Chapter 5.

Results

Foreword

Before launching into the hypothesis-related results, which is the central task of this chapter, it will help first to briefly explore descriptive findings and prospective associations between T1 predictors and T2 outcomes. After this, the results will be presented in the same order as central hypotheses.[1] Section 5.2 refers to the role played by self-efficacy beliefs, and proactive attitude as protective factors in the work stress-health/quality of life relation, from a prospective approach. The Section ends with a summary of results for Hypothesis 1. Section 5.3 considers the role played by coping, as potential mediator of the effects of T1 work-stress and personal resources on T2 health outcomes and quality of life indicators, and it ends with an outline of results for Hypotheses 2 to 5. In closing chapter 5 (section 5.4), I consider the study of stability and change in the interplay between work stress, self-efficacy beliefs, coping, and health outcomes over the time. Before describing the results of each analysis, the specific hypothesis that is being tested will be briefly summarized by including a small paragraph.

[1] Sample characteristics can be found at the end of Chapter 4, as well as the complete description of hypotheses.

5.1 Descriptive Results

5.1.1 Mean, standard deviation, and T1-T2 differences in antecedent variables, mediating processes, and outcomes

Table 7 presents an overview to means, standard deviations, as well as results of paired sample T-tests for antecedent variables (work stress, personality resources, and social support), mediating processes (coping), and outcomes (symptomatology, emotional experience and quality of life) across the two measurement points in time.

As can be seen, the reported severity and frequency of work stress was significantly higher at Time 1 (June 2001) in comparison with Time 2 (January 2002). Both, subjective and objective factors may interact to explain these results, however, in terms of demographics, no differences in work stress were found according to sex and occupational level at both measurement points. These results are coincident with those reported by Spielberger and Reheiser (1995), in which gender and job position played no role in the perception of work stress in the context of manufacturing companies.

In terms of personality resources, general self-efficacy, work-specific self-efficacy, and proactive attitude were found to be quite stable across the time, considering that no differences in T-test were identified, and that test-retest reliability yielded T1-T2 correlations superior than .50 across these three constructs (see Chapter 4). These results are coherent with theoretical assumptions of stability in personality characteristics, and confirm findings reported by Schmitz and Schwarzer (1999) for the proactive attitude scale in occupational settings, and by Scholz et al. (2002) for the generalized self-efficacy scale.

The findings for received support suggest that, the mobilization of advice was constant, irrespective of the level of work stress confronted at each measurement point in time. A set of support scales applied to the same sample at the two measurement points - which are not included into Table 7- presented the same pattern of results.

Changes in coping were found for proactive coping, active coping, and denial, which were all higher at T1, and presented a significant decrease from T1 to T2. On the contrary, no changes in avoidance and behavioral disengagement were identified, since

they were rather low and stable over time. On the whole, the most common strategies used by employees to deal with work stressors were the ones that focused directly on the problems.

Three different types of outcomes are used in this study, namely emotional experience, symptomatology, and quality of life. As can be seen in Table 7, negative and positive affect present a contrasting pattern according to the stress situation. While higher negative affect and lower positive affect was reported at T1; at T2, the scales inverted their mean, and negative affect was found to be lower than positive affect. In other words, results revealed that emotional experience was healthier at T2 compared to T1. A similar pattern of results emerged from analyses of self-reports of symptomatology. The reported depression, somatization, and physical disorders were significantly higher at T1 compared to T2. Quality of life (physical and psychological), on the contrary, presented the same mean score across the time, and it appears to be a more stable dimension compared to self-reports of symptoms and emotions. In comparison to female, male employees presented slightly lower mean scores in measures of symptoms over time, except for somatic disorders. On the whole, the reported levels in physical and psychological quality of life were quite high, according to the intervals published by the world health organization (see Power et al., 1999).

Table 7. Item Mean, Standard Deviation, Median and Stability across two measurement points (sample sizes were N = 535 (T1) and N = 535 (T2)).

		Time 1			Time 2			MT1-MT2
	Range	M	SD	Md	M	SD	Md	Sig. (2-tailed)
Antecedents								
Personality Resources								
General Self-efficacy	1-4	2.95	0.46	3.00	2.93	0.44	3.00	$p = 0.32$
Work Specific Self-efficacy	1-4	3.21	0.47	3.17	3.19	0.45	3.17	$p = 0.31$
Proactive Attitude	1-4	3.14	0.42	3.13	3.14	0.38	3.13	$p = 0.91$
Social Resources								
Received Advice	1-5	3.23	0.83	3.25	3.26	0.81	3.25	$p = 0.42$
Work Stress								
Work Stress Frequency	1-9	3.53	1.76	3.10	3.19	1.59	2.90	$p < 0.001$
Work Stress Severity	0-9	3.12	2.10	2.80	2.75	1.94	2.40	$p < 0.001$
Mediators								
Positive Coping								
Proactive Coping	1-4	2.83	0.50	2.85	2.79	0.48	2.85	$p < 0.05$
Active Coping	1-4	2.92	0.64	3.00	2.82	0.66	3.00	$p < 0.001$
Negative Coping								
Avoidance Coping	1-4	1.50	0.52	1.33	1.48	0.55	1.33	$p = 0.52$
Denial Coping	1-4	1.70	0.72	1.50	1.62	0.68	1.50	$p < 0.05$
Behavioral Disengagement	1-4	1.41	0.59	1.00	1.37	0.55	1.00	$p = 0.18$
Outcomes								
Illness-related Symptoms								
Depression	1-4	1.62	0.52	1.45	1.52	0.50	1.36	$p < 0.001$
Somatization	1-4	1.66	0.51	1.50	1.59	0.49	1.50	$p < 0.001$
Physical Illness	0-4	2.47	1.41	3.00	1.79	1.24	2.00	$p < 0.001$
Emotional Experience								
Positive Affect	1-4	2.89	0.54	2.90	3.00	0.52	3.00	$p < 0.001$
Negative Affect	1-4	1.92	0.65	1.80	1.79	0.59	1.70	$p < 0.001$
Quality of Life								
Psychological Quality of Life	1-5	4.05	0.67	4.17	4.08	0.65	4.17	$p = 0.15$
Physical Quality of Life	1-5	4.08	0.60	4.14	4.11	0.56	4.14	$p = 0.25$

5.1.2 Associations between personal resources, coping and negative vs. positive health outcomes

5.1.2.1 Correlational analyses

The theoretical approach that was assumed, emphasizes the role of personal resources (and collaterally social resources) and coping for the occurrence of good versus bad health outcomes. In my view, a person may tend to become sick or stay well because of his/her self-efficacy beliefs level, because of his/her proactive attitude niveau, and also depending on the coping strategies that he/she tends to use when dealing with work-related stressors. The major findings of associations for *negative vs. positive health outcomes* are represented in Figures 16 and 17 (see also Tables 19 and 20 in Appendix C).

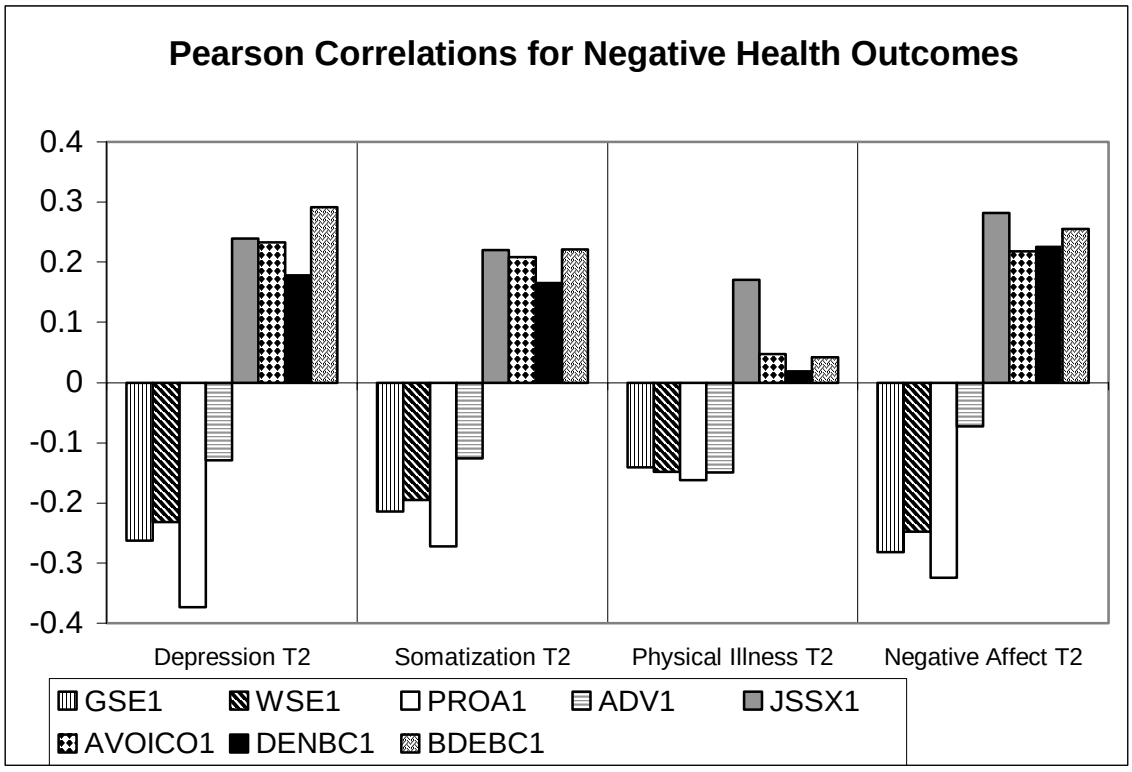

Figure 16. Pearson Correlations for Negative Health Outcomes. GSE1 = General Self-Efficacy T1, WSE1 = Work-specific Self-Efficacy T1, PROA1 = Proactive Attitude T1, ADV1 = Received Advice T1, JSSX1 = Work Stress Index T1, AVOICO1 = Avoidance Coping T1, DENBC1 = Denial Coping T1, BDEBC1 = Behavioral Disengagement T1

As hypothesized (see Figure 16), self-efficacy beliefs, proactive attitude, and received advice were negatively associated with depression, somatization, physical illness, and negative affect at T2 ($p < .001$). That is, persons who reported being more efficacious and proactive at the start of the study were the ones who reported fewer symptoms and less aversive emotions six months later. This was also the case for those who received more advice at T1. Coefficients were moderate to low. In addition, positive correlations between work stress T1 and negative health outcomes at T2 were found ($p < .001$), suggesting that those employees who experienced more stress were the ones who reported more symptoms and negative affect six months later. These results were consistent with theoretical assumptions and all coefficients were moderate to low. The use of negative coping, on its side, was positively correlated with depression, somatization, and negative affect at T2, revealing that those who confronted stress at work by using denial, avoidance and behavioral disengagement were also the ones who reported more negative health outcomes at T2 ($p < .001$). Correlations were moderately low and coincident with theoretical assumptions.

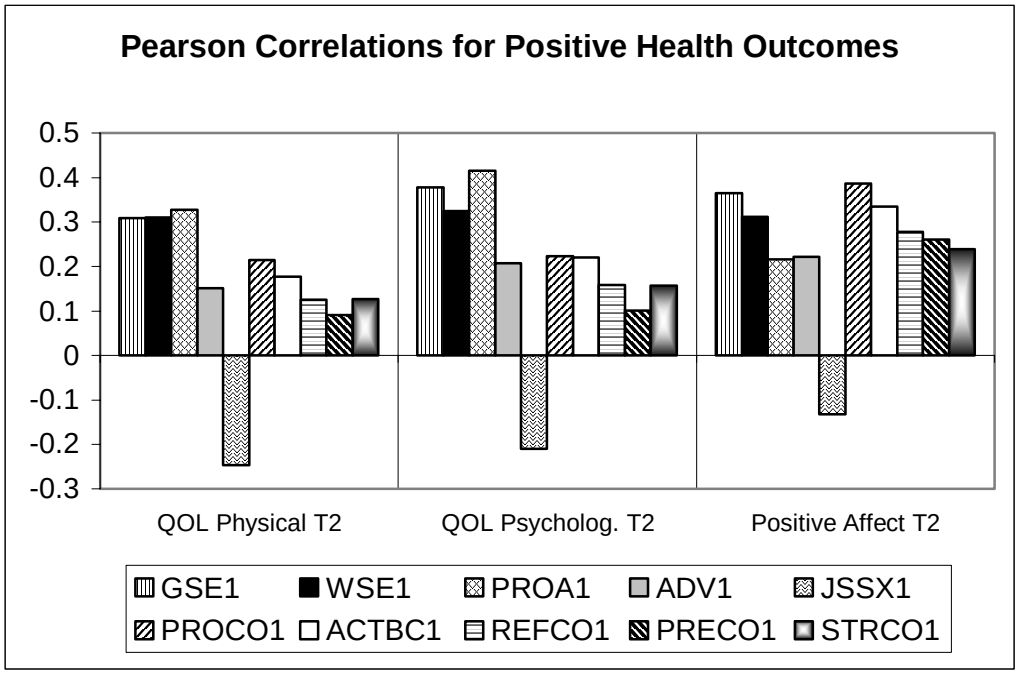

Figure 17. Pearson Correlations for Positive Health Outcomes. GSE1 = General Self-Efficacy T1, WSE1 = Work-specific Self-Efficacy T1, PROA1 = Proactive Attitude T1, ADV1 = Received Advice T1, JSSX1 = Work Stress Index T1, PROCO1 = Proactive Coping T1, ACTBC1 = Active Coping T1, REFCO1 = Reflective Coping T1, PRECO1 = Preventive Coping T1, STRCO1 = Strategic Planning T1

Also in accordance with expectations (see Figure 17), indicators of quality of life (physical and psychological) and positive affect at T2 were positively correlated with self-efficacy beliefs, proactive attitude, and received advice at T1 ($p < .001$). In other words, the higher the self-efficacy, and the higher the proactive attitude, the better the level of quality of life and the higher the positive affect six months later. The same pattern of associations was found for received advice. As in the first set of correlations, coefficients were moderate to low. With regard to the influence of work stress, a consistent pattern of negative correlations was found between work demands at T1 and quality of life and positive affect at T2 ($p < .001$). As hypothesized, employees that reported higher work stress at T1 exhibited lower QoL and less positive affect at T2. Correlations were moderately low. Moreover, the use of two forms of positive coping was related to higher QoL and more positive affect at T2. Proactive coping and active coping were positively related to a better quality of life and higher positive affect six months later ($p < .001$). A similar type of correlations emerged from analyses between goal-oriented coping and QoL and positive affect at T2. The higher the use of preventive, reflective, and strategic planning, the more positive affect and quality of life were reported at T2 ($p < .001$).

In sum, the first overview of associations between predictors at T1 and outcomes at T2 was completely in accordance with theoretical assumptions. Personal and social resources and the use of positive coping (proactive and goal-oriented) were consistently related to better standards in quality of life and positive affect, as well as with lower illness-related symptoms and negative affect at a later point in time. Conversely, work stress in conjunction with the so called negative coping (avoidance, denial, and behavioral disengagement) were systematically correlated with lower quality of life, less positive affect, and higher rates in symptoms.

5.2 Resources and the Work Stress – Health/Quality of Life Relation

5.2.1 The effects of personal resources on the work stress-health relation

After a brief revision of descriptive statistics and associations between variables of interest, the task consists now in answering the question whether personal resources (and alternatively advice) may act as protective factors in the work stress-health relation. In the work stress literature, two different kinds of effects have been identified: On the one hand the so called "main effect", which refers to direct effects when analyzing the influence of two dichotomized variables on continuous variables. The second is "buffer effect"; that is, the simplest case of interaction explained by Baron and Kenny (1986), in which a dichotomous independent variable's effect (e.g., work stress) on the dependent variable (e.g., symptoms) may change as a function of another dichotomy (e.g., self-efficacy).[2]

5.2.1.1 Testing Hypothesis 1: On the role played by self-efficacy beliefs and proactive attitude in the work stress-health outcomes /quality of life relation

This hypothesis sustains that Self-efficacy beliefs (SEB) and Proactive Attitude (PROA) may "regulate" the effects of work-related stress on health outcomes/quality of life at a later point in time. The potential effects of SEB and PROA may be general (through main effects) or interactive (through buffer effects). In the former, it would be expected that SEB and PROA would tend to act in favor of health status both when work stress is high and when work stress is low. On the other hand, in the presence of a buffer effect, it would be expected that SEB and PROA would tend to act in favor of health only when work stress is high. In either case, it is expected that both SEB and PROA should influence coherently *in favor* of the improvement of health/quality of life of working people.

[2] In a 2 X 2 ANOVA, for example, a significant interaction would be interpreted as buffer effect, whereas a nonsignificant interaction in the presence of significant main effects would be understood as a general effect only (see Baron & Kenny, 1986, p. 1175).

5.2.1.1.1 General procedure of testing Hypothesis 1

To assess hypothesis 1, SPSS GLM (Multivariate) was used instead of a set of ANOVAs, given its advantages in testing potential interaction effects of two IVs on two or more DVs.[3] In the very first analysis, prospective effects of general self-efficacy and work stress will be evaluated by using the linear combination of three negative health outcomes at T2 as dependent variable (entered into analyses as zscores). To build independent variables, work stress T1 was dichotomized (by median split) into high and low groups, and the same was done with indicators of self-efficacy beliefs and proactive attitude. Therefore, the central interest of forthcoming analyses is to evaluate whether there is interaction or not. [4] Results are presented first for negative health outcomes, and then for positive outcomes (quality of life indicators and positive affect).

5.2.1.2 Results on negative health outcomes (depression, somatization, and physical illness)

Analysis 1: How does General Self-Efficacy influence the work stress-health relation?

Results of the first analysis yielded a highly significant multivariate effect of general self-efficacy (F [3,527] = 8.5, p< .001, partial Eta^2 = 0.05)[5] and work stress on negative health outcomes at T2 (F [3,527] = 11.33, p< .001, partial Eta^2 = 0.06). However, this analysis revealed a nonsignificant interaction (F [3,527] = .71, p= .55,

[3] In the current study, GLM (*Multivariate Analysis of Variance)* was implemented by using a *prospective approach*, defining Time 2 symptomatology as the criterion with Time 1 work stress and personal resources as predictors.

[4] I like to thank Dr. Hans Grüner (Freie Universitaet Berlin) and Prof. Dr. Mathias Jerusalem (Humboldt Universitaet zu Berlin) for their advice in the conduction of analyses.

[5] F values were computed by accomplishing all assumptions of normality, equality of covariance matrices, equality of error variances, as well as assumptions of linearity and multicollinearity. The determinant of the pooled within cells correlations, for example, was found to be significantly different from zero in all analyses. Hence neither multicollinearity nor singularity was found to be a problem. All assumptions for Multivariate Analysis of Variance were accomplished based on the procedures suggested by Tabachnick and Fidell (2001).

partial Eta^2 = 0.00).[6] As expected, results showed coherent significant differences in negative health outcomes at T2 between the high and low self-efficacious groups, and the high and low stress groups. However, given the nonsignificant interaction, this result suggests that the influence of stress on negative health outcomes might not be considered as a contingent of the level of general self-efficacy. In terms of main vs. buffer effects, the first multivariate analysis suggests that general self-efficacy has a main effect in the work stress-illness relation instead of a buffer effect. Moreover, results of GLM Univariate Tests of between-subjects effects were also consistent with results of multivariate analyses, in the sense that there were only significant main effects of general self-efficacy beliefs and work stress at T1 on depression, somatization and physical illness at T2.

Figures 18, 19 and 20 represent the significant main effects of general self-efficacy and work stress on negative health outcomes at a later point in time, and Table 21 (see Appendix C) contains further details regarding univariate analyses. As can be seen, results seem to be coherent with theoretical assumptions of the main effect health model, in the sense that high self-efficacious employees tend to be less vulnerable than low self-efficacious individuals in developing illness, irrespective of the level of stress. Does this result vary when using a context specific measure of self-efficacy, namely work specific self-efficacy? Let's see analysis 2.

[6] Box-M-Test: F(18, 898544) = .84, p = .65

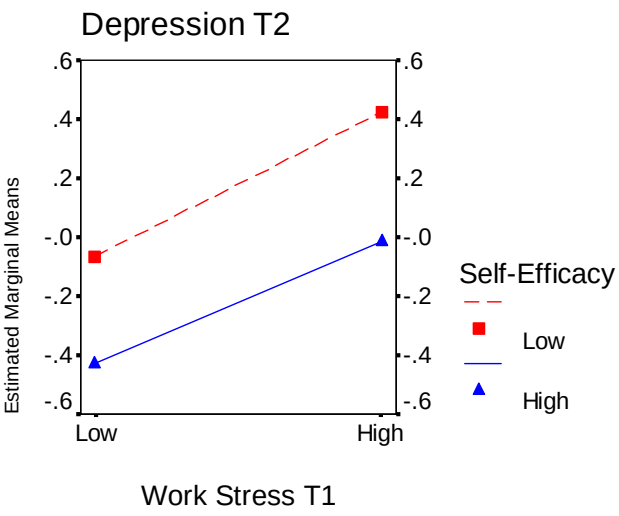

Figure 18. Main effect of General Self-Efficacy on the work stress-depression relation

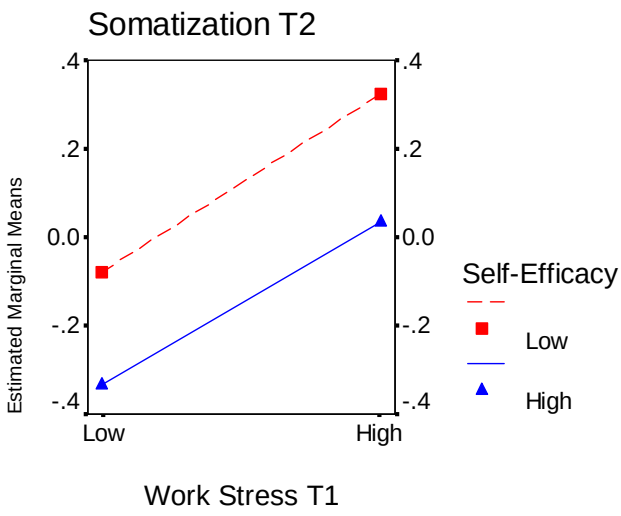

Figure 19. Main effect of General Self-Efficacy on the work stress -somatization relation

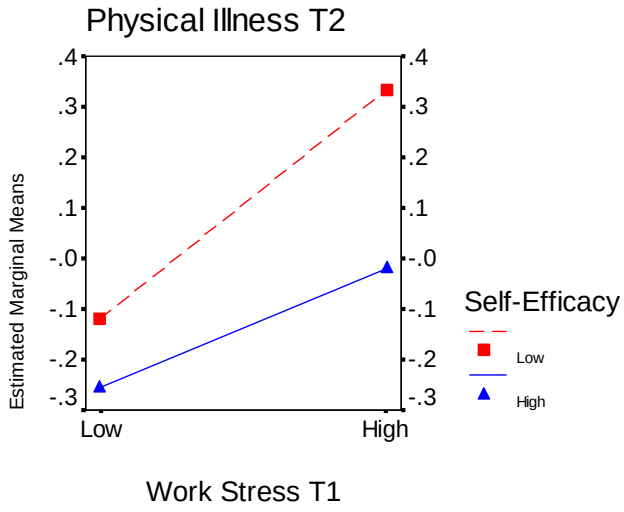

Figure 20. Main effect of General Self-Efficacy on the work stress-physical illness relation

Analysis 2: How does Work specific Self-Efficacy influence the work stress-health relation?

A similar pattern of results emerged from analysis when using work specific self-efficacy and stress T1 as predictors of negative health outcomes at T2. First, multivariate test revealed a significant effect of work specific self-efficacy (F [3,527] = 7.75, p< .001, partial Eta^2 = 0.04) and work stress on negative outcomes at T2 (F [3,527] = 10.73, p< .001, partial Eta^2 = 0.06). In the same way, the current analysis yielded a nonsignificant interaction (F [3,527] = 1.80, p= .15, partial Eta^2 = 0.01).[7] These results suggest that work specific self-efficacy has a main effect in the work stress-illness relation, since employees with high work specific self-efficacy presented lower levels in negative health outcomes at T2 irrespective of the level of stress experienced at T1. This finding was corroborated by looking at GLM Univariate Tests of between-subjects (see Table 22, Appendix C), which yielded significant between-subjects effects for work specific self-efficacy and work stress on depression, somatization, and physical illness at T2, but nonsignificant interaction effects.

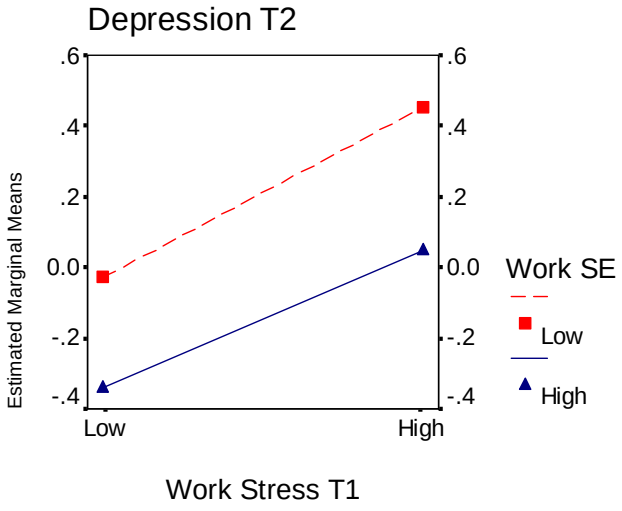

Figure 21. Main effect of Work specific Self-Efficacy on the work stress-depression relation

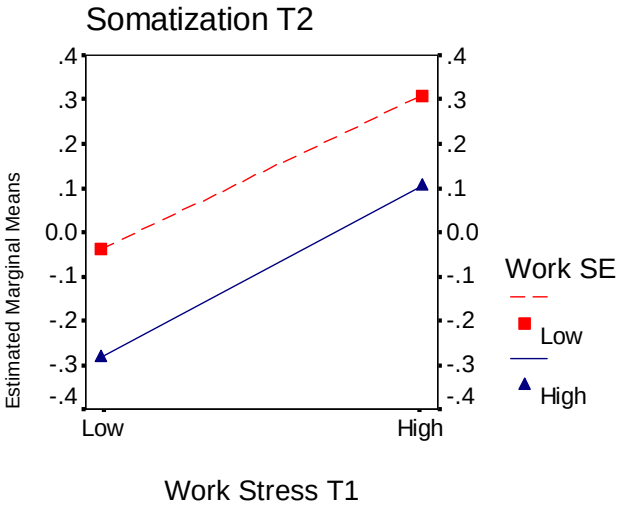

Figure 22. Main effect of Work specific Self-Efficacy on the work stress-somatization relation

[7] Box-M-Test: F(18, 705266) = .65, p = .86

Figures 21, 22 and 23 represent effects on each negative health outcome. As can be observed, results are coherent with those obtained with general self-efficacy, suggesting that, both work specific and generalized self-efficacy beliefs tend to influence in the same way the long term effects of work stress on negative health outcomes. That is, both appear to be protective irrespective of stress niveau. At this point, we may then ask ourselves whether proactive attitude –another relevant proactive coping resource- may yield a different pattern of results in terms of effects. Analysis 3 offers the answer.

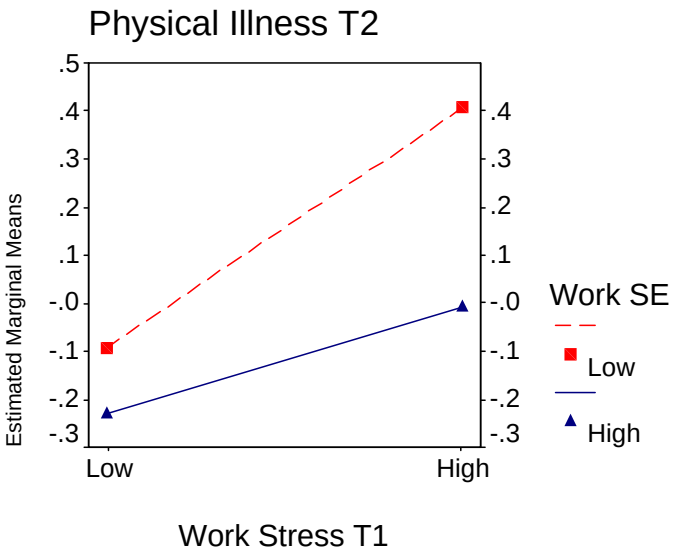

Figure 23. Main effect of Work specific Self-Efficacy on the work stress-physical illness relation

Analysis 3: How does Proactive Attitude influence the work stress-health relation?

The third analysis on negative health outcomes used proactive attitude and work stress as predictors. GLM (Multivariate) yielded a consistent pattern of results in comparison with analysis 1 and 2. First, multivariate test showed significant effects for proactive attitude ($F\ [3,527] = 17.41$, $p < .001$, partial $Eta^2 = 0.09$) and work stress on negative health outcomes at T2 ($F\ [3,527] = 7.29$, $p < .001$, partial $Eta^2 = 0.04$). In addition, a nonsignificant interaction effect was found ($F\ [3,527] = 2.19$, $p = .09$, partial $Eta^2 = 0.01$).[8] A closer look at univariate effects leads us to corroborate, that proactive attitude and work stress as measured at T1 did have a significant main effect on depression, somatization, and physical illness at T2. Figures 24, 25 and 26 exhibit the effects of predictor variables on negative health outcomes at T2. Table 23 (see Appendix C) contains relevant information regarding univariate analyses.

[8] Box-M-Test: F(18, 718840) = .57, p = .92

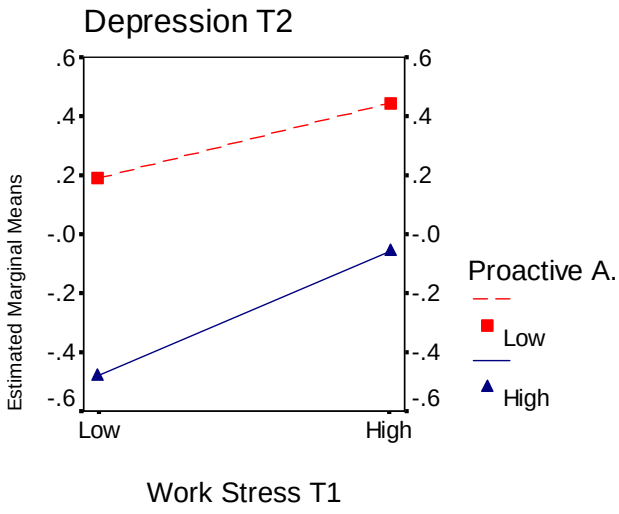

Figure 24. Main effect of Proactive Attitude on the work stress-depression relation

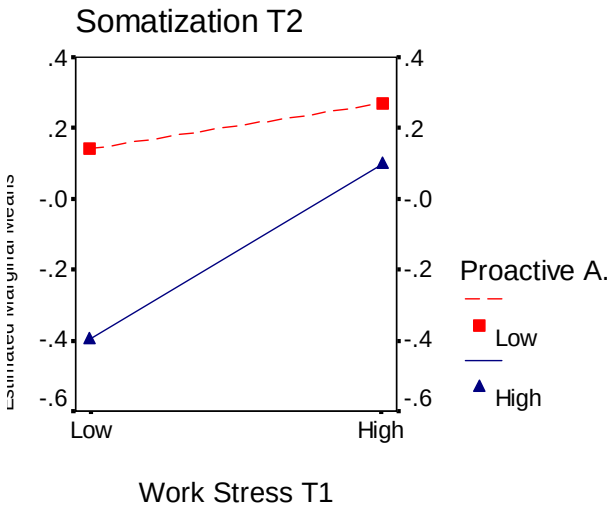

Figure 25. Main effect of Proactive Attitude on the work stress-somatization relation

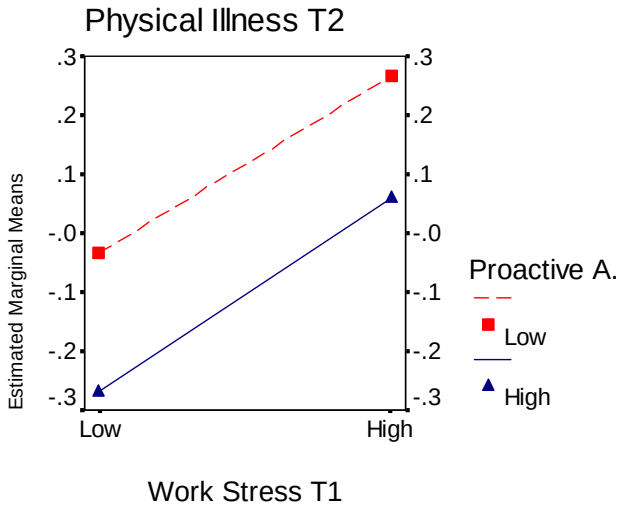

Figure 26. Main effect of Proactive Attitude on the work stress-physical illness relation

5.2.1.3 Results on quality of life (physical quality of life, psychological quality of life)

Many studies define negative health outcomes as dependent variables to evaluate whether there is a main or a buffer effect as result of the influence of personality related variables. I already investigated this issue in the previous sections. Now, I would like to

use quality of life as a positive indicator of health from a holistic viewpoint, with the aim of exploring a more positive facet of potential effects of personality resources in the stress-quality of life relation. As in the first set of analyses, I will systematically present three separated results as follows: First, a 2 * 2 between-subjects GLM will be conducted with the aim of assessing the prospective effects of general self-efficacy (high, low) and work stress (high, low) as measured at T1 on two indicators of quality of life at T2 (physical quality of life and psychological quality of life). In the second and the third analysis, I will do the same by changing the personal resource predictor.

Analysis 4: How does General Self-Efficacy influence the work stress-quality of life relation?

When using physical and psychological quality of life at T2 as dependent variables in the fourth analysis, I found that general self-efficacy beliefs as well as work stress have significant main effects only. In other words, GLM yielded a significant multivariate effect of self-efficacy ($F\ [2,530] = 29.82$, $p < .001$, partial $Eta^2 = 0.10$) and work stress ($F\ [2,530] = 9.72$, $p < .001$, partial $Eta^2 = 0.04$) on QoL at T2, but there was no significant interaction effect ($F\ [2,530] = .04$, $p = .96$, partial $Eta^2 = 0.00$)[9]. In addition, univariate tests and pairwise comparisons suggest that Time 2 physical and psychological quality of life tend to be higher in those employees who have high levels of general self-efficacy. This difference was present, not only in those employees who experienced low stress, but also in those who experienced high stress at T1. That is, the protective role of general self-efficacy seems to appear irrespective of the situation. Figures 27 and 28 present a graphical overview of effects, and table 24 (see Appendix C) summarizes statistics for univariate tests.

[9] Box-M-Test: $F(9, 2665636) = 1.5$, $p = .14$

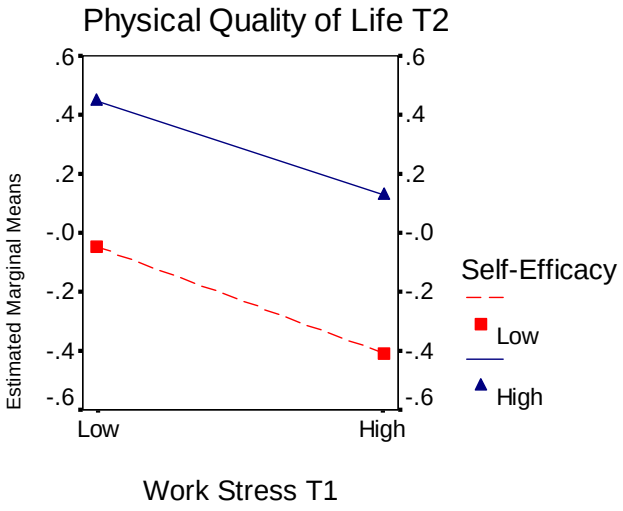

Figure 27. Main effect of General Self-Efficacy on the work stress-physical quality of life relation

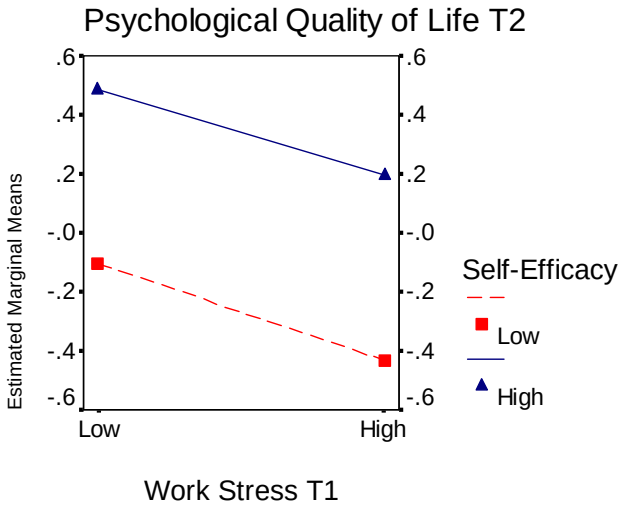

Figure 28. Main effect of General Self-Efficacy on the work stress-psychological quality of life relation

Analysis 5: How does work specific self-efficacy influence the work stress-quality of life relation?

In examining the relative role played by work specific self-efficacy in the work stress-quality of life relation, similar patterns of results emerged from analyses in comparison with general self-efficacy. Results of GLM revealed a significant multivariate effect of work specific self-efficacy ($F [2,530] = 16.39$, $p < .001$, partial $Eta^2 = 0.06$) and work stress ($F [2,530] = 8.54$, $p < .001$, partial $Eta^2 = 0.03$) on QoL at T2, and no significant interaction ($F [2,530] = 1.45$, $p = .24$, partial $Eta^2 = 0.00$)[10]. Moreover, univariate tests revealed that high and low self-efficacious employees differ in T2 QoL, both when T1 stress was high and when T1 stress was low. Figures 29 and 30 represent effects, and table 25 (see Appendix C) summarizes statistics for univariate tests, which were all coherent with multivariate results.

[10] Box-M-Test: $F(9, 1775384) = 1.71$, $p = .08$

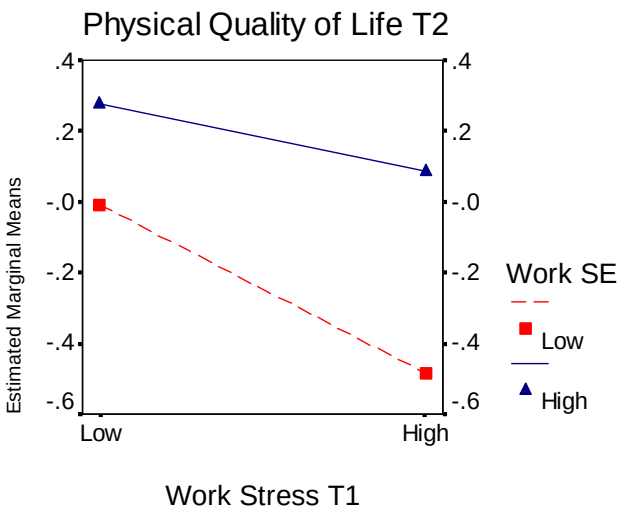

Figure 29. Main effect of Work Self-Efficacy on the work stress-physical quality of Life relation

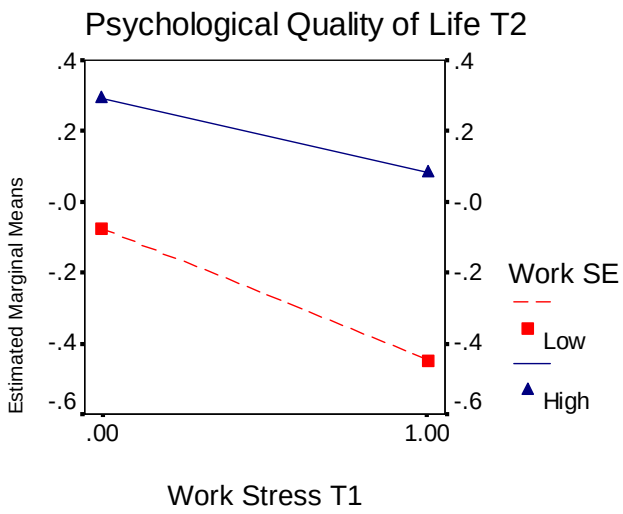

Figure 30. Main effect of Work Self-Efficacy on the work stress-psychological quality of Life relation

Analysis 6: How does Proactive Attitude influence the work stress-quality of life relation?

We have reached now the last GLM, in which the relative role of proactive attitude in the work stress-quality of life interaction is explored. As expected, the same result profile came out from GLM compared to the last two analyses. Multivariate Test revealed a significant main effect of proactive attitude ($F [2,530] = 18.04$, $p < .001$, partial $Eta^2 = 0.064$) and work stress ($F [2,530] = 5.33$, $p = .005$, partial $Eta^2 = 0.02$) on QoL at T2, nevertheless, no significant interaction was documented by analyses ($F [2,530] = 1.64$, $p = .20$, partial $Eta^2 = 0.00$)[11]. In addition to previous results, univariate follow-up tests indicated that low proactive employees tend to have low psychological and physical quality of life in comparison with highly proactive employees. This difference is evident in both the high stress and the low stress group, suggesting that proactive attitude has a main effect in the work stress-QoL relation. Figures 31 and 32 represent relationships between effects of predictors on dependent variables. Table 26 shows (see Appendix C) statistics for univariate tests that are consistent with multivariate results.

[11] Box-M-Test: $F(9, 1358324) = 1.81$, $p = .061$

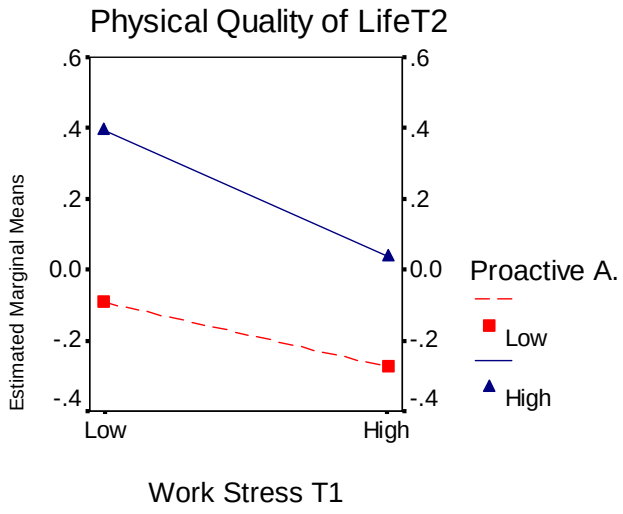

Figure 31. Main effect of Proactive Attitude on the work stress-physical quality of life relation

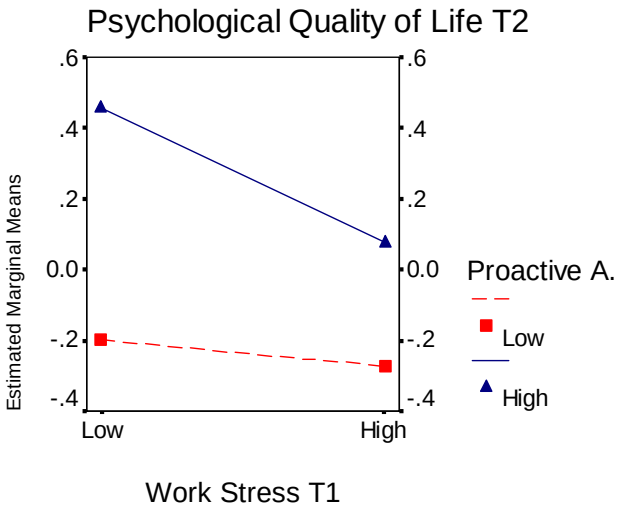

Figure 32. Main effect of Proactive Attitude on the work stress-psychological quality of life relation

5.2.2 The effects of social support (received advice), compared to personal resources, on the work stress-health relation

5.2.2.1 Testing Hypothesis 1a

This hypothesis sustains that social support (in concrete, received advice) may play a leading role as a health protective factor when crisis arises, that is, it may buffer the long term effects of work stress on negative health outcomes. The benefits of received advice may not be visible when work stress is experienced as a routine, but when employees confront highly stressful transactions.

To assess hypothesis 1a, I have conducted a further GLM by using one indicator of social support (advice) to evaluate whether there was a buffer effect or not. This time, multivariate analyses revealed that advice did function as a buffer in the work stress-illness relation. Results of Multivariate Test showed a significant main effect of advice ($F [3,527] = 3.61$, $p = .013$, partial $Eta^2 = 0.02$) and work stress ($F [3,527] = 11.53$, $p < .001$, partial $Eta^2 = 0.06$) on T2 negative health outcomes, but also a significant interaction was reported by analyses ($F [3,527] = 2.74$, $p = .04$, partial $Eta^2 = 0.02$)[12]. In particular, follow-

[12] Box-M-Test: F(18, 949430) = .49, p = .97

up tests yielded significant differences in illness at T2, between the low and the high advice group that experienced high work stress at T1. However, there were no differences in illness at T2 between the low and the high advice group that experienced low work stress at T1. This information suggests that, personal resources might play a different role compared to social support when facing work stress. Advice, in particular, seems to be helpful only when crisis arises. Figure 33, 34 and 35 represent the findings, and Table 27 (Appendix C) contains the details of univariate effects.

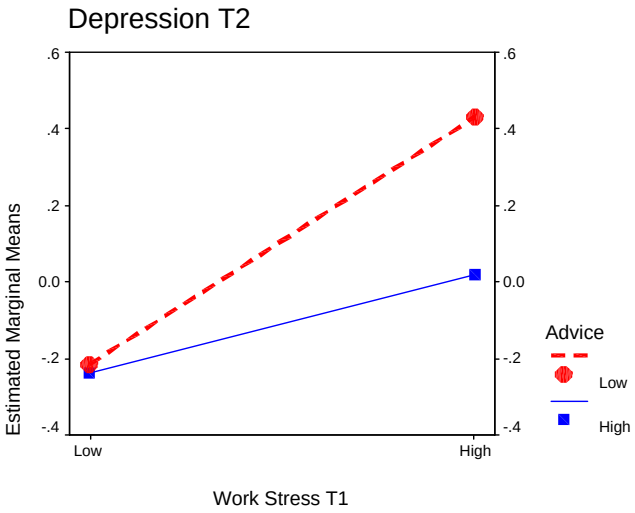

Figure 33. Buffer effect of Advice on the work stress-depression relation

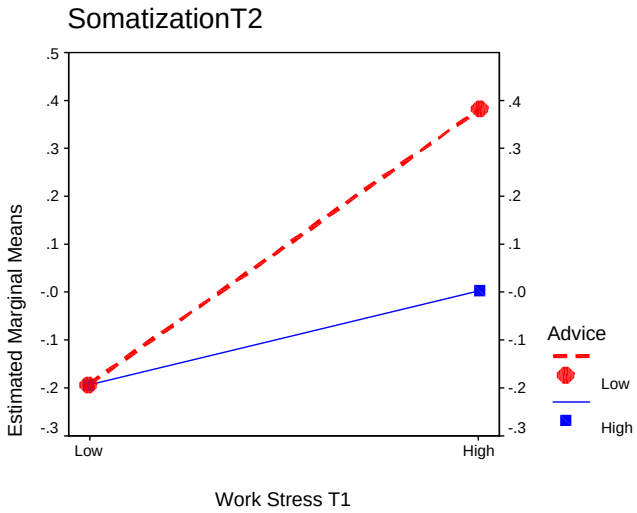

Figure 34. Buffer effect of Advice on the work stress-somatization relation

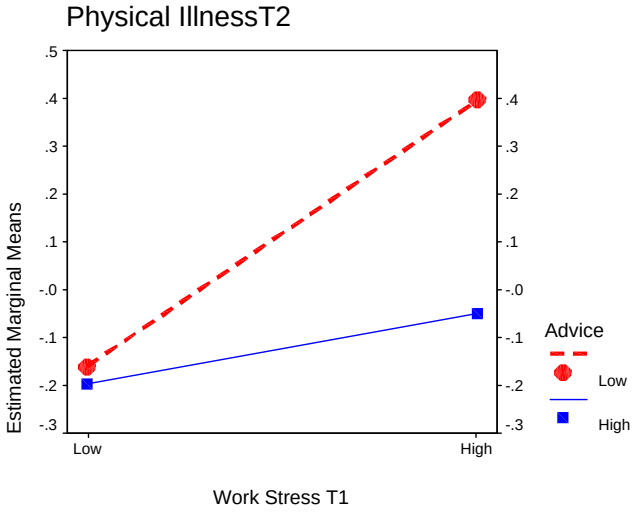

Figure 35. Buffer effect of Advice on the work stress-physical illness relation

5.2.3 Summary of results for Hypothesis 1 and 1a

Do personality resources influence the stress-health/quality of life relation?

The central purpose of previous analyses was to identify the potential presence (or absence) of significant stress * personal resources effects on negative health outcomes and quality of life from a prospective viewpoint. Results indicate three things:

First, the effect of personal resources in the work stress-health/quality of life relation appeared to be *general*. That is, it seems to be that personal resources operate in a *protective* manner, not only when work stress is high, but also when work stress is rather a routine.

Second, results were all consistent in the sense that those employees with high personal resources tend to develop lower depression, somatization, and physical illness, as well as higher physical and psychological quality of life at T2, irrespective of stress level. From previous evidence I may say, that personal resources have a protective function in the work stress-health/QoL relation. In other words, current findings suggest that working people get benefits of being highly self-efficacious and highly proactive.

Third, comparative analyses provided to evaluate differences between the effects of personal and social resources, suggested, that social support (received advice) tend to act as a buffer whereas personal resources tend to function as a general stabilization resource factor when dealing with job stressors. In practical terms, the information might suggest that the boundaries of internal resources are palpable irrespective of the particular demands that employees may confront at work. Conversely, the search for advice seems to be relevant –only- when stress increases, and the job situation is rather highly demanding.

Another aspect to take into account is the predictive power of the already developed models. On the whole, the strength of the effects of stress and personal (or social) resources on health outcomes/QoL were found to be relatively low, since the GLMs accounted for an average ranging from 10% to 14% in the variance of the linear combination of dependent variables. Nevertheless, we should take into account the time

interval between the initial measures and the outcomes, which consists of a 6-month time period. On the other hand, in the case of the direct effects, these findings will be reinforced (and further supported) by using structural equation modeling procedures, in which I will also explore the effects of personal resources on health outcomes/QoL from a prospective viewpoint by adding to the models the mediating function of coping.

5.3 On the role played by COPING as potential mediator of the long term effects of Work Stress and Personal Resources on Health Outcomes/Quality of Life

5.3.1 General procedure of testing *prospective mediation* of coping

Hypotheses 2 to 5 concern the *mediating role* of coping in the relationship between work stress, personal resources and positive vs. negative health outcomes from a *prospective viewpoint*. To test hypotheses, I will make use of the *alternative models* strategy suggested by Jöreskog (1993). The procedure requires the specification of alternative models (or competing models) and, on the basis of the analysis of a single empirical set of data, one of the models should be selected.

Basically, I will specify two alternative models –on each hypothesis- which have different theoretical implications: a) Model A (see Figure 36) represents a *restrictive model*, in which all the influence of personal resources and work stress on heath outcomes/QoL is *fully mediated* by coping. This is considered to be the initial model on the basis of substantive theory. b) Model B (see Figure 37) is conceived to be the alternative model, since it specifies both *direct and indirect effects*. In this case, work stress and personal resources are conceived to make also individual contributions to health consequences and quality of life at a later point in time.

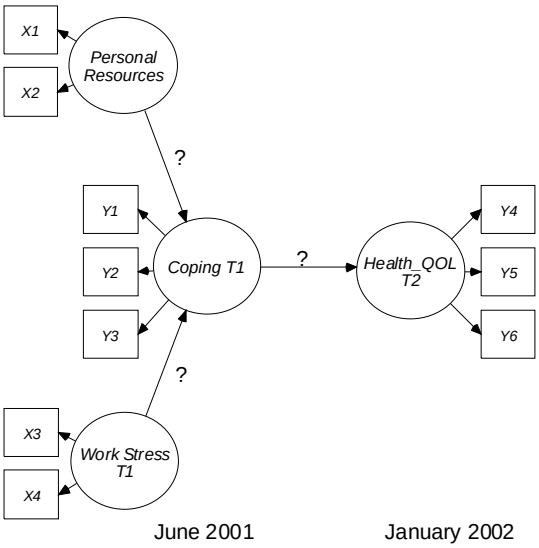

Figure 36. MODEL A

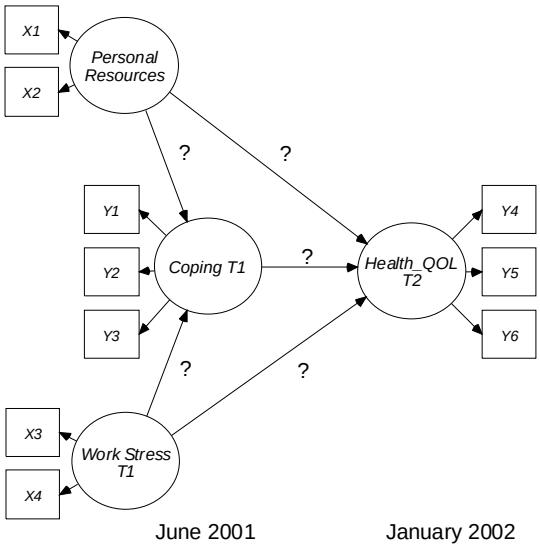

Figure 37. MODEL B

In general, for each hypothesis I will evaluate both models, to select one of them, and then to interpret results. To decide which model should be discarded, I have first evaluated the fit of the initial model (Model A), particularly paying attention to chi-square, standard errors, *t* values, standardized residuals, and modification indices. If chi-square was significant and the fit indices unacceptable, then I looked at modification indices, and on the basis of theoretically-based criteria, further parameters were freed or fixed until obtaining a model that fits on the data better and in which all parameters were meaningful and substantively interpretable.

Why should I use this strategy instead of a simplest one? I have both theoretical and methodological reasons to test hypothesis by using prospective models. In terms of theory, stress and coping research is progressively moving from concurrent (cross-sectional) models into longitudinal (prospective) analysis, in which the *level* of health/QoL at T2 is conceived to be function of the *level of* earlier psychosocial predictors. In other words, the unity under investigation involves the prediction in dependent measures. Thus, the need of using prospective models responds to the need of convergence between even more challenging theoretical approaches and methodology in the study of human behavior.

In this sense, structural equation modeling (LISREL) was preferred as an ideal strategy to evaluate the assumption that coping may be a *prospective mediator* of the effects of personal resources and work stress on health/QoL. The schema of Model A has been used -for example- in studies about: Coping, college adjustment and performance (Aspinwall & Taylor, 1992); coping, personal resources and adaptation process of migrants (Schwarzer, Hahn, & Fuchs, 1993); undergoing coronary artery bypass surgery (Scheier, Matthews, Owens, Magovern, Lefebre, Abbott, & Carver, 1989), and I have to say there are only isolated examples into the literature of work-related stress research (see literature review, Chapter 2).

5.3.2 The contribution of work stress, self-efficacy beliefs, and coping process to health outcomes and quality of life

5.3.2.1 Testing Hypothesis 2: On the role played by AVOIDANCE COPING as potential mediator of the long term effects of *work stress* and *self-efficacy beliefs* on ***negative health outcomes***

Hypothesis 2 assumes that avoidance coping may be a path through which employees tend to become sick. In concrete, the use of avoidance, denial and behavioral disengagement at T1 should conduce to higher levels of depression, somatization, and more physical illness six month after. The pervasive long term effects of avoidance coping should be exacerbated by work stress, which may also act indirectly on later consequences in negative health outcomes. In contrast, self-efficacy beliefs may tend to decrease the use of avoidance coping, so that it may also indirectly promote an improvement in health outcomes six moths later.

- Results on Negative Health Outcomes

Analysis 1: Does avoidance coping mediate the effects of self-efficacy beliefs and work stress on Negative Health Outcomes?

The first step in presenting LISREL results concerns the question whether Model A fits better with data than Model B. This is perhaps the most important result in terms of hypothesis and theoretical consequences. If Model B is selected, then, on the basis of the analysis of direct and indirect effects, the relative contribution of each construct in the prediction of coping and negative health outcomes may be clarified. In addition, the proportion of variance in coping and negative health outcomes accounted for by structural equations may give us an idea of the boundaries of the model in predicting dependent variables. Figures 38 and 39 represent the standardized solution for the competing models, and Table 8 summarizes results of fit indices for each model. Both

Figures include significant effects only. The complete standardized solution (ULS-parameter) was included into Table 28 and 29 in Appendix C.

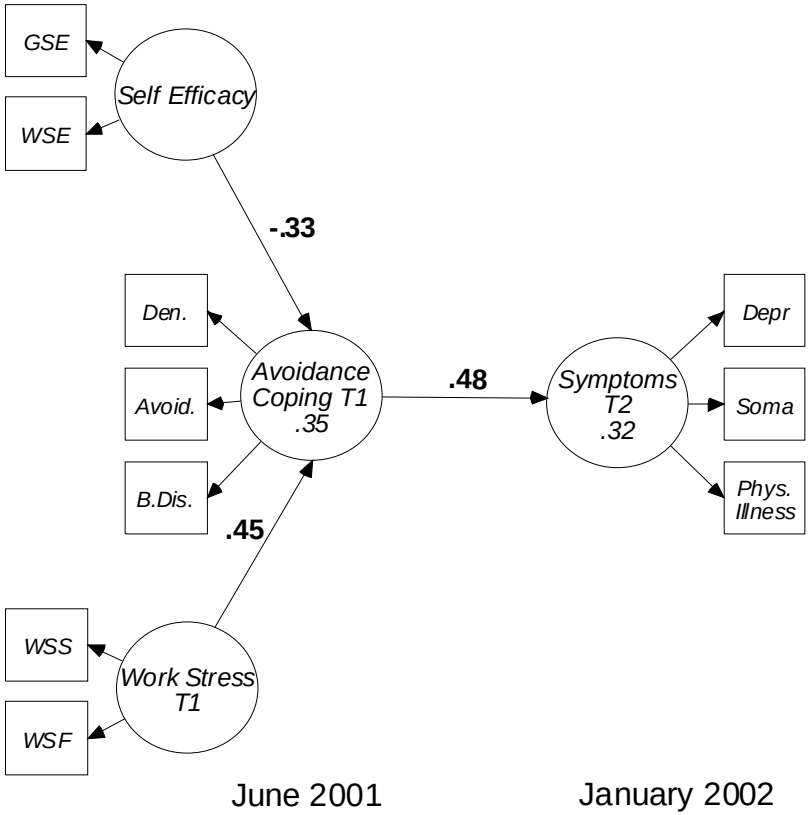

Figure 38. Restrictive Model 1-A

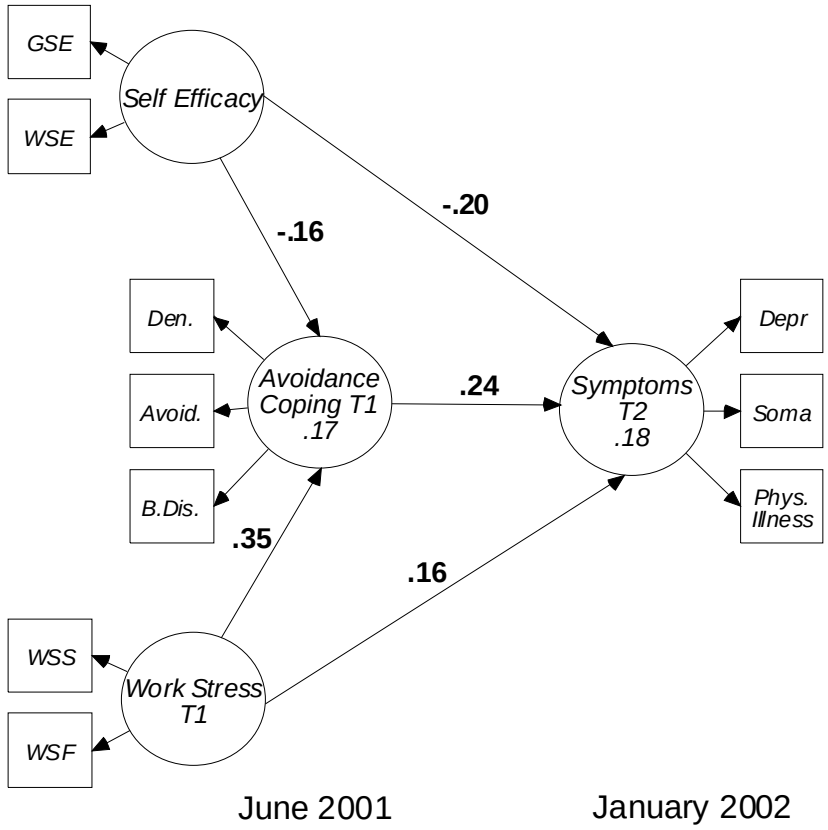

Figure 39. Best Fitting Model 1-B

Table 8. Fit Indices for Competing Models 1-A and 1-B.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Model 1-A	93.72	29	3.23	.000	-	.98	.96	.056	.065	145.72	110.00
Model 1-B	47.67	27	1.76	.01	46.05 (2)*	.99	.98	.040	.038	103.67	110.00

*p< .001

Which model fits better with data? As can be seen in Table 8, Model B (Figure 39) was found to be the best LISREL solution compared to Model A, since all fit indices were better in terms of the range recommended as index limits for an acceptable fit. This result suggests that avoidance coping mediates *only part* of the effects of self-efficacy beliefs and work stress on negative health outcomes at a later point in time. In other words, self-efficacy beliefs and work stress seem to make individual contributions as well as in cooperation with avoidance in terms of becoming sick.

On the basis of the analysis of the Gamma- Matrix (effects of self-efficacy and stress on coping and illness), results revealed that self-efficacy beliefs have a negative effect on both avoidance coping (-.16) and illness (-.20). On the contrary, work stress was found to have a positive effect on avoidance coping (+.35) and illness (+.16). These results were expected and are all coherent with theoretical assumptions. Self-efficacy beliefs function as a protective health factor, thanks to their long term influence in ameliorating illness and their immediate effects in reducing the use of avoidance. A contrasting pattern of effects emerged from analysis in the case of work stress, which seems to function as a pervasive health factor.

In analyzing the Beta-Matrix (the effects of avoidance coping on illness), it was observed that avoidance-oriented coping has a positive effect on illness (+.24), indicating that the systematic use of denial, avoidance, and behavioral disengagement at the beginning of the study was related to an increase in negative health outcomes six months later. The expected "maladaptive" role played by coping in human functioning at the level of working environments was then supported. With regard to the so called mediating (indirect) effects, LISREL results showed that avoidance-oriented coping did mediate the effects of self-efficacy beliefs (-.04) and work stress (.08) on illness. On the whole, direct effects of self-efficacy beliefs and work stress were found to be stronger than indirect effects. Nevertheless, the analysis of direct effects added to indirect effects showed, that the global impact of self-efficacy beliefs on illness (-.24) is as strong as the global impact of work stress (+.24) on illness. Self-efficacy beliefs appear then as a healthy resource that employees may use in favor of health.

With regard to the percentage of variance accounted for by structural equations, the diagonal of the PSI-Matrix (1-PSI) revealed that the model predicted around 17% of

the variance in avoidance coping; and despite the long interval between the measurement of self-efficacy beliefs, work stress and negative health outcomes at T2, a non deplorable part of the variance in illness (around 18%) was explained by initial measures. These results are consistent with findings reported by other investigators (e.g., Schroeder, 1997a).

5.3.2.2 Testing Hypothesis 2a: On the role played by AVOIDANCE COPING as potential mediator of the long term effects of *work stress* and *self-efficacy beliefs* on ***negative affect***

Nested into Hypothesis 2, another relevant aspect that emerges is the development of negative affect through the use of avoidance-oriented coping. Negative affect involves a group of negative emotional reactions (e.g., hostility, guilt, distress, irritability, nervousness etc.), that have been related into the literature with neuroticism (however, I consider here negative affect as a state). Hence, hypothesis 2a conceives that avoidance coping at T1 should conduce to higher negative affect at T2. Parallel, avoidance coping should cooperate with work stress in exacerbating negative affect. In the case of self-efficacy beliefs, it is expected that they may function as a protective factor against the development of negative affect, also by reducing the use of avoidance coping. In contrast to work stress, the long term influence of self-efficacy beliefs on negative affect (either direct or indirect) should be then benign.

I have analyzed negative affect as a separated construct from depression, somatization and physical illness for empirical and theoretical reasons. First, research results have suggested that two independent factors –positive and negative affect- may comprise the dominant dimensions of *emotional experience*, both in English and in a number of other languages (see Watson, Clark & Tellegen, 1988; Watson, 2002). Second, assumptions of hypothesis 2 pertains more to the symptoms perception model, whereas hypothesis 2a is more related to *state* emotional experience, including a broad range of aversive mood states such as distressed, nervous, afraid, angry, guilty, and scornful.

- Results on Negative Affect (The PANAS)

Analysis 1a: Does avoidance coping mediate the effects of self-efficacy beliefs and work stress on the development of Negative Affect?

As in hypothesis 2, the general procedure to evaluate assumptions has to do with the examination of two rival models, namely Model A (a restrictive model) and Model B (a non restrictive one), with the aim of selecting the best solution in terms of fit indices. Figures 40 and 41 represent the complete standardized solution of predictive relationships (ULS-parameter), and Table 9 offers a synthesis of fit indices for each model. The complete set of matrices for the best model solution can be found into the Appendix C, Tables 30 and 31.

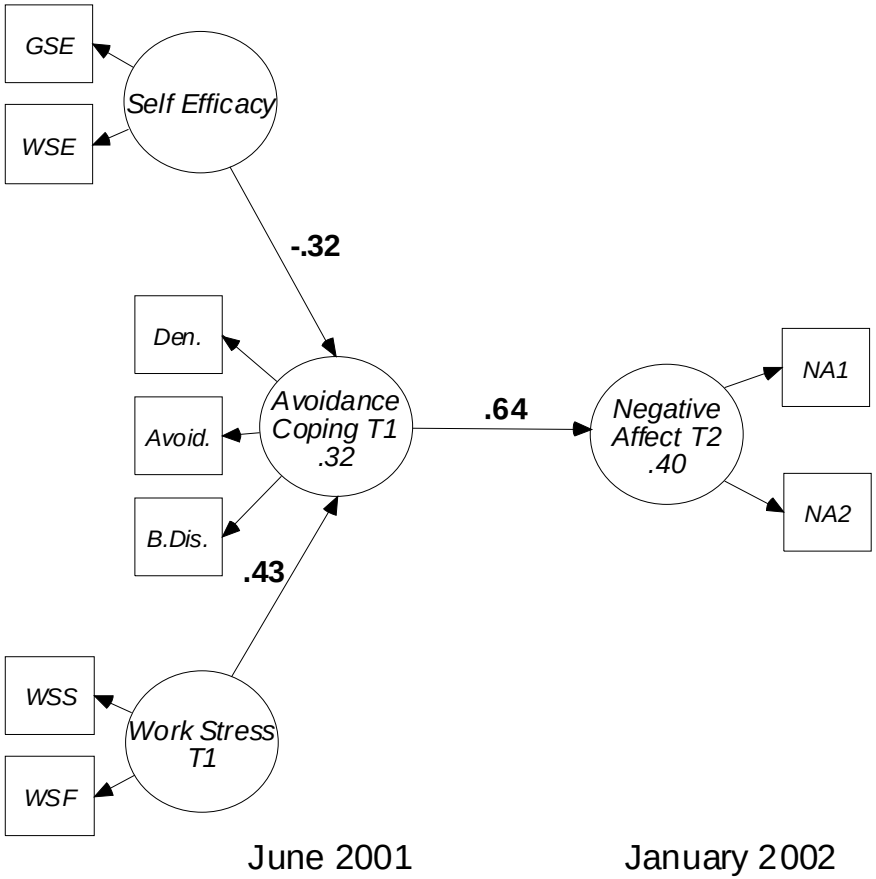

Figure 40. Model 2-A. Restrictive Model.

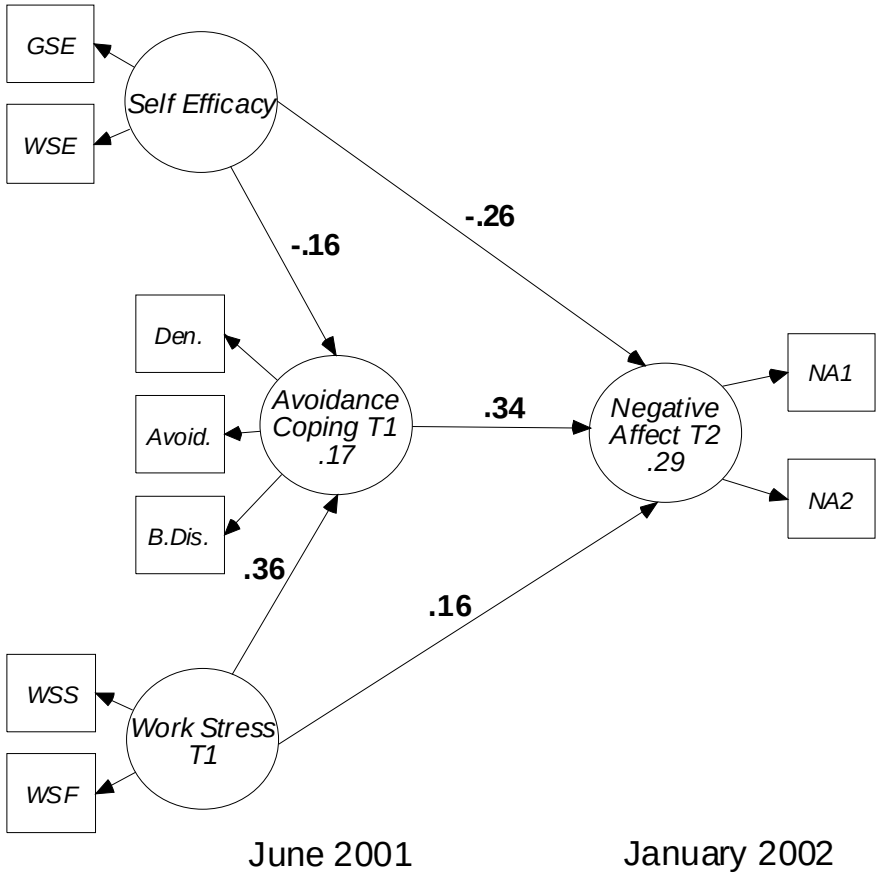

Figure 41. Model 2-B. Best Fitting Model.

Table 9. Fit Indices for Competing Models 2-A and 2-B.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Model 2-A	71.55	23	3.10	.00	-	.98	.97	.055	.063	115.55	90.00
Model 2-B	29.63	21	1.41	.10	41.92(2)*	.99	.98	.035	.028	77.63	90.00

*p< .001

Which model fits better with data? As a result of comparative examination of fit indices, it was found that Model B (Figure 41) fitted better with data. This finding is coherent with previous results, indicating that avoidance coping does mediate the effects of self-efficacy beliefs and work stressor on negative affect at a later point in time, but only *part* of the total effects. Let's analyze specific effects.

Results of analysis of Gamma-Matrix (effects of self-efficacy and work stress on negative affect) showed, that self-efficacy has a negative impact on avoidance coping (-.16) and a further negative influence on negative affect at T2 (-.26). Conversely, the effects of work stress on coping (.36) and negative affect (.16) were all positive. Again, self-efficacy beliefs exhibit their benign facet by protecting individuals against aversive mood states development at a later point in time, and by reducing the earlier use of maladaptive coping patterns. The effect of stress, on its side, is not surprising and confirms my expectations regarding its pervasive influence.

The Beta-Matrix (effects of coping on negative affect) revealed, that avoidance oriented coping has a strong influence (+.34) in posterior development of negative affectivity. The result is consistent with the assumption that the cocktail constituted by denial, avoidance and behavioral disengagement, is a route by which employees will experience more aversive mood states.

In terms of the mediation exercised by avoidance, the analysis of indirect and total effects revealed that avoidance coping was a better mediator of the indirect effects of work stress (+.12) on negative affect, in comparison with the indirect effects of self-efficacy beliefs on negative affect at T2 (-.05). However, the total long term effect of work stress on negative affect (.28) was slightly lower than the total long term effect of self-efficacy beliefs (-.31). The protective influence of self-efficacy beliefs is remarkable, and confirms assumptions regarding their protective function in promoting a more healthy emotional life.

With reference to the proportion of variance accounted for by structural equations, the diagonal of the PSI-Matrix (1-PSI) showed, that the best fitting model explains around 29% of the variance in negative affect at T2 from measures that were applied at T1. With regard to avoidance coping, the same proportion of variance was explained by this model in comparison with the previous one (17%).

5.3.2.3 Testing Hypothesis 3: On the role played by PROACTIVE COPING as potential mediator of the long term effects of *work stress* and *self-efficacy beliefs* on *quality of life*

Hypothesis 3 concerns –perhaps- the most positive facet of coping in human functioning at the workplace. The proactive coping theory sustains that self-regulatory goal management includes an ambitious manner of goal-setting and tenacious goal pursuit. Following this premise, hypothesis 3 proposes that work specific self-efficacy may serve as a coping resource in the proactive efforts individuals make towards challenging goals and personal growth. In connection with quality of life, this hypothesis assures that proactive coping may be, subsequently, a way through which people should tend to remain healthy instead of becoming sick. It is hypothesized that the use of proactive coping at T1 should promote better levels of quality of life (psychological and physical) at T2. Particularly, work specific efficacy beliefs should motivate the use of proactive coping strategies, and consequently, conduce to better quality of life standards. Conversely, the direct effects of work stress on QoL are expected to be negative.

- Results on Quality of Life (Psychological and Physical).

Analysis 2: Does PROACTIVE COPING mediate the long term effects of work specific self-efficacy beliefs and work stress on physical and psychological quality of life?

As the result of comparative analysis of fit indices of competing models, it was concluded that Model B (Figure 43) represents the best fitting model. As can be seen in Table 10, LISREL analyses yielded a perfect fit for the partially mediated model, according to the limits accepted for an excellent fit. Hence, this result discards the hypothesis that proactive coping mediates the whole influence of work specific self-efficacy and work stress on QoL. The complete standardized solution (ULS-parameter) was included into Table 32 and 33 in Appendix C.

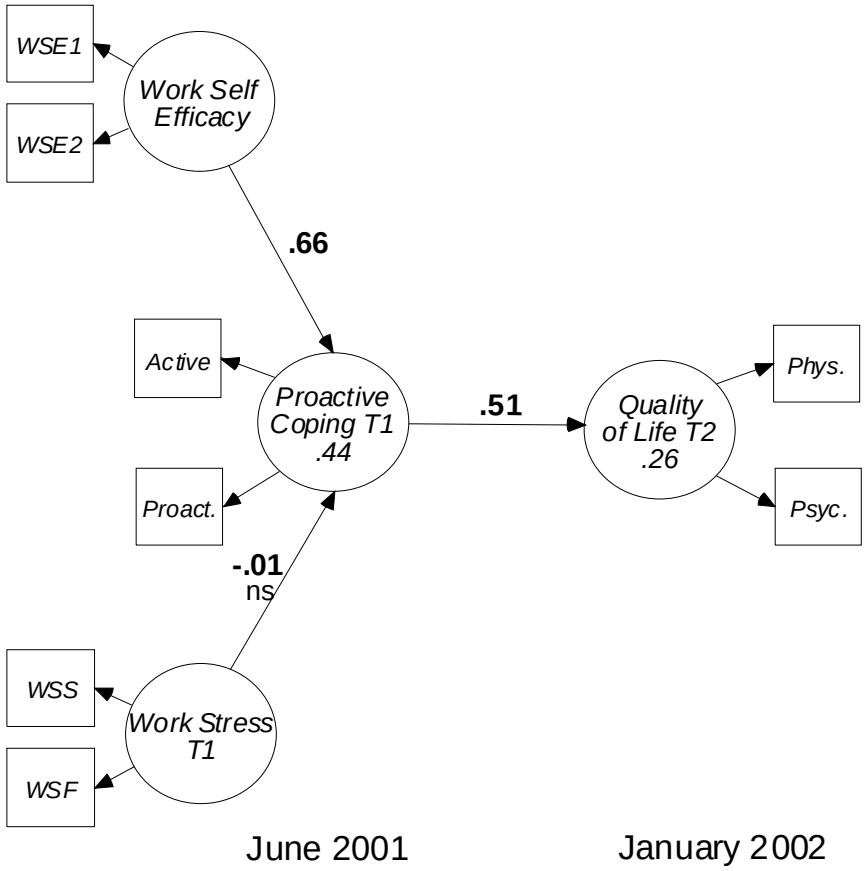

Figure 42. Model 3-A. Restrictive Model.

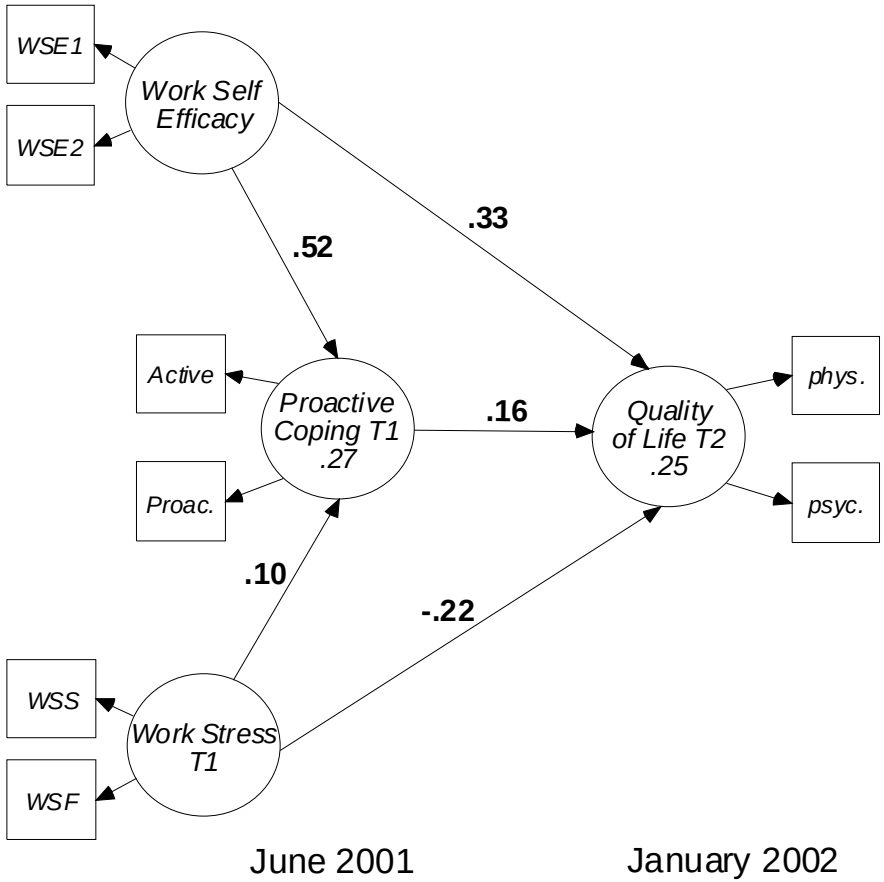

Figure 43. Model 3-B. Best Fitting Model.

Table 10. Fit Indices for Competing Models 3-A and 3-B.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Model 3-A	109.61	16	6.85	.00	-	.97	.94	.076	.10	149.61	72.00
Model 3-B	2.73	14	0.19	1.00	106.88(2)*	1.00	1.00	.012	0.00	46.73	72.00

*p< .001

With regard to direct effects of T1 predictors on T1 coping and T2 quality of life (Gamma-Matrix), the LISREL solution revealed that work specific self-efficacy has a strongly positive effect on proactive coping (+.52) as well as on physical and psychological quality of life six months later (+.33). In addition, work stress presents a positive impact on proactive coping (+.10) but a negative influence on the two indicators of quality of life (-.22). In this case, the benign influence of work specific self-efficacy was stronger than the one exhibited by work stress. Results are coherent with hypothesis. A further relevant direct effect emerges from the Beta-Matrix. As can be seen, proactive coping has a positive effect (+.16) on both physical and psychological quality of life six months later, suggesting that employees who used proactive coping at T1 were the ones who presented higher quality of life at T2.

Results of the direct vs. indirect effects revealed that work specific self-efficacy beliefs and proactive coping did collaborate in predicting QoL at T2. Proactive coping mediated the effects of work specific self-efficacy (+.08) on QoL at T2, but it failed to mediate the indirect effects of stress on QoL, since t-value of the indirect effect of work stress was found to be nonsignificant. In other words, the path work specific self-efficacy -> proactive coping -> QoL T2 seems to have benign effects on a long term basis. In sum, the total effect of work specific self-efficacy on QoL at T2 (+.41) was stronger than the total effect of work stress (-.20). In terms of the proportion of variance accounted for by structural equations (1-PSI), the best fitting model (Figure 43) has explained 27% of the variance in proactive coping, and 25% in QoL six months later.

5.3.2.4 Testing Hypothesis 3a: On the role played by PROACTIVE COPING as potential mediator of the long term effects of *work stress* and *self-efficacy beliefs* on ***positive affect***

- Results on Positive Affect

Analysis 2a: Does PROACTIVE COPING mediate the long term effects of self-efficacy beliefs and work stress on positive affect?

Nested into hypothesis 3 arises the question whether positive affect is also influenced by work stress, self-efficacy, and coping, and particularly through the prospective mediation of proactive coping. Positive affect reflects the extent to which a person feels enthusiastic, active, and alert. High positive affect is a state in which individuals experience high energy, full concentration, and pleasurable engagement. In the current hypothesis, these states are conceived to be promoted by both general and work specific self-efficacy beliefs and the use of proactive coping. Work stress, on its side, should contribute to the long term development of less positive affect. The results of the two competing models are represented in Figures 44 and 45, and Table 11 presents an overview to fit indices. The complete standardized solution (ULS-parameter) was included into Table 34 and 35 in Appendix C.

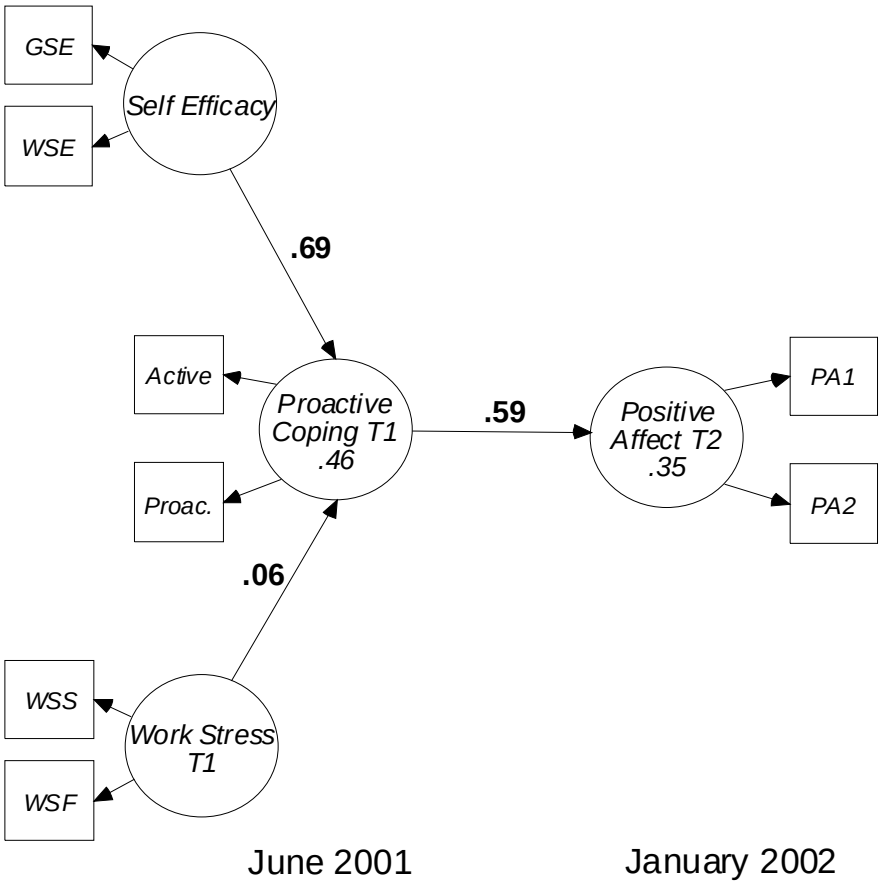

Figure 44. Model 4-A. Restrictive Model.

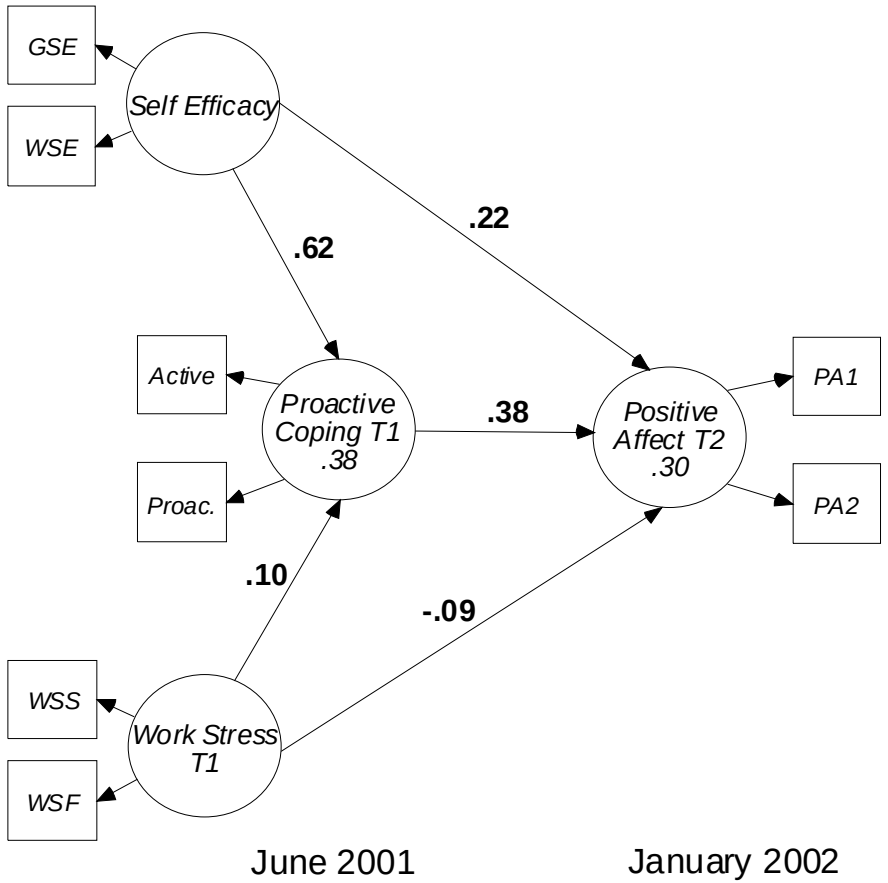

Figure 45. Model 4-A. Restrictive Model.

Table 11. Fit Indices for Competing Models 4-A and 4-B.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Model 4-A	28.06	16	1.75	.03	-	.99	.98	.038	.038	68.06	72.00
Model 4-B	6.11	14	0.43	1.00	21.95(2)*	1.00	1.00	.018	0.00	50.11	72.00

*p< .001

As can be seen, the same pattern of results emerged from analyses when using positive affect as an outcome, in comparison with analyses conducted by using QoL. That is, the model containing both direct and indirect effects of self-efficacy and work stress on positive affect was found to be the best fitting alternative. The hypothesis that coping should fully mediate the effects of mentioned constructs on positive affect was rejected (see Figure 45).

The evidence provided by the Gamma-Matrix (effects of self-efficacy and work stress on coping and positive affect) reveals that self-efficacy beliefs have a very strong and positive effect on proactive coping (+.62) and a non less important direct influence on positive emotionality (+.22). Interesting is that work stress exhibits weaker effects into this model in comparison with the previous one. The effect of stress on proactive coping was positively lower (+.10) as well as the direct negative influence on positive affect (-.09). On the other hand, by looking at the Beta-Matrix, a strong long term effect of proactive coping on positive affect (+.38) was identified. The results are consistent with research hypothesis in the sense that self-efficacy beliefs and proactive coping may function in a benign way by promoting healthier emotions.

In analyzing the total vs. the direct and indirect contributions to positive affect, it was found that the path self-efficacy->proactive coping->positive affect T2 presented a positive and strong mediating effect via proactive coping (+.22). On the contrary, the indirect effect of work stress on positive affect was much weaker (+.04) and nonsignificant. On the whole, the direct effects (+.22) added to the indirect effects (+.23) of self-efficacy on positive affect (+.45) were substantial, and as can be seen, proactive coping was found to be a very good mediator of the long term effects of self-efficacy beliefs on positive affect.

Finally, the PSI-Matrix revealed that self-efficacy beliefs and work stress accounted for 38% in the variance of proactive coping, whereas the whole model explained 30% of the variance in positive affect at a later point in time.

5.3.3 The contribution of work stress, proactive attitude, and coping process to health outcomes and quality of life

5.3.3.1 Testing Hypothesis 4: On the role played by AVOIDANCE COPING as potential mediator of the long term effects of *work stress* and *proactive attitude* on ***negative health outcomes***

Hypothesis 4 sustains that the effects of *proactive attitude* on negative health outcomes should be consistent with the effects of self-efficacy beliefs. That is, it is expected that proactive attitude may also play a protective role by reducing the use of avoidance coping and ameliorating depression, somatization and physical illness. Proactive individuals should tend to use less avoidance coping, and consequently they may tend to remain healthier instead of becoming sick. This may also be related to the fact that they have a strong belief in the rich potential of changes that can be made to improve oneself and one's environment. In terms of mediating processes, proactive attitude should negatively influence illness through its indirect effects (through avoidance coping), whereas work stress should tend to aggravate the things by increasing the use of avoidance coping and exacerbating symptoms.

- Results on Negative Health Outcomes (Depression, Somatization, and Physical Illness)

Analysis 1: Does avoidance coping mediate the long term effects of proactive attitude and Work Stress on Negative Health Outcomes?

Before describing results, I would like to explain that the original proactive attitude scale entails a total of 8 items: an equal number of positively worded (4) and negatively worded (4) statements. Factor analyses conducted on the 8 items demonstrated

that the scale entails two sub-dimensions in the Costa Rican sample, namely: a) A positive one, which concerns proactive-related resourcefulness, and b) a negative one, which might be considered as an indicator of deficit in proactive attitude. Hence, the following analyses will be implemented by using the positive-oriented factor instead of the negative one. Two item examples of the positive factor are “I spend time identifying long-range goals for myself”, and “I am able to choose my own actions”. More details regarding scale reliability can be found into Chapter 4. The results for both competing models are represented in Figures 46 and 47, and fit indices for each competing model are included into Table 12. The complete standardized solution (ULS-parameter) was included into Table 36 and 37 in Appendix C.

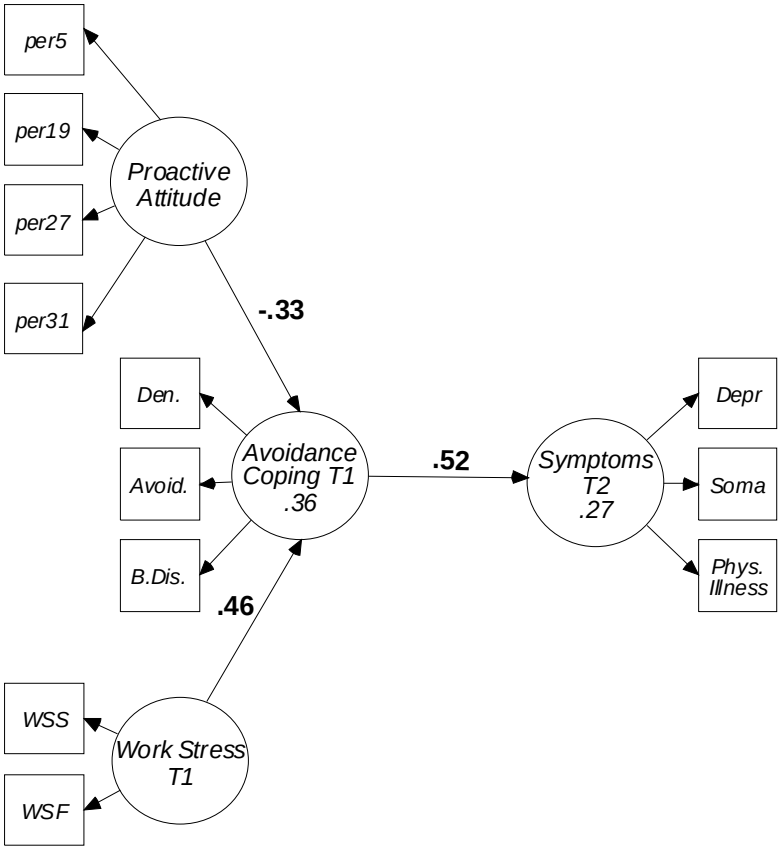

Figure 46. Model 5-A. Restrictive Model.

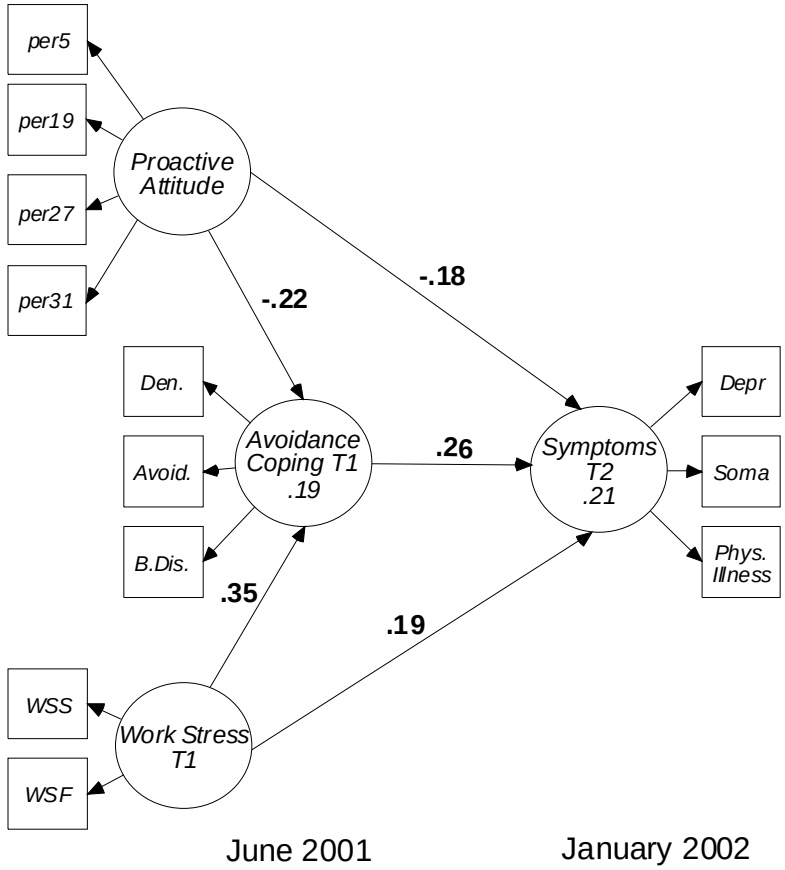

Figure 47. Model 5-B. Best Fitting Model.

Table 12. Fit Indices for Competing Models 5-A and 5-B.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Model 5-A	108.69	50	2.17	.00	-	.98	.97	.051	.047	164.69	156.00
Model 5-B	80.31	48	1.67	.002	28.38 (2)*	.98	.97	.044	.036	140.31	156.00

*p< .001

Which model fits better with data? Based on results of Table 12, it can be observed that, although the X^2 is still significant for the best fitting model, the rest of fit indices –nevertheless- are within the range recommended as index limits for an acceptable model fit (GFI > .95; AGFI > .90; NFI> .90; X^2/df< 2 to 5; RMSR< .05; RMSEA < .05). For example, the RMSEA was a good indicator of major approximation of the estimated covariance matrix to original covariance matrix. Browne and Cudeck (1993) suggest that a value of 0.05 of RMSEA indicates a close fit and that up to 0.08 represents reasonable errors of approximation in the population.

Based on previous remarks, it can be assumed that Model B (Figure 47) fits better than Model A (Figure 46), and that the effects of proactive attitude and stress on illness are *partially* mediated by avoidance coping. The hypothesis sustaining a full mediation was then rejected. In accordance to expectations, the Gamma-Matrix showed that proactive attitude has two negative direct effects, namely on avoidance coping (-.22) and on the development of illness related symptoms (-.18) six months later. Less surprising are the effects of work stress, which are –as expected- positive on both avoidance coping (+.35) and illness at T2 (+.19). The protective role played by proactive attitude was then corroborated, and its similarity with self-efficacy beliefs sustained.

With regard to the effects of avoidance coping (Beta-Matrix), the model suggested that the use of denial, avoidance coping, and behavioral disengagement has a positive, long term effect on illness (+.26). In terms of direct vs. indirect effects, the total influence of work stress on illness at T2 (+.28) was slightly stronger than the effects of proactive attitude (-.24). Naturally, the direction of the influence was pervasive in the case of work stress and benign in the case of proactive attitude. As in previous analyses, the indirect effects of proactive attitude (-.06) and work stress (+.09) on illness were found to be weaker compared to direct effects. Directions of effects are all consistent with hypothesis.

How much of the variance is accounted for by the structural equations? The results of the PSI-Matrix revealed that the first structural equation explained around 19% of the variance in avoidance coping, whereas the second structural equation accounted for 21% of variance in symptoms. The results are consistent and quite similar to those obtained with self-efficacy beliefs.

5.3.3.2 Testing Hypothesis 4a: On the role played by AVOIDANCE COPING as potential mediator of the long term effects of *work stress* and *proactive attitude* on ***negative affect***

- Results on Negative Affect

Analysis 1a: Does AVOIDANCE COPING mediate the effects of proactive attitude and work stress on negative affect?

Clustered into hypothesis 4, is the theoretical assumption that proactive attitude should present a similar pattern of influence on negative affect in comparison with self-efficacy beliefs. Both direct and indirect effects on coping and illness are expected to be negative, whereas those presented by work stress should reproduce a pattern of pervasive influence by exacerbating avoidance-oriented coping as well as illness. The results of analysis of the competing models are presented in Figures 48 and 49, and Table 13 resumes fit indices of both alternatives. The complete standardized solution (ULS-parameter) was included into Table 38 and 39 in Appendix C.

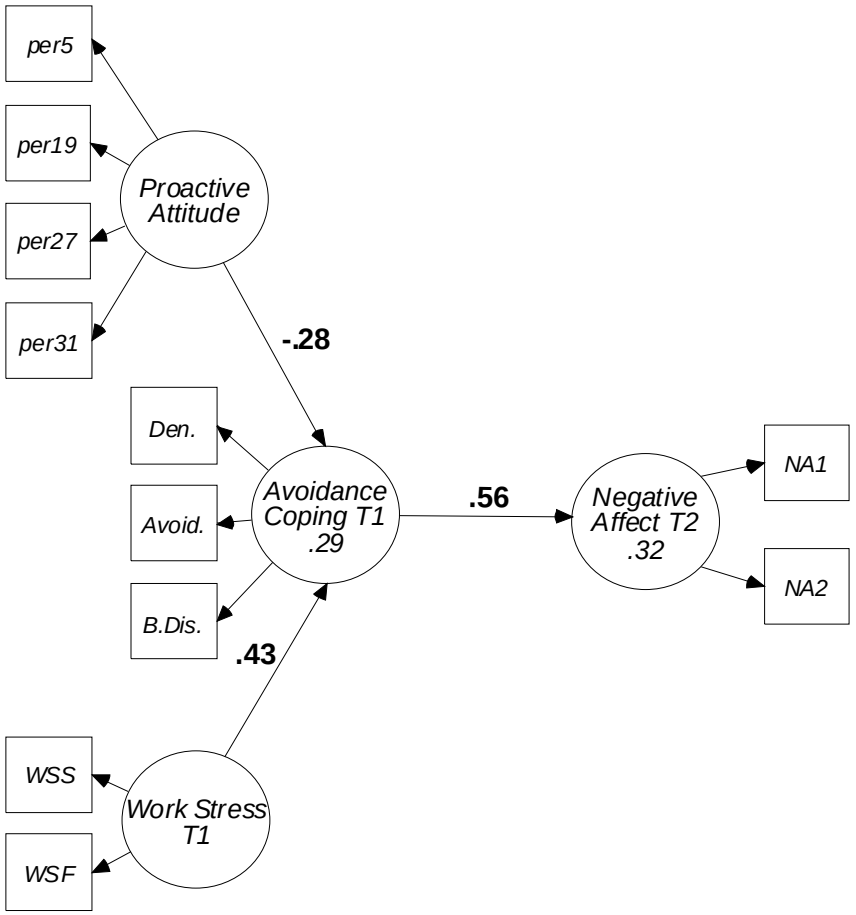

Figure 48. Model 6-A. Restrictive Model.

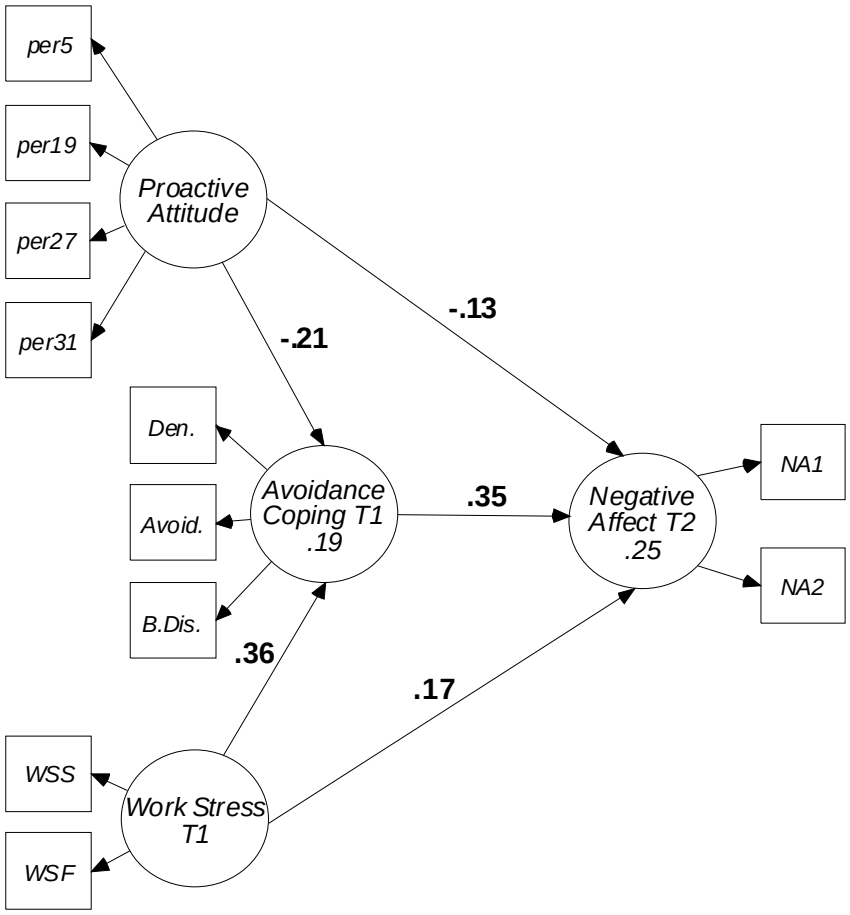

Figure 49. Model 6-B. Best Fitting Model.

Table 13. Fit Indices for Competing Models 6-A and 6-B.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Model 6-A	68.42	40	1.71	.003	-	.98	.97	.044	.036	120.42	132.00
Model 6-B	52.63	38	1.38	.06	15.79 (2)*	.99	.98	.039	.027	108.63	132.00

*p< .001

Which model fits better with database? Again, the model allowing both direct and indirect effects was found to be the best fitting alternative (see Figure 49). Avoidance coping mediates part of the influence of proactive attitude and work stress on illness. With respect to direct effects, the Gamma-Matrix showed, that proactive attitude has a negative impact on avoidance (-.21) as well as a long term effect on aversive emotions (-.13). Conversely, the direct effects of work stress on coping (+.36) and negative affect at T2 (+.17) were both positive. Avoidance coping, as expected, increased negative emotions six months later (+.35), and it did mediate part of the influence of both predictors on aversive emotions. In concrete, the indirect effect of proactive attitude on negative affect through avoidance was low and negative (-.07), whereas the indirect effect of stress was higher and positive (+.13). It is evident, that avoidance coping is a better prospective mediator of the effects of stress on negative affect. In general, the total impact of work stress on negative affect was stronger than the total influence of proactive attitude (-.20 vs. +.30). In addition, result of the PSI-Matrix revealed that the model accounted for around 20% in the variance of avoidance coping, and it explained around 25% of the variance in negative affectivity six months later.

5.3.3.3 Testing Hypothesis 5: On the role played by PROACTIVE COPING as potential mediator of the long term effects of *work stress* and *proactive attitude* on ***positive affect***

Hypothesis 5 is derived from hypothesis 3a, and it makes similar assumptions, but emphasizing on the role played by proactive attitude instead of self-efficacy beliefs as resource factor. Hypothetically, positive affect may be considered as an outcome variable influenced by individual characteristics such as personal vision, resourcefulness, personal values, and a strong sense of responsibility in life. Besides, proactive individuals should tend to use proactive coping strategies, which may lead to higher positive emotions at a later point in time. With regard to work stress, it is expected that the higher the work stress, the lower the positive affect. In terms of proactive coping, it is expected that it

may mediate the effects of work stress on positive affect by reverting the damaging effects of work stress. In essence, a similar pattern of effects is expected for proactive attitude compared with self-efficacy beliefs.

- Results on Positive Affect

Analysis 2: Does PROACTIVE COPING mediate the effects of proactive attitude and work stress on positive affect?

Results of the complete standardized solution are represented in Figures 50 and 51, and Table 14 exhibits fit indices for both competing models. The complete standardized solution (ULS-parameter) was included into Table 40 and 41 in Appendix C.

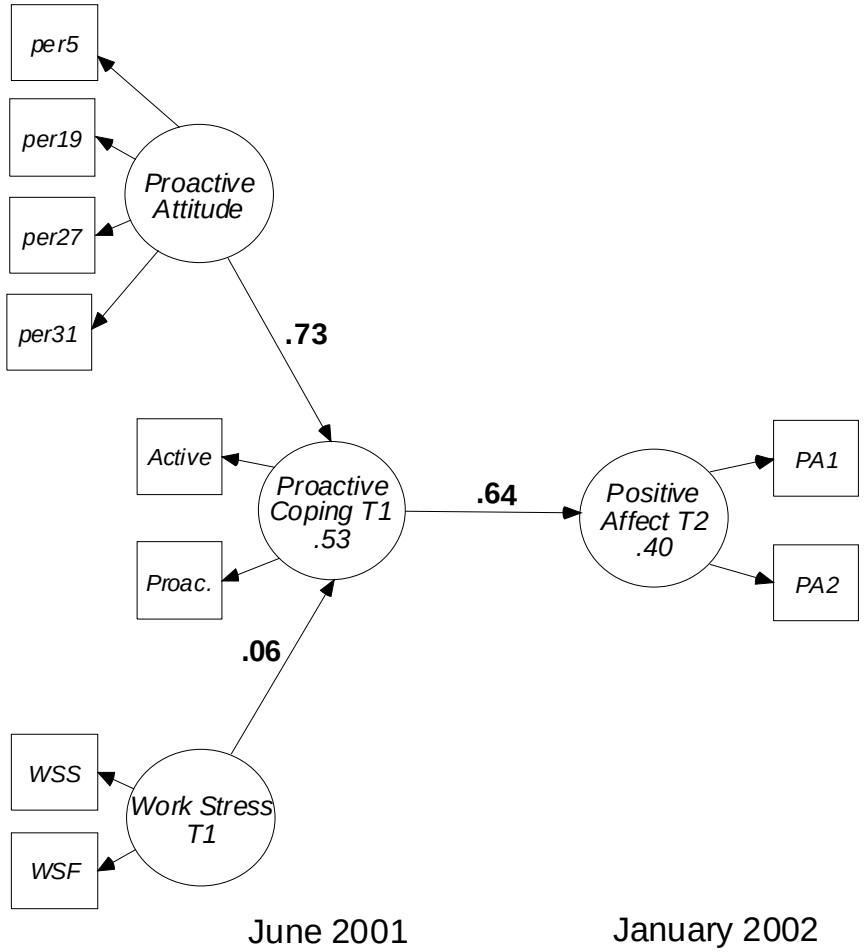

Figure 50. Model 7-A. Restrictive Model.

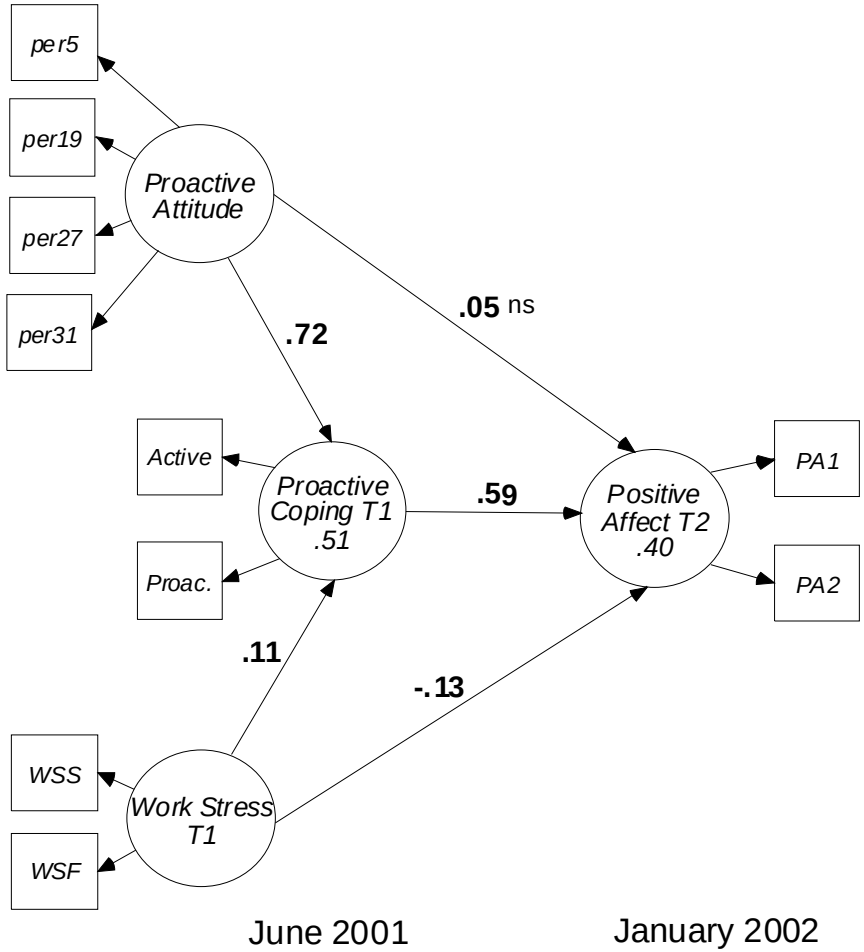

Figure 51. Model 7-B. Best Fitting Model.

Table 14. Fit Indices for Competing Models 7-A and 7-B.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Model 7-A	41.91	31	1.35	.091	-	.99	.98	.038	.026	89.91	110.00
Model 7-B	27.46	29	0.94	.55	14.45 (2)*	.99	.99	.031	0.00	79.46	110.00

*p< .001

As can be seen in Table 14, the restrictive model presented the worst fit indices and the partially mediated model the best ones. The full mediation model was then rejected in favor of the model that included both direct and indirect effects. Nevertheless, the current analyses presented a different pattern of results compared to those obtained with self-efficacy.

The results of the Gamma-Matrix revealed that proactive attitude has NO *direct effect* on the development of positive affect six months later, but a very strong direct effect on proactive coping (+.72). Work stress, on its side, displayed a positive effect on proactive coping (+.11), and a negative impact on positive affect (-.13). As expected, the use of proactive coping was related to an increase in positive affect six months later (Beta-Matrix). This effect was also very strong and positive (+.59).

The results of total vs. direct effects revealed that proactive attitude has a very strong *indirect effect* on positive affect (+.42) through proactive coping, whereas the indirect effect of work stress was rather weak and nonsignificant. In other words, proactive coping was found to be an excellent mediator of the effects of proactive attitude on positive affect on a long term basis, and a bad mediator of the effects of work stress on positive affect. The total effect of proactive attitude on positive affect was strong and positive (+.47).

With regard to boundaries of the model, this is –perhaps- one of the best models among all in terms of predictive power. Results of the diagonal of the PSI-Matrix (1-PSI) showed, that structural equations accounted for a substantial amount of the variance in proactive coping (.51) and an important amount of the variance in positive affect at T2 (.40).

5.3.4 Summary of results for Hypotheses 2 to 5

While hypothesis 1 dealt with potential buffer vs. main effects of personal resources in the work stress-health outcomes/QoL interaction, hypothesis 2 to 5 concerned the role played by COPING in mediating the long term effects of personal

resources (self-efficacy beliefs and proactive attitude) on health outcomes/QoL. The latter assumptions approached the following global question: Does COPING mediate the long term effects of work stress, self-efficacy beliefs, and proactive attitude on health outcomes/quality of life? Let's see.

5.3.4.1 Results of LISREL using self-efficacy beliefs as personality resource

To assess hypotheses involving self-efficacy beliefs, several models were implemented by using the competing model strategy as suggested by Jöreskog (1993). Two models used *avoidance coping* as central mediator of the effects of self-efficacy beliefs and work stress on illness-related symptoms, on the one hand, and on negative affect, on the other. In both cases, the best fitting alternative suggested that avoidance coping mediated only part of the effects of self-efficacy beliefs and work stress. The hypothesis of a fully mediation was rejected. This was also the case for the two remaining models, in which *proactive coping* was used as mediator of the effects of personal resources and work stress on quality of life, on the one hand, and positive affect, on the other. Again, the restrictive hypothesis was rejected. In sum, results suggested that negative coping is a better mediator of the long term effects of work stress on negative health outcomes, whereas proactive coping appears to be a good mediator for the long term effects of self-efficacy on quality of life and positive affect.

5.3.4.2 Results of LISREL using proactive attitude as personality resource

Three LISREL models were implemented to analyze the contribution of proactive attitude compared to self-efficacy beliefs in the context of health outcomes. The main purpose of this strategy was to assess the general hypothesis that proactive attitude should have a consistent pattern of influence compared to self-efficacy beliefs. In the first two models, avoidance coping was specified as central mediator of the effects of

work stress and proactive attitude on illness-related symptoms and negative affect. Results of the negative oriented models were all consistent with those obtained with self-efficacy beliefs. The best fitting alternatives suggested that avoidance coping mediated only part of the effects of proactive attitude and work stress on negative health outcomes and negative affect. Again, the hypothesis of a restrictive mediation was rejected. In addition, a third model was implemented to assess the pattern of influence of proactive attitude on positive affect compared to self-efficacy, by using proactive coping as mediator. While the best fitting model also suggested a partial mediation instead of a full one, the effects of proactive attitude were totally mediated by proactive coping, since the link from proactive attitude to positive affect was nonsignificant.

The fact that the *indirect effect* of work stress on positive affect was nonsignificant, but the *direct effect* was highly significant might suggest that proactive coping "neutralizes" the potential damaging effects that would be "transmitted" to positive affect. In other words, proactive coping did not "transform" the effects of stress on positive affect into a positive influence. It has "stopped" them.

5.4 The Interplay between Work Stress, Self-Efficacy Beliefs, Coping, and Health Outcomes over the time

This section is aimed at studying the process of stability and change in the interplay between work stress, self-efficacy beliefs, coping, and health outcomes/quality of life. In order to assess hypotheses, four further models will be developed by using cross-lagged panel (CLP) procedures that will be implemented with the help of structural equation modeling (LISREL). While in section 5.3 the competing models strategy was used to assess whether coping did *fully* or *partially* mediate the influence of work stress and personality factors on health; in the current section, fit indices of a *stability-model*, that only includes stability paths for each construct between subsequent measures, will be compared with fit indices of a *cross-lagged panel model,* that allows cross-lagged paths linking each construct. Figure A and B represent, respectively, a *stability-model* and a *CLP-model* in their most simple form, that is, the so called two waves, two latent variables model (2W2LV).

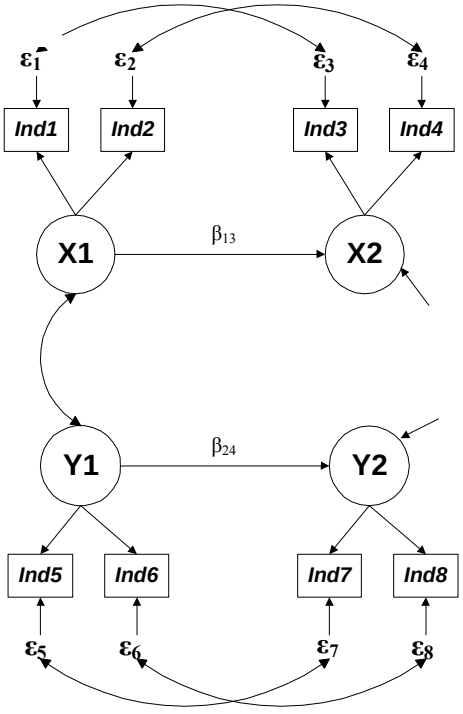

Figure A. STABILITY MODEL

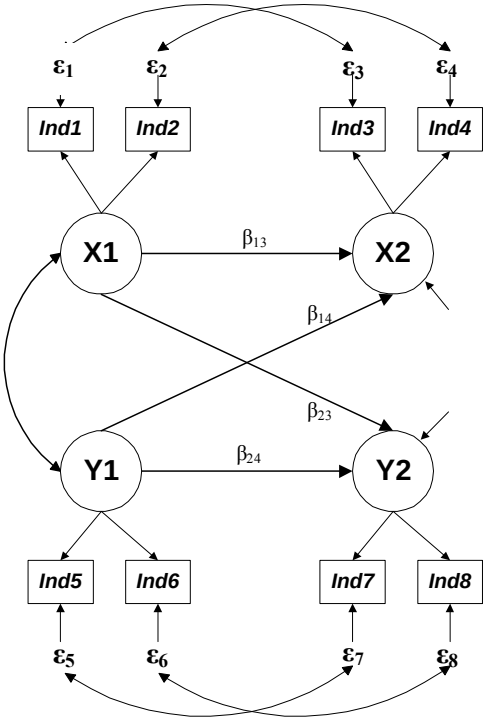

Figure B. CROSS-LAGGED MODEL

In principle, the paths connecting repeated measurements of the same variables (X1 -> X2; Y1 -> Y2) reflect their respective temporal "stability", whereas the paths that cross variables and measurement occasions (X1 -> Y2; Y1-> X2) represent "causal effects", that explain the *change* in Y2 and X2, as the result of the influence of X1 and Y1, respectively. We can talk here about *change* in Time 2 variables, because cross-lagged effects can be viewed as the effects of Time 1 variables on that part of Time 2 variation that remains *unexplained* when regressing each variable on itself (Engel & Meyer, 1996).

In the present research, rather than using a standard 2W2LV design, a set of 2W3LV designs will be implemented with the aim of corroborating dynamic hypotheses involving more than two variables measured at two occasions. To do this, parameters estimates will be computed on the basis of variance-covariance matrices, and allowing error-autocorrelations of observed indicators as suggested in the literature (Dormann, 1999; Engel & Reinecke, 1996; Hsiao, 1986; Jöreskog, 1979; Rogosa, 1979)[13].

To simplify the exposition of results, a path diagram with the complete standardized solution of the CLP model, including significant links only, is offered; and for comparative effects, a Table containing fit indices of both models, is included. As already suggested, in analyzing fit indices, the idea consists of having a comparison standard (stability model) for each CLP model. As in section 5.3, the hypothesis that is being tested will be first summarized, and then, fit indices will be compared. After that, a description of both, the links that correspond to "temporal stability" and the cross-lagged links that represent the "causal influence", is provided.

[13] Maximum Likelihood Method of estimation was used to calculate CLP models by accomplishing assumptions of normality.

5.4.1 The dynamics of work stress, negative affect and physical illness over the time

5.4.1.1 Testing Hypothesis 6: On the interplay between work stress, negative affect, and physical illness

In previous sections, a set of GLMs (Multivariate) and LISREL analyses suggested that work stress may conduce –directly or indirectly (through avoidance coping) – to negative affect and physical illness at a later point in time. Now, I would like to evaluate three questions: First, whether T1 work stress contributes with the change in T2 negative affect, and physical illness. Second, whether T1 negative affect contributes to explain the change in T2 somatic disorders. Third, whether or not there is reciprocal influence among work stress, negative affect and physical illness. Hypothesis 6 concerns the global question of how then, are work stress, negative affects, and physical illness interrelated. Research suggests that the relationship is *bi-directional* (Lazarus, 1991b). Negative emotions may take origin from perceived stress and there might be unhealthy emotions that can conduce to subsequent stress and distress. In concrete, perceived severity and frequency of work stress should increment the level of negative emotions and physical illness, and negative emotions should augment stress experience as well as the occurrence of physical illness at a later point in time.

- Results on Negative Health Outcomes

Analysis 1: How are work stress, negative affect and physical illness interrelated?

Results of the complete standardized solution are represented in Figure 52, and Table 15 exhibits fit indices for the stability and the CLP models. Error-autocorrelations of observed indicators and covariance between latent variables were omitted for clarity. The complete standardized solution (ML-parameter) was included into Table 42 in Appendix C.

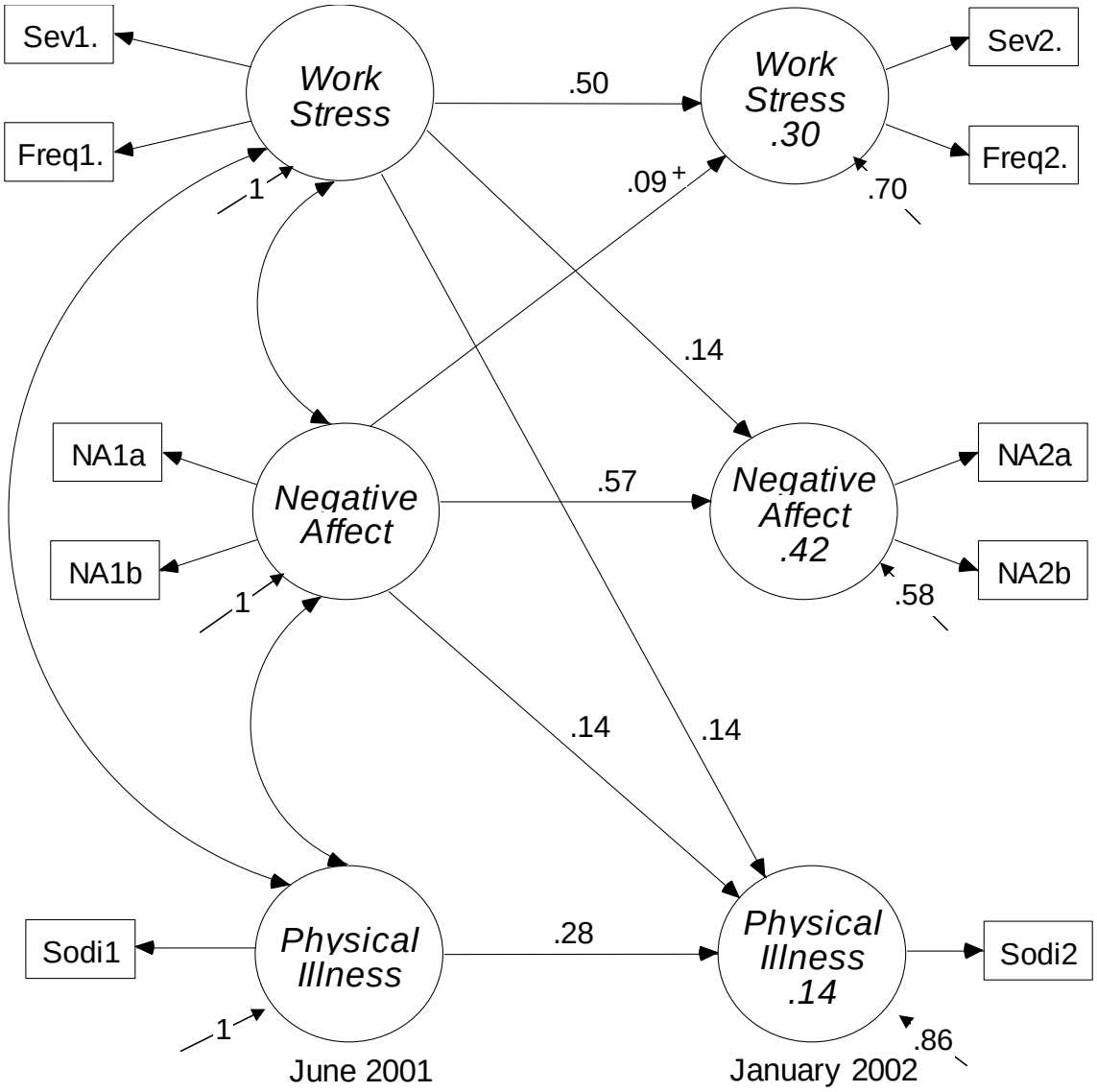

Figure 52. Model 8. CLP Model of Work Stress-Illness Dynamics in work environments. Error-autocorrelations of observed indicators and covariance between latent variables were omitted for clarity. A "+" means that the parameter is marginally significant (p<.10).

Table 15. Fit Indices for Model 8.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Stability Model	65.23	26	2.51	.00	-	.98	.95	.072	.054	123.0	110
CLP Model	24.38	20	1.22	.23	40.85(6)*	.99	.97	.020	.020	94.4	110

*p<.001

As can be seen in Figure 52, the CLP model is a 2W-3LV system that entails three latent variables assessed at two measurement points in time, namely *work stress* (operationalized by severity and frequency of work stress), *negative affect* (operationalized by the PANAS negative affect scale, which was divided into two subscales), and an *index of physical illness* (operationalized by a single indicator) that evaluates the occurrence of four somatic disorders, namely musculoskeletal pain, gastrointestinal disorders, viral respiratory infections, and skin disorders. Physical illness was analyzed as a single indicator separated from depression, and somatization to evaluate whether stress and negative emotions do conduce to mentioned physical disorders.

In Table 15, it can be seen that the CLP model exhibits a better fit with data in comparison with the stability model, indicating that the CLP-effects have contributed with the improvement in the adjustment of the model to database. The Beta-Matrix is a useful tool to evaluate both auto-regressive effects ("stability" indicators) and Cross-Lagged Panel effects ("causality" indicators). Negative affect exhibited the highest stability score (+.57), followed by work stress (+.50), and the index of physical illness (+.28). With regard to CLP-effects, the Beta-Matrix revealed that T1 work stress has a positive effect on the *change* in negative affect (+.14) and physical illness (+.14) at T2, suggesting that the occurrence of somatic disorders and negative affect is sensible to the influence of environmental pressures. The third significant CLP-effect corresponds to the link that goes from T1 negative affect to T2 physical illness (+.14), indicating that the *change* in somatic disorders was explained in part by the effects of aversive emotions experienced in the past. Work stress and negative affect appear then, as significant predictors of the change in physical disease.

As for reciprocal effects, work stress and negative affect seem to have a relation of reciprocal influence. However, given that the reversed effect of T1 negative affect on T2 work stress was found to be marginally significant, the hypothesis of the bi-directionality among negative affect and work stress should be interpreted with caution. Although it is difficult to estimate the strength of CLP-effects, in order to decide which parameter influence more than the other in explaining the *change* (see Schnabel, 1996), the most

important information was the corroboration of the hypothesis that work stress and negative affect conduce to physical illness at a later point in time. The diagonal of the PSI-Matrix revealed that the model accounted for 30% of the variance in T2 stress, around the 42% of the variance in T2 negative affect, and approximately 14% of the variance in physical illness. The current results are consistent with those obtained by using LISREL in the previous sections.

5.4.2 The dynamics of self-efficacy beliefs, negative affect and physical illness over the time

5.4.2.1 Testing Hypothesis 7: On the interplay between self-efficacy beliefs, negative affect, and physical illness

In the former sections, it was suggested that personality characteristics may function as a *protective factor* against the development of illness and negative affect. Here, I consider the question whether self-efficacy beliefs predict the *change* in negative affect and somatic disorders at a later point in time, and whether there is a reciprocal influence among mentioned constructs across the time. Specifically, it was hypothesized that self-efficacy should conduce to the reduction in negative affect, and negative affect should lead to a decrease in self-efficacy judgments. Moreover, self-efficacy beliefs were expected to explain the reduction in physical illness, and physical illness, on its side, should explain the reduction in self-efficacy beliefs, on the one hand, and the augment in negative affect, on the other. As can be seen, the question of the reciprocal influence is also relevant here.

Analysis 2: How are self-efficacy beliefs, negative affect and physical illness interrelated?

Figure 53 offers the results of the complete standardized solution, and for comparative purposes, Table 16 contains the fit indices for the stability and the CLP models. As always, error-autocorrelations of observed indicators are omitted for clarity,

and the complete standardized solution (ML-parameter) has been included into Table 43 in Appendix C.

From Table 16 it can be concluded that, the CLP model containing CLP-effects (see Figure 53) is a better fitted one in comparison with the stability model. All indicators of fit adjustment improved after setting free the cross-lagged effects. The characteristics of this model are the same in comparison with the previous one, except for one latent variable, self-efficacy beliefs, which is replacing work stress.

In analyzing the Beta-Matrix, it can be observed that the highest auto-regressive effects correspond to self-efficacy beliefs (+.58) and negative affect (+.58), followed by somatic disorders (+.31). These results confirm the findings of the previous model, in which negative affect appears to be more stable in comparison with physical complaints. Self-efficacy beliefs, on their side, appear to be as stable as negative affect, suggesting that the former might be influenced by personality characteristics that are not included into the model. The Beta-Matrix also reveals that, there are four significant CLP-effects, one of them representing a reversed effect. Specifically, self-efficacy beliefs have a negative influence on the *change* in T2 negative affect (-.19) as well as on the *change* in T2 somatic disorders (-.15). Conversely, negative affect exhibited the already demonstrated positive influence in the *change* on T2 physical illness (+.19), and this time, it presents a negative influence on the *change* in T2 self-efficacy beliefs (-.11). These results suggest that there is a reciprocal relation between self-efficacy beliefs and negative affectivity over the time. This is coherent with theoretical assumptions and my expectations. Somatic disorders, on the other hand, received the influence of negative affect and self-efficacy beliefs, but somatic disorders do not return their effects on negative affect and self-efficacy beliefs. This pattern of relations is similar with the one described in the previous model. In terms of the percentage of variance accounted for by structural equations, the results indicated that the model accounted for 40% of the variance in self-efficacy beliefs, 43% of the variance in negative affect, and 15% of the variance in physical complaints.

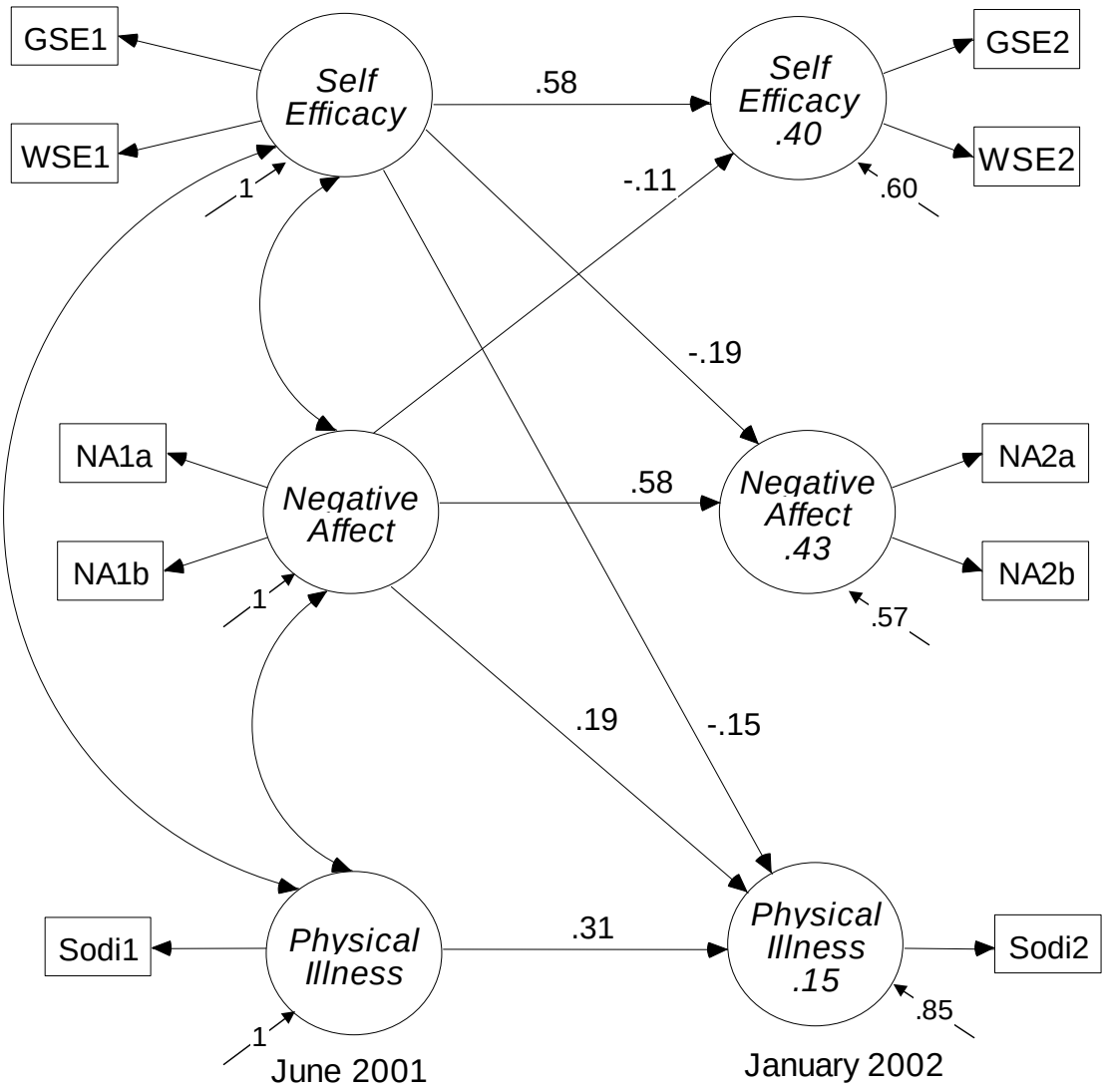

Figure 53. Model 9. CLP Model of Self-Efficacy Beliefs and Illness Dynamics in work environments. Error-autocorrelations of observed indicators and covariance between latent variables were omitted for clarity.

Table 16. Fit Indices for Model 9.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Stability Model	71.73	24	2.99	.00	-	.97	.94	.073	.062	134	110
CLP Model	16.67	18	0.92	.55	55.06(6)*	.99	.98	.015	.00	91	110

*p<.001

5.4.3 The dynamics of self-efficacy beliefs, positive affect and quality of life over the time

5.4.3.1 Testing Hypothesis 8: On the interplay between self-efficacy beliefs, positive affect and quality of life

While hypothesis 7 had to do with the protective role played by self-efficacy beliefs against the occurrence of negative health outcomes, hypothesis 8 approaches self-efficacy beliefs as a personality factor that should produce and reproduce *positive outcomes* such as positive affect and enhanced quality of life. In principle, self-efficacy beliefs may function as a general stability factor inducing a better emotional life experience and higher levels of psychological and physical quality of life. Alternatively, positive affect and quality of life may also enhance one's perception of self-efficacy, as result of a feedback effect proper of the self-system and its regulatory principles. For example, a rich life in terms of good health and the experience of positive emotions should also be a good source of information that gives individuals the sense of being capable to deal with a wide variety of stressors, including the work-related ones.

- Results on positive health outcomes

Analysis 3: How are self-efficacy beliefs, positive affect and quality of interrelated?

In Figure 54, the complete standardized solution of analysis 3 is offered, and Table 17 entails fit indices for the stability and the CLP model. The complete standardized solution (ML-parameter) can be found in Appendix C, in Table 44. Fit indices indicate that the model including both auto regression effects and CLP-effects did fit better with data. The most important characteristic of model 10 is that it includes only positive-oriented latent variables in terms of human functioning.

As for the auto-regressive effects, the Beta-Matrix reveals that the highest stability among the constructs pertains to quality of life (+.59), and self-efficacy beliefs (+.58), being the auto-regressive effect of positive affect somewhat lower (+.40). With

regard to CLP-effects, the Beta-Matrix shows the presence of three significant cross-lagged links, one of them reversed. In particular, self-efficacy beliefs exhibit two significant effects, namely on T2 positive affect (+.23) and on T2 quality of life (+.15), suggesting that an optimistic perception in one's capabilities to cope with stressors has a positive influence on the *change* in physical and psychological quality of life, and on the *change* in positive affect at a later point in time.

A reciprocal influence was identified between self-efficacy beliefs and quality of life, being significantly positive (+.20) the effect of the latter on the former. Contrary to my expectations, positive affect influenced neither T2 self-efficacy beliefs nor T2 indicators of quality of life. On the other hand, results of the PSI matrix showed that the model explained 46% of the variance in self-efficacy beliefs, 44% of the variance in quality of life, and 33% of the variance in positive affect. These results are consistent with findings of LISREL models offered in section 5.3 and confirm the positive role of self-efficacy beliefs in the development of both a healthy emotional life and a better niveau in quality of life.

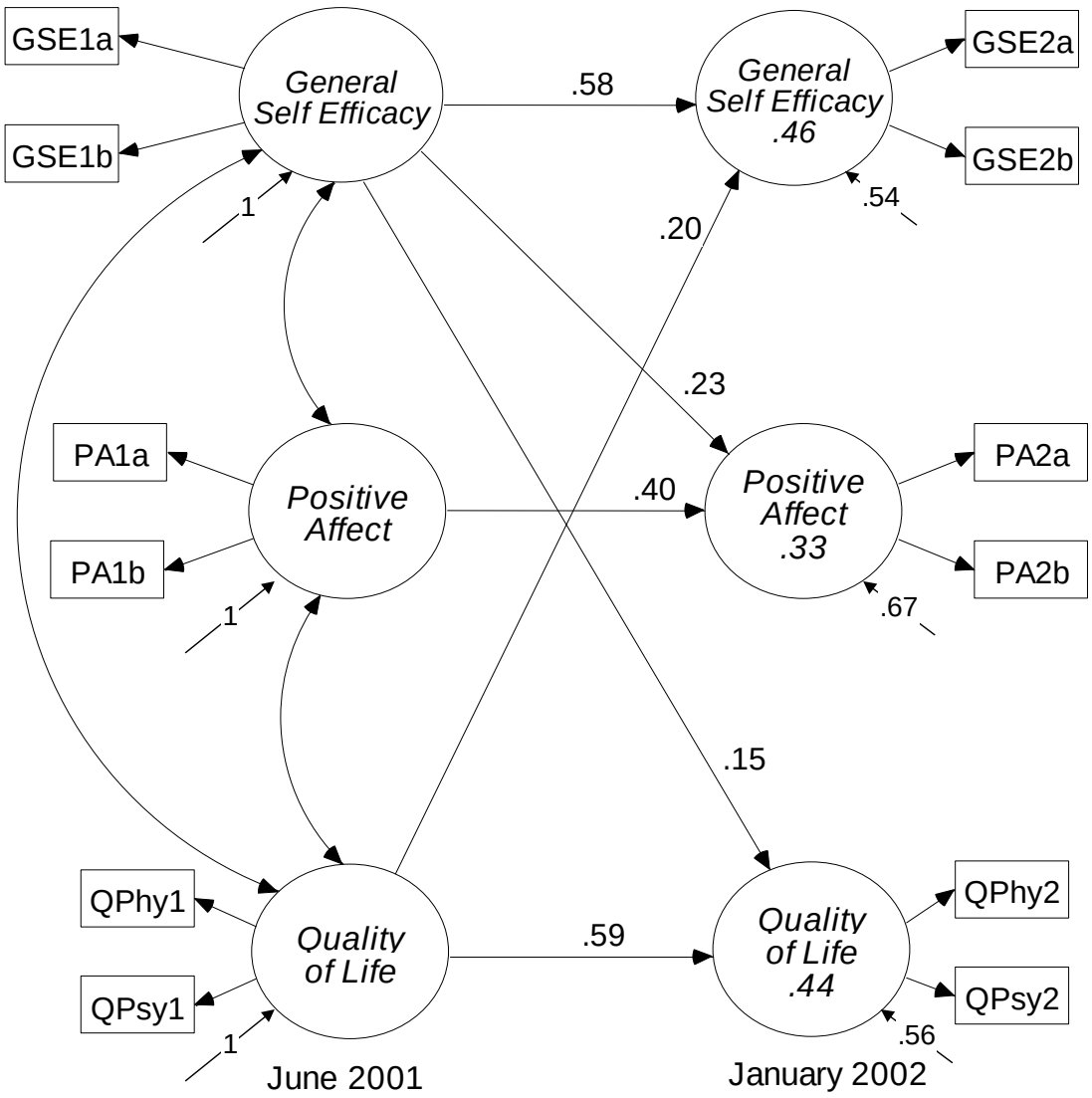

Figure 54. Model 10. CLP Model of Self-Efficacy and Well-Being Dynamics in work environments. Error-autocorrelations of observed indicators and covariance between latent variables were omitted for clarity.

Table 17. Fit Indices for Model 10.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Stability Model	73	37	1.97	.00	-	.98	.95	.048	.04	155	156
CLP Model	42	31	1.35	.09	31(6)*	.99	.97	.022	.026	135	156

*p<.001

5.4.4 The dynamics of proactive coping, positive affect and quality of life over the time

5.4.4.1 Testing Hypothesis 9: On the interplay between proactive coping, positive affect and quality of life

The proactive coping framework sustains that the main sources of proactive coping may not be the perception of situational stressors, but the maintenance and/or acquisition of resources, or what is also understood as personal and external resources. In section 5.3, it was suggested that proactive coping was a better mediator of the effects of personal resources on health outcomes and quality of life. In addition, the results suggested the existence of a systematic pattern of influence, in which positive personal resources had the strongest effects on proactive coping compared to work stress. Hypothesis 9, on its side, assumes that proactive coping may conduce to a better physical and psychological quality of life; besides, physical and psychological quality of life may enhance the use of proactive coping strategies. As for positive emotional experience, it is hypothesized that proactive coping should be associated with the occurrence and maintenance of positive affect, and that positive affect may also conduce to proactive efforts towards the accumulation and maintenance of resources.

Analysis 4: How are proactive coping, positive affect and quality of life interrelated?

Results of the complete standardized solution are represented in Figure 55, and fit indices for the stability and the CLP models are included into Table 18. Error-autocorrelations of observed indicators and covariance between latent variables were omitted for clarity. Table 45 in Appendix C contains the complete standardized solution (ML-parameter).

As in previous models, the same pattern of fit indices emerged from analyses for the CLP model, which exhibits a significantly better adjustment on the observed database (see Table 18). With regard to auto-regressive effects, quality of life shows the highest stability (+.64), result that is consistent with the previous model. The second place in

stability pertains to proactive coping (+.56), whereas positive affect appears to be the least stable construct among the three, due to the low auto-regressive influence on itself (+.34).

The model depicted in Figure 55 presents three CLP-effects that are significant. Results of the Beta-Matrix suggests that proactive coping has a positive effect on the *change* in T2 positive affect (+.24), as well as on the *change* in T2 physical and psychological quality of life (+.16). Contrary to my expectations, positive affect was found to be unlinked to T2 proactive coping and quality of life; a further unexpected result was that quality of life was unrelated to T2 positive affect. Nevertheless, a reverse CLP-effect was identified for the link that goes from T1 quality of life to T2 proactive coping (+.16), suggesting that there is a relation of reciprocal influence between quality of life and proactive coping.

As for the percentage of variance accounted for by structural equations, 37% of the variance in T2 proactive coping was explained by the model; 34% of the variance in T2 positive affect, and 44% of the variance in T2 quality of life.

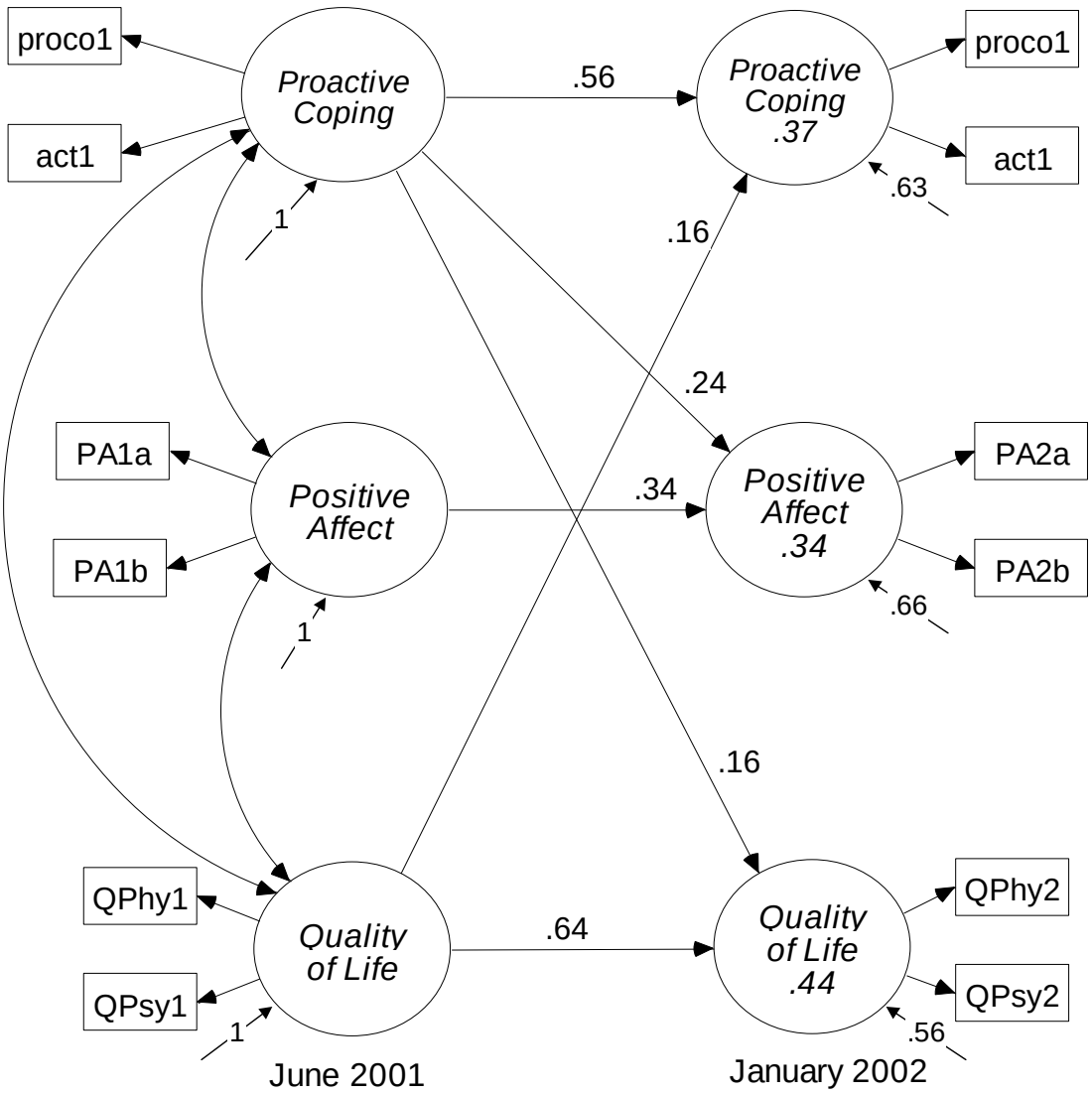

Figure 55. Model 11. CLP Model of Proactive Coping and Well-Being Dynamics in work environments. Error-autocorrelations of observed indicators and covariance between latent variables were omitted for clarity.

Table 18. Fit Indices for Model 11.

	X^2	df	X^2/df	p	X^2 – dif(df)	GFI	AGFI	SRMR	RMSEA	AIC	SAIC
Stability Model	64	37	1.72	.004	-	.98	.96	.046	.037	146	156
CLP Model	37	31	1.19	.22	27(6)*	.99	.97	.021	.019	130	156

*p<.001