Does Latent Deprivation lead to Psychological Distress? Investigating Jahoda’s Model in a 4-Wave Study.

Eva Selenko, Bernad Batinic & Karsten I. Paul

Eva Selenko, is now with the Institute of Work Psychology, Management School, Conduit Road, University of Sheffield, S10 1FL, Sheffield, United Kingdom. E-mail: e.selenko@sheffield.ac.uk

Bernad Batinic, Institute of Education and Psychology, Johannes Kepler University of Linz, Austria.

Karsten I. Paul, University of Erlangen-Nuremberg. Germany

A final and authorized version of this paper has been published as:


This paper may not exactly replicate the final version.
Abstract

Unemployment has serious negative effects on psychological health, and yet the underlying mechanisms remain unknown. According to the latent deprivation model (Jahoda, 1983; 1997), it is the lack of latent benefits of work associated with unemployment, which leads to psychological distress. In a four-wave study among employed persons, unemployed persons, and persons out of the labor force (OLF) \((n_{T1} = 1,026)\) this assumption was tested cross-sectionally as well as longitudinally. Multiple mediation analyses show the expected differences in distress between the employed, unemployed and OLF persons and indicate that part of this difference can be explained by differential access to the latent benefits. Furthermore, cross-lagged structural equation modeling confirms that a deprivation of latent benefits leads to a decrease in psychological health six months later. Findings regarding the different quality of the latent benefits in relation to each other and over time when predicting psychological health are discussed.

Keywords: unemployment, out of the labor force, latent benefits, psychological health
Does Latent Deprivation lead to Psychological Distress? Investigating Jahoda’s Model in a 4-Wave Study.

Disruptions in the employment biography are a very common experience in today’s globalized economy. Despite being so common, unemployment is still a rather negative experience for most people (Paul & Moser, 2009). In comparison to persons who have a job, unemployed persons show more symptoms of psychological distress, lower self-esteem (cf. Waters & Moore, 2002b), more depression, more stress symptoms, less general life satisfaction (Feather & O’Brien, 1986), a higher likelihood of alcohol abuse (Dooley, Catalano, & Hough, 1992), and several other symptoms (cf. Paul & Moser, 2006). These findings have been well reported and are stable across cultures, social groups and different decades (Moser & Paul, 2001). Furthermore, it has become generally accepted that this finding is unidirectional, i.e. unemployment precedes detrimental psychological health rather than the other way around (Murphy & Athanasou, 1999; Paul & Moser, 2009).

Even though there exists vast literature on unemployment, psychological distress and their co-occurrence, studies that examine the mechanisms through which unemployment leads to distress are relatively scarce (Paul & Moser, 2009). One theoretical concept of the processes between unemployment and psychological distress is the latent deprivation model by Marie Jahoda (1983, 1997). Jahoda states that besides providing for a financial income employment serves several other functions central to psychological health. When a person becomes unemployed they not only suffer losses of financial income, but also from a deprivation of the latent benefits of work, which in turn are the primary cause for distress. The latent benefits of work (Jahoda, 1983) are (1) time structure, (2) activity, (3) status and identity, (4) collective purpose, and (5) social contact. People in Western cultures, Jahoda specifies, grow up learning to fill the day with scheduled activities. During unemployment the time structure of an adult person’s daily life gets disrupted; and persons have fewer opportunities to actively
engage in regular endeavors. Moreover, unemployed persons often report a loss of status and the impression of leading a life “on the scrap heap” (Jahoda, 1983, p. 48) rather than a life of collective purpose. Eventually, unemployed persons also report fewer social contacts.

According to Jahoda (1983) only a regular employment contract can provide with a sufficient amount of latent benefits. Persons such as homemakers, volunteer workers, retirees or women on maternity leave are out of the labor force (OLF), a state that according to Jahoda might provide some access to the latent benefits of work, but never as much as a regular employment contract would.

Although Jahoda’s considerations on unemployment were originally not aimed at creating an empirically testable theory in the strict sense of the word (Jahoda, 1992) still they have inspired a wide variety of empirical studies, confirming that persons in different employment statuses have differential access to latent benefits and different psychological health. Since the development of measurement scales of the latent benefits (Evans, 1986; Muller, Creed, Waters & Machin, 2005) research on the latent deprivation model has flourished. Employed individuals report significantly more latent benefits than unemployed individuals (Paul & Batinic, 2010; Feather & Bond, 1983). Also persons who can be considered OLF report significantly less latent benefits than persons who are employed (Creed, Muller & Patton, 2003) and more than persons who are unemployed (Paul & Batinic, 2010). In addition, the latent benefits have been significantly related to psychological health in several studies (Creed, Muller & Machin, 2001; Creed & Macintyre, 2001; Hassall, Muller & Hassall, 2004; Hassall, Muller & Hassall, 2005; Muller, Creed & Francis, 2004).

Despite the great variety of evidence on the association of the latent benefits with employment and psychological health, most of the studies concern group-differences, the proposed underlying dynamic has rarely been tested. After all, the coincidental finding that persons in different employment statuses report different access to certain latent benefits and
different distress, does not warrant the conclusion that persons in different employment
statuses differ in their distress because they have differential access to latent benefits, as
proposed by Jahoda (1992). The two questions this study is after are does employment status
affect psychological health via the latent benefits and does less access to latent benefits lead
to worse health?
To find answers to these questions, mediational analyses and longitudinal data are needed.
Few studies confirm the mediational capacities of the latent benefits in predicting
psychological health so far, e.g. of persons who were moonlighting or not (Šverko, Galić,
Seršić, & Galešić, 2008), or of employed or unemployed students (Paul, Geithner & Moser,
2009), however these studies do not clarify which of the specific latent benefits explains the
psychological health difference between employed and unemployed persons.
Furthermore, there are few two-wave studies showing that an increase of latent benefits
precedes a consequential improvement of psychological health (for exceptions see Hoare &
Machin, in press; Waters & Moore, 2002a). Two-wave studies have been criticized on
methodological grounds by some (e.g. Singer & Willet, 2003) to be insufficient in providing
with longitudinal data. Hence, the assumption that the latent benefits lead to psychological
distress needs further support.
Summarizing, although there has been considerable support for the concept of latent
depprivation as such the role of the latent benefits as mediators and as predictors of health is
still in great need for further support. The presented study tests for the proposed mediational
qualities of the latent benefits cross-sectionally as well as for their value as predictors of
psychological health over four waves of data.
In this analysis the latent benefits will be regarded separately. The literature is divided as to
whether to treat the latent benefits as partial constructs or as one overall construct. Both
conceptions have gained empirical support, but recent studies indicate that not only persons
in different employment statuses vary regarding their access to different latent benefits but also that the latent benefits vary in their impact on psychological health (Paul & Batinic, 2010; Batinic, Selenko, Stiglbauer & Paul, 2010; Hassall et al., 2004; Waters & Moore, 2002a; Hoare & Machin, in press).

Furthermore this study will pay attention to the situation of persons who are out of the labor force. So far there is neither theoretical nor empirical agreement on whether being OLF would be more similar to unemployment or more similar to employment (see Goldsmith, Veum, & Darity, 1994; Creed, et al., 2003 and Paul & Batinic, 2010 for different positions and findings regarding the state of being OLF).

**Hypotheses**

The assumed differences between different employment status groups will be investigated cross-sectionally. We assume that employed persons have better psychological health than unemployed persons (Hypothesis 1a) and than people who are OLF (Hypothesis 1b).

Furthermore persons who are OLF will have better psychological health than unemployed persons (Hypothesis 1c). Secondly, we assume that employed persons have more access to latent and manifest benefits of work than unemployed persons (Hypothesis 2a) and OLF persons (Hypothesis 2b). In addition, we posit that persons who are OLF have more access to latent and manifest benefits than unemployed persons (Hypothesis 2c). Thirdly, we propose that the effect of employment status on psychological health will be mediated by access to latent benefits (Hypothesis 3). The relation between latent benefits and psychological health will be tested using longitudinal data. We propose that a deprivation of latent benefits more likely precedes psychological distress, than the other way around (Hypothesis 4).
Method

Sample and Procedure

A four-wave survey study was conducted with the help of an online survey centre (unipark). Respondents at time 1 were recruited via newsletter invitation from an online panel (Respondi AG, www.respondi.com). Registration in this online survey panel is open to anyone, free-of-charge, and participation in surveys is not obligatory. Participants are not paid for their efforts, but regular participation in surveys can earn bonus points, which can then be exchanged for real products. Participants of subsequent waves were directly invited per email and could participate in a raffle as a reward. This technique has been found to generate high response rates, while not affecting the quality of the response (Boyer, Olson, Catalone, & Jackson, 2002). To our knowledge this sampling had no selective influence on the amount of psychological health, latent benefits or employment status the respondents have. Participants were comparable to the average participant of the online panel.

T1 The first measurement point of the study (T1) was conducted in March 2008. Of 1,517 persons who followed the link to the study and saw the first page, 1,136 persons completed the questionnaire indicating a response-rate of 73.23 % (Kaye & Johnson, 1999). On average these persons took 599.4 seconds ($SD = 312.7$) to fill in the questionnaire. Respondents with unrealistically low or high response rates (less than 180 seconds and more than 1500 seconds), in total 36 persons, were excluded from further analysis. Furthermore, following the suggestions by Gosling, Vazire, Srivastava, and John (2004) we screened for persons with long strings of identical responses ($n = 19$) and repeat responders ($n = 2$). In addition, persons with missing data on the variable employment status ($n = 25$), persons who indicated another citizenship than German ($n = 36$), and persons under 16 years of age ($n = 11$) were omitted from the analyses. Eventually, the final sample contained 1,026 respondents.
T2 735 respondents out of the original sample of 1,026 persons indicated to be interested in a follow-up. These persons were consequentially invited every six months for participation in the next wave of the study and were given online access to the respective questionnaire. Six months seemed a reasonably long period for observing stable effects of unemployment on psychological health. McKee-Ryan, Song, Wanberg, and Kinicki (2005) found health differences between persons who were shorter than six months and persons who were longer than six months unemployed. For every wave the sample was cleaned using the same cleaning strategies as at T1. Six months after the first study, the second wave of the study (T2) was conducted, 477 persons of 735 invited persons (64.90 %) ultimately took part in the T2 study. This sample was reduced to 383 persons after employing the same screening strategies as at T1.

T3 The third wave took place 12 months after the first study, 459 of 735 persons (62.45%) took part. This sample was reduced to 366 persons after cleaning.

T4 Another six months later, 384 of 735 invited persons (52.24%) took part in the T4 study, data of 285 persons was used after cleaning.

The final sample on which the longitudinal analyses were conducted, contained 360 persons who participated at least two times over a period of 18 months and who were not cleaned at any time-point. Meta studies (e.g. Paul & Moser, 2009) reveal a significant effect of unemployment on psychological health during the first nine months, then the effect stabilizes. 18 months time lag hence seemed sufficiently long to observe changes in psychological health. Participants were between 17 and 61 years of age ($M = 34.68$, $SD = 10.44$), 56.9% were female. As for education two persons did report to have no finished schooling, 5.6% reported 9 years of schooling as highest degree, 25.6% reported to have a degree of 10 years of schooling but less than a high school diploma, 29.4% reported a high-school diploma, 38.9% a university or college degree. The majority of the respondents did not have children
(74.2%), 11.9% had one child, 10.0% had two children, 3.9% had three or more children. The demographic characteristics of this sample compare to the demographic make-up of the online data base it was drawn from.

To control for systematic dropout, participants who took part at least twice were compared with participants who only took part once regarding latent benefits, psychological health and demographic variables. Participants did not differ from each other on psychological health, however it appeared that persons who took part at least twice were significantly more likely to be female ($t(1025) = 2.13$, $p < .05$, $d = 0.1$), older ($t(1025) = 3.51$, $p < .01$, $d = 0.2$), and reported a better time structure ($t(1025) = 2.19$, $p < .05$, $d = 0.1$) than persons who participated only once, although the effects can be considered as rather small (Cohen, 1988). We conclude that the dropouts were due to reasons irrelevant for the purpose of this study.

**Measures**

*Psychological Health.* We used a short version of the German translation of the General Health Questionnaire (Goldberg & Hillier, 1979; Linden, Maier, Achberger, Herr, Helmchen, & Benkert, 1996) to measure psychological health. After a pre-test, four items with the highest factor loadings were selected as a short measure of psychological health. The internal reliability for this scale was good as indicated by Cronbach’s alpha ranging from .85 to .89 across all four measurement points. For the purpose of the present study, the scale was recoded so that high scores indicated good psychological health.

*Access to manifest and latent functions.* The latent and manifest benefits [LaMB] of work scale by Muller et al. (2005) served as measure of the latent and manifest benefits. This scale consists of six subscales, each containing six items, using a 7-point Likert scale format, with scale endpoints expressing high or low access to the benefit (in the following examples only the ends with high access are shown). The subscale measuring financial benefits (e.g. “My income usually allows me to do the things I want”) showed good reliability (Cronbach’s
alpha ranging from = .94 to .95 across the four assessment points). The latent benefit activity (e.g. “I often have nothing to do”) (Cronbach’s alpha ranging from = .90 to .92), social contacts (e.g. “I regularly engage in social activities with others”) (Cronbach’s alpha ranging from = .83 to .85), time structure (e.g. “I usually do all the things I have to”) (Cronbach’s alpha ranging from = .81 to .85), collective purpose (e.g. “I usually feel very much a part of my community”) (Cronbach’s alpha ranging from = .82 to .84), and status (e.g. “I am often valued by the people around me”) (Cronbach’s alpha ranging from = .88 to .92) showed good reliabilities across the four assessment points as well. The items were translated into German using the translation-backtranslation method and the help of a native English speaker. The translations were then compared and discussed by the second and the third author and revised if necessary. For better interpretation, the items were recoded so that a low score indicated low access to this benefit. We decided to exclude three items of the status subscale because they were primarily concerned with helping behavior instead of status. The remaining 3-item scale was also reliable (Cronbach’s alpha ranging from = .89 to .92). The LaMB scale has generally shown good psychometric qualities (Muller et al., 2005; Paul & Batinic, 2010), which was verified by confirmatory factor analyses, conducted at each of the measurement points, with fit-indices ranging between RMSEA = 0.07 and 0.08, and between CFI =.87 and .88 across the four measurement points.

Employment status. Respondents had to indicate their current employment category from a pool of 14 options commonly used in surveys: of the final pool of 360 respondents, 56.1 % were full-time employed at T1 and 15.8% were part-time employed, 5.3% were self-employed, two persons reported to have been unable to work for over 4 weeks, 4.2% were registered as unemployed, one person was in a re-employment program, two persons were on maternity leave/sabbatical, two were out of the workforce (homemaker), 6 persons were in school, 9.4% were students, 4.7% were in vocational training, no-one in compulsory
military/civilian service, and three persons were in early retirement. Although not representative for, this sample still resembles the German workforce in 2008 to some degree. According to the German federal agency for statistics (Destatis, 2010), in 2008 7.8% of all Germans of employable age were registered unemployed, 67.5% were employed. It should be noted, that in Germany registered unemployed persons are entitled to receive unemployment benefits of around 60% of their last income. Persons can register as unemployed when they have been employed for a minimum of 12 months within two years. The duration of registered unemployment varies between 6 and 24 months.

This pool of 14 employment categories was reduced to three meta-categories: being employed, being out of the labor force and being unemployed. According to the American Community Survey being employed means to be 16 years old and older and to be are either at work or at a job (US Census Bureau, 2006, p. 37). Respondents who were full-time employed, part-time employed, self-employed or in vocational training hence fell into the category being employed. The term being out of the labor force, which is often used interchangeably with being not in the labor force, comprises “All people 16 years old and over who are not classified as members of the labor force. This category consists mainly of students, housewives, retired workers, seasonal workers […] institutionalized people, and people doing only incidental unpaid family work.” (US Census Bureau, 2006, p. 38). Respondents who were unable to work for over 4 weeks, persons on maternity leave or sabbatical, homemakers, persons who were in school, students, persons in compulsory military or civilian service, in early retirement and in retirement were therefore classified as being out of the labor force. Respondents who indicated to be unemployed or participating in a re-employment program were classified as being unemployed. This re-categorization resulted in 81.9% employed persons, 13.6% who were out of the labor force and 4.4% unemployed persons at T1.
Results

Prior to the analysis, we checked for comparability of the employment status groups\(^2\). One-way ANOVAs revealed significant differences between the three employment status groups with regard to age, \(F(2, 1017) = 76.06, p < .01, \eta^2 = .13\), number of children, \(F(2, 1017) = 7.35, p < .01, \eta^2 = .01\), education \(F(2, 1017) = 5.77, p < .01, \eta^2 = .01\), gender \(F(2, 1017) = 13.62, p < .01, \eta^2 = .02\) and being in a relationship, \(F(2, 1017) = 11.65, p < .01, \eta^2 = .02\) (see table 1). First of all the cross-sectional results regarding employment group comparisons and the mediator effects will be reported. Second the longitudinal results on change and cross-lagged effects will be discussed.

---

Insert Table 1 about here

---

Employment Group Comparisons

We assumed that persons with different employment statuses would differ regarding their psychological health. More specifically, we assumed that employed persons would report better psychological health than unemployed persons (Hyp. 1a) and OLF persons (Hyp. 1b). Furthermore, we assumed that OLF persons would report a better psychological health than unemployed persons (Hyp. 1c).

---

Insert Table 2 about here

---

Results of a one-way ANOVA (see table 2) indicated that the three employment status groups differed significantly from each other with regard to psychological health, \(F(2, 1023) = 21.69, p < .01, \eta^2 = .04\). Post-hoc pair-wise comparisons showed that employed persons reported significantly better psychological health than persons who were OLF, \(t(974) = 4.56\)
Latent deprivation and psychological health over time

$p < .01, d = 0.37$ and unemployed persons, $t(856) = 5.30, p < .01, d = 0.71$. Furthermore, OLF persons reported significantly better psychological health than unemployed persons, $t(216) = 2.14, p < .05, d = 0.34$. Hypothesis 1 was thus supported. Hypothesis 2 proposed that persons with different employment statuses would report differing access to latent and manifest benefits. Specifically, employed persons were expected to report more financial and latent benefits than unemployed persons (Hyp. 2a) and OLF persons (Hyp. 2b). OLF persons should report better access to financial and latent benefits than unemployed persons (Hyp. 2c).

Results of a multivariate ANOVA indicated that there was an overall between-group difference across all variables $F(12, 2024) = 14.20, p < .01, \eta^2 = .08$. Univariate tests of between-group differences on each of the tested variables turned out to be significant, except for status, where no group difference could be found (see table 2). Post-hoc pair-wise comparisons with Bonferroni correction give a more varied picture. Employed persons reported better access to financial benefits than unemployed persons $t(851) = 7.98, p < .01, d = 1.22$ and better access to four out of five latent variables; collective purpose, $t(851) = 4.31, p < .01, d = 0.58$ time structure, $t(851) = 8.32, p < .01, d = 1.04$, social contacts, $t(851) = 3.28, p < .01, d = 0.42$ and activity if no Bonferroni correction was applied $t(851) = 2.53, p < .05, d = 0.34$. Hypothesis 2a was supported for financial benefits and for four out of five latent benefits. In comparison to OLF persons, employed persons reported significantly better financial benefits $t(967) = 3.88, p < .01, d = 0.34$, more time structure $t(967) = 4.67, p < .01, d = 0.39$ and more activity, but again only if no Bonferroni correction was applied, $t(967) = 2.09, p < .05, d = 0.17$. No better access to collective purpose, social contacts, or status was detected. We regard hypothesis 2b as being supported for financial benefits and for two out of five latent benefits. OLF persons in comparison to unemployed persons reported significantly more financial benefits, $t(214) = 5.71, p < .01, d = 0.92$ more collective purpose, $t(214) = 3.47, p < .01, d = 0.52$, more time structure, $t(214) = 4.49, p < .01, d = 0.68$ and more social
contacts, $t(214) = 3.78, p < .01, d = 0.57$. Hypothesis 2c was supported for financial benefits and for three out of five latent benefits.

The Mediator Effect of Manifest and Latent Benefits

We wanted to test the proposition that the influence of employment status on psychological health would be mediated by access to latent benefits. First of all, employment status was dummy-variable-coded into two indicators, being unemployed and being OLF. The reference category was being employed.

Table 3 shows the intercorrelations between psychological health (GHQ), being unemployed, being OLF and access to manifest and latent benefits of work and the demographical control variables. In line with our expectations, psychological health is positively related to all latent benefits and the manifest benefit. It is negatively related to being unemployed and being OLF. It is not related to the demographic variable number of children, which will be excluded from further analyses.

A hierarchical linear regression analysis (see table 4) was conducted with psychological health as dependent variable. In a first step, the demographic variables (age, gender, education, being in a relationship) were entered as controls, which together accounted for 4.9% of the explained variance of psychological health, $F(4, 1009) = 12.96, p < .01$. Age, education, being in an intimate relationship, and being a man, were positively related to psychological health. In step 2, employment status was entered. This accounted for an additional 2.5% of the variance of psychological health, $\Delta R^2 = .02, F(2, 1007) = 13.78, p < .01$. The coefficients indicated that unemployed persons and OLF persons reported significantly worse psychological health than employed persons.
The inclusion of amount of financial and latent benefits increased the explained variance of psychological health to 20.2%, $\Delta R^2 = .13$, $F(6, 1001) = 26.74, p < .01$. The more financial benefits the respondents reported, the better their psychological health. A better psychological health was also related to more social contacts and more activity. The latent benefits status, collective purpose and time structure did not have any independent influence on the prediction of psychological health. Through the inclusion of the latent and manifest benefits, the impact of the demographic variables was reduced, with only age and gender continuing to have an independent impact on psychological health.

To test whether the effect of employment status and psychological health was mediated through access to the latent benefits, we conducted a test for multiple mediation, using the bootstrap approach (Preacher & Hayes, 2008). For calculation, Hayes’ INDIRECT.SPS macro for SPSS was adopted (Hayes, 2007). A 95% bias-corrected bootstrap for calculation of the confidence intervals was used, repeating the bootstrap process a 1000 times. The macro allows only for one independent variable at a time, the categorical variable employment-status in this study was dummy-coded into two variables, therefore separate analyses had to be conducted for each dummy variable, each using the other dummy variable and the demographic variables (age, gender, education, being in a relationship) as covariates. Like a linear regression analysis the bootstrap approach informs whether the unemployed and employed persons or OLF and employed persons still differ on wellbeing, once their differential access to the latent benefits is controlled for. In addition the approach estimates the indirect effects of employment status via each of the latent benefits on psychological health. Taken together, the results inform about the differences between unemployed and
employed as well as OLF and employed persons on the dependent variable and whether this difference is due to differential access to each of the latent benefits. There was a significant total indirect effect of unemployment on psychological health through access to latent and manifest benefits, $B = -0.27$, $SE_B = .06$, $CI_{low}/CI_{up} = -.39/-.17$. An analysis of each of the benefits revealed that specifically the manifest function had a significant effect as a mediator for unemployed persons, $B = -.14$, $SE_B = .03$, $CI_{low}/CI_{up} = -.21/-0.09$, as well as the amount of social contacts, $B = -.03$, $SE_B = .03$, $CI_{low}/CI_{up} = -.07/-0.00$ and the amount of time-structure, $B = -.04$, $SE_B = .02$, $CI_{low}/CI_{up} = -.09/-0.01$.

The total indirect effect of being OLF on psychological health was only marginally significant, $B = -0.05$, $SE_B = .03$, $CI_{low}/CI_{up} = -.10/-.00$. The individual indirect effect of OLF via financial benefits was significant, which implies that part of the psychological health difference between OLF and employed persons is due to fewer financial benefits on the side of the OLF persons, $B = -.04$, $SE_B = .01$, $CI_{low}/CI_{up} = -.07/-0.02$.

Altogether, the data partly supports the mediational qualities of the latent benefits. The worse psychological health of unemployed persons was partly due to a deprivation on some of the latent benefits. The worse psychological health of OLF persons in our study was partly explained by their worse access to financial benefits only, less access to latent benefits did not matter.

**Change and cross-lagged effects**

One of the assumptions of this study was whether a change in latent benefits would lead to a similar change in psychological health, a few months later. The analyses were conducted on those persons who participated at least two times and were not cleaned at any time-point ($n = 360$).

In order to test for the assumed temporal precedence of latent benefits over health, structural equation modeling (SEM) was employed, following the suggestions for analyzing
longitudinal data by Cole and Maxwell (2003) and the step-wise approach by Anderson and Gerbing (1988). The latent benefits were modeled using first and second order models. In the first order model each latent benefit was modeled to load on three item parcels, which were constructed using the item-to-construct balance technique (Little, Cunningham, Shahar, & Widaman, 2002). This was done separately for each time-point. In the second order model each of the five latent benefits of each wave was modeled to load on a common underlying latent factor called latent benefits. This was done in order to keep the number of to-be estimated paths and parameters in the model at a minimum. In addition, latent deprivation theory (Jahoda, 1983) warrants latent benefits to load on one underlying factor. First, the measurement models for latent benefits and psychological health were tested for structural invariance. The models allowed for correlations among the latent constructs over time, as well as correlations between items over time (for the measurement model of psychological health only). The measurement model for psychological health fitted acceptably to the data ($\chi^2(78) = 298.75, p < .01, \text{RMSEA} = .08, \text{CFI} = .92$) the measurement model for latent benefits fitted well to the data ($\chi^2(1663) = 3833.99, p < .01, \text{RMSEA} = .06, \text{CFI} = .85$). The latent variable latent benefits significantly loaded onto each of the five latent benefits (time structure, collective purpose, activity, social contacts and status) at each of the time-points. Moreover, each of the five latent benefits was significantly related to its parcel indicators.

In a second step, the relationship between access to latent benefits and psychological health was tested by using nested model tests. Six different SEMs were estimated: (1) an unrestricted model with reciprocal cross-lagged associations, between psychological health at a prior time-point and access to latent benefits at latter time-points, and between access to latent benefits at a prior time-point and health at latter time-points, (2) a restricted version of model 1, with cross-lagged effects from access to latent benefits at a prior time-point to psychological health at latter time-points only, (3) a restricted version of model 2 with cross-
lagged effects from access to latent benefits at a prior time-point to psychological health at a lag 1 latter time-point only, (4) an alternative restricted model with cross-lagged effects from psychological health at a prior time-point to access to latent benefits at latter time-points only, (5) a restricted version of model 4 with cross-lagged effects from psychological health at a prior time-point to access to latent benefits at a lag 1 latter time-point only, and (6) a very restricted model with no cross-lagged associations allowed. All models allowed residual variances of the latent benefits to correlate with the corresponding variances over time, also covariances between the latent constructs and psychological health within each time-point were freed.

---

Insert Table 5 about here

---

The first model (model 1, see table 5) which allowed for stability effects between the time-points, as well as reciprocal cross-lagged associations fit the data well. Parameter estimates indicated that the paths from psychological health to access to latent benefits at a latter time-point were neither significant for lag 1 waves (T1-T2, T2-T3, and T3-T4), nor for lag 2 or 3 waves (T1-T3, T1-T4, and T2-T4). Lag 1 paths from latent benefits to psychological health were significant for T1-T2 and T2-T4 but not for T2-T3. None of the lag 2 or 3 waves from latent benefits on psychological health (T1-T3, T1-T4, and T2-T4) were significant. Model 2 examined the hypothesis that latent benefits would influence psychological health, but not the other way around. It is equivalent to model 1, with the exception that the paths from psychological health to access to latent benefits were set equal to zero. Model 2 fit the data well and differed non-significantly from model 1, $\Delta \chi^2(6) = 3.86, p = .69$, which indicates support for model 2 and the constrained relationship from psychological health to access to latent benefits. Model 3 is an even more restricted version than model 2, it allows for cross
lagged paths from latent benefits to health at lag 1 intervals only. It differs non-significantly from model 1, $\Delta \chi^2(9) = 4.74$, $p = .85$, and non-significantly from model 2, $\Delta \chi^2(3) = 0.87$, $p = .83$, but shows better fit indices than the first two models. Model 4 was constructed to test for possible reverse causation from psychological health to access to latent benefits. It is identical to model 1, with the exception that the paths from access to latent and manifest benefits at a prior time-point to health at a latter time-point were set equal to zero. This model differed significantly from model 1, $\Delta \chi^2(6) = 13.20$, $p < .05$ but does not show improved fit-indices, indicating less support for model 4 than for the unrestricted model. Model 5 was even more restricted than model 4, allowing for cross-lagged paths from psychological health to latent benefits only across lag 1 intervals. This model differed non-significantly from model 1, $\Delta \chi^2(9) = 13.39$, $p = .14$, and non-significantly from model 4, $\Delta \chi^2(3) = 0.19$, $p = .98$, however its fit-indices were worse than that of model 2 and 3. Across the specified models, model 3 is preferable to model 2 and model 1. As a final test, a non-structural model was designed, which allowed for stability parameters, but not for any cross-lagged associations. Model 6 differed significantly from model 3, $\Delta \chi^2(3) = 12.87$, $p < .01$, while having worse fit indices, which provides further support for model 3. In addition, although RMSEA and CFI-fit indices hardly differed between the models, AIC indices show the most favorable value at model 3. Altogether, the results of the structural equation tests provide support for the hypothesized model 3. Model 3 (see figure 1) accounted for 48.8% of the variance of psychological health at T4 and for 91% of the variance of access to latent benefits at T4. Covariances between latent benefits and psychological health appeared to vary over time, indicating the impact of possible moderators.

Insert Figure 1 about here
Discussion

The aim of the present study was to investigate the role of the latent benefits as mediators and as precedents of psychological health. According to Jahoda (1983) the distress associated with unemployment should be the result of a deprivation of the latent benefits associated with employment. In other words, the effect of unemployment on psychological health should be mediated by the access to latent benefits. Also, a deprivation of latent benefits should precede psychological distress.

Across four waves of data we found that a person who reports a decrease in latent benefits at one time-point will probably report a decrease in psychological health six months later. The findings of nested model tests suggest that it is more likely that access to latent benefits precedes psychological health than the other way around. This is in line with findings regarding social contacts, time-structure, and financial benefits of previous two-wave studies. Wanberg, Griffiths and Gavin (1997) found a significant relation between drop in time-structure and consequential drop in psychological health. Also the relations between social contacts and financial benefits and psychological health have been well-reported (Turner, Kessler & House, 1991; Hoare & Machin, in press). Interestingly, the impact of the latent benefits fluctuated slightly over time. Apparently there are certain variables that moderate the relation between latent benefits and psychological health, which were not included in this study. Moreover, as in previous studies, (e.g. Hoare & Machin, in press; Waters & Moore, 2002b), the effect of latent deprivation on psychological health was detectable across six months intervals, however over longer periods, like 12 or 18 months, the effect of latent benefits was no longer there. All together, despite the considerable support the longitudinal findings provide for the proposition that a change in latent benefits precedes a change in psychological health; they also raise new questions concerning possible moderators and the temporal stability of the effect. Given the current state of research, there is no knowledge on
how quick or lasting the effect of latent benefits on psychological health is and on whether there might be an effect vice-versa f.e. in a shorter time-interval. Future research might be well advised to include more and shorter time-intervals to further explore the temporal stability of the latent benefits effect on health.

The cross-sectional results concerning the mediation were largely in line with the expectations. Similar to previous studies, unemployed persons in this study reported worse psychological health and less financial benefits than employed and OLF persons (Paul & Batinic, 2010; Creed & Machin, 2002; Creed et al., 2003; Wanberg et al., 1997).

Unemployed persons also reported significantly worse access to collective purpose, social contacts, time-structure, and activity in comparison to employed persons, which is also in line with previous studies that used the same scale (e.g. Hoare & Machin, in press; Creed & Muller, 2006; Hassall et al., 2004). With the help of multiple mediation analyses we tested whether the worse access to latent and manifest benefits might explain the psychological health difference between unemployed and employed persons. The results show that only the worse access to financial benefits and the worse access to social contacts and time-structure accounted for the psychological health difference. The effect of financial benefits and time-structure on psychological health has also been reported in other studies (e.g. Creed & Macintyre, 2001). The latent benefit activity did not have independent mediating effect, so did status and collective purpose, which did not even have an independent direct effect on psychological health. Notably, and similar to other studies (e.g. Šverko et al. (2008) and Paul et al. (2009)), the effect of unemployment on psychological health was only partly mediated and not fully.

The OLF persons of this study reported worse psychological health, less financial benefits, time-structure, and activity than employed persons, but they did not differ on the other three latent benefits. Multiple-mediation analysis showed support for a mediation only through the
financial benefits. In other words, the psychological health difference between OLF and employed persons was not due to the difference in latent benefits and could only partly be explained by OLF person’s worse access to financial benefits. This was not as expected. According to Jahoda’s theory and previous research (e.g. Goldsmith et al, 1994; Paul & Batinic, 2010) being OLF should be a state similar to being unemployed and OLF persons should feel equally deprived of latent benefits as unemployed persons. One explanation for the great similarity to employed persons might be that the OLF sample in this study contained relatively many young and highly educated persons. Younger persons have been found to cope better with underemployment than middle-aged and older persons (e.g. Jackson & Warr, 1984). Another notable finding was the non-differentiation of the three employment groups on the status scale, even when the analyses were re-conducted with the original 6-item scale. This might indicate a cultural misunderstanding of the items, originally the status scale-items were developed based on interviews of an Australian sample of jobseekers (Muller et al., 2005) but certainly more research is needed to confirm this suspicion.

Taken together, the longitudinal and cross-sectional results of the presented study offer important new evidence for the latent deprivation model. They support Jahoda’s assumption that the psychological health difference between employed and unemployed persons can be explained by a deprivation of some of these latent benefits unemployed persons experience. Furthermore, the longitudinal results confirm that it’s more likely that a deprivation of latent benefits precedes psychological distress than the other way around.

Our study also casts new light on the concept of latent benefits. It appears that certain occupations, which might not be considered employment in Jahoda’s sense, can also provide with access to latent benefits in almost the same way as real employment. There might be some forms of being OLF that actually provide a similar amount of latent benefits as employment does, as has already been found for e.g. underemployment (Creed & Machin,
Further research is needed to entangle the effect of certain demographic characteristics of specific OLF groups and their relation to latent benefits.

Second, it appears that not all of the benefits play an equal role in predicting psychological health, or work equally well as mediators. So far, the discussion of mediators between unemployment and psychological health has mostly focused on the impact of manifest versus latent benefits (Jahoda, 1992). Our findings are in accordance with that, moreover, they stress the importance to consider the latent benefits as separate constructs. This point has also been made by other researchers, who demonstrate a separate analysis of the latent benefits (e.g. Waters & Moore, 2002a; Hoare & Machin, in press).

Certainly, there are also limitations to the findings. The aim of sampling a naturalistic group of people in various employment statuses came at the price of having relatively few unemployed persons, especially at the follow-up studies, and few persons who changed their employment status between the measurement points. Our findings should not be regarded as representative for the German workforce. Moreover, in countries where labor law does not protect persons with psychological problems from getting fired, the relation between health and latent benefits might be different.

The practical implications of our findings are obvious. Once more they stress the challenge for policy makers and practitioners to assist those who experience unemployment not only with financial unemployment benefits but also with access to latent benefits. Also for employed persons reasonable access to latent benefits should be assured in order to ensure good psychological health. Rather than as a model for the detrimental effects of unemployment only, the latent deprivation model might be better understood as a general model of the psychologically beneficial effects of work.
References


http://www.destatis.de/jetspeed/portal/cms/Sites(destatis/Internet/DE/Navigation/Publikationen/STATmagazin/ArbeitsmarktL2008__1,templateId=renderPrint.psml__nnn=true


Footnotes

1 There seems to be a slight confusion about the naming of the LAMB-subscales time structure and enforced activity by Muller et al. (2005). Similar to Paul and Batinic (2010; p. 52) we believe that the scale “enforced activity” by Muller et al. (2005) has been wrongly labeled “time structure” and the other way around. We have corrected that by changing the scale names.

2 At the consequent waves very similar results were found, but for sakes of brevity only the findings of measurement time 1 are reported. Furthermore, the reduced sample size of unemployed persons at consequent waves does only allow for very cautious conclusions. Upon request, cross-sectional results concerning the other three measurement points are readily available from the first author.
### Table 1

**Demographic Characteristics of Employed Persons, OLF Persons and Unemployed Persons**

<table>
<thead>
<tr>
<th></th>
<th>Employed</th>
<th>OLF</th>
<th>Unemployed</th>
<th>F(2,1017)</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n</strong></td>
<td>803</td>
<td>168</td>
<td>49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>34.69&lt;sub&gt;a&lt;/sub&gt;</td>
<td>24.91&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>35.67&lt;sub&gt;b&lt;/sub&gt;</td>
<td>76.06**</td>
<td>.13</td>
</tr>
<tr>
<td></td>
<td>(9.66)</td>
<td>(7.59)</td>
<td>(11.74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>0.47&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.20&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.35</td>
<td>7.35**</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>(0.87)</td>
<td>(0.55)</td>
<td>(0.69)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>5.00&lt;sub&gt;a&lt;/sub&gt;</td>
<td>4.96&lt;sub&gt;b&lt;/sub&gt;</td>
<td>4.53&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>5.77**</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>(0.96)</td>
<td>(0.66)</td>
<td>(1.16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>0.48&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.70&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.55</td>
<td>13.62**</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>(0.50)</td>
<td>(0.46)</td>
<td>(0.50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a relationship</td>
<td>0.65&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>0.50&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.39&lt;sub&gt;b&lt;/sub&gt;</td>
<td>11.65**</td>
<td>.02</td>
</tr>
<tr>
<td></td>
<td>(0.48)</td>
<td>(0.50)</td>
<td>(0.49)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Means in the same row that share the same subscripts differ at $p < .05$ from each other.

Standard deviations in parentheses.

**$p < .01.$**
### Table 2

*Analysis of Variance for Employment-Status on Psychological Health, Financial and Latent Benefits*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Employed n = 803-8</th>
<th>OLF n = 166-8</th>
<th>Unemployed n = 50</th>
<th>df</th>
<th>F</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psych. Health</td>
<td>3.09&lt;sub&gt;a&lt;/sub&gt;</td>
<td>2.83&lt;sub&gt;a&lt;/sub&gt;</td>
<td>2.57&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1023</td>
<td>21.67**</td>
<td>.04</td>
</tr>
<tr>
<td></td>
<td>(0.66)</td>
<td>(0.73)</td>
<td>(0.79)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance</td>
<td>4.21&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.65&lt;sub&gt;a&lt;/sub&gt;</td>
<td>2.21&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1013</td>
<td>37.57**</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td>(1.73)</td>
<td>(1.56)</td>
<td>(1.54)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collective Purp.</td>
<td>4.23&lt;sub&gt;a&lt;/sub&gt;</td>
<td>4.13&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.45&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>1013</td>
<td>9.72**</td>
<td>.02</td>
</tr>
<tr>
<td></td>
<td>(1.23)</td>
<td>(1.13)</td>
<td>(1.45)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Contacts</td>
<td>4.17&lt;sub&gt;a&lt;/sub&gt;</td>
<td>4.38&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.55&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>1013</td>
<td>7.98**</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>(1.27)</td>
<td>(1.28)</td>
<td>(1.60)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td>5.35</td>
<td>5.27</td>
<td>5.06</td>
<td>1013</td>
<td>1.78</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>(1.08)</td>
<td>(1.16)</td>
<td>(1.29)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Structure</td>
<td>5.56&lt;sub&gt;a&lt;/sub&gt;</td>
<td>5.05&lt;sub&gt;a&lt;/sub&gt;</td>
<td>4.03&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1013</td>
<td>41.01**</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td>(1.25)</td>
<td>(1.36)</td>
<td>(1.72)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td>4.82&lt;sub&gt;a&lt;/sub&gt;</td>
<td>4.62</td>
<td>4.40&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1013</td>
<td>4.82**</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>(1.13)</td>
<td>(1.22)</td>
<td>(1.31)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Means in the same row that share the same subscripts differ at *p < .05* from each other on Bonferroni corrected post-hoc tests. Standard deviations in parentheses. Differing sample sizes due to list-wise exclusion of missing data regarding latent and manifest benefits.

** *p < .01.*
Table 3

Correlations Between Psychological Health, Demographic Variables, Employment-Status and Manifest and Latent Benefits (n = 1026)

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>P. Health</td>
<td>-.09**</td>
<td>.13**</td>
<td>.11**</td>
<td>.15**</td>
<td>.03</td>
<td>-.15**</td>
<td>-.12**</td>
<td>.32**</td>
<td>.22**</td>
<td>.24**</td>
<td>.17**</td>
<td>.28**</td>
</tr>
<tr>
<td>2.</td>
<td>Gender</td>
<td>1</td>
<td>-.24**</td>
<td>-.05</td>
<td>-.04</td>
<td>-.10**</td>
<td>.01</td>
<td>.16**</td>
<td>-.11**</td>
<td>-.00</td>
<td>.04</td>
<td>-.03</td>
<td>.06</td>
</tr>
<tr>
<td>3.</td>
<td>Age</td>
<td>1</td>
<td>-.01</td>
<td>.19**</td>
<td>.50**</td>
<td>.06</td>
<td>-.36**</td>
<td>.02</td>
<td>.08**</td>
<td>-.04</td>
<td>.16**</td>
<td>.11**</td>
<td>-.03</td>
</tr>
<tr>
<td>4.</td>
<td>Education</td>
<td>1</td>
<td>.07*</td>
<td>-.04</td>
<td>-.11**</td>
<td>-.001</td>
<td>.28**</td>
<td>.17**</td>
<td>.15**</td>
<td>.19**</td>
<td>.04</td>
<td>.15**</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Relation.</td>
<td>1</td>
<td>.25**</td>
<td>-.10**</td>
<td>-.10**</td>
<td>.09**</td>
<td>.11**</td>
<td>.10**</td>
<td>.17**</td>
<td>.15**</td>
<td>.07*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Children</td>
<td>1</td>
<td>-.02</td>
<td>-.12**</td>
<td>-.066</td>
<td>.12**</td>
<td>-.03</td>
<td>.18**</td>
<td>.07*</td>
<td>-.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Unempl.</td>
<td>1</td>
<td>-.10**</td>
<td>-.23**</td>
<td>-.13**</td>
<td>-.11**</td>
<td>-.24**</td>
<td>-.07*</td>
<td>-.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>OLF</td>
<td>1</td>
<td>-.09**</td>
<td>-.02</td>
<td>.07*</td>
<td>-.12**</td>
<td>-.06</td>
<td>-.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Finan.</td>
<td>1</td>
<td>.16**</td>
<td>.25**</td>
<td>.08*</td>
<td>.21**</td>
<td>.08**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Coll.</td>
<td>1</td>
<td>.58**</td>
<td>.19**</td>
<td>.21**</td>
<td>.35**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Social</td>
<td>1</td>
<td>.14**</td>
<td>.16**</td>
<td>.38**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>-------</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>12. Timestr.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.19**</td>
<td></td>
<td>.31**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Activity</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.28**</td>
</tr>
<tr>
<td>14. Status</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Relation. = in a relationship; Unempl. = being unemployed; Coll. = collective purpose; Social = social contact; Time Str. = time structure.

*p < .05, **p < .01.
Table 4

*Standardized Regression Coefficients for a Hierarchical Regression Analysis on Psychological Health (n=1014)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Step 1</th>
<th></th>
<th></th>
<th>Step 2</th>
<th></th>
<th></th>
<th>Step 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>β</td>
<td>B</td>
<td>SE B</td>
<td>β</td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Age</td>
<td>0.01</td>
<td>0.00</td>
<td>0.10**</td>
<td>0.01</td>
<td>0.00</td>
<td>0.09*</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.09</td>
<td>0.04</td>
<td>-0.06*</td>
<td>-0.07</td>
<td>0.04</td>
<td>-0.05</td>
<td>-0.08</td>
<td>0.04</td>
</tr>
<tr>
<td>Education</td>
<td>0.07</td>
<td>0.02</td>
<td>0.10**</td>
<td>0.06</td>
<td>0.02</td>
<td>0.09*</td>
<td>0.00</td>
<td>0.02</td>
</tr>
<tr>
<td>Relationship</td>
<td>0.17</td>
<td>0.04</td>
<td>0.12**</td>
<td>0.14</td>
<td>0.04</td>
<td>0.10**</td>
<td>0.07</td>
<td>0.04</td>
</tr>
<tr>
<td>Unemployed</td>
<td></td>
<td></td>
<td></td>
<td>-0.47</td>
<td>0.10</td>
<td>-0.15**</td>
<td>-0.20</td>
<td>0.10</td>
</tr>
<tr>
<td>OLF</td>
<td>-0.16</td>
<td>0.06</td>
<td>-0.09*</td>
<td>-0.11</td>
<td>0.06</td>
<td>-0.06*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial ben.</td>
<td></td>
<td></td>
<td></td>
<td>0.08</td>
<td>0.01</td>
<td>0.21**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collect. purpose</td>
<td></td>
<td></td>
<td></td>
<td>0.03</td>
<td>0.02</td>
<td>0.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social contacts</td>
<td></td>
<td></td>
<td></td>
<td>0.06</td>
<td>0.02</td>
<td>0.11**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-structure</td>
<td></td>
<td></td>
<td></td>
<td>0.03</td>
<td>0.02</td>
<td>0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td></td>
<td></td>
<td></td>
<td>0.11</td>
<td>0.02</td>
<td>0.18**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td>-0.01</td>
<td>0.02</td>
<td>-0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. $R^2 = .04$ for Step 1, $\Delta R^2 = .02$ for Step 2, $\Delta R^2 = .13$ for Step 3 ($ps < .01$).*

* $p < .05$, ** $p < .01$. 
Table 5

Fit Indices for Cross-Lagged Models (n = 360).

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>RMSEA</th>
<th>CFI</th>
<th>AIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Full model, cross-lagged associations</td>
<td>5474.35</td>
<td>2678</td>
<td>0.054</td>
<td>.844</td>
<td>6122.35</td>
</tr>
<tr>
<td>2 Latent benefits à P. health</td>
<td>5478.22</td>
<td>2684</td>
<td>0.054</td>
<td>.844</td>
<td>6114.22</td>
</tr>
<tr>
<td>3 Latent benefits à P. health 1 lag</td>
<td>5479.09</td>
<td>2687</td>
<td>0.054</td>
<td>.844</td>
<td>6109.09</td>
</tr>
<tr>
<td>4 P. health à latent benefits</td>
<td>5487.56</td>
<td>2684</td>
<td>0.054</td>
<td>.843</td>
<td>6123.55</td>
</tr>
<tr>
<td>5 P. health à latent benefits 1 lag</td>
<td>5487.75</td>
<td>2687</td>
<td>0.054</td>
<td>.843</td>
<td>6117.75</td>
</tr>
<tr>
<td>6 No cross-lagged associations</td>
<td>5491.97</td>
<td>2690</td>
<td>0.054</td>
<td>.829</td>
<td>6115.97</td>
</tr>
</tbody>
</table>

Note. RMSEA values for all Models are the same, AIC values and tests of $\chi^2$ differences favor model 3.
Figure Caption

*Figure 1.* Crosslagged relations between psychological health and access to latent functions for the final model 3 (n = 360). The dotted paths were restricted zero. Paths from the second-order latent variables latent benefits to each of the first-order variables latent benefits and their parcel indicators were omitted for sake of clarity. Also the indicators for the latent variable psychological health have been omitted.

* * p < .05. ** * p < .01.