

# Dynamic interconnections between career engagement and perceived employability among recent graduates: a latent change score modeling approach

Higher Education,  
Skills and Work-  
Based Learning

Received 4 March 2024  
Revised 4 April 2024  
Accepted 4 April 2024

Ilke Grosemans

*Research Group Work and Organizational Psychology, Open Universiteit,  
Heerlen, Netherlands and*

*Research Group Work, Organisational and Personnel Psychology, KU Leuven,  
Leuven, Belgium*

Anneleen Forrier

*Department of Work and Organisation Studies, KU Leuven, Leuven, Belgium, and*

Nele De Cuyper

*Research Group Work, Organisational and Personnel Psychology, KU Leuven,  
Leuven, Belgium*

## Abstract

**Purpose** – The purpose of this paper is to examine career engagement and perceived employability during the school-to-work transition. We studied within-person changes in career engagement and perceived employability in the transition from higher education to the labor market. We investigated their dynamic reciprocal relationship to unravel whether career engagement or perceived employability is the leading indicator in the relationship in view of providing adequate support for students during the school-to-work transition.

**Design/methodology/approach** – We conducted latent change score (LCS) analyses on a three-wave sample of 701 graduates in Flanders (Belgium). We collected data in July (right before graduation), November and May. LCS is a novel method allowing to simultaneously test change and reciprocal relationships.

**Findings** – Our findings demonstrated how both career engagement and perceived employability changed (within-person) non-linearly during the school-to-work transition. As for their relationship, we found that perceived employability is the driving force in the relationship. Perceived employability fueled subsequent positive changes in career engagement, whereas career engagement did not lead to subsequent changes in perceived employability.

**Originality/value** – Our study connects the career development and the graduate employability literature, and examines the school-to-work transition from preparation for the labor market to ten months after graduation. We also make an important methodological contribution, demonstrating the added value of LCS

© Ilke Grosemans, Anneleen Forrier and Nele De Cuyper. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licences/by/4.0/legalcode>

The authors want to thank Julie De Wilder and Sarah Vansteenkiste for their contribution to the data collection. This work was supported by Interne Fondsen KU Leuven/Internal Funds KU Leuven [C24M/19/012].

*Ethical approval:* The research project was approved by the Social and Societal Ethic Committee of KU Leuven [G-2020-1951-R2].



Higher Education, Skills and  
Work-Based Learning  
Emerald Publishing Limited  
2042-3896

DOI10.1108/HESWBL-03-2024-0072

---

for studying employability in higher education. Our findings provide insights in how higher education institutions may support students in the school-to-work transition.

**Keywords** Perceived employability, Career engagement, Latent change score, Graduates, School-to-work transition

**Paper type** Research paper

---

Preparing students for a smooth school-to-work transition is an important aim of higher education (Clarke, 2018). How to prepare them has been explored by both the career development literature and the graduate employability literature. Career development research aims to understand how students engage in career decision-making and actions (Jackson and Tomlinson, 2019), while graduate employability research focuses on employability experiences and outcomes (Donald *et al.*, 2019). How both interrelate has hardly been studied so far (Bennett *et al.*, 2023; Healy *et al.*, 2022), while understanding their connection is crucial for higher education institutions to effectively support their students in building a career after education (Donald *et al.*, 2024).

With this study, we respond to the call to improve our understanding of the link between career development and graduate employability (Healy *et al.*, 2022). More specifically, we study how career engagement and perceived employability are interconnected. Career engagement entails the degree of engagement in proactive career behaviors (Hirschi *et al.*, 2014). Perceived employability refers to the graduates' perception of their likelihood of success in the labor market (Berntson and Marklund, 2007; Donald *et al.*, 2019; Pitan and Muller, 2019). We examine career engagement and perceived employability during the transition from higher education to work. While higher education research has mainly studied career engagement and perceived employability before graduation (for an overview, see Healy *et al.*, 2022), it is insightful to study them during the transition: not only before but also in the months after graduation. The transition from higher education to the labor market is a turbulent, complex and uncertain time (Grosemans and De Cuyper, 2021), which can trigger changes for individuals (Healy, 2023). Moreover, career engagement and perceived employability are both important to lay the foundation for a future sustainable career (Blokker *et al.*, 2023). We study their dynamic reciprocal relationship: Both the career development literature and the graduate employability literature assume that career engagement and perceived employability are related, yet in different ways.

We study this dynamic relationship by means of latent change score (LCS) analysis, a promising method that is novel to career and employability research in higher education. LCS enables to simultaneously test change and reciprocal relationships. First, LCS allows studying within-person change of a variable: It models a latent change variable capturing change in the true score of that variable between two moments. As such, it allows to test whether career engagement and perceived employability are subject to change during the school-to-work transition. Second, LCS enables to test whether one variable has lagged impact on changes in another variable and vice versa. It thus allows testing dynamics between career engagement and perceived employability, thereby examining potential feedback loops (Matusik *et al.*, 2021). LCS makes it possible to examine whether career engagement promotes changes in perceived employability, and whether perceived employability, in turn, fuels changes in career engagement. We conduct LCS on a sample of 701 graduates in Flanders (Belgium), using a three-wave quantitative design (July 2020 – right before graduation, November 2020 and May 2021).

With this study, we contribute to higher education research on career development and employability in three ways. First, we respond to the call to integrate research on career development and employability of graduates (Donald *et al.*, 2024; Healy *et al.*, 2022; Jackson and Tomlinson, 2020). We demonstrate whether either career engagement or perceived employability

---

is the leading indicator in their relationship and whether potentially reinforcing feedback loops exist. This is of theoretical relevance: Connecting both can enrich both fields of research and reduces the risk of a jingle-jangle fallacy (Healy *et al.*, 2022). It has practical implications for higher education too, as it provides a more cohesive view on how to support students (Clarke, 2018). Second, we address the call for more scholarly attention to the school-to-work transition (Akkermans *et al.*, 2023; Blokker *et al.*, 2023; Donald *et al.*, 2018). Most career development and graduate employability research in higher education focuses on the preparation and readiness for the transition before graduation (Healy *et al.*, 2022). To understand how this readiness continues and manifests itself after the transition, longitudinal studies spanning the transition are needed (Blokker *et al.*, 2023). Third, we make an important methodological contribution, demonstrating the added value of LCS as a novel method for studying within-person change-related processes in reciprocal relationships. While within-person changes are often assumed in career and employability research, they are seldom tested (Van Harten *et al.*, 2021).

### Literature review and research question development

Two distinct fields of research have explored how graduates prepare for a smooth school-to-work transition: career development and graduate employability (Healy *et al.*, 2022). Career development research focuses on how graduates approach their careers, make career decisions and pursue their career goals (Jackson and Tomlinson, 2019). In this study, we focus on career engagement as a form of career development (Hirschi *et al.*, 2014). Career engagement is proactive career development through multiple career behaviors, such as proactively investing in one's human capital or self-exploration, exploring the context by networking or searching for feedback, or regulating one's career management (Hirschi *et al.*, 2014).

The graduate employability literature generally focuses on employability processes and outcomes. Whereas research has had a strong focus on employability skills, we join recent studies that pay more attention to graduate (or student) perceived employability (Donald *et al.*, 2019, 2024; Jackson and Tomlinson, 2020). Perceived employability is defined as the individual's perception of one's possibilities in the labor market (De Cuyper and De Witte, 2010; Rothwell *et al.*, 2008). We will first discuss career engagement and perceived employability separately and reflect about changes in the school-to-work-transition. We will then go into the reciprocal relationship between both.

#### *Career engagement in the school-to-work transition*

Career engagement is key throughout the entire career (Healy *et al.*, 2022). It enhances career success, including reaching goals, reducing insecurity and adjustment (e.g. Hirschi *et al.*, 2014; Perera and McIlveen, 2014). Yet, career engagement has particular resonance for graduates embarking on their careers, and is associated with a smooth labor market entry in terms of readiness or job search duration (e.g. Baluku *et al.*, 2021; Hirschi *et al.*, 2014; Jackson and Tomlinson, 2020). The transition from education to the labor market is a period in which individuals take major career decisions (Creed *et al.*, 2021) and their decisions and career goals when entering the labor market are expected to impact their career in the long term (Hirschi *et al.*, 2011). Career engagement in the school-to-work transition has mainly been studied before graduation, among students. Preparing for the school-to-work transition can trigger students to invest in career-related behaviors (e.g. in view of making career decisions after graduating and to achieve those goals; Bridgstock, 2009; Jackson and Tomlinson, 2020) and impact their readiness for the school-to-work transition (Baluku *et al.*, 2021). Little is known, however, about the change in career engagement *during* the transition (Dietrich and Salmela-Aro, 2016). Dietrich *et al.* (2012) propose that career engagement increases as students approach the school-to-work transition and decreases after the transition. Others argue, in contrast, that career engagement may be triggered by new experiences after the transition, for example investing in one's network when adjusting to a new role (e.g. Hirschi *et al.*, 2014). While these within-person

---

changes are theoretically assumed, empirical research following up on these changes in the challenging times of the school-to-work transition remains scarce (Blokker *et al.*, 2023).

RQ1. How does career engagement change in the transition from higher education to work?

#### *Graduate perceived employability in the school-to-work transition*

While perceived employability has mainly been studied among employees, it has also gained importance in research on graduate employability (Akkermans *et al.*, 2023). Whereas higher education institutions were commonly oriented towards employability skills, and more objective employability outcomes, the importance of the subjective perceptions of students about their employment options (i.e. their perceived employability) has been acknowledged in recent years (Clarke, 2018; Donald *et al.*, 2024; Petruzzello *et al.*, 2023). For students, perceived employability has been related to positive outcomes, such as a smooth transition to the labor market in terms of readiness (Baluku *et al.*, 2021; Okolie, 2022) and employment outcomes (Grosemans *et al.*, 2023).

Holmes (2013) stresses the processual nature of graduate employability and argues that a research focus on changes in the school-to-work transition is much needed. Graduates engage in a calibration process: Employability perceptions can change when encountering with the labor market. This process of calibrating one's perceptions based on work experiences continues until reaching stability. Prior research has pointed towards within-person changes over time in students' perceived employability. Donald *et al.* (2018) identified that these within-person changes are not straightforward: students experienced increased awareness of labor market challenges, which associated with decreases in their perceived employability (i.e. first signs of calibration). Simultaneously, they also experienced personal growth over time that increased their perceived employability before graduation. Different within-person changes can be expected when entering the labor market too: Graduates could experience a reality shock that decreases their perceived employability, while their first labor market experiences can also boost their perceived employability, again, much in line with the calibration idea (e.g. Grosemans *et al.*, 2023). The complexity both before and after graduation stresses the need to further disentangle these within-person changes in the school-to-work transition.

RQ2. How does perceived employability change in the transition from higher education to work?

#### *Reciprocal relationships between career engagement and perceived employability*

Research on career engagement and on graduate employability has largely developed in siloes (Healy *et al.*, 2022), while educational practice assumes they are interconnected: Higher education institutions offer students career development opportunities based on the assumption that this increases their employability. The literature on perceived employability shares this assumption. Career engagement is considered to be an employability-enhancing activity through which graduates increase their competences (i.e. capital; Donald *et al.*, 2019), and subsequently increase their perceived employability (Baluku *et al.*, 2021; Ho *et al.*, 2023; Qenani *et al.*, 2014). This hints at within-person changes, yet this has rarely been examined (Van Harten *et al.*, 2021): Most studies focus on between-person differences rather than within-person changes (Ho *et al.*, 2023; Kim *et al.*, 2023).

Taking a career development perspective, the relationship between career engagement and perceived employability is assumed to go in the opposite direction. This reasoning is based on social cognitive career theory (SCCT), a theoretical framework which is extensively used in the career development literature (Healy *et al.*, 2022). SCCT

---

theorizes how individuals make career decisions and take up proactive career behaviors (Brown and Lent, 2019). It assigns a key role to social cognitive elements in predicting approach or avoidance of career-related actions (e.g. career engagement). Perceived employability can be interpreted as a social cognitive element. Building on SCCT, perceived employability, as the belief in one's potential to obtain or maintain employment, is expected to steer future career engagement (Jackson and Tomlinson, 2020). Yet, empirical research following up on this assumption is scarce. Jackson and Tomlinson (2020) found a strong positive between-person effect of perceived employability on career planning with cross-sectional data of university students in Australia and England. How perceived employability leads to within-person changes of career engagement has yet to be uncovered.

Our study brings those interconnections together and explores how career engagement and graduate perceived employability mutually reinforce each other over time. Bringing the two strands together, a reciprocal relationship could be expected or in other words, a (self-reinforcing) feedback loop between career engagement and perceived employability: Perceived employability may bring about within person-changes in career engagement and career engagement may lead to within-person changes in perceived employability. Moreover, we aim to investigate whether both relationships are equally strong or whether one of the constructs is the driving force in the relationship.

*RQ3.* How are career engagement and perceived employability dynamically related in the transition from higher education to work?

#### *Unraveling dynamics by a latent change score (LCS) approach*

To adequately capture the dynamic relation between career engagement and perceived employability, we use LCS. LCS models are particularly suited for investigating how constructs evolve over time as well as providing evidence for their dynamic (i.e. time-lagged) reciprocal relationships (Matusik *et al.*, 2021).

Step 1 in LCS is a univariate model, to determine the change pattern for each variable separately (i.e. career engagement and perceived employability) (RQ1 and RQ2). The LCS (e.g.  $\Delta PE_{T1-T2}$ ;  $\Delta PE_{T2-T3}$ ) may be influenced by constant change and proportional change. Constant change is influenced by time, independent of the true score of the variable (i.e. the previous level of the variable). For instance, perceived employability may grow linearly over time. Proportional change is influenced by the true score of the variable. For instance, perceived employability at T1 may predict change in perceived employability at T2 (e.g. the higher perceived employability, the smaller its growth). The combination of the constant and proportional change explains the overall change pattern, which may be nonlinear (Cáncer and Estrada, 2023). To illustrate, a positive constant change in perceived employability combined with a negative proportional change points to a positive change that is decelerating over time. These nonlinear change trends allow to better capture the complexity of graduates' careers as they enter the labor market (Grosemans and De Cuyper, 2021).

Step 2 in LCS is a bivariate model. Bivariate LCS models investigate dynamics by testing whether concepts reciprocally relate over time (RQ3). The most important parameter in a bivariate LCS model is the so-called coupling parameter, which indicates whether the true score of one concept (e.g. the level of career engagement) relates to changes in a subsequent concept (e.g. subsequent changes in perceived employability). As these coupling parameters are modeled simultaneously (i.e. from the level of career engagement to subsequent changes in perceived employability and from the level of perceived employability to subsequent changes in career engagement), it enables us to disentangle which of both constructs is the driving force in the relationship.

## Method

### *Procedure*

The data collection was part of a larger project on early careers of students and graduates in Flanders, Belgium. We invited students from one university who were about to graduate to participate. Students received an invitation mail sent by the student services. We collected data in July 2020 (T1), which is around the time of graduation. Participants who provided their email address were invited to participate again in November 2020 (T2) and in May 2021 (T3). We created a unique code for each participant, which we used to connect their responses over time. Gift vouchers were raffled among participants. The research project was approved by the Social and Societal Ethic Committee of KU Leuven (G-2020-1951-R2).

### *Sample*

The first wave of data collection consisted of 1,001 participants. We only retained those participants who were in their final year of higher education and who completed at least one of the instruments used in this study or who provided contact details, resulting in a final sample size of 701 participants. At T1, 699 participants completed the survey. About half of the participants provided contact details (354; 50.50%). These participants were contacted again in November and in May. At T2 and T3, 291 (41.51%) and 258 (36.80%) participants completed the survey, respectively. 195 participants (27.82%) completed all three surveys. Female students were overrepresented in our sample: 70.04% of the participants were female ( $n = 491$ ), compared to 55.46% of female students obtaining a Master's degree in Flanders at the time of data collection ( $\chi^2(1) = 60.35, p < 0.001$ ; [Onderwijs Vlaanderen, 2024](#)). The mean age was 23.67 years with a standard deviation (SD) of 2.49. A majority completed their Master's degree in the field of humanities and social sciences (431; 61.48%), 139 graduates in the field of science and technology (19.83%) and 131 participants in the field of biomedical sciences (18.69%). Regarding employment status, 143 participants were working in November (T2; 49.14%) and 122 in May (T3; 47.29%), 27 were searching for work at T2 (9.28%) and 9 at T3 (3.49%) and 108 continued education at T2 (37.11%) and 77 at T3 (29.84%). At T2, 6 participants and at T3 50 participants did not provide information on their employment status.

### *Instruments*

Both perceived employability and career engagement were measured at all waves (T1, T2, T3). To assess perceived employability, we adapted the scale of [De Cuyper and De Witte \(2010\)](#) to make the items fit the context of recent graduates. A sample item is "I am optimistic that I would find a job (or another job) elsewhere, if I looked for one." The four items were measured on a 5-point Likert scale with 1 equaling "Strongly disagree" and 5 equaling "Strongly agree". For career engagement, we used the nine-item career engagement scale ([Hirschi et al., 2014](#)). A sample item is "To what extent have you in the past three months developed plans and goals for your future career?". Participants could indicate frequency of behavior on a 5-point Likert scale with 1 equaling "Not much" and 5 equaling "A great deal".

### *Analyses*

We used Mplus version 8.10, and the full information maximum likelihood estimator to deal with missing data ([Finney and DiStefano, 2013](#)), in combination with the robust maximum likelihood (MLR) estimator. We conducted confirmatory factor analyses (CFA) for each wave separately. We assessed goodness-of-fit with the comparative fit index (CFI) (cut-off value  $> 0.90$ ), root mean square error of approximation (RMSEA) and standardized root mean squared residuals (SRMR) (cut-off values  $< 0.08$ ) (e.g. [Hu and Bentler, 1999](#); [Marsh et al., 2005](#)). Configural, metric and scalar longitudinal measurement invariance were assessed. We used

$\Delta CFI < 0.01$  to compare the nested models, retained factor scores, using effect coding (Little *et al.*, 2006), from the most invariant model for the analyses.

Next, we conducted LCS. In a first step, we estimated a univariate dual change score model to assess average change in career engagement (RQ1) and perceived employability (RQ2). We created latent true scores based on the obtained factor scores. LCSs were modeled by regressing the latent true scores (e.g.  $CE_{T2}$ ) on the true score of the previous time point (e.g.  $CE_{T1}$ ; Klopack and Wickrama, 2020). Next, we estimated a constant change parameter (latent slope), and a proportional change parameter (e.g.  $CE_{T1}$  to  $\Delta CE_{T1-T2}$ ). In line with the call of Matusik *et al.* (2021), we did not constrain the proportional change parameters to equality over time. Four models were compared: an intercept-only model, a constant change model, a proportional change model and a dual change score model (including both the constant and proportional change parameter). To assess model fit, we used fit indices and a chi-square difference test with Satorra-Bentler correction.

In a second step, we combined the dual change score models of both career engagement and perceived employability in a bivariate model (RQ3). We added coupling parameters, without assuming equality over time (Matusik *et al.*, 2021). Again, we compared four models: a no coupling model, two single coupling models ( $CE_{T1}$  to  $\Delta PE_{T1-T2}$  and  $CE_{T2}$  to  $\Delta PE_{T2-T3}$  and vice versa) and a full coupling model. We used fit indices and chi-square difference test to compare models and retained the best model for interpretation. Mplus scripts can be found via [https://osf.io/efvr28/?view\\_only=1b9d184c781d45ddaaf7978bc18086e8](https://osf.io/efvr28/?view_only=1b9d184c781d45ddaaf7978bc18086e8).

## Results

### *Preliminary analysis*

Results of the CFA are presented in Table 1. The CFA model achieved an acceptable fit at the three time points. We assessed longitudinal measurement invariance (Table 1) and achieved metric invariance. We obtained partial scalar invariance:  $\Delta CFI > 0.01$  after constraining the intercepts to equality over time, so we released constraints for two items of the career engagement scale at T1. Means, standard deviations, correlations and reliability coefficients (Cronbach's alpha) are presented in Table 2.

### *Understanding change (univariate analysis; RQ1 and RQ2)*

For the univariate LCS analysis, we compared different models (Table 3). For career engagement (CE), model fit continued to improve when adding the change parameters. Based on the fit indices and model comparison, the dual change score model fitted the data best. Similar results were found for perceived employability (PE). The dual-change score model for career engagement (RQ1) has an intercept of 3.41 (with a standard error of 0.02;  $SE = 0.02$ ), a significant and positive constant change factor of 2.15 ( $SE = 0.46$ ,  $p < 0.001$ ) and a negative proportional change factors ( $\beta_2 = -0.68$ ,  $SE = 0.14$ ,  $p < 0.001$ ;  $\beta_3 = -0.66$ ,  $SE = 0.14$ ,  $p = 0.001$ ). While the constant change factor intuitively points to a positive trend, career engagement decreased over time and more or less stabilized after November (due to the proportional change). Career engagement averaged 3.41 by the time of graduation (intercept), it decreased by 0.17 by November (compared to July;  $2.15 + [-0.68 \times 3.41]$ ) and increased by 0.01 by May (compared to November;  $2.15 + [-0.66 \times (3.41 - 0.17)]$ ). The dual-change score model of perceived employability (RQ2) has an intercept of 3.45 ( $SE = 0.03$ ), a positive and significant constant change factor of 3.59 ( $SE = 0.28$ ) and negative proportional change factors ( $\beta_2 = -1.05$ ,  $SE = 0.08$ ,  $p < 0.001$ ;  $\beta_3 = -0.99$ ,  $SE = 0.08$ ,  $p < 0.001$ ). Although the direction of the change parameters is the same, perceived employability demonstrates a different trend, due to different magnitudes of the change parameters: Perceived employability averaged 3.45 by the time of graduation (intercept), slightly decreased by November by 0.03 ( $3.59 + [-1.05 \times 3.45]$ ) and increased by May by 0.20 ( $3.59 + [-0.99 \times (3.45 - 0.03)]$ ).

HESWBL

Model	MLR $\chi^2$ (df)	SCF	CFI	RMSEA	SRMR	Model comparison	$\Delta$ MLR $\chi^2$ ( $\Delta$ df)	<i>p</i>	$\Delta$ CFI
<i>Confirmatory factor analyses</i>									
T1	418.02 (64)	1.18	0.90	0.09	0.07				
T2	180.49 (64)	1.15	0.93	0.08	0.07				
T3	166.246 (64)	1.13	0.94	0.08	0.05				
<i>Longitudinal measurement invariance</i>									
Model 1 (configural invariance)	1399.58 (648)	1.05	0.92	0.04	0.08				
Model 2 (equal loadings)	1429.40 (670)	1.04	0.92	0.04	0.08	Model 1 vs. Model 2 (metric invariance)	28.24 (22)	0.17	0.00
Model 3 (+ equal intercepts)	1611.00 (692)	1.04	0.90	0.04	0.08	Model 2 vs. Model 3 (scalar invariance)	196.51 (22)	<0.001	0.02
Model 4 (– constraints of intercepts of two items)	1520.33 (690)	1.04	0.91	0.04	0.08	Model 2 vs. Model 4 (partial scalar invariance)	95.17 (20)	<0.001	0.01

**Table 1.** Confirmatory factor analyses and longitudinal measurement invariance

**Note(s):** SCF = scaling correction factor. In Model 4, constraints on the intercepts of two items were released at T1, being “collected information about employers, professional development opportunities or the job market in your desired area” and “voluntarily participated in further education, training or other events to support your career”  
**Source(s):** Table by authors

	Mean	Standard deviation	Cronbach's alpha	1	2	3	4	5	6
1. Perceived employability (T1)	3.44	0.98	0.94						
2. Perceived employability (T2)	3.40	1.00	0.95	0.61***					
3. Perceived employability (T3)	3.60	1.00	0.95	0.65***	0.70***				
4. Career engagement (T1)	3.38	0.77	0.86	0.01	0.07	0.07			
5. Career engagement (T2)	3.21	0.82	0.88	–0.03	0.01	0.00	0.56***		
6. Career engagement (T3)	3.26	0.84	0.89	–0.04	0.09	0.09	0.51***	0.64***	

**Table 2.** Correlations, descriptive statistics and Cronbach's alphas

**Note(s):** \**p* < 0.05. \*\*\**p* < 0.01. \*\*\*\**p* < 0.001  
**Source(s):** Table by authors

*Examining dynamics (bivariate analysis; RQ3)*

We combined the two univariate dual change score models in one bivariate dual change score model. We compared different nested models (Table 3). The full coupling model fitted the data best. The results of this model are visualized in Figure 1. For career engagement, the intercept is 3.41 (*SE* = 0.02), in combination with a positive constant change factor of 1.10 (*SE* = 0.51, *p* = 0.03), negative proportional change factors ( $\beta_{CE2} = -0.65$ , *SE* = 0.11, *p* < 0.001;  $\beta_{CE3} = -0.76$ , *SE* = 0.12, *p* < 0.001) and positive coupling factors from perceived



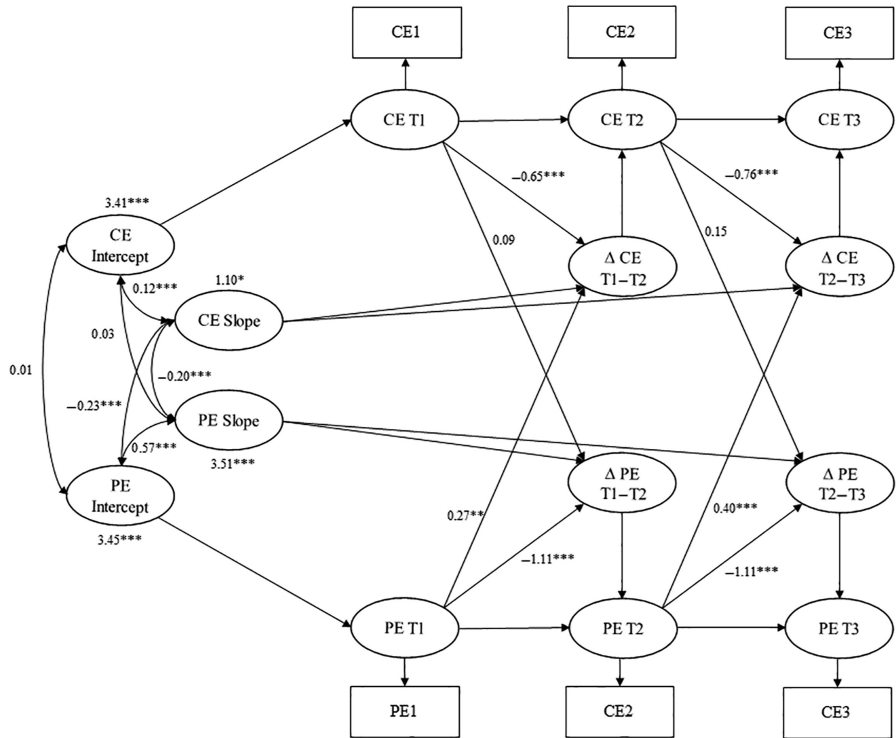
Model	MLR $\chi^2$ ( <i>df</i> )	SCF	CFI	RMSEA	SRMR	Model comparison	$\Delta$ MLR $\chi^2$ ( $\Delta$ <i>df</i> )	<i>p</i>	$\Delta$ CFI	Higher Education, Skills and Work- Based Learning
<i>Career engagement</i>										
M1: Intercept only	136.93 (6)	2.10	0.59	0.18	0.24	M1 vs M2	119.71 (3)	<0.001	0.29	
M2: Constant change	40.715 (3)	2.72	0.88	0.13	0.07	M1 vs M3	138.18 (2)	<0.001	0.27	
M3: Proportional change	47.983 (4)	2.55	0.86	0.13	0.24	M2 vs M4	32.07 (2)	<0.001	0.11	
M4: Dual change	4.09 (1)	1.68	0.99	0.07	0.09	M3 vs M4	40.67 (3)	<0.001	0.13	
<i>Perceived employability</i>										
M1: Intercept only	152.38 (6)	1.99	0.69	0.19	0.27	M1 vs M2	70.80 (3)	<0.001	0.15	
M2: Constant change	80.76 (3)	2.16	0.84	0.19	0.08	M1 vs M3	128.93 (2)	<0.001	0.17	
M3: Proportional change	68.58 (4)	2.47	0.86	0.15	0.26	M2 vs M4	71.47 (2)	<0.001	0.15	
M4: Dual change	7.99 (1)	2.06	0.99	0.10	0.10	M3 vs M4	58.67 (3)	<0.001	0.13	
<i>Bivariate model</i>										
M1: No coupling	35.52 (6)	1.84	0.98	0.08	0.08	M1 vs M2	8.03 (2)	0.02	0.00	
M2: CE $\rightarrow$ $\Delta$ PE	27.64 (4)	1.82	0.98	0.09	0.06	M1 vs M3	25.76 (2)	<0.001	0.02	
M3: PE $\rightarrow$ $\Delta$ CE	9.45 (4)	1.83	1.00	0.04	0.06	M2 vs M4	25.37 (2)	<0.001	0.02	
M4: Full coupling	2.292 (4)	1.82	1.00	0.01	0.02	M3 vs M4	7.13 (2)	0.03	0.00	
<b>Source(s):</b> Table by authors										

**Table 3.**  
Fit indices for the univariate and bivariate latent change score models

employability to  $\Delta$ CE ( $\gamma_{CE2} = 0.27$ ,  $SE = 0.09$ ,  $p = 0.003$ ;  $\gamma_{CE3} = 0.40$ ,  $SE = 0.11$ ,  $p < 0.001$ ). For perceived employability, the intercept is 3.45 ( $SE = 0.03$ ), combined with a positive constant change factor of 3.51 ( $SE = 0.46$ ) and negative proportional change factors ( $\beta_{PE2} = -1.11$ ,  $SE = 0.08$ ,  $p < 0.001$ ;  $\beta_{PE3} = -1.11$ ,  $SE = 0.10$ ,  $p < 0.001$ ). The coupling parameters from career engagement to  $\Delta$ PE were not significant ( $\gamma_{PE2} = 0.09$ ,  $SE = 0.09$ ,  $p = 0.36$ ;  $\gamma_{PE3} = 0.15$ ,  $SE = 0.09$ ,  $p = 0.11$ ). The results of the change factors show nonlinear trends in both career engagement and perceived employability, in line with the univariate analyses. The coupling parameters show that prior scores on perceived employability act as a facilitating factor for positive changes in career engagement, but prior scores on career engagement do not predict changes in perceived employability.

## Discussion

Using LCS on a longitudinal three-wave sample of 701 graduates, we studied the reciprocal relationship between career engagement and perceived employability during the school-to-work transition. First, we investigated within-person change in both career engagement and perceived employability during the school-to-work transition. Results demonstrated nonlinear change in both constructs. Whereas career engagement decreases shortly after graduation and stabilizes later, perceived employability tends to stagnate shortly after graduation and increases afterward. Second, we connected both change patterns in view of examining potential feedback loops between career engagement and perceived employability. Findings demonstrated that perceived employability is the driving force in the relationship: Perceived employability fuels subsequent positive changes in career engagement. We did not find support for a feedback loop: Career engagement did not cause subsequent changes in perceived employability.



**Figure 1.** Results of the bivariate dual change score model

**Note(s):** \* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ . Error terms omitted for presentation purposes

**Source(s):** Figure by authors

*Theoretical implications and avenues for future research*

We highlight three theoretical implications of our study. First, our study responded to the call to integrate the fields of career development and graduate employability (Healy *et al.*, 2022). Our findings show how both constructs interrelate, with perceived employability being the driving force in the relationship. Those who score high on perceived employability demonstrate a growth in career engagement. Believing in one’s own employment opportunities is an incentive to further engage in career development. This conforms the idea from SCCT that social cognitive elements, such as perceived employability, determine whether graduates approach career development activities (Brown and Lent, 2019). We did not find a reciprocal effect. This finding nuances the idea of career engagement being an employability-enhancing activity. A potential explanation for the absence of the relationship from career engagement to changes in perceived employability could be that, while career engagement may increase employability perceptions for some, it may also raise doubts among others about their chances in the labor market (e.g. Okay-Somerville and Scholarios, 2014). Career engagement is about reflecting on one’s strengths, exploring options, and/or to connecting with employers. For some, this may open doors and convince them of their own worth in the labor market. For others, on the contrary, it might be a reality check tempering their expectations or making them more insecure. An interesting way forward would be to

---

further unravel this relationship between career engagement and perceived employability and determine the conditions under which one can benefit from career engagement in terms of steering perceived employability.

As a second theoretical implication, our study responds to the call to add time to research on school-to-work transitions (Akkermans *et al.*, 2023; Blokker *et al.*, 2023). We examined the process from preparation for to initial integration in the labor market, and also studied reciprocal effects within this process (Blokker *et al.*, 2023). Our findings illustrate the changes that occur beyond graduation, thereby demonstrating the inherent interconnectedness between the school and the labor market context. The change pattern of career engagement supports the proposition of Dietrich *et al.* (2012) that career engagement peaks before graduation when students prepare for the school-to-work transition and decreases after the transition. The change pattern of perceived employability illustrates that graduation is not an end point of the employability process (Clarke, 2018). Although perceived employability stagnates right after the transition, it starts to grow again about four months after graduation. This supports the idea that first labor market experiences and personal growth may boost perceived employability (e.g. calibration). Furthermore, our study provides insight in the sequence of the process: Perceived employability precedes career engagement. Focusing on both duration of the process and sequence addresses the call of Aguinis and Bakker (2021) to adequately conceptualize and model time. We invite future research to include additional waves, to study change-to-change relationships and investigate cycles (Grimm *et al.*, 2012). Whereas this study focused on the relationship between levels in one concept and changes in the other, this would allow investigating how the change trends continue after the first year in graduates' careers. For example, researchers may investigate whether *changes* in perceived employability lead to subsequent *changes* in career engagement (and vice versa), which can further inform higher education on how to support students before entering the labor market (Herbert *et al.*, 2020).

Third, we applied a LCS model, which is novel to employability and career research in higher education. LCS is a powerful technique that is truly able to capture how concepts relate over time by focusing on within-person changes. While this type of relationships is of common interest and often hypothesized, frequently used analytical techniques are not suitable to address these questions (such as cross-lagged panel models; Matusik *et al.*, 2021). We showed the potential of LCS for understanding employability and its dynamics and invite future research to use LCS when interested in within-person changes or feedback loops.

### *Limitations*

A limitation of our study includes generalizability of the sample. Participation was based on self-selection: Both women and students in the field of humanities and social sciences were more likely to participate. Results could be replicated in a sample that is representative for the population, and ideally also in a cross-country study to investigate to what extent the results hold in other educational systems and labor markets than the Flemish/Belgian context. Furthermore, data were collected in the backdrop of the COVID-19 pandemic. Research has demonstrated that perceived employability perceptions were similar during this period vs in the years before (Grosemans *et al.*, 2023). Still, we encourage scholars to replicate the findings.

Besides replicating the findings in a broader sample, we also see value in replication in a more selective sample of specific study domains. Both career engagement opportunities and perceived employability may depend on the study domain (Clarke, 2018). Focusing on specific study domains to further contextualize the findings is an important avenue for future research too. Similarly, we deliberately chose to include all respondents who were graduating, as career engagement and perceived employability are important when graduating in view of achieving career goals, irrespective of whether graduates eventually start to work or decide to

---

engage in continued studies. Future research could include career goals before graduating to investigate whether different career-related investments are made and whether this relates differently to one's perceived employability (and vice versa) depending on one's career goals (Creed *et al.*, 2021).

### *Practical implications*

To prepare students for the school-to-work transition, higher education institutions mostly focus on career development activities. Despite our finding that career engagement does not necessarily boost employability, we do not claim that higher education investment in career development is in vain. Yet, we believe it is important for higher education institutions and educators to reflect more deeply on whether and how career development activities may impact students' employability perceptions. After all, our results show that perceived employability matters in the school-to-work transition and fuels subsequent career engagement. This study therefore urges higher education institutions to invest in students' perceived employability. This does not imply that higher education institutions or educators have to boost employability perceptions at all costs and make students believe in opportunities that are non-existent. It does mean that higher education institutions and educators can increase students' understanding and awareness of labor market realities to help them make realistic assessments of what they are worth in the labor market. Prior research has also pointed to the role of higher education institutions and educators in view of stimulating perceived employability such as providing information about job opportunities or helping students gain professional experience through internships or work-integrated learning (Bennett *et al.*, 2023; Donald *et al.*, 2018; Petruzzello *et al.*, 2023; Qenani *et al.*, 2014). Our study shows the relevance of these activities and invites higher education institutions and educators to further intensify these efforts. In doing so, it is important to keep in mind that students get a sufficiently broad view of the labor market, and that organizations at job fairs or offering internships are representative of what the labor market has to offer (Donald, 2024; Donald *et al.*, 2022).

### **References**

- Aguinis, H. and Bakker, R.M. (2021), "Time is of the essence: improving the conceptualization and measurement of time", *Human Resource Management Review*, Vol. 31 No. 2, 100763, doi: [10.1016/j.hrmr.2020.100763](https://doi.org/10.1016/j.hrmr.2020.100763).
- Akkermans, J., Donald, W.E., Jackson, D. and Forrier, A. (2023), "Are we talking about the same thing? The case for stronger connections between graduate and worker employability research", *Career Development International*, Vol. 29 No. 1, pp. 80-92, doi: [10.1108/cdi-08-2023-0278](https://doi.org/10.1108/cdi-08-2023-0278).
- Baluku, M.M., Mugabi, E.N., Nansamba, J., Matagi, L., Onderi, P. and Otto, K. (2021), "Psychological capital and career outcomes among final year university students: the mediating role of career engagement and perceived employability", *International Journal of Applied Positive Psychology*, Vol. 6 No. 1, pp. 55-80, doi: [10.1007/s41042-020-00040-w](https://doi.org/10.1007/s41042-020-00040-w).
- Bennett, D., Knight, E. and Li, I. (2023), "The impact of pre-entry work experience on university students' perceived employability", *Journal of Further and Higher Education*, Vol. 47 No. 8, pp. 1140-1154, doi: [10.1080/0309877x.2023.2220286](https://doi.org/10.1080/0309877x.2023.2220286).
- Berntson, E. and Marklund, S. (2007), "The relationship between perceived employability and subsequent health", *Work and Stress*, Vol. 21 No. 3, pp. 279-292, doi: [10.1080/02678370701659215](https://doi.org/10.1080/02678370701659215).
- Blokker, R., Akkermans, J., Marciniak, J., Jansen, P.G.W., Khapova, S.N. and Wang, M. (2023), "Organizing school-to-work transition research from a sustainable career perspective: a review and research agenda", *Work, Aging and Retirement*, Vol. 9 No. 3, pp. 239-261, doi: [10.1093/workar/waad012](https://doi.org/10.1093/workar/waad012).

- 
- Bridgstock, R. (2009), "The graduate attributes we've overlooked: enhancing graduate employability through career management skills", *Higher Education Research and Development*, Vol. 28 No. 1, pp. 31-44, doi: [10.1080/07294360802444347](https://doi.org/10.1080/07294360802444347).
- Brown, S.D. and Lent, R.W. (2019), "Social Cognitive Career Theory at 25: progress in studying the domain satisfaction and career self-management models", *Journal of Career Assessment*, Vol. 27 No. 4, pp. 563-578, doi: [10.1177/1069072719852736](https://doi.org/10.1177/1069072719852736).
- Cáncer, P.F. and Estrada, E. (2023), "Effectiveness of the deterministic and stochastic bivariate latent change score models for longitudinal research", *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 30 No. 4, pp. 618-632, doi: [10.1080/10705511.2022.2161906](https://doi.org/10.1080/10705511.2022.2161906).
- Clarke, M. (2018), "Rethinking graduate employability: the role of capital, individual attributes and context", *Studies in Higher Education*, Vol. 43 No. 11, pp. 1923-1937, doi: [10.1080/03075079.2017.1294152](https://doi.org/10.1080/03075079.2017.1294152).
- Creed, P.A., Sawitri, D.R., Hood, M. and Hu, S. (2021), "Career goal setting and goal pursuit in young adults: the role of financial distress", *Journal of Career Development*, Vol. 48 No. 6, pp. 801-816, doi: [10.1177/0894845319897136](https://doi.org/10.1177/0894845319897136).
- De Cuyper, N. and De Witte, H. (2010), "Temporary employment and perceived employability: mediation by impression management", *Journal of Career Development*, Vol. 37 No. 3, pp. 635-652, doi: [10.1177/0894845309357051](https://doi.org/10.1177/0894845309357051).
- Dietrich, J. and Salmela-Aro, K. (2016), "Emerging adults and work: a model of phase-adequate engagement", in Arnett, J.J. (Ed.), *The Oxford Handbook of Emerging Adulthood*, Oxford University Press.
- Dietrich, J., Parker, P. and Salmela-Aro, K. (2012), "Phase-adequate engagement at the post-school transition", *Developmental Psychology*, Vol. 48 No. 6, pp. 1575-1593, doi: [10.1037/a0030188](https://doi.org/10.1037/a0030188).
- Donald, W.E. (2024), *Strategic Opportunities for Bridging the University-Employer Divide*, IGI Global, Hershey, Pennsylvania.
- Donald, W.E., Ashleigh, M.J. and Baruch, Y. (2018), "Students' perceptions of education and employability", *Career Development International*, Vol. 23 No. 5, pp. 513-540, doi: [10.1108/cdi-09-2017-0171](https://doi.org/10.1108/cdi-09-2017-0171).
- Donald, W.E., Baruch, Y. and Ashleigh, M. (2019), "The undergraduate self-perception of employability: human capital, careers advice, and career ownership", *Studies in Higher Education*, Vol. 44 No. 4, pp. 599-614, doi: [10.1080/03075079.2017.1387107](https://doi.org/10.1080/03075079.2017.1387107).
- Donald, W.E., Ashleigh, M.J. and Baruch, Y. (2022), "The university-to-work transition: responses of universities and organizations to the COVID-19 pandemic", *Personnel Review*, Vol. 51 No. 9, pp. 2201-2221, doi: [10.1108/pr-03-2021-0170](https://doi.org/10.1108/pr-03-2021-0170).
- Donald, W.E., Baruch, Y. and Ashleigh, M.J. (2024), "Construction and operationalisation of an employability capital growth model (ECGM) via a systematic literature review (2016-2022)", *Studies in Higher Education*, Vol. 49, pp. 1-15, doi: [10.1080/03075079.2023.2219270](https://doi.org/10.1080/03075079.2023.2219270).
- Finney, S.J. and DiStefano, C. (2013), "Non-normal and categorical data in structural equation modeling", in Hancock, G.R. and Mueller, R.O. (Eds), *Structural Equation Modeling: A Second Course*, Information Age.
- Grimm, K.J., An, Y., McArdle, J.J., Zonderman, A.B. and Resnick, S.M. (2012), "Recent changes leading to subsequent changes: extensions of multivariate latent difference score models", *Struct Equ Modeling*, Vol. 19 No. 2, pp. 268-292, doi: [10.1080/10705511.2012.659627](https://doi.org/10.1080/10705511.2012.659627).
- Grosemans, I. and De Cuyper, N. (2021), "Career competencies in the transition from higher education to the labor market: examining developmental trajectories", *Journal of Vocational Behavior*, Vol. 128, 103602, doi: [10.1016/j.jvb.2021.103602](https://doi.org/10.1016/j.jvb.2021.103602).
- Grosemans, I., De Cuyper, N., Forrier, A. and Vansteenkiste, S. (2023), "Graduation is not the end, it is just the beginning: change in perceived employability in the transition associated with graduation", *Journal of Vocational Behavior*, Vol. 145, 103915, doi: [10.1016/j.jvb.2023.103915](https://doi.org/10.1016/j.jvb.2023.103915).

- 
- Healy, M. (2023), "Careers and employability learning: pedagogical principles for higher education", *Studies in Higher Education*, Vol. 48 No. 8, pp. 1303-1314, doi: [10.1080/03075079.2023.2196997](https://doi.org/10.1080/03075079.2023.2196997).
- Healy, M., Hammer, S. and McIlveen, P. (2022), "Mapping graduate employability and career development in higher education research: a citation network analysis", *Studies in Higher Education*, Vol. 47 No. 4, pp. 799-811, doi: [10.1080/03075079.2020.1804851](https://doi.org/10.1080/03075079.2020.1804851).
- Herbert, I.P., Rothwell, A.T., Glover, J.L. and Lambert, S.A. (2020), "Graduate employability, employment prospects and work-readiness in the changing field of professional work", *The International Journal of Management Education*, Vol. 18 No. 2, 100378, doi: [10.1016/j.ijme.2020.100378](https://doi.org/10.1016/j.ijme.2020.100378).
- Hirschi, A., Niles, S.G. and Akos, P. (2011), "Engagement in adolescent career preparation: social support, personality and the development of choice decidedness and congruence", *Journal of Adolescence*, Vol. 34 No. 1, pp. 173-182, doi: [10.1016/j.adolescence.2009.12.009](https://doi.org/10.1016/j.adolescence.2009.12.009).
- Hirschi, A., Freund, P.A. and Herrmann, A. (2014), "The career engagement scale", *Journal of Career Assessment*, Vol. 22 No. 4, pp. 575-594, doi: [10.1177/1069072713514813](https://doi.org/10.1177/1069072713514813).
- Ho, T.T.H., Le, V.H., Nguyen, D.T., Nguyen, C.T.P. and Nguyen, H.T.T. (2023), "Effects of career development learning on students' perceived employability: a longitudinal study", *Higher Education (Dordr)*, Vol. 86 No. 2, pp. 1-19, doi: [10.1007/s10734-022-00933-6](https://doi.org/10.1007/s10734-022-00933-6).
- Holmes, L. (2013), "Competing perspectives on graduate employability: possession, position or process?", *Studies in Higher Education*, Vol. 38 No. 4, pp. 538-554, doi: [10.1080/03075079.2011.587140](https://doi.org/10.1080/03075079.2011.587140).
- Hu, L.T. and Bentler, P.M. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives", *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 6, pp. 1-55, doi: [10.1080/10705519909540118](https://doi.org/10.1080/10705519909540118).
- Jackson, D. and Tomlinson, M. (2019), "Career values and proactive career behaviour among contemporary higher education students", *Journal of Education and Work*, Vol. 32 No. 5, pp. 449-464, doi: [10.1080/13639080.2019.1679730](https://doi.org/10.1080/13639080.2019.1679730).
- Jackson, D. and Tomlinson, M. (2020), "Investigating the relationship between career planning, proactivity and employability perceptions among higher education students in uncertain labour market conditions", *Higher Education*, Vol. 80 No. 3, pp. 435-455, doi: [10.1007/s10734-019-00490-5](https://doi.org/10.1007/s10734-019-00490-5).
- Kim, S., Creed, P.A., Hood, M. and Bath, D. (2023), "Protean career processes in young adults: relationships with perceived future employability, educational performance, and commitment", *International Journal for Educational and Vocational Guidance*, pp. 1-23, doi: [10.1007/s10775-023-09584-0](https://doi.org/10.1007/s10775-023-09584-0).
- Klopack, E.T. and Wickrama, K. (2020), "Modeling latent change score analysis and extensions in Mplus: a Practical Guide for Researchers", *Structural Equation Modeling*, Vol. 27 No. 1, pp. 97-110, doi: [10.1080/10705511.2018.1562929](https://doi.org/10.1080/10705511.2018.1562929).
- Little, T.D., Slegers, D.W. and Card, N.A. (2006), "A non-arbitrary method of identifying and scaling latent variables in SEM and MACS models", *Structural Equation Modeling*, Vol. 13 No. 1, pp. 59-72, doi: [10.1207/s15328007sem1301\\_3](https://doi.org/10.1207/s15328007sem1301_3).
- Marsh, H.W., Hau, K.-T. and Grayson, D. (2005), "Goodness of fit in structural equation models", in Maydeu-Olivares, A. and McArdle, J.J. (Eds), *Contemporary Psychometrics*, Erlbaum.
- Matusik, J.G., Hollenbeck, J.R. and Mitchell, R.L. (2021), "Latent change score models for the study of development and dynamics in organizational research", *Organizational Research Methods*, Vol. 24 No. 4, pp. 772-801, doi: [10.1177/1094428120963788](https://doi.org/10.1177/1094428120963788).
- Okay-Somerville, B. and Scholarios, D. (2014), "Coping with career boundaries and boundary-crossing in the graduate labour market", *Career Development International*, Vol. 19 No. 6, pp. 668-682, doi: [10.1108/cdi-12-2013-0144](https://doi.org/10.1108/cdi-12-2013-0144).
- Okolie, U.C. (2022), "Work placement learning and students' readiness for school-to-work transition: do perceived employability and faculty supervisor support matter?", *Journal of Vocational Behavior*, Vol. 139, 103805, doi: [10.1016/j.jvb.2022.103805](https://doi.org/10.1016/j.jvb.2022.103805).

- Onderwijs Vlaanderen (2024), "Hoger onderwijs in cijfers: studiebewijzen hoger onderwijs (2019-2020)", available at: <https://onderwijs.vlaanderen.be/nl/onderwijsstatistieken>
- Perera, H.N. and McIlveen, P. (2014), "The role of optimism and engagement coping in college adaptation: a career construction model", *Journal of Vocational Behavior*, Vol. 84 No. 3, pp. 395-404, doi: [10.1016/j.jvb.2014.03.002](https://doi.org/10.1016/j.jvb.2014.03.002).
- Petruzziello, G., Mariani, M.G., Guglielmi, D., Van Der Heijden, B.I.J.M., De Jong, J.P. and Chiesa, R. (2023), "The role of teaching staff in fostering perceived employability of university students", *Studies in Higher Education*, Vol. 48 No. 1, pp. 20-36, doi: [10.1080/03075079.2022.2105830](https://doi.org/10.1080/03075079.2022.2105830).
- Pitan, O.S. and Muller, C. (2019), "Students' self-perceived employability (SPE)", *Higher Education, Skills and Work-Based Learning*, Vol. 10 No. 2, pp. 355-368, doi: [10.1108/heswbl-03-2019-0040](https://doi.org/10.1108/heswbl-03-2019-0040).
- Qenani, E., MacDougall, N. and Sexton, C. (2014), "An empirical study of self-perceived employability: improving the prospects for student employment success in an uncertain environment", *Active Learning in Higher Education*, Vol. 15 No. 3, pp. 199-213, doi: [10.1177/1469787414544875](https://doi.org/10.1177/1469787414544875).
- Rothwell, A., Herbert, I. and Rothwell, F. (2008), "Self-perceived employability: construction and initial validation of a scale for university students", *Journal of Vocational Behavior*, Vol. 73, pp. 1-12, doi: [10.1016/j.jvb.2007.12.001](https://doi.org/10.1016/j.jvb.2007.12.001).
- Van Harten, J., De Cuyper, N., Knies, E. and Forrier, A. (2021), "Taking the temperature of employability research: a systematic review of interrelationships across and within conceptual strands", *European Journal of Work and Organizational Psychology*, Vol. 31 No. 1, pp. 145-159, doi: [10.1080/1359432x.2021.1942847](https://doi.org/10.1080/1359432x.2021.1942847).

#### Corresponding author

Ilke Grosemans can be contacted at: [ilke.grosemans@ou.nl](mailto:ilke.grosemans@ou.nl)