and indicate future research directions and practical implications related to measuring and monitoring students' employability level.

The concept of employability

Employability in a traditional view has been understood as a set of skills that is likely to give a graduate secure employment (Rothwell & Rothwell, 2016). This type of thinking focused on short-term employment outcomes – on initial graduate destinations. However, a more appropriate approach might be to facilitate skill development to help individuals sustain their careers in labour markets

where continuous life-long employment has not been the norm for some time (Vargas et al., 2018).

In more recent times, employability understood more as the *ability to attain sustainable employment appropriate to one's qualification level,* has been perceived on four different levels (Rothwell et al., 2008; Vargas et al., 2018). Firstly, as a political issue where it is seen as a tool to reduce unemployment and social exclusion, for example, in disadvantaged groups such as people with disabilities (Tymon, 2013; Strindlund et al., 2019). It has also been related to national or international workforce and evident in the government and international institutions' policies and strategies (Rothwell & Rothwell, 2016). Secondly, employability is an educational issue, as a key issue in study programs. In this perspective, individual students' educational success is measured by the level of employability they achieved (Higgs et al., 2019). Thirdly, employability is understood as a notion related to the human resource strategies, where it is leveraged as an alternative to job security (Bernstrøm et al., 2019) referring to the individuals' abilities to get and retain a job in a changing labor market. Fourth, employability is perceived as a set of individual expectations about being employed. This last construct, self-perceived employability, has been the subject of a growing body of research, with many studies relating to university students' skills and abilities, which may enable them to get a job in a contemporary changing labor market (Van Dam, 2004; Misra & Mishra, 2011; Lo Presti et al., 2018; Gunawan et al., 2019).

In our research model, employability is understood to be a complex and multidimensional phenomenon (Fugate et al., 2004) that can be considered from three perspectives:

1. Economic: as a set of skills and characteristics of employees, competencies that help them function efficiently in the changing economic reality of the modern world. These competencies are checked at the recruitment stage but also developed during professional work (Rothwell & Arnold, 2007; Lo Presti et al., 2018).
2. Educational: as an element of general education and vocational counselling programs at each stage of education (Pegg et al., 2012). The task of schools and universities is to educate young people in acquiring such qualities and abilities that will allow them to effectively build their professional development path (Dacre Pool & Sewell, 2007).
3. Individual: as a set of characteristics and skills which constitute the potential of a given person throughout their life: both at the stage of preparing for and entering the job market and during his/her entire pro-

fessional career (Al-Mutairi et al., 2014). Employability understood in this way is not a state to achieve, but a process that is dependent on both external (social, economic, educational, cultural) and internal (personal) factors (Holmes, 2013).

Generally speaking, employability can be measured in two ways: 1. As an objective factor – an analysis of various demographic characteristics, and 2. As a subjective factor based on surveying the person's beliefs and perception. There are several tools to measure employability, and they are often specific for some countries or regions. It is worthwhile to mention, e.g. Misra nad Mishra's (2011) tool for measuring employability skills that employs six factors as important: improving one's own job qualifications, task orientation, experience, professional network, good time management and a liking for challenges; or Gunawan, Creed and Glendon's (2019) *Perceived Future Employability Scale* and their research that proved a positive correlation between future perceived employability and professional ambitions, university commitment and negative – with the job hardship.

The research concept utilized in our research builds on previous works in this field of Rothwell, Herbert and Rothwell (2008) as only in their conception the employability factors are recognized as both internal and external. The scale had good psychometric values and can be used for students at any stage of their university career, so it was decided to adapt it and use it in Poland.

Method

Settings and research sample

The research was conducted at the John Paul II Catholic University of Lublin *(Katolicki Uniwersytet Lubelski – KUL*), a mid-size university located in Poland. Since 2011 its authorities have been monitoring extensively the graduates' careers (Biuro Karier KUL, 2017). The results for graduates from the class of 2015 (the most recent available) show that 11% of them are not in work (this result is much higher than the overall results for Poland). Pointing to the reasons for their unemployment, 37% of this group named lack of job offers to suit their education profile, 14% believed they lack the necessary competencies, 21% mentioned family responsibilities and 14% a lack of job offers on the local market. Further analysis of the reasons mentioned suggested that the graduates tend to stick passively to their first educational choices, not willing to look for other career options.

The study was conducted at KUL among first-year students of humanities and social sciences faculties. We decided to use the purposive sampling and se-

lected first year students. The choice of the sample of the first-year students was related to the fact that they are just starting their higher education with a teenage vision of what to do next. An invitation to participate in the survey was sent to 800 persons, and 650 out of this group responded positively. However, 50 questionnaires had some data missing and were not included in the research

Therefore, we are examining an ideal image that can be modified through a higher education degree. We can compare this vision in a longitudinal study of how it changes in the last year of study. We examined 600 people, including 431 women and 169 men. The average age of the subjects was 19.93 (SD = 2.33), average age of women was 19.71 (SD = 1.45) and men's average age was M = 20,46 (SD = 3.69).

Adaptation procedure

Before choosing the tool measuring employability for adaptation, we considered a number of potential measures. In previous studies, some measures were found to relate principally to students at the point of graduation (Gunawan et al., 2019) or very recent graduates (Misra & Mishra, 2011). Others, although relatively widely validated, had principally been tested with graduates at the start of their careers (Van Dam, 2004). As we wanted to conduct our research in a systematic way and introduce a post-assessment intervention plan, the self-perceived employability scale designed for undergraduate students by Rothwell, Herbert and Rothwell (2008) and further adapted for post-graduates (Rothwell et al., 2009) was regarded the best choice. This tool had been adapted, translated and tested with students earlier in their academic careers and in a wide range of other cultural contexts (Goodman & Tredway, 2016; Świgoń, 2016; Cheung et al., 2018; Vargas et al., 2018) hence including South Africa, Spain, Hong Kong and the USA (among many others) and had proved to be robust and reliable.

In our study, Polska Skala Postrzegania Własnej Zatrudnialności (*Polish Self-Perceived Employability Scale* – PSPE) adapted the 12 item employability scale by Rothwell et al. (2008; 2009), to which participants respond on a Likert-type scale with anchors from *strongly disagree* (1) to *strongly agree* (5). The scale had been developed based on a model which aimed to account for the interaction of four major influences on employability. First, the individual (including study engagement and self-belief); second, the university (including the perceived status of the university and the strength of its brand); third, the individual's field of study (including perceptions of employer demand for individuals from that field); finally, the state of the external labor market. After

obtaining the consent from the author of the original scale, this was translated from English to Polish by three experienced linguists, all specialists in HE, one of whom was a native speaker. The Polish version was then analyzed and back-translated into English. During this process, some changes to the original version were suggested (and agreed with the original author) to mirror better the specificity of the Polish context. For example, item 4 – the expression *highly regarded in terms of social status* was changed into *prestigious*, item 5 – the expression *external labor market* was shortened to *labor market*, as "external" might sound for our students as *foreign,* and in item 6 the word *geographical* (which once again sounded more like *foreign*) was omitted. Next, the tool was distributed to a group of 20 HE students to evaluate the content understanding, rationality, and suitability of the items to their situation. The final version of the PSPE was created that met both the requirements of grammatical and stylistic correctness of the Polish language, as well as research assumptions of the original version. Finally, the agreed Polish version was subject to an English translation, which showed a satisfactory correlation with the original.

The psychometric properties of the PSPE and descriptive statistics were developed based on the results obtained from a group of 600 students of the John Paul II Catholic University of Lublin. There were two stages of the study. The first one comprised the sample of 600 participants and was conducted in January 2020. The sample was drawn from students who took part in the "Entrepreneurship" classes as a part of their course. The second stage of the study involved the randomized sample of 150 participants, drawn from the population of students, who were subjected to re-examination with the *Self-Perceived Employability Scale* 4 weeks after the first study (early March 2020). After the dropout of 35 cases of missing data, the final number amounted to 115 subjects. Participation in the survey was voluntary and did not involve any incentive. Participants were asked to sign consent forms and information about the purpose of the study. They were then provided with instructions on survey completion, which was undertaken via Google Questionnaires. The survey followed the ethical rules of the American Psychological Association, and the university ethical authorities approved it.

The results include:

1) Psychometric properties, the analysis of PSPE reliability based on Cronbach's alfa coefficient on a sample of 600 people;
2) Evaluating the theoretical fit of the PSPE to the original research model (based on the confirmatory factor analysis)
3) Test-retest reliability

All calculations were made using the SPSS statistical package version 25.

Psychometric properties

The software used to process the data was IBM SPSS Statistics for Windows, Version 25.0. IBM Corp., and CFA was conducted by IBM SPSS AMOS, Version 22.0.0 IBM Corp.

Descriptive statistics (Table 1) revealed the normal distribution of all the items with skewness and kurtosis values from .04 to -.91. The mean range is from 3.06 to 4.02, and SD range is from 0.03 to 0.05. A negative skew is consistent with earlier studies (Rothwell et al., 2008; 2009) that is either an absolute skewness was not larger than 2 or an absolute kurtosis was not larger than 7. Thus, we may consider our data distribution taken from sample sizes greater than 300 as not substantially differ from a normal distribution (West et al., 1995; Kim, 2013).

Table 1. Items' descriptive statistics.

Items	Mean	SD	Skewness	Kurtosis
Item 1	3.64	.032	-.328	.190
Item 2	4.02	.036	-.718	.243
Item 3	3.10	.052	-.051	-.907
Item 4	3.36	.041	-.326	-.256
Item 5	3.67	.034	-.284	-.195
Item 6	3.48	.039	-.355	-.192
Item 7	3.37	.040	-.262	-.307
Item 8	3.06	.037	-.083	.102
Item 9	3.33	.038	-.241	-.101
Item 10	3.34	.033	-.140	.288
Item 11	3.47	.036	-.208	.038
Item 12	3.58	.036	-.156	-.324

Sources: Authors' research.

Before proceeding to the confirmatory factorial analysis, we decided to carry out an exploratory factorial analysis because of the possible differences that could influence the structure of the two scales (original version and the Polish adapted version).

The reliability of the 12-item *Self-Perceived Employability Scale* was estimated as internal compliance and constancy of results (test-retest method). Exploratory Factor Analysis (EFA) with the Principal Components method, Va-

rimax rotation and Kaiser normalization was applied. The matrix determinant for analyzed data was KMO= .838, with Bartlett's significant sphericity test (chi^2= 2198.364; p<.000). Based on Scree plot we can see that the factorial analysis extracted three factors with 58.2% variance explained and eigenvalues > 1 (Ledesma et al., 2015), so the following structure was obtained (Table 2). Looking at factor loadings (>.50, the three factors' structure showed a good internal consistency. There are not significant cross-loadings indicating structure fit. Loadings below 0.5 were suppressed (Hair et al., 2010).

Table 2. Exploratory Factorial Analysis with factorial loadings [1]. Three factor model.

Items	Factor 1	Factor 2	Factor 3
Item 6	**.765**	.093	.239
Item 5	**.746**	.144	.183
Item 4	**.682**	-.046	.414
Item 7	**.639**	.128	.087
Item 8	**.615**	.389	-.064
Item 9	**.609**	.426	.162
Item 12	.078	**.836**	.106
Item 11	.173	**.796**	.153
Item 10	.439	**.572**	.164
Item 2	.172	.147	**.706**
Item 1	-.111	.339	**.676**
Item 3	.306	-.092	**.595**

[1] Factor loadings < .50 are bolded.

Sources: Authors' research.

The values reveal a good coefficient of internal consistency for the factors I and II but factor III showed a relatively weak Cronbach's alfa value (Table 3). The comparable Italian study (Lodi et al. 2020) also obtained three factors. In their case, the variance was lower (51.03%) but the third factor fulfilled the criterion of Cronbach's alfa internal consistency ($\alpha = 0.67$). We decided to repeat the same EFA procedure but forcing two-factor solution by referring to the original version of the method, which confirmed internal and external employability factors (Rothwell, 2007).

Table 3. Results of internal consistency analysis. Three factor model.

Factor	Item numbers	Cronbach's alfa
I	**6**	.810
II	**3**	.754
III	**3**	.470

Sources: Authors' research.

The second iteration of EFA was conducted with the Principal Components Method and Varimax rotation. A two factors structure was chosen, which explained 47.6% of the variance. One item, (8) showed cross-loading and indicates a poor discriminant validity so it was removed. In the case of items 9, 2 and 1 the factor loadings were below 0.50 and therefore were not included (Table 4).

Table 4. Exploratory Factorial Analysis with factorial loadings [1]. Two factor model.

Items	Internal	External
Item 4	**.789**	.078
Item 6	**.772**	.214
Item 5	**.723**	.257
Item 7	**.591**	.219
Item 3	**.532**	-.006
Item 8	.468	.464
Item 2	.420	.221
Item 11	-.015	**.844**
Item 12	.095	**.821**
Item 10	.373	**.637**
Item 9	.417	.492
Item 1	.123	.370

[1] Factor loadings < 0.50 are bolded.

Sources: Authors' research.

A second factorial model with satisfying properties was obtained (Table 5). Our findings are similar to the Spanish researchers who tested a two-factor model (Vargas et al. 2018). Their model explained less variance (44.28%), and more items had higher factorial loadings. Finally, they received higher reliabil-

ity index in external employability (Factor 1 – .81) but lower reliability level in internal employability (Factor 2 – .64). The reliability which was obtained in our research was lower than the reliability of the original version (for the 11-item scale it was .83, for internal employability .72, and for external employability – .79).

Table 5. Results of internal consistency analysis. Two-factor model and general score.

Factor	Item numbers	Cronbach's alfa
I	5	.741
II	3	.754
GS	8	.778

Sources: Authors' research.

The stability of the scale assessed on a sample of 119 persons at an interval of 4 weeks was $r_s = .759$, $p < .001$ for external factor, $r_s = .650$, $p < .001$ for internal and $r_s = .769$, $p < .001$ for general score which is at the satisfactory level. The Cronbach's alfa internal compliance factor for the whole scale in the first test was $\alpha = .780$ (test) and in the second $\alpha = .720$ (retest).

In addition, a test for differences in the results obtained by the test and retest (dependent groups) was carried out (Table 6). The paired-sample t-test was applied for observation pairs. The test showed no significant differences ($p>.05$), which proves the stability of the results obtained by the method.

Table 6. Indicators of absolute stability of results for factors and the general score (test-retest).

Test- retest	t	df	Sig. (2-tailed)
external test – external retest	-1.228	118	0.222
internal test – internal retest	-1.854	118	0.066
general score test – general score retest	-1.733	118	0.086

Sources: Authors' research.

The CFA was conducted on the 8 items. At final stage the CFA was conducted on the 6 items (see Appendix). The x2 value is not significant ($p > 0.05$) and the chi square/df ratio is <3 indicating a great value ($chi^2 = 39.53$; $df = 17$). The other model fit indices are good: CFI = 0.984; NFI=0.973; RMSEA = 0.047; PCLOSE=0.570. The two factor original version structure could not be confirmed in the Italian study (Lodi et al., 2020),

because of poor fit $chi^2_{(34)} = 449.53$; CFI = 0.89; RMSEA = 0.14; SRMR = = 0.09; AIC = 518.55. However, Italian researchers managed to build a model with a good fit based on a three-factor solution: $chi^2_{(32)} = 155.49$; CFI = 0.97; RMSEA = 0.08; SRMR = 0.05; AIC = 215.04 (cf. Lodi, 2020).

The level of self-perceived employability

The average overall score for the *Self-Perceived Employability Scale* was 41.42 (*SD* = 6.52; min_{score} = 21 and max_{score} = 59, *Range* = 38). Half of all subjects' results lay between results 37 (*Q1*) and 46 (*Q3*), respectively. The result that divided all results in half was 42 (*Q2* = *Me*) and was close to the mean of scores. The distribution of our results did not differ in shape from the model of normal distribution.

Discussion

The research findings related to the validation of the Polish version of the *Self--Perceived Employability Scale* (Rothwell et al., 2008), performed on the sample of 600 students, support the use of this scale in Poland, especially in the higher education setting.

It has to be mentioned that the structure of the obtained model does not fully correspond with the original one developed by Rothwell et al. (2008) with two factors instead of four. One of the reasons that the individual factor did not enter the Polish adaptation of the test may be that in Polish secondary education, there is no tradition of emphasizing the role of engagement, motivation and self-confidence in the teaching process on such a scale as it is done in western countries such as the United States or England. The university factor (the perceived status of the university and the strength of its brand) may not have entered the model because in Poland, marketing of universities and brand building strategies is not so advanced as in the case of western countries, especially those where education is not free.

However, our two-factor solution consists of the two core dimensions, namely, internal (perceptions of employer demand for individuals from that field) and external employability (perceptions of the state of the external labor market). It corresponds with the theoretical framework presented by Fugate, Kinicki, and Ashfourth (2004), who presented employability as a complex and multidimensional phenomenon comprising three perspectives: economic, educational, and individual. The first two may be perceived as external factors

while the latter one – internal. Therefore, as stated by Holmes (2013), employability may be understood not a state to achieve, but a process that is dependent on both external (social, economic, educational, cultural) and internal (personal) factors.

Perceived employability may be considered as an important variable – from the economic, educational and individual perspective. The results achieved by our sample show that first year students are quite positive about their employability. They have just started their university studies, and a significant number of them constitutes the first generation students. However, following the career development of graduates in Poland – and graduates of our university in particular – it can be noted that for a number of them, their employability skills are not solid enough to enable them finding a good job and feeling competent players on the job market. This observation underlines a gap in employability perception of first year students' and reality after graduation. More importantly, it calls for implications for university study programs: they should incorporate not only subject knowledge but also courses on developing students managerial, communication and career development skills. Thus, the results might have a direct impact on educational practices on the tertiary level and, consequently, on the economy of our region and presumably – even a wider terrain.

Study limitations and future research directions

There are some limitations which set a basis for future research directions. Firstly, reliance on self-report measurement raises concerns over construct validity due to response distortions, among others. Secondly, the sample was derived from a single university and focused on a simple measure of self-perceived employability in this specific context. Our convenience sample may not be representative enough to allow broader generalization of our results, and additional tests within various samples may be able to examine the external validity of our model. Also, the study did not employ any other self-perceived-employability measures, which would verify the construct validity. The possible further research direction could focus on other validated scales of employability in the Polish context. Future research may also involve a longitudinal study which verifies whether students who reported a high level of employability developed career more intensively in comparison to those who scored lower levels of employability. Additionally, the follow-up study could take into account possible socio-economic changes resulting from the specific global situation (the COVID-19 pandemic).

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