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Archivio istituzionale della ricerca

Self-Perceived Employability and Psychological Well-Being Among Italian Students and Graduates : A Three-Wave Cross-Lagged Study

This is the final peer-reviewed author's accepted manuscript (postprint) of the following publication:

Published Version:

Petruzziello, G., Chiesa, R., Guglielmi, D., van der Heijden, B.I.J.M., de Jong, J.P., Mariani, M.G. (2025). Self-Perceived Employability and Psychological Well-Being Among Italian Students and Graduates : A Three-Wave Cross-Lagged Study. JOURNAL OF CAREER DEVELOPMENT, 52(1), 21-40 [10.1177/08948453241296805].

Availability:

This version is available at: <https://hdl.handle.net/11585/1001203> since: 2025-01-15

Published:

DOI: <http://doi.org/10.1177/08948453241296805>

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Abstract

This study investigated the reciprocal relationship between self-perceived employability (SPE) and psychological well-being (PWB), **a connection previously suggested by theory but not yet explored empirically in early career research**. Drawing from the Conservation of Resources theory, we analysed the reciprocal effects between SPE and PWB. Using data collected from 376 Italian university students and graduates, we tested the hypotheses with the Random Intercept Cross-Lagged Panel Model (RI-CLPM) to analyse the SPE-PWB reciprocal linkage at both the between-person and within-person levels. While we observed a reciprocal SPE-PWB association across three waves at the between-person level, we obtained mixed findings at the within-person level. This study is the first to test the reciprocal associations between SPE and PWB among labour market entrants adopting a within-person approach. The findings offer new empirical insights into SPE during early career stages, with implications for both future research and practical applications.

Keywords: Self-perceived Employability, Psychological Well-being, COR Theory, Transition-to-work, Random-intercept Cross-lagged Panel Model (RI-CLPM)

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Changes in the world of work have made the transition-to-work stage more uncertain and less linear than in the past, with more fragmented movements before labour market entrants achieve stability in the labour market (Akkermans et al., 2021; Blokker et al., 2023). The pandemic has also highlighted distortions in the labour market that threaten career sustainability and make people place more value on their mental health (Ng & Stanton, 2023). As a result, beyond outcomes like employment status or career progression, there is increasing emphasis on the toll that uncertain transition prospects take on the psychological well-being of new entrants (Blokker et al., 2023).

Aligning with the assumptions of the Conservation of Resources theory (COR theory, Hobfoll et al., 2018), personal resources are essential for a healthy transition to work (Akkermans et al., 2021). Within COR theory, Self-perceived Employability (henceforth, SPE)—the self-estimated ability and possibilities to attain employment (Clarke, 2018)—is a personal resource that supports labour market entrants coping strategies and protects their well-being (Akkermans et al., 2021; Clarke, 2018). Research among students and graduates has supported a relationship between SPE and Psychological Well-being (hereafter, PWB) (e.g., Petruzziello et al., 2023). However, previous studies have not yet empirically established an effect of SPE on PWB among labour market entrants due to the use of cross-sectional or multi-wave designs measuring one variable per wave (Petruzziello et al., 2023; Schettino et al., 2022). Moreover, to investigate the direction of causality further, we also argue that PWB can influence SPE, suggesting a reciprocal relationship between the two variables over time. Indeed, according to the COR theory notion that gaining resources leads to further resource acquisition, there is growing recognition that experiencing PWB may contribute to more positive appraisals of one's employment potential, suggesting that it might also be an antecedent of SPE (Vanhercke et al., 2016). Many scholars have called for research on the reciprocal effects of SPE and PWB over time (i.e., Hu et

al., 2022; Van Harten et al., 2021) to move SPE theory forward and guide research among new entrants, adding to limited evidence obtained with (older) workers (e.g., De Cuyper et al., 2012; Van Harten et al., 2021). Moreover, no studies have explored these reciprocal associations within a person. Specifically, SPE and PWB are not necessarily stable; individuals could experience periods of higher or lower PWB than usual or higher or lower SPE than usual. For example, news about the economy could temporarily impact the SPE (or PWB) of a student who usually has a relatively high level of SPE (or PWB). Such individual fluctuations in SPE could impact subsequent individual levels of PWB and vice versa. **While, theoretically**, change processes of SPE and PWB should occur within individuals as they are psychological personal resources (Sonnentag, 2015; Vanhercke et al., 2015), research has yet to investigate how SPE and PWB are reciprocally related to one another over time within one person. **Instead, the focus has been on between-person differences.** This is problematic because without examining within-person dynamics, it is hard to infer conclusions about the relationship and direction of causality between SPE and PWB (Lo Presti & De Rosa, 2023; Van Harten et al., 2021).

Considering this, and based on the COR theory, we aimed to test the reciprocal relationships between SPE and PWB with a three-wave cross-lagged design with Italian students and graduates. **Our study makes several contributions.** The three-wave longitudinal cross-lagged design allowed us to examine the SPE influence on PWB among labour market entrants, **going beyond** previous cross-sectional designs (Schettino et al., 2022). Additionally, analysing the reciprocal effects between SPE and PWB from a within-person perspective addresses the call for a more rigorous exploration of SPE among labour market entrants (Van Harten et al., 2021) **building on the limited existing cross-lagged evidence** (e.g., De Cuyper et al., 2012; Vanhercke et al., 2015). Understanding this reciprocal **relationship extends SPE theory** (Clarke, 2018), providing future research with information for an accurate study of the SPE-PWB dynamics. **Our research also advances COR theory by investigating personal resource gain spirals in more depth and integrating a within-person perspective.**

The Context of Italy

Italy is a country where a stagnant economy struggles to absorb highly educated graduates, causing more complex and prolonged transitions than in other European countries (Pastore et al., 2021). Difficult transition paths like those in Italy may also affect later career-level functioning and well-being (Blokker et al., 2023; Tanzi, 2023). In addition, the pandemic and the lockdown measures had students and graduates feel stuck, with declining job prospects and worsening mental health (Parola, 2020). This context makes our study particularly relevant as it can offer practical guidance for higher education to promote SPE and PWB, which may represent interchangeable resources to activate positive spirals amid uncertain transition prospects. Also, observing whether the relationships hypothesised here occur within a person can inform whether the associations tested are valid and whether they can be used as a basis for interventions (Hamaker et al., 2015).

Theoretical Background and Hypotheses Development

COR theory (Hobfoll et al., 2018) asserts that people strive to build and protect resources—objects, personal characteristics, conditions, and energy—that they can invest in to prevent stress or foster motivation to gain additional resources to achieve goals. COR theory is not only applied in stress studies but also in career and employability studies (De Vos et al., 2020; Kirves et al., 2014). A major assumption of COR theory is that resources do not exist in isolation. Instead, they form patterns of correlated resources (i.e., resource caravans), where having a resource can cause other resources to flourish. These resource caravans may also follow a spiralling trend (i.e., "Resource gain spirals"), which defines bi-directional relationships between resources and suggests reciprocal links over time (Hobfoll et al., 2018).

SPE as a Predictor of PWB among Labour Market Entrants

COR theory considers personal resources—i.e., aspects related to the individual's ability to recover from adversities, control the environment, and achieve their goals (Hobfoll et al., 2018)—key

factors for protecting well-being. SPE—i.e., self-estimated ability and possibilities to attain employment, shaped by the appraisal of personal and contextual career-related factors (Caballero et al., 2021; Clarke, 2018)—is considered a personal resource within the COR Theory. **Indeed, SPE promotes a sense of control and an adaptive mindset for handling unexpected or stressful career events** (Chiesa et al., 2018), **which predisposes individuals to better transition outcomes and health** (Gunawan et al., 2021; Yizhong et al., 2017). In this sense, labour market entrants with resources (i.e., SPE) may **feel more capable of navigating a stressful transition-to-work stage** (Lo Presti & De Rosa, 2023). **This** fosters positive expectations **for** the future and encourages adaptive coping strategies (Gunawan et al., 2021; Yizhong et al., 2017). In other words, SPE **shields** people from the stress caused by adverse conditions, making them feel better opportunities to reach their goals instead, which may determine outcomes such as a higher PWB (Vanhercke et al., 2016). **Previous studies have shown** that SPE relates to PWB among labour market entrants, **but these conclusions were based solely on cross-sectional studies or multi-wave studies where one variable was collected at each wave** (e.g., Petruzzello et al., 2023; Schettino et al., 2022). This limitation raises doubts about the strength of the SPE's influence on PWB. Thus, there was still room to **substantiate** the positive **impact** of SPE on PWB with a more rigorous research design. Therefore, we formulated the following hypothesis:

Hypothesis 1. SPE has a positive cross-lagged effect on PWB.

The Reversed Effect of PWB on SPE

COR theory's resource gain spiral principle (Hobfoll et al., 2018) includes the possibility of reverse relationships, as resources are expected to feed each other. Some scholars (e.g., Lo Presti & De Rosa, 2023; Vanhercke et al., 2016) have relied on this assumption to **argue** that a reversed effect of PWB on SPE is also possible. Vanhercke et al. (2016) **proposed** this relationship integrating the "selection effect" hypothesis—which posits that mental health states influence the appraisal of employment prospects (Paul & Moser, 2009)—with the **idea** that PWB is itself a resource,

corresponding with energy that can be invested (Williamson & Carr, 2009), to activate gain spirals towards SPE. Indeed, well-being **promotes** broader thinking and action, **which can improve performance across** life domains, identify opportunities, and "broaden and build" resources (Fredrickson, 2001)- This is supported by evidence that PWB fosters **greater** self-regulation towards career goals and resource development (Reis et al., 2013; Singhal & Rastogi, 2017). As such, PWB may influence an individual's perception of **their** competitiveness in the labour market, positively impacting their SPE (Vanhercke et al., 2016).

The reversed causal effect between PWB and SPE has been partially supported in earlier research. **Lo Presti and De Rosa (2023) and Vanhercke et al. (2015) found a trend but no statistical significance to support the PWB effect on SPE in samples of adult workers. Meanwhile,** Hu et al. (2022) found a significant positive effect of work engagement on SPE. However, evidence of reversed causation between SPE and PWB is **absent** in the literature on labour market entrants, making further empirical work necessary. In sum, we intended to fill this gap and posited that PWB is a resource that could be invested to drive the acquisition of another resource, like SPE. Therefore, we hypothesised the following:

Hypothesis 2. PWB has a positive cross-lagged effect on SPE.

The Reciprocal Relationship between SPE and PWB

A comprehensive consideration of COR theory's resource gain spiral principle (Hobfoll et al., 2018) requires exploring the possibility that 'normal' and 'reverse' causation occur simultaneously, **thereby** defining reciprocity. **Since resources are interconnected, initial resource acquisition stimulates an upward movement, with resources influencing each other over time in a spiralling trend** (Halbesleben et al., 2014). That is, one resource provides the momentum to build another resource that can reciprocate and contribute to the development of the former in a continuous process. Building on this feature of COR theory, Vanhercke et al. (2016) proposed that the 'normal' and 'reversed'

relationships between SPE and PWB likely occur simultaneously. Specifically, feeling employable leads to a higher sense of control, inducing enhanced PWB that, in turn, makes people feel even more employable. Thus, SPE and PWB may mutually reinforce each other's development over time.

Although this relationship is theoretically possible, research has yet to provide evidence of a full bidirectional spiral between SPE-PWB (Hu et al., 2022; Lo Presti & De Rosa, 2023). Therefore, we formulated the following hypothesis:

Hypothesis 3. SPE and PWB have a positive and reciprocal effect over time.

Figure 1 shows the hypothesised relationships in our study.

Between- and within-person effects

COR theory predicts within-person processes, where changes in one variable cause changes in another variable (and vice versa), as an individual's personal resources may fluctuate over time (Halbesleben et al., 2014; Vanhercke et al., 2015). Accordingly, changes in SPE and PWB should occur at a within-person level, reflecting intraindividual psychological processes. For example, someone who feels more employable than usual would also exhibit higher PWB than usual (and vice versa). However, previous research that has examined COR theory-based associations between SPE and PWB (e.g., Schettino et al., 2022) has focused solely on stable between-person differences and only determined whether labour market entrants with higher (or lower) SPE than others, on average, also show higher (or lower) PWB. This could be problematic, as confounding between-level and within-level effects may lead to erroneous conclusions and limit the understanding of a psychological relationship that may also present unexpected features. For example, while some students might perceive their employability more positively than others (between-person effects), an individual student's perceptions of employability might be higher during a particular period, for example, when the student is experiencing a period of higher psychological well-being (within-person effect; Curran & Bauer, 2011). Therefore, adopting a within-person analysis in addition to the between-level analysis of

the SPE-PWB relationship is **essential** (Lo Presti & De Rosa, 2023; Van Harten et al., 2021). This would provide a complete and unbiased view of the intra-individual and inter-individual dynamics of the SPE-PWB relationship.

Methods

Participants

The participants in this study (i.e., Italian university students and graduates) were involved in a three-wave data collection. At Wave 1, 1,597 people filled out an online questionnaire. After removing cases with many missing values or those who did not fulfil the participation requirements, the final sample for Wave 1 consisted of 1,294 valid cases (81.03% of the initial sample) with a mean age of 25.81 years ($SD = 4.10$). Most respondents identified themselves as women (88.1%) and were students (70.3%). In Wave 2, we obtained 677 valid cases (response rate 52.32%). In Wave 3, the number of valid cases was 376 (response rate of 29.06% compared to Wave 1 and 55.54% compared to Wave 2). The final sample of participants had a mean age of 25.79 years ($SD = 4.21$). Most identified as women (89.4%; men = 10.4%; non-binary = 0.3%). Most participants were students (71.5%; graduates = 28.5%) with a Humanities background (85.6%; Healthcare = 0.8%; Scientific-technologic = 13.6%) and had work experience (76.6%; no previous experience = 23.4%).

An attrition analysis revealed that there were no differences between those who dropped out after Wave 1 ($N = 914$) and those who stayed until Wave 3 ($N = 376$) in terms of gender ($\chi^2 = 5.43, p = .14$), previous work experience ($\chi^2 = 1.14, p = .29$), and participant status (student or graduate; $\chi^2 = 1.09, p = .29$). Nevertheless, the two groups differed in terms of study field ($\chi^2 = 19.17, p = .00$), as the Humanities field was overrepresented in Wave 3 compared to those who had dropped out after Wave 1. There were no differences between the two groups with regard to age, $t(1288) = -0.86, p = .39$, SPE, $t(1288) = -0.71, p = .48$, and PWB, $t(1288) = -1.62, p = .11$.

Procedure for Data Collection

We conducted this study in accordance with the guidelines of the Declaration of Helsinki. The bio-ethical committee of the first author's institution reviewed and approved the ethical standards of the study. Participants were involved in a three-wave research design, which occurred in November-December 2019 (Wave 1), February-March 2020 (Wave 2), and May-June 2020 (Wave 3). Our purposive sampling strategy focused on individuals facing the transition to working life or about to do so. This differs from previous research in the field (e.g., Schettino et al., 2022), which involved convenience samples of students at an earlier stage of their studies. The inclusion criteria were: 1) being enrolled in the final year of a degree programme (for students) or 2) having graduated within the past year (for graduates). We used social media to recruit participants for an online survey. Participation was voluntary, and participants gave informed consent at each wave. They were assured confidentiality and the right to withdraw participation at any time. Those who provided their e-mail addresses were invited to Waves 2 and 3, three and six months after the first completion, respectively. We used an alphanumeric code to anonymously link the questionnaire at Wave 1 with the same participants' questionnaire at Waves 2 and 3. One month after the invitation to each measurement, we sent a reminder to complete the questionnaire. It is important to note that the second and third waves occurred shortly before and during the outbreak of the COVID-19 pandemic respectively, when Italian students and graduates experienced lockdown measures to prevent the contagion. The time lag in this study was chosen based on theoretical and empirical research on SPE (Kirves et al., 2014) and indications from the Italian context (Gilardi & Guglielmetti, 2015).

Measures

SPE

SPE was measured with five items by Berntson and Marklund (2007) and back-translated into Italian by Caricati et al. (2016). The items rated individuals' agreement with statements about how their personal qualities make it easy to find employment (e.g., "My personal qualities would make it easy for

me to get a job") on a 5-point Likert scale (from 1 = *completely disagree* to 5 = *completely agree*).

Bertson and Marklund (2007) evaluated the original scale's factorial structure and reliability ($\alpha = .88$).

The Italian adaptation confirmed the uni-dimensional structure with good composite reliability ($= .71$) and gender invariance (Caricati et al., 2016).

PWB

PWB was measured with ten items from the World Health Organisation's well-being index – validated by Bech et al. (1996) and translated to Italian with the translation-back-translation methodology (Hambleton, 2005). This scale, already used to examine the SPE-mental health relationship (Berntson & Marklund, 2007), described how respondents felt regarding the absence of negative symptoms and the presence of positive symptoms. The items included statements like "During the last week... I have felt well-adjusted to my life situation.", rated on a 5-point Likert scale (from 1 = *never* to 5 = *always*). The original scale showed internal consistency ($\alpha = .85$) and external validity (concurrent and discriminant).

Control variables

Control variables were age, gender, field of study, participants' status (students or graduates), and work experience, as these factors relate to SPE and PWB (De Cuyper et al., 2012). We created dummy variables for the categorical control variables.

Analytical Strategy

First, we computed means, standard deviations, reliabilities, and correlations between all study variables from Wave 1 to Wave 3 for preliminary analyses. Then, we tested measurement models across waves and evaluated measurement invariance over time. To assess measurement invariance, we compared increasingly stringent models, namely configural, metric, and scalar invariance models (Selig & Little, 2012). We performed the main analyses with the Mplus Statistical Package, version 6.12 (Muthén & Muthén, 1998-2015). We tested the hypothesised relationships with the Random Intercept-

Cross Lagged Panel Model (RI-CLPM) approach introduced by Hamaker et al. (2015) to address the limitations of the conventional cross-lagged panel model (CLPM) in separating within-person effects from between-person differences. For example, some students may have higher SPE/PWB than others because they have a more positive disposition than others (between-person level), while news about the economy could temporarily affect the SPE/PWB of a student who usually has a relatively high level of SPE/PWB (within-person level). RI-CLMP includes random intercepts (RIs) that capture and rule out the time-invariant, between-person variability and "isolate" intraindividual variability, generating unbiased cross-lagged estimates at the within-person level. More specifically, the method disaggregates the observed score variance into variance that represents the individual's deviation from the sample grand mean and their stable position in the sample (stable differences among individuals: between-person level) and variance representing the within-person fluctuation (i.e., the difference between each individual's observed score and expected score; Hamaker et al., 2015).

In the model specification, we used the observed variables for SPE and PWB, allowing each observed score to regress on their latent variable, with each loading constrained at 1. This resulted in three latent factors representing the within-person variance for each variable. We then included the RIs with factor loadings constrained at 1 to represent the between-person differences in SPE and PWB. We also added the correlations between RIs, which illustrate how the between-person differences in one variable are associated with between-person differences in the other variable. Additionally, the error variance was constrained to be zero to ensure that all the variance in observed variables was explained by between- and within-person latent variables. Moreover, the within-person correlations between the two constructs were also estimated at each Wave.

Next, we examined the stability of SPE and PWB by testing autoregressive effects coefficients, which represent to what extent within-person deviations in one variable's score can predict within-person deviations in the same variable's score (i.e., the "within-person carry-over effect"; Hamaker et

al., 2015, p. 104). We then investigated the cross-lagged associations between SPE and PWB. This allowed us to evaluate whether deviations from an individual's expected PWB score could be predicted by deviations from their expected SPE score three months before and vice versa. This is crucial to detect potential reciprocal associations (Hamaker et al., 2015). We evaluated the model's goodness of fit by using the Comparative Fit Index (CFI), the Non-Normed Fit Index (NNFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardised Root Mean Square Residual (SRMR). CFI and NNFI higher than or equal to 0.90 and RMSEA and SRMR below 0.08 suggest a good fit with the data (Hu & Bentler, 1999)

Results

Preliminary Results

Table 1 reports Cronbach's alpha values, mean values, standard deviations, and correlations among all study variables. SPE and PWB at each Wave presented an acceptable Cronbach's alpha value (Nunnally & Bernstein, 1994). Bivariate correlation showed that SPE and PWB were positively and significantly correlated at each wave ($p < .01$), with a correlation coefficient spanning from $r = .21$ to $r = .75$. SPE scores showed the strongest correlation between Wave 1 and Wave 2 ($r = .75$); PWB scores showed the highest correlation between Wave 2 and Wave 3 ($r = .64$). The strongest correlation between SPE and PWB was between PWB at Wave 2 and SPE at Wave 3 ($r = .37$). Each measurement model had an acceptable fit across all three waves: Wave 1, $\chi^2(83) = 253.042$, CFI = .928, NNFI = .901, RMSEA = .074, SRMR = .065; Wave 2, $\chi^2(83) = 232.591$, CFI = .957, NNFI = .946, RMSEA = .069, SRMR = .051; Wave 3, $\chi^2(82) = 232.536$, CFI = .951, NNFI = .938, RMSEA = .069, SRMR = .042. Model indices of the configural, $\chi^2(255) = 793.135$, CFI = .939, NNFI = .925, RMSEA = .043, SRMR = .069; metric, $\chi^2(285) = 860.220$, CFI = .935, NNFI = .928, RMSEA = .042, SRMR = .072; and scalar, $\chi^2(311) = 992.343$, CFI = .923, NNFI = .922, RMSEA = .044, SRMR = .072, models were good. To test invariance, we followed Chen's (2007) recommendations that an absolute change in CFI

$\geq .01$ and $RMSEA \geq .015$ would indicate non-invariance. Comparing the configural and metric models, the ΔCFI (.004) and the $\Delta RMSEA$ (.001) were within the threshold value. However, comparing the metric vs scalar models, the $\Delta RMSEA$ (.002) was acceptable, but not the ΔCFI (.012). Therefore, we tested an alternative scalar invariance model, relaxing the intercept constraint of PWB. The modified model fitted the data well: $\chi^2(309) = 901.267$, $CFI = .933$, $NNFI = .932$, $RMSEA = .041$, $SRMR = .072$, and the change in CFI and RMSEA was within the acceptable cut-off range (respectively, 0.002 and 0.003), herewith supporting partial scalar invariance. We also checked for predictors' multicollinearity with the variance inflation factor (VIF). VIF was = 1.06 for SPE and PWB (Wave 1) and = 1.13 for SPE and PWB (Wave 2), being both below the threshold of 5.00, indicating no multicollinearity issues (Hair et al., 2019).

Main Results

We calculated Intra-class Correlations (ICC_1). We found an $ICC_1 = .89$ for SPE, suggesting that 11% of the variance occurred within-person. For PWB, the ICC_1 was .81, indicating that 19% of PWB variance was explained within-person. The RI-CLPM model fitted well with the data, $\chi^2(1) = 2.579$, $CFI = .99$, $NNFI = .98$; $RMSEA = .07$, $SRMR = .02$. Regarding control variables, the correlation matrix (Table 1) showed that only gender and work experience were systematically related to SPE and PWB. Therefore, we tested the model with and without these variables. The model with control variables fitted worse than the model without, $\chi^2(5) = 28.538$, $CFI = .93$, $NNFI = .63$, $RMSEA = .11$, $SRMR = .04$, and control variables did not affect SPE and PWB. For parsimoniousness, we only report the results for the RI-CLPM without control variables (Becker, 2005).

Between-Person Level Results

At the between-person level, the RI-CLPM model revealed a significant correlation between SPE and PWB ($B = 0.15$; $S. E. = .03$; $p < .000$), meaning that higher between-person levels of SPE were related to higher between-person levels of PWB. To cross-validate the RI-CLPM, we tested an

additional conventional CLPM, typically used to examine the dynamic association between two constructs at the between-person level. The joint use of CLPM and RI-CLPM has been recommended (e.g., Haenggli et al., 2021; Li, 2022) to complement the between-level analysis of reciprocal effects, which in RI-CLPM are only modelled as correlations between RIs. Our CLPM model fit the data well, $\chi^2(140) = 385.134$, CFI = .947; NNFI = .928; RMSEA = .068; SRMR = .066. Figure 2 shows the standardised coefficients of the CLPM reciprocal model. We found that SPE at Waves 1 and 2 had a cross-lagged positive effect on PWB at Waves 2 ($\beta = .12$, S.E. = .06, $p = .01$) and 3 ($\beta = .11$, S.E. = .06, $p = .02$), respectively. Regarding reversed causation, we found that PWB at Waves 1 and 2 impacted SPE at Wave 2 ($\beta = .11$, S.E. = .03, $p = .005$) and 3 ($\beta = .12$, S.E. = .03, $p = .003$), respectively. At a between-person level, the results from RI-CLPM and CLPM supported our hypotheses. Individuals with higher (or lower) SPE reported higher (or lower) PWB three months later compared to those with lower (or higher) SPE. **Moreover, those higher (or lower) in PWB experienced higher (or lower) SPE three months later than those lower (or higher) in PWB. This suggests a reciprocal relationship between SPE and PWB over time.**

Within-Person Level Results

Figure 3 shows the within-person level results. In terms of stability, only PWB at Wave 2 predicts itself within-person at Wave 3 ($B = 0.29$; S. E. = 0.09; $p = .001$), **reflecting a within-person carry-over effect and implying that individuals scoring higher-than-expected PWB at Wave 2 are likely to score higher-than-expected PWB three months later. In contrast, SPE did not persist over time.** The cross-lagged estimates only showed that PWB at Wave 2 predicts SPE at Wave 3 ($B = 0.17$; S.E. = 0.08; $p = .043$), herewith partially supporting Hypothesis 2. **These results suggest that a deviation from the expected SPE score at Wave 3 is predicted by variations in the PWB expected score measured three months earlier.** The other cross-lagged effect (SPE on PWB) was **non-significant**, thus rejecting

Hypothesis 1 and Hypothesis 3 at a within-person level. Figures 2 and 3 summarise the CLPM and the RI-CLPM results, including coefficients' estimates.

Discussion

Building on the COR theory's gain spirals principle (Hobfoll et al., 2018), we conducted a three-wave cross-lagged study among Italian labour market entrants. We posited a positive cross-lagged effect from SPE to PWB (H1), a positive reversed effect with PWB enhancing SPE (H2), and a reciprocal relationship between the two variables over time (H3). While we enrich the literature by filling several empirical gaps, we also make a unique contribution by exploring the within-person effects of the SPE-PWB relationship. Below, we discuss the results and their implications for the theoretical development of the SPE concept and COR theory.

Between-person Level Differences

Our results (i.e., RI-CLPM and the additional CLPM) supported our hypothesised relationships at a between-person level. Support for H1 advances the literature on labour market entrants by providing evidence that SPE influences PWB. This evidence confirms that SPE is a personal resource and that individuals with higher resources (i.e., SPE) have positive expectations, exert control over transition-related stressors, and augment their resources (i.e., PWB). This finding confirms a COR-rooted mechanism establishing a causal relationship, extending beyond non-definitive evidence from cross-sectional designs involving labour market entrants (e.g., Petruzzello et al., 2023). The reverse PWB effect on SPE (H2) aligns with theoretical assumptions based on the COR gain spiral principle (Vanhercke et al., 2016), adding to the previously mixed findings in organisational contexts (De Cuyper et al., 2012; Hu et al., 2022; Lo Presti & De Rosa, 2023). This finding further supports the resource gain mechanism already documented in organisational studies (e.g., Hu et al. 2022), explaining how non-work-related PWB contributes to resource acquisition. Namely, while investing in work-related well-being, such as work engagement, increases productivity and signals good potential to

employers, young people who are not employed can leverage positive mental health to develop career-related resources, become more active in the labour market, and enhance their chances of competing for a job (Melendro et al., 2020). This also reinforces recent findings on mental health as an asset and a key factor for a sustainable transition to work (Blokker et al., 2023). The reverse effect also invites further reconsideration of the SPE concept. Since subjective career success has also been shown to be a potential antecedent of graduate SPE (Bargsted et al., 2021), rethinking SPE's nature is essential to test models that adopt a reverse causation perspective.

Support for H3 provides empirical confirmation of the COR theory's assumption about the spiralling nature of the gain process involving SPE and PWB (Hobfoll et al., 2018). Labour market entrants who report higher SPE may report higher PWB, which predicts higher SPE levels. This finding adds to prior research (De Cuyper et al., 2012; Vanhercke et al., 2015), offering a more rigorous test of the bi-directional SPE-PWB relationships, as recently called for (Van Harten et al., 2021). This spiraling process is important evidence for integrating COR and sustainable career theories. Indeed, sustainable careers rely on recurring cycles of resource acquisition (De Vos et al., 2020), with SPE as crucial in this dynamic perspective (Akkermans et al., 2023). Our findings offer a foundation for future research to examine the role of SPE and gain spirals during the transition to work from a sustainable career perspective.

In summary, the between-person effects remark significant differences among labour market entrants in the extent to which they experience SPE and PWB. From a resource-based perspective, the combination of between-person effects and within-person effects (discussed below) supports integrating both between- and within-person effects in COR theorising. Halbesleben et al. (2014) suggested that resource fluctuations occur both between and within individuals. We support this assumption and follow those calling to adopt this view more extensively in COR-based research (e.g., Poetz & Volmer, 2024).

Within-person Level Effects

At a within-person level, SPE showed low variability, and **non-significant** autoregressive effects confirmed low SPE dynamicity. **The non-significant** SPE autoregressive effects indicate that the consistency is due to more stable elements (i.e., between-person differences). Although this result may seem unexpected compared to the idea that SPE is malleable (Berntson & Marklund, 2007) and to the COR theory's assumption that resources can activate upward spirals (Hobfoll et al., 2018), it echoes Kirves et al. (2014)'s finding that most people in their study showed **stable SPE levels** over two years. By integrating the RI-CLPM approach with the COR theory (Halbesleben et al., 2014), we can explain that SPE depends on stable factors, which define different levels of this resource across people (i.e., between-person differences). At an intraindividual level (within-person effects), SPE fluctuations are more transient and triggered by specific episodes, **which is consistent with COR theory** (Halbesleben et al., 2014). **Another possible** explanation is that, being surveyed every three months, labour market entrants may not yet have developed or tested the resources affecting SPE. This warns future research on the **SPE malleability** and the effectiveness of short-term interventions in increasing it.

We found that higher-than-usual levels of PWB at Wave 2 predicted higher-than-usual PWB levels three months later (during the pandemic outbreak), suggesting a gain spiral for PWB. This **confirms the assumption that specific episodes elicit resource fluctuation and that resources help against stressful circumstances to preserve one's resources (Halbesleben et al., 2018).** Regarding the cross-lagged effects, we observed that PWB at Wave 2 was positively linked to SPE at Wave 3, partially supporting H2. This result confirms PWB as a resource influencing employment-related appraisals. PWB impacted SPE between February-March 2020 (Wave 2) and May-June 2020 (Wave 3)—when the outbreak of the COVID-19 pandemic occurred, harming Italian labour market entrants' health and career prospects (Parola, 2020). **This suggests that this event may have triggered PWB's effect on SPE. This effect aligns with the COR theory, which holds that resource gains become more**

important under stressful circumstances and that the value of some resources fluctuates as much as they enable adaptation to the environment (Halbesleben et al., 2014). When health is more threatened, PWB becomes necessary to cope with challenges, activating an intra-individual resource gain mechanism towards SPE. Theoretically, this advances the understanding of how PWB can predict SPE fluctuations, explaining how resources change within a person over time and clarifying this process (Haenggli et al., 2021). It also encourages COR-based research to explore resource gain and loss cycles, particularly during disruptive events that impact careers (i.e., career shocks; Akkermans et al., 2020). Regarding SPE theory, this evidence explains a condition for the reverse PWB-SPE effect among entrants in the labour market and invites future research to account for such a suggestion.

With our within-person data, we could not find support for H1 and H3 and thus could not confirm the notion of the COR theory resource gain spiral. Specifically, we did not observe that within-person variations in SPE predict increases in PWB three months later, in contrast to the between-person evidence. This prevented us from establishing a reciprocal association of these two variables over time at a within-person level. As Kirves et al. (2014) suggested, SPE may take more time to influence PWB than the three months considered here. This is consistent with the COR theory, which suggests that an investment in resources (such as SPE, through career behaviours) may initially create downward pressure, hindering the resource gain process (i.e., non-significant SPE effects found here) or even causing an initial resource depletion (i.e., a negative impact on PWB) before the upward gain spiral is established (Halbesleben et al., 2014). Future studies with longer time lags are necessary to test this explanation further. They could analyse the mechanism and the timing by which labour market entrants offset the initial resource depletion after investing in SPE (through job search and career behaviours, Yizhong et al., 2017) and eventually establish a gain spiral towards enhanced PWB. Additionally, as Vanhercke et al. (2015) noted, SPE may not offer enough perceived control over increasingly unstable career prospects for new entrants.

Overall, our study responds to calls for within-person approaches to bridge the knowledge gap regarding SPE and its relationships with related variables, helping to overcome inconclusive existing findings (Van Harten et al., 2021). Our findings indicate that the hypothesised gain spiral dynamics sustain a reciprocal association, but only at a between-person level, while intra-individual changes do not explain such a feedback loop. Although our within-person findings largely contradicted our expectations, we highlight the importance of disentangling between and within-person effects. The RI-CLPM allowed us to advance the theoretical understanding of the SPE construct and its bidirectional relationship with PWB by exposing nuances in this relationship and in the underlying COR dynamics. **Our results have important implications** for future research, as they suggest a rethinking of the nature of SPE (i.e., low intra-individual variability) and its dynamics in early career stages. Applying research designs that incorporate within-level effects is essential for deepening our understanding of the SPE-PWB reciprocity while accounting for conditions and variables that affect this relationship at the intra-individual level.

Limitations and Future Research Recommendations

Some limitations must be considered. First, following prior debates in the literature about SPE (i.e., Kirves et al., 2014; Vanhercke et al., 2016), future research in this field may benefit from using different time lags. Specifically, given the findings about within-person effects, it is important to investigate whether the reciprocal effects might occur using longer intervals. Second, **we relied on** self-report measures. Even though alleviated by the longitudinal design, **which may reduce artefactual covariance between variables**, the problem of common-method variance remains a possibility (Podsakoff et al., 2003). Future research could address this by collecting data from other sources, such as SPE rated by others (e.g., recruiters, career services staff), to detect possible selection effects (Paul & Moser, 2009).

Additionally, future research could explore alternative analytical methods to control for measurement error, which could still be present even when factorial invariance is tested (Hamaker et al., 2015). Third, the overrepresentation of the humanities field and women recommends caution about the generalisability of these results. More heterogeneous samples would improve the robustness of future findings. Fourth, we did not collect variables that could explain intra-individual processes, such as those related to individuals' environment, which are crucial to the transition to work (Clarke, 2018). Variables like environmental and cultural factors (e.g., family support, social pressure, higher education curricula design) (Blokker et al., 2023; Gerritsen et al., 2024) or the post-pandemic era's labour market conditions may offer valuable insights for future research. Fifth, RI-CLPM's capacity to infer causality is currently debated because of its limitations in controlling for unmeasured time-invariant and time-variant confounders (Lüdtke & Robitzsch, 2021). Future research could use alternative approaches to control for these confounders and draw robust conclusions about causality in these cross-lagged designs (Lüdtke & Robitzsch, 2021).

Practical Implications

The challenges of complex transitions to work in Italy (Tanzi, 2023) call for targeted interventions for labour market entrants. Our results offer more precise practical indications. Given that SPE exhibited low intraindividual variability, our first suggestion is to exercise caution when adopting short-term career interventions. Instead, career counsellors should focus on longer-term investments—with enduring and tailored career education programmes—to gradually change the individual level of SPE over time. Also, psychometrically valid instruments (i.e., questionnaires; Marciniak, 2020) could help detect these changes over time.

Second, these interventions should aim to provide a comprehensive capital of career resources to shape SPE. These interventions should stimulate career identity, career decision-making, and goal-setting (through modules for self-reflection and planning), as well as build social capital and labour

market knowledge (through sessions on occupational opportunities) and job search skills. These interventions should be embedded within multi-level career ecosystems (Donald et al., 2024) with other stakeholders that influence SPE. For instance, career counsellors should cooperate with teaching staff to design curricula that help students understand their learning and knowledge, **relate** it to available opportunities for professional and personal development, and present it effectively to prospective employers, thereby enhancing human capital and job search skills (Petruzzello et al., 2023). **Moreover**, Universities could partner with employers to provide labour market information and internships, which would enhance work ethics and cultural capital. This multi-level long-term intervention **approach**, rather than short-term interventions, is **especially necessary** with Italian labour market entrants (Nie et al., 2019) and should offer robust SPE development opportunities.

Third, our findings suggest that interventions should also promote PWB, which can pave the way for sustainability-oriented resources like SPE. Activating counsellors, even internal to universities, is critical to help students and graduates improve their mental health with tailored interventions. In Italy, Di Consiglio et al. (2021) developed an online intervention to increase PWB among University students. This multi-module programme **included** explanations and practical exercises to **enhance** emotional awareness and self-knowledge, assertiveness, relational skills, and the ability to overcome harmful psychological processes. The authors reported promising results **in** improving University students' PWB. Adopting **such** interventions as best practices may activate virtuous circles through gains spirals against threatening circumstances.

Conclusion

We tested whether SPE and PWB are reciprocally associated over time among entrants in the labour market. Using the RI-CLPM, we disentangled between- and within-person differences. Our three-wave study shows that, at a between-person level, SPE predicts PWB over time. Notably, in addition to this, PWB predicts SPE over time, supporting the hypothesised reciprocal association as

well. However, most of our expectations were not supported at a within-person level. Despite this, using RI-CLPM remains crucial for advancing our understanding of SPE as a resource within the COR theory and its relationship with well-being. The results of our study contribute to the SPE literature by extending knowledge about labour market entrants and offering practical suggestions for fostering personal resources to support a sustainable transition to work.

References

- Akkermans, J., Blokker, R., Buers, C., Van der Heijden, B. I. J. M., & De Vos, A. (2021). Ready, Set, Go! The School-to-Work Transition in the New Career. In E. A., Marshall, & J. E., Symonds. (Eds.), *Young Adult Development at the School-to-Work Transition: International Pathways and Processes* (pp. 77-103). Oxford University Press.
- Akkermans, J., Donald, W. E., Jackson, D., & Forrier, A. (2023). Are we talking about the same thing? The case for stronger connections between graduate and worker employability research. *Career Development International*, 29(1), 80–92. <https://doi.org/10.1108/cdi-08-2023-0278>
- Akkermans, J., Richardson, J., & Kraimer, M. L. (2020). The Covid-19 crisis as a career shock: Implications for careers and vocational behavior. *Journal of Vocational Behavior*, 119, 103434. <https://doi.org/10.1016/j.jvb.2020.103434>
- Bargsted, M., Yeves, J., Merino, C., & Venegas-Muggli, J. I. (2021). Career success is not always an outcome: Its mediating role between competence employability model and perceived employability. *Career Development International*, 26(2), 119–139. <https://doi.org/10.1108/cdi-06-2020-0141>
- Bech, P., Gudex, C., & Staehr Johansen, K. (1996). The WHO (ten) well-being index: Validation in diabetes. *Psychotherapy and Psychosomatics*, 65(4), 183–190. <https://doi.org/10.1159/000289073>

- Becker, T. E. (2005). Potential problems in the statistical control of variables in organisational research: A qualitative analysis with recommendations. *Organisational Research Methods*, 8(3), 274–289. <https://doi.org/10.1177/1094428105278021>
- Berntson, E., & Marklund, S. (2007). The relationship between perceived employability and subsequent health. *Work and Stress*, 21 (3), 279–292. <https://doi.org/10.1080/02678370701659215>
- Blokker, R., Akkermans, J., Marciniak, J., Jansen, P. G., & Khapova, S. N. (2023). Organising school-to-work transition research from a sustainable career perspective: A review and research agenda. *Work, Aging and Retirement*, 9(3), 239–261. <https://doi.org/10.1093/workar/waad012>
- Caballero, G., Álvarez-González, P., & López-Miguens, M. J. (2021). Which are the predictors of perceived employability? An approach based on three studies. *Assessment & Evaluation in Higher Education*, 47(6), 1–18. <https://doi.org/10.1080/02602938.2021.1983769>
- Caricati, L., Chiesa, R., Guglielmi, D., & Mariani, M. G. (2016). Real and perceived employability: a comparison among Italian graduates. *Journal of Higher Education Policy and Management*, 38 (4), 490–502. <https://doi.org/10.1080/1360080x.2016.1182668>
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling* 14(3), 464–504. <https://doi.org/10.1080/10705510701301834>
- Chiesa, R., Fazi, L., Guglielmi, D., & Mariani, M. (2018). Enhancing sustainability: Psychological capital, perceived employability, and job insecurity in different work contract conditions. *Sustainability*, 10(7), 2475. <https://doi.org/10.3390/su10072475>
- Clarke, M. (2018). Rethinking graduate employability: the role of capital, individual attributes and context. *Studies in Higher Education* 43(11), 1923–1937. <https://doi.org/10.1080/03075079.2017.1294152>

- Curran, P. J., & Bauer, D. J. (2011). The disaggregation of within-person and between-person effects in longitudinal models of change. *Annual review of psychology*, *62*, 583-619.
<https://doi.org/10.1146/annurev.psych.093008.100356>
- De Cuyper, N., Raeder, S., Van der Heijden, B. I. J. M., & Wittekind, A. (2012). The association between workers' employability and burnout in a reorganisation context: Longitudinal evidence building upon the conservation of resources theory. *Journal of Occupational Health Psychology*, *17*(2), 162–174. <https://doi.org/10.1037/a0027348>
- De Vos, A., Van der Heijden, B., & Akkermans, J. (2020). Sustainable careers: Towards a conceptual model. *Journal of Vocational Behavior*, *117*, 103196. <https://doi.org/10.1016/j.jvb.2018.06.011>
- Di Consiglio, M., Fabrizi, G., Conversi, D., La Torre, G., Pascucci, T., Lombardo, C., Violani, C., & Couyoumdjian, A. (2021). Effectiveness of NoiBene: A web-based programme to promote psychological well-being and prevent psychological distress in university students. *Applied Psychology: Health and Well-being*, *13*(2), 317–340. <https://doi.org/10.1111/aphw.12251>
- Donald, W. E., Van Der Heijden, B. I. J. M., & Baruch, Y. (2024). Introducing a sustainable career ecosystem: Theoretical perspectives, conceptualisation, and future research agenda. *Journal of Vocational Behavior*, *151*, 103989. <https://doi.org/10.1016/j.jvb.2024.103989>
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*(3), 218–226. <https://doi.org/10.1037/0003-066x.56.3.218>
- Gerritsen, S., Pak, K., Darouei, M., Akkermans, J., & Van Der Heijden, B. (2024). Building a sustainable career during the initial transition to work: a multiple-stakeholder perspective on proactive behaviors and contextual factors. *Career Development International*.
<https://doi.org/10.1108/cdi-03-2024-0096>

- Gilardi, S., & Guglielmetti, C. (2015). Will I make it? Self-perceived employability in the unemployed. *Ricerche di Psicologia, 1*, 63–87. <https://doi.org/10.3280/rip2015-001003>
- Gunawan, W., Creed, P. A., & Glendon, A. I. (2020). Young adults' perceived future employability: Antecedents and consequences. *International Journal for Educational and Vocational Guidance, 21*(1), 101–122. <https://doi.org/10.1007/s10775-020-09430-7>
- Haenggli, M., Hirschi, A., Rudolph, C. W., & Peiró, J. M. (2021). Exploring the dynamics of protean career orientation, career management behaviors, and subjective career success: An action regulation theory approach. *Journal of Vocational Behavior, 131*, 103650. <https://doi.org/10.1016/j.jvb.2021.103650>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis* (8th ed.). Cengage Learning.
- Hamaker, E. L., Kuiper, R. M., & Grasman, R. P. P. P. (2015). A critique of the cross-lagged panel model. *Psychological Methods, 20*(1), 102–116. <https://doi.org/10.1037/a0038889>
- Hambleton, R. K. (2005). Issues, designs, and technical guidelines for adapting tests into multiple languages and cultures. In R. K., Hambleton, P. F. Merenda, & C. D., Spielberger (Eds.), *Adapting educational and psychological tests for cross-cultural assessment* (pp. 3-38). Psychology Press. <https://doi.org/10.1016/j.socscimed.2015.08.004>
- Halbesleben, J. R. B., Neveu, J. P., Paustian-Underdahl, S. C., & Westman, M. (2014). Getting to the "COR": Understanding the role of resources in conservation of resources theory. *Journal of Management, 40*(5), pp. 1334–1364. <https://doi.org/10.1177/0149206314527130>
- Hobfoll, S. E., Halbesleben, J., Neveu, J. P., & Westman, M. (2018). Conservation of resources in the organisational context: The reality of resources and their consequences. *Annual review of organisational psychology and organisational behavior, 5*, 103-128. <https://doi.org/10.1146/annurev-orgpsych>

- Hu, L., & Bentler, P. M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1–55. <https://doi.org/10.1080/10705519909540118>
- Hu, S., Jiang, L., & Chen, L. (2022). Get a little help from your perceived employability: Cross-lagged relations between multi-dimensional perceived employability, job insecurity, and work-related well-being. *European Journal of Work and Organizational Psychology*, 31(6), 880–893. <https://doi.org/10.1080/1359432x.2022.2050219>
- Kirves, K., Kinnunen, U., de Cuyper, N., & Mäkikangas, A. (2014). Trajectories of perceived employability and their associations with well-being at work: A three-wave study. *Journal of Personnel Psychology*, 13(1), 46–57. <https://doi.org/10.1027/1866-5888/a000103>
- Li, J. B. (2022). Teacher-student relationships and academic adaptation in college freshmen: Disentangling the between-person and within-person effects. *Journal of Adolescence*, 94(4), 538-553. <https://doi.org/10.1002/jad.12045>
- Lo Presti, A., & De Rosa, A. (2024). Employable, successful and healthy, or vice versa? A three-wave cross-lagged analysis. *European Journal of Work and Organizational Psychology*, 33(1), 99-113. <https://doi.org/10.1080/1359432X.2023.2250089>
- Lüdtke, O., & Robitzsch, A. (2021). *A critique of the random intercept cross-lagged panel model*. PsyArXiv. <https://doi.org/10.31234/osf.io/6f85c>
- Marciniak, J., Hirschi, A., Johnston, C. S., & Haenggli, M. (2020). Measuring career preparedness among adolescents: Development and validation of the career resources questionnaire—adolescent version. *Journal of Career Assessment*, 29(1), 164–180. <https://doi.org/10.1177/1069072720943838>

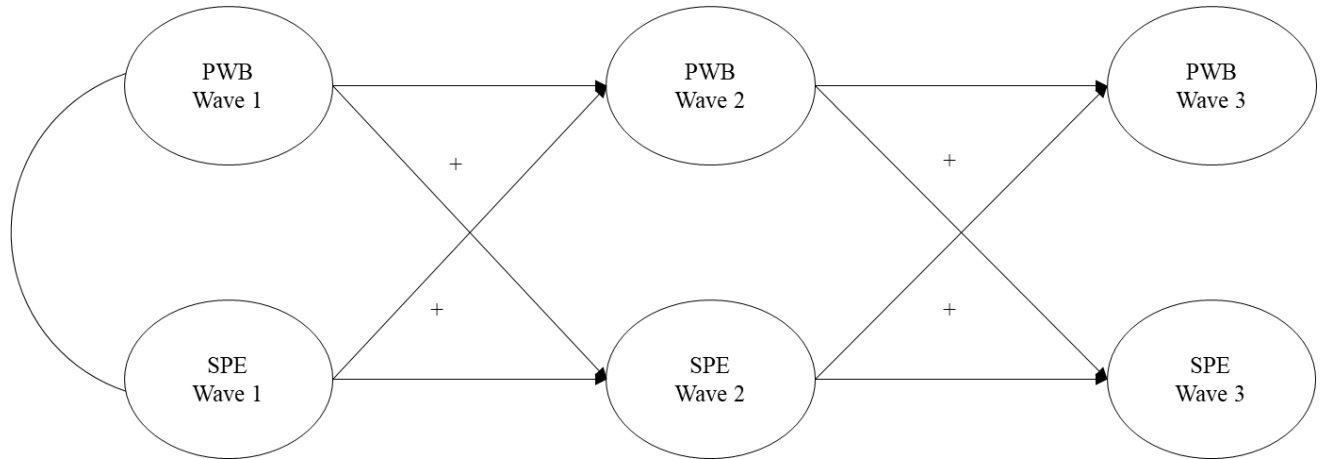
- Melendro, M., Campos, G., Rodríguez-Bravo, A. E., & Arroyo Resino, D. (2020). Young people's autonomy and psychological well-being in the transition to adulthood: A pathway analysis. *Frontiers in Psychology*, 11(46), 1-12. <https://doi.org/10.3389/fpsyg.2020.01946>
- Muthén, L. K., & Muthén, B. O. (1998–2015). *Mplus user's guide* (7th ed.). Muthén & Muthén.
- Ng, E., & Stanton, P. (2023). The great resignation: managing people in a post COVID-19 pandemic world. *Personnel Review*, 52(2), 401-407.
- Nie, Z., Zurlo, F., Camussi, E., & Annovazzi, C. (2019). Service ecosystem design for improving the service sustainability: A case of career counselling services in the Italian higher education institution. *Sustainability*, 11(5), 1427. <https://doi.org/10.3390/su11051427>
- Nunnally, J. C., & Bernstein, I. H. (1994), *Psychometric theory*. McGraw-Hill
- Pastore, F., Quintano, C., & Rocca, A. (2022). The duration of the school-to-work transition in Italy and in other European countries: a flexible baseline hazard interpretation. *International Journal of Manpower*, 43(7), 1579–1600. <https://doi.org/10.1108/ijm-03-2021-0135>
- Paul, K. I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior*, 74 (3), 264–282. <https://doi.org/10.1016/j.jvb.2009.01.001>
- Parola, A. (2020). Novel coronavirus outbreak and career development: a narrative approach into the meaning for Italian university graduates. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.02255>
- Petruzzello, G., Mariani, M. G., Guglielmi, D., van der Heijden, B. I. J. M., de Jong, J. P., & Chiesa, R. (2023). The role of teaching staff in fostering perceived employability of university students. *Studies in Higher Education*, 48(1), 20-36. <http://doi.org/10.1080/03075079.2022.2105830>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>

- Poetz, L., & Volmer, J. (2024). What does leadership do to the leader? Using a pattern-oriented approach to investigate the association between daily leadership profiles and daily leader well-being. *Journal of Business and Psychology*. <https://doi.org/10.1007/s10869-024-09939-6>
- Reis, D., Hoppe, A., & Schröder, A. (2013). Reciprocal relationships between resources, work and study engagement, and mental health: Evidence for gain cycles. *European Journal of Work and Organizational Psychology*, 24(1), 59–75. <https://doi.org/10.1080/1359432x.2013.834891>
- Selig, J. P., & Little, T. D. (2012). Autoregressive and cross-lagged panel analysis for longitudinal data. In B. Laursen, T. D., Little, & N. A., Card (Eds.), *Handbook of developmental research methods* (pp. 265–278). The Guilford Press.
- Schettino, G., Marino, L., & Capone, V. (2022). The impact of university-related variables on students' perceived employability and mental well-being: An Italian longitudinal study. *Sustainability*, 14(5), 2671. <https://doi.org/10.3390/su14052671>
- Singhal, H., & Rastogi, R. (2018). Psychological capital and career commitment: The mediating effect of subjective well-being. *Management Decision*, 56(2), 458–473. <https://doi.org/10.1108/md-06-2017-0579>
- Sonnentag, S. (2015). Dynamics of Well-Being. *Annual Review of Organizational Psychology and Organizational Behavior*, 2(1), 261–293. <https://doi.org/10.1146/annurev-orgpsych-032414-111347>
- Tanzi, G. M. (2023). Scars of youth non-employment and labour market conditions. *Italian Economic Journal*, 9(2), 475-499. <https://doi.org/10.1007/s40797-022-00191-6>
- Van Harten, J., De Cuyper, N., Knies, E., & 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*, 31(1), 145–159. <https://doi.org/10.1080/1359432x.2021.1942847>

- Vanhercke, D., De Cuyper, N., & de Witte, H. (2016). Perceived employability and well-being: An overview. *Psihologia Resurselor Umane, 14*, 8-18.
- Vanhercke, D., Kirves, K., De Cuyper, N., Verbruggen, M., Forrier, A., & De Witte, H. (2015). Perceived employability and psychological functioning framed by gain and loss cycles. *Career Development International, 20*(2), 179–198. <https://doi.org/10.1108/CDI-12-2014-0160>
- Williamson, D. L., & Carr, J. (2009). Health as a resource for everyday life: Advancing the conceptualisation. *Critical Public Health, 19*(1), 107–122.
<https://doi.org/10.1080/09581590802376234>
- Yizhong, X., Lin, Z., Baranchenko, Y., Lau, C. K., Yukhanaev, A., & Lu, H. (2017). Employability and job search behavior: A six-wave longitudinal study of Chinese university graduates. *Employee Relations, 39*(2), 223–239. <https://doi.org/10.1108/ER-02-2016-0042>

Figure 1

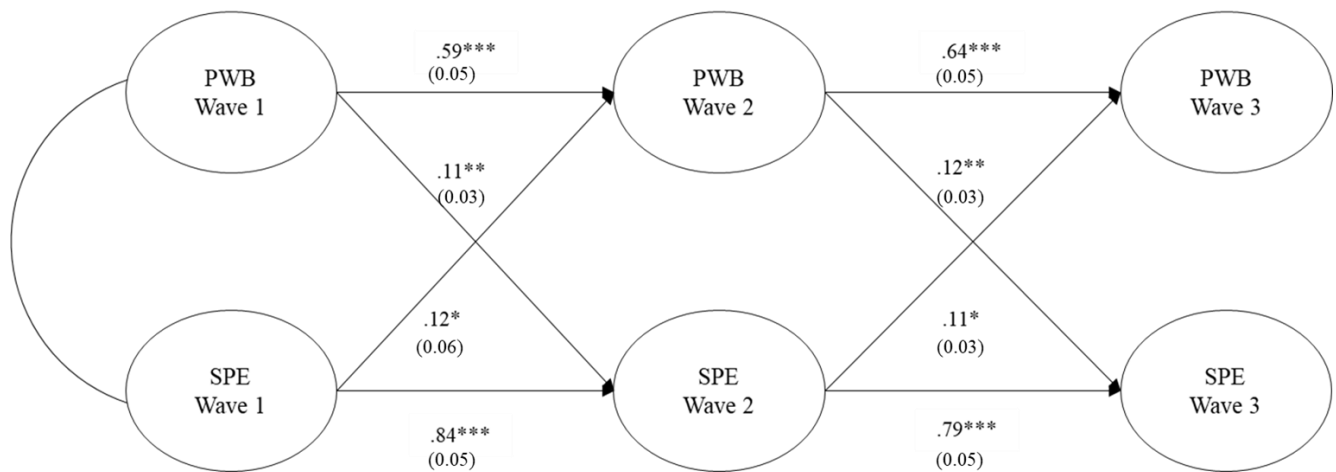
The Hypothesised Research Model



Note. PWB = Psychological Well-Being; SPE = Self-perceived Employability.

Figure 2

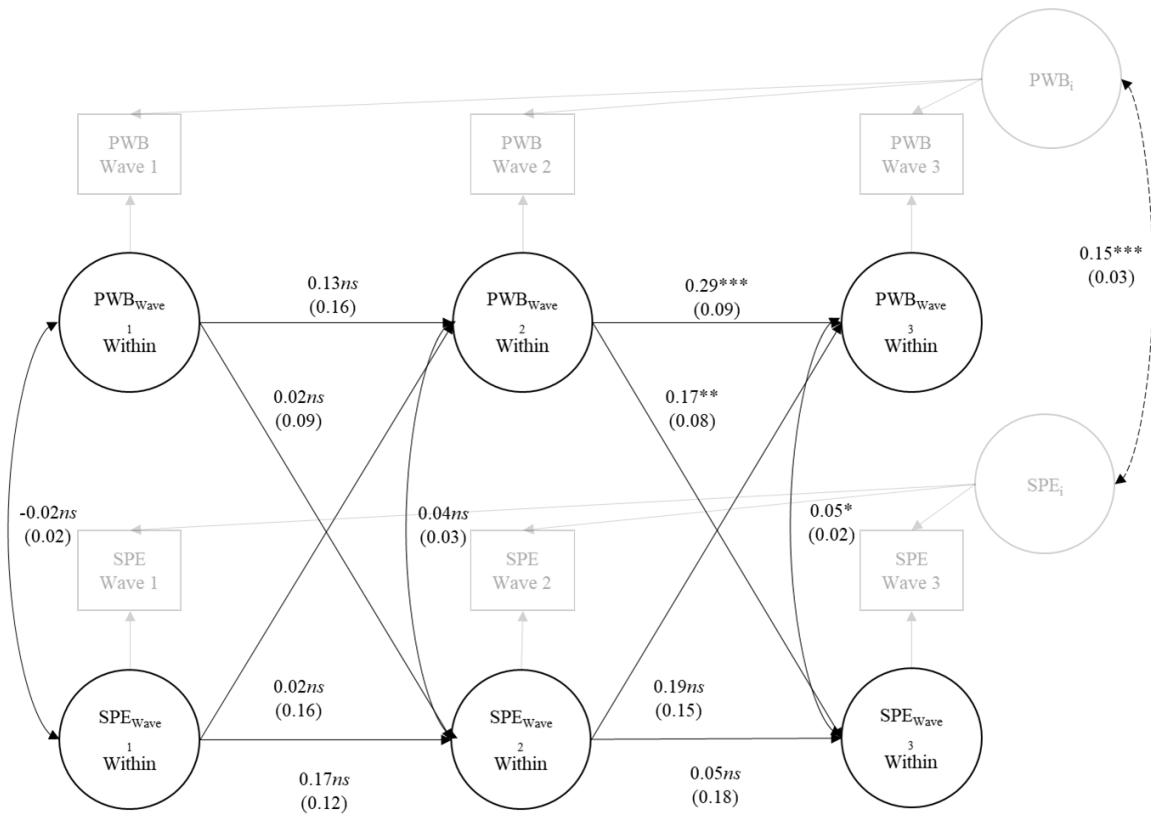
Path Coefficients in the CLPM Reciprocal Model (Additional Analysis)



Note. $N = 376$. PWB = Psychological Well-Being; SPE = Self-perceived Employability. For parsimoniousness, the coefficients of the control variables on the focal variables and covariance coefficients are not shown. * $p < .05$; ** $p < .01$; *** $p < .001$. Standard Errors in brackets.

Figure 3

Path Coefficients in the RI-CLPM model



Note. Grey rectangles represent measurements from Wave 1 to Wave 3. "Within" circles represent the within-person components of the construct over time. SPE_i and PWB_i represent random intercepts (i.e., between-person effects) for SPE and PWB. Directional arrows represent the within-person paths. Bi-directional arrows represent the state correlations (within-effects) between the variables. Dashed bi-directional arrows represent the between-person (i.e., stable trait component of the variables) correlations. Certain parameters and paths have been omitted from this representation for parsimoniousness. * $p < .05$, ** $p < .01$, *** $p < .001$. Standard Errors in brackets.

Table 1*Means, Standard deviations, Cronbach's Alpha Values, and Correlations among the Study Variables*

	M (SD)	α	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Age	25.32 (4.17)	NA													
2. Gender Dummy 1 ^a	0.10 (0.30)	NA	.09												
3. Gender Dummy 2 ^b	0.89 (0.31)	NA	-.09	-.99**											
4. Work Experience ^c	0.77 (0.42)	NA	-.13*	-.02	.02										
5. Participants' Status ^d	0.75 (0.43)	NA	-.21**	-.07	.06	.08									
6. Study Field Dummy 1 ^e	0.85 (0.35)	NA	-.09	-.01	.01	-.08	-.28**								
7. Study Field Dummy 2 ^f	0.14 (0.34)	NA	.09	-.01	.01	.08	.28**	-.97**							
8. SPE Wave 1	2.95 (0.76)	.78	.13*	.12*	-.10	-.13*	-.04	.03	-.08						
9. SPE Wave 2	3.01 (0.72)	.78	.06	.13*	-.12*	-.12*	-.06	.04	-.08	.75**					

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10. SPE Wave 3	2.98 (0.73)	.78	.07	.13*	-.11*	-.14**	-.05	.05	-.09	.67**	.75**			
11. PWB Wave 1	2.87 (0.76)	.89	.02	.11*	-.09	-.08	-.03	.06	-.07	.24**	.30**	.32**		
12. PWB Wave 2	2.89 (0.81)	.92	-.01	.12*	-.11*	-.00	-.06	.09	-.09	.24**	.34**	.37**	.58**	
13. PWB Wave 3	2.87 (0.82)	.93	.02	.14**	-.13*	-.09	.02	.03	-.03	.21**	.31**	.35**	.54**	.64**

Note. $N = 376$. ^a1 = Man, 0 = Other; ^b 1 = Woman, 0 = Other; ^c1 = yes; 0 = no; ^d1 = student; 0 = graduate; ^e1 = Humanities, 0 = Other; ^f1 = Scientific-technologic, 0 = Other; SPE = Self-perceived Employability; PWB = Psychological Well-Being; α = Cronbach's Alpha

Values; * $p < .05$, ** $p < .01$.