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THE EFFECTS OF AFFECTIVITES OVER THE RELATIONSHIP OF DISPOSITIONAL OPTIMISM WITH LIFE SATISFACTION OF UNIVERSITY STUDENTS

Can MAVRUK [1]

Abstract

This study investigates whether positive and negative affects (affectivities) mediate and moderate the relationship between dispositional optimism and life satisfaction based on a survey of 855 Çukurova University students. For this purpose, the significance of indirect and interaction effects of positive and negative affects are estimated. Nonparametric Spearman correlation analysis showed significant correlations between optimism, affects and life satisfaction. Hierarchical regression analysis is performed to determine whether the affect is potential mediator and moderator variable. A structural model which shows the life satisfaction relationship with optimism through components of positive and negative affects is estimated. The significance of the indirect effects of optimism is tested to examine the mediating role of the affects. Hierarchical regression analysis results showed that the affects significantly predicted life satisfaction above and beyond optimism ($F(2,851)=76.21$, $\Delta R^2=.120$, $p<.001$). The maximum likelihood estimation results indicated significance of indirect effect of optimism via affects. That is, the affects significantly mediated optimism ($z=11.12$, $p<.001$) over life satisfaction. Hierarchical regression analysis revealed that the mediation was partial and that PA was a moderator. Marginal analysis further showed that particularly being moderately alert and being moderately enthusiastic were moderators.

Keywords ***:*** *Life Satisfaction, Optimism, Affect, Higher Education, Structural Equation Modelling.*

Jel Classification *: I31, I12, I23, C51.*

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NEGATİF VE POZİTİF ETKİLERİN ÜNİVERSİTE ÖĞRENCİLERİNİN EĞİLİMSEL İYİMSERLİĞİ VE YAŞAM MEMNUNİYETİ ARASINDAKİ İLİŞKİSİ ÜZERİNE ETKİLERİ

Öz

Bu çalışma, 855 Çukurova Üniversitesi öğrenci anketine dayanarak pozitif ve negatif etkilerin, eğilimsel iyimserlik ile yaşam memnuniyeti arasındaki ilişkiye aracılık edip etmediğini ve moderatör olup olmadıklarını araştırmaktadır. Bu amaçla, pozitif ve negatif etkilerin dolaylı ve etkileşim etkilerinin anlamlılığı hesaplanmıştır. Parametrik olmayan Spearman korelasyon analizi, eğilimsel iyimserliğin ve duygulanımların yaşam memnuniyeti ile anlamlı bir ilişkiye sahip olduğunu ortaya koymuştur. Pozitif ve negatif etkilerin potansiyel aracı ve moderatör olup olmadığını belirlemek için hiyerarşik regresyon analizi kullanılmıştır. Eğilimsel iyimserlik ile yaşam memnuniyeti ilişkisini pozitif ve negatif etki bileşenleri üzerinden gösteren yapısal bir model tahmin edilmiştir. Etkilerin aracılık rolünü incelemek için eğilimsel iyimserliğin dolaylı etkilerinin anlamlılığı test edilmiştir. Hiyerarşik regresyon analizi sonuçları, pozitif ve negatif etkilerin iyimserliğin üstünde ve ötesinde yaşam memnuniyetini anlamlı bir şekilde yordadığını göstermiştir ($F(2,851)=76.21$, $\Delta R^2=.120$, $p<.001$). Maksimum olabilirlik tahmin sonuçları, iyimserliğin dolaylı etkisinin pozitif ve negatif etkiler yoluyla anlamlı olduğunu göstermiştir. Yani, pozitif ve negatif etkilerin iyimserlik ve yaşam memnuniyeti arasında anlamlı ($z=11.12$, $p<.001$) bir aracı rolü olduğunu göstermektedir. Hiyerarşik regresyon analizi, bu arabuluculuğun kısmi olduğunu ve ayrıca PA'nın moderatör olduğunu ortaya koymuştur. Marginal analiz, özellikle orta derecede alert ve hevesli olmanın moderatör olduklarını göstermiştir.

Anahtar kelimeler ***:*** *Yaşam Memnuniyeti, İyimserlik, Duygulanım, Yapısal Denklemler, Yükseköğretim.*

Jel Sınıflandırması *: I31, I12, I23, C51.*

INTRODUCTION

Subjective well-being is a field of psychology, which is based on people's evaluations of their lives in the form of cognition and affect (Diener, Suh, Oishi, 1997: 1). Individuals' subjective well-being (SWB) is affected by personality characteristics and life circumstances which are associated with positive and negative affects (Diener, Suh, Lucas, Smith, 1999: 279). Over which a theory of dispositional optimism is developed by Scheier & Carver (1985) in which optimism should have positive future expectancies in a wide range of behavioral domains based on day-to-day experiences over a period of time. For example, university students study hard over a period of time towards a better life goal. During final examination week their moods and emotions get high, even higher for senior students, and depending on their performance these moods and emotions together with important future expectancies affect their satisfaction. Thus, moods and emotions can indirectly contribute to students' satisfaction with life.

Personality traits exhibit some of the strongest relations with SWB (Diener et al., 1999: 282). For example, relation of optimisim with SWB. Previous literature findings of correlations between optimism and SWB are 0.34 (Zhang, Miao, Sun, Xiao, Ren, Xiao, Peng, 2014: 763), 0.36 (Uğurlu 2013: 500), 0,39 (Kapıkıran, 2012: 336), 0.40 (Rezaei & Khosroshahi, 2018: 155), 0.48 (Oriol, Miranda, Bazán, Benavente, 2020: 7; Jiang, Fei, Jiang, Yu, Liu, Li, & Zuo, 2014: 4), 0,54 (Duy & Yıldız, 2017: 1459) whereas significant direct, indirect and total effects are 0.21, 0.18 and 0.39 all with $p<0.05$ through PA (Oriol et al., 2020: 8), 0.29, 0.26 and 0.55 with $p<.01$ through PA and NA (Kapıkıran, 2012: 337), 0.57, 0.11 and 0.68 through core self evaluations (Jiang et al., 2014: 4), 0.65, 0.21 and 0.86 through self esteem (Duy & Yıldız, 2017: 1460).

Satisfaction With Life Scale (SWLS) of Diener, Emmons, Larsen and Griffin (1985: 72), Revised Life Orientation Test (LOT-R) of Scheier, Carver and Bridges (1994) and positive and

negative affects scale (PANAS) of Watson, Clark, Tellegen (1988: 1070) are used to measure mediation and moderation effects of optimism over Life Satisfaction (LS) through PANAS. Affectivity or affectivities is used for positive and negative affects which are moods and emotions. Some studies based on samples of college and university students that are close to this study are available in the literature (Kapıkıran, 2012: 335; Uğurlu, 2013: 499; Oriol et al., 2020: 4). However, marginal analysis of mediation and moderation effects do not seem to be used in the literature. Interaction effects of constructs may be found to be very weak or insignificant. For example, Kapıkıran (2012: 339) interacted NA and PA constructs with optimism construct, and found no significant moderation effect. Significance of itemwise interactions under both constructs can be investigated for more specific findings.

Potential mediator personal characteristics over the relationship of dispositional optimism with LS of university students have varied. Core-self evaluations (Jiang et al., 2014: 2), positive and negative affects, PANAS or affectivity (Kapıkıran, 2012: 336, Uğurlu, 2013: 499), positive affect (Oriol et al., 2020: 3), perceived social support (Ferguson & Goodwin, 2010: 45), self esteem (Duy & Yıldız, 2017: 1458) and financial status (Leung, Moneta, McBride-Chang, 2005: 345) are used as potential mediators. Of these, Oriol et al. (2020: 1) found no mediating effect on life satisfaction. Uğurlu (2013: 499) found partial mediation effect of PA but no mediation effect of NA which is consistent with Chang and Sanna (2001). Some studies investigated the effects of optimisim and pessimism over psychological adjustments which are LS and depression (Chang, Sanna & Yang, 2003: 1196; Chang & Sanna, 2001; Bayrami et al., 2012: 307). In methodology, factorial assessments are performed for dimensional structures of LOT or LOT-R (Scheier & Carver, 1985: 225; Jiang et al., 2014: 3). Hierarchical regression analysis and structural equation modelling are used to find mediation and/or moderation effects (Kapıkıran, 2012: 337; Daukantaite & Zukauskiene, 2012: 10; Uğurlu, 2013: 501; Jiang et al., 2014: 4; Rezaei & Khosroshahi, 2018: 156). Conversely, optimism is also used as a potential mediator over the relationship between affectivities and SWB (Zhang et al., 2014) in which optimism is found to be partial mediator.

This study aims to estimate the indirect and interaction effects of optimism via affectivity over LS of Çukurova University students. I hope to contribute to subjective well-being research using marginal interactions for possible moderation effects of affectivity over the relationship between optimisim and life satisfaction.

I. METHOD

I.I. Survey Procedure

A social survey was applied to 855 Çukurova University students in Adana between 18-28 January 2019. All survey data are in ordinal level. A group of students gathered data using Google Drive. The sample consists of 487 women (57%) and 368 men (43%). 81 percent of the participants are in the 18-24 age category, 18 percent in the 25-31 age category, 0.6 percent in the 32-38 age category and 0.22 percent in the 39+ age category. Average age 1.2 categories (sd 0.43). 466 (54.5%) of the participants are from Adana city center and 389 (45.5%) are from other neighborhoods of Adana.

I.II. Measures

The scales used for dependent and independent variables are explained. The dependent variable of this study is LS.

a. Life satisfaction

This study used SWLS for LS consisting of five items from "My life is close to ideal in many

ways" to "I would hardly change anything if I lived my life again" (Diener et al., 1985). Each item is scored on a 5-point scale from 1="strongly disagree" to 5="strongly agree". In this study, the lower and upper two categories were combined to get five categories, from "strongly disagree" to "strongly agree". Stata calculated internal consistency for LS as 0.84.

b. Revised life orientation test

Revised Life Orientation Test (LOTR) is formed of optimism and pessimism scales 10 items each (three items measure optimism and three items pessimism, four are fillings). Each scale is reduced to five which are considered as best representatives. The assessment is based on the five-point Likert scale. Participants scored their best choice for each item choosing one from 0 (never) to 4 (always). Stata calculated internal consistency for LOT-R as 0.71.

c. Positive and negative affect scale

Five items from each of the positive and negative affects scale (PANAS) were selected.

Positive affects: Strong, Enthusiastic, Alert, Inspired, Active

Negative affects: Disstressed, Guilty, Scared, Nervous, Jittery

Participants indicated the category that fits best to their feelings over the past week. For these variables "Very slightly or not at all", "a little", "moderately", "quite a bit" and "extremely" options are presented. Stata calculated internal consistency for PANAS as 0.72.

I.III. Data Analysis

Before regression model is built, scatter plots of LS against each predictive variable are checked. The matrix graph in Figure 1 does not show any outliers. Before regression model is run, how well the data meet the assumptions of regression is checked. For normality of residuals Shapiro Wilk W test showed that the null hypothesis of normality cannot be rejected ($p>0.05$).

For homoscedasticity of residuals, White test is used. The plot of residuals against fitted values shows no evidence for heteroscedasticity and $p=0.19>0.05$, so the null hypothesis of homoscedasticity cannot be rejected. Multicollinearity issue is checked using tolerance value which is found to be greater than 0.10, and using condition number for the stability of the regression coefficients. Raw scale scores are standardized against instability of regression coefficients.

For correlation analysis, graphical check on the fitted values of dependent variables against independent variables have shown either monotone increasing or decreasing relationships. Having ordinal variables and monotonicity assumptions met, Spearman nonparametric order correlation was used for LS components.

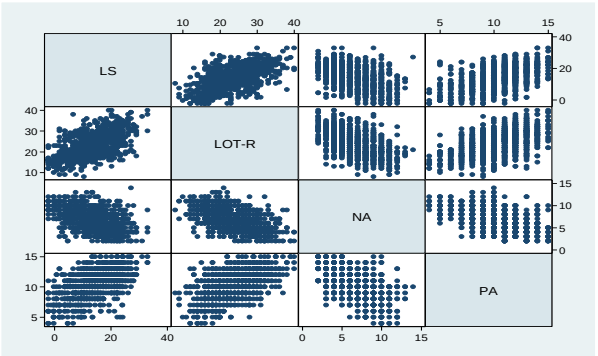

Figure 1. Scatter Plots of LS Against Predictor Variables

Factor analysis using Maximum Likelihood (ML) with oblimin rotation with no number of factors specified generated a two factor solution. The two-factor solution was accepted against the absolute test of model fit by ML method.

I.IV. Fit Statistics

In Stuctural Equation Modelling (SEM), LR and discrepancy tests of a model versus saturated and baseline models goodness of fit are evaluated. The root mean square error of approximation (RMSEA) measures the discrepancy (Shi, Lee and Maydeu-Olivares 2019:312). ML and ADF are used to estimate the models. Likelihood ratio and discrepancy statistics with $p<0.05$ shows a good overall fit. RMSEA value of $0.073<0.08$ suggests a reasonable model–data fit. 90% CI of RMSEA is [0.024, 0.137]. Comparative fit index, CFI=0.993 and Tucker–Lewis index, TLI=0.960 both larger than 0.95. In general, A TLI close to 0.95 is acceptable for goodness of fit (Hu and Bentler, 1999:27).

Table 1. Model Goodness of Fit Indices

	$\chi 2$	p value	CFI	TLI	RMSEA
ML	5.537	0.019	0.993	0.960	0.073
ADF	6.020	0.014	0.983	0.900	0.077

Source: Own estimations

Table 1 shows the results for CFI, TLI and RMSEA. CFI and TLI show how a hypothesized model fit compared to a baseline model (Xia & Yang, 2019:409).

II. RESULTS

II.I. Descriptive findings of SWLS

Table 2 describes response and relative frequencies, means, standard deviations 554ort he items in SWLS, corrected item-total correlations and survey's internal consistency. Scale statistics results indicated that the mean score on the SWLS was 13.90, with a standard deviation of 4.16. Standard deviations of SWLS components range between 1.04 and 1.09. Variability between SWLS components is small. Cronbach α values range between 0.781-0.850 which are acceptable and item-rest correlations range between 0.488-0.744. SWLS3 shows the highest mean score with 3.11 whereas SWLS5 shows the lowest mean score with 2.30. Mean scores of SWLS components range between 2.30 and 3.11. Relative frequencies are given in parantheses right after frequencies of life satisfaction components.

Table 2. SWLS Descriptive Statistics and Reliability Analysis

	f (%)	Strongly Disagree	Disagree	Nötr	Agree	Strongly Agree	Mean	sd	α	r
SWLS1	My life is close to ideal in many ways	91(10.6)	279(32.6)	215(25.2)	245(28.7)	25(2.9)	2.81	1.06	.786	.726
SWLS2	The conditions of my life are excellent	122(14.3)	197(23.0)	313(36.6)	189(22.1)	34(4.0)	2.78	1.07	.850	.488
SWLS3	I am satisfied with my life	77(9.0)	165(19.3)	248(29.0)	317(37.1)	48(5.6)	3.11	1.07	.781	.744
SWLS4	So far I have gotten the important things I want in life	81(9.5)	234(27.4)	259(30.3)	250(29.2)	31(3.6)	2.90	1.04	.793	.702
SWLS5	I would hardly change anything if I lived my life again	228(26.7)	309(36.1)	181(21.2)	110(12.9)	27(3.2)	2.30	1.09	.827	.578

f: Frequency**, %:** Relative frequency**, sd:** Standard deviation, ***α*:** Cronbach alpha**, r:** Item-rest correlation, **SWLS:** Satisfaction with Life Scale

Source: Own estimations

II.II. Descriptive findings of PANAS

Table 3 describes response and relative frequencies, means, standard deviations for the items in PANAS, corrected item-total correlations and Cronbach alpha coefficients. Scale statistics results indicate that the the total mean score on the PANAS is 21.87 with a standard deviation of 2.64. The total mean score for NA items was 10.55, with a standard deviation of 2.95. Total mean score for PA items was 11.32, with a standard deviation of 2.34.

Table 3. PANAS Descriptive Statistics and Reliability Analysis

		Mean	sd	α	r
PA1	Enthusiastic	2.21	0.76	.767	.576
PA2	Attentive	1.97	1.02	.786	.396
PA3	Inspired	2.26	0.68	.783	.435
PA4	Alert	2.44	0.69	.800	.259
PA5	Strong	1.87	0.83	.759	.622
NA1	Jittery	2.64	0.98	.762	.594
NA2	Scared	2.39	0.88	.772	.522
NA3	Upset	0.43	0.49	.777	.481
NA4	Disstressed	1.84	0.82	.782	.441
NA5	Guilty	1.46	0.71	.791	.348

PA: Positive Affect, **NA**: Negative Affect, **sd**: Standard deviation, **α**: Cronbach alpha, **r**: Item-rest correlation

Source: Own estimations

II.III. Descriptive findings of LOTR

Table 4 shows means, standard deviations, item-rest correlations and internal consistencies for LOT-R items. Mean scores of optimism range between 2.31 and 2.74 whereas mean scores of pessimism range between 1.51 and 1.86. Among all LOT-R items, “In uncertain times, I usually expect the best” has the highest mean score and the reversed item “I rarely count on good things happening to me” has the lowest mean score. Furthermore, the filler item “I enjoy my friends a lot” has the second highest mean score. Mean scores of filler items are between 1.90 and 2.72. Standard deviations range between 1.06 and 1.27. Variability in optimism is not high. Cronbach α values range between 0.643 (I’m always optimistic about my future) and 0.757 (I hardly ever expect things to go my way). Item-rest correlations range between -0.053 and 0.655.

Table 4. LOT-R Descriptive Statistics and Reliability Analysis

		Mean	sd	α	r
O1	In uncertain times, I usually expect the best	2.74	1.12	.653	.600
R1	It’s easy for me to relax	2.13	1.07	.653	.619
P1	If something can go wrong for me, it will*	1.57	1.06	.727	.146
O2	I’m always optimistic about my future	2.31	1.13	.643	.655
R2	I enjoy my friends a lot	2.72	1.12	.664	.541
R3	It’s important for me to keep busy	2.36	1.15	.692	.374
P2	I hardly ever expect things to go my way*	1.86	1.12	.757	-.053
R4	I don’t get upset too easily	1.90	1.14	.713	.248
P3	I rarely count on good things happening to me*	1.51	1.09	.715	.233
O3	Overall, I expect more good things to happen to me than bad	2.51	1.27	.678	.451

sd: Standart deviation, **α:** Cronbach alpha, **r:** Item-rest correlation, ***** Item scores are reversed, **O:** Optimism, **P:** Pessimism, **R:** Filler items

Source: Own estimations

The mean score of the total scale is 23.72, standard deviation 6.0. The mean for the optimism items is 7.55, with a standard deviation of 2.80, the mean for the pessimism items is 4.94, with a standard deviation of 2.50 and the mean for the filler items is 9.11, with a standard deviation of 3.20. LOT-R Cronbach's alpha for standardized items is 0.713.

II.IV. Factorial Assessment of LOTR

The ML method and direct Oblimin rotation are used for factorial analysis. Bartlett's Test of Sphericity showed a good fit for correlations matrix with χ^2=2420 and p<0.001. The Kaiser-Meyer-Olkin is calculated as 0.821. Factor analysis shows that two factor solution explains 53.6 percent of the variance. The first factor which is generated by the optimism and filler items (O1 O2 R1 R2 R3 O3 R4) explains 35 percent of the variance. Cronbach α is 0.82 and factor loadings are between 0.461 and 0.796. The second factor which is generated by the pessimism items (P3 P1 P2) explained 18.7% of the variance with factor loadings between 0.711 and 0.805, and Cronbach α=0.64.

II.V. Spearman Order Correlations

Table 5 shows means, standard deviations and pairwise correlations of standardized cognition and affectivities with life satisfaction based on total scale scores. Optimism is a stronger correlate (.477) than PA (.402) and NA (-.419) when optimism and pessimism are taken as three items of LOTR.

Table 5. Spearman Correlations of Optimism and Affectivity With Life Satisfaction

	LS	Optimism	Pessimism	NA	PA
LS	1.000				
Optimism	0.477*	1.000			
Pessimism	-0.126*	-0.087**	1.000		
NA	-0.419*	-0.438*	-0.254*	1.000	
PA	0.402*	0.462*	-0.004	-0.248*	1.000
Mean (sd)	13.90(4.16)	8.33(2.77)	4.94(2.49)	6.71(2.48)	10.32(2.34)

*p < 0.001, **p<0.05

Source: Own estimations

Table 6 shows Spearman rank-order correlations of personal characteristics with life satisfaction based on ordinal scale scores. Most predictor variables correlates stronger with SWLS3 than other SWLS components. Only P2 "I hardly ever expect things to go my way" shows no significant correlation with any SWLS component.

Table 6. Spearman Correlations of Affectivity And Optimism With Life Satisfaction

N=855	SWLS1	SWLS2	SWLS3	SWLS4	SWLS5
Strong	0.072*	0.050	0.064	0.081*	0.038
Enthusiastic	0.318*	0.218*	0.332*	0.264*	0.181*
Inspired	0.393*	0.258*	0.359*	0.317*	0.191*
Alert	0.199*	0.130*	0.236*	0.169*	-0.030
Attentive	0.201*	0.158*	0.169*	0.180*	0.148*
Jittery	-0.315*	-0.334*	-0.404*	-0.305*	-0.248*
Scared	-0.239*	-0.287*	-0.263*	-0.197*	-0.150*
Upset	-0.143*	-0.113*	-0.174*	-0.122*	-0.060
Disstressed	-0.230*	-0.232*	-0.321*	-0.208*	-0.213*
Guilty	-0.188*	-0.147*	-0.228*	-0.119*	-0.097*
O1	0.381*	0.333*	0.387*	0.297*	0.110*
O2	0.437*	0.466*	0.447*	0.354*	0.280*
O3	0.261*	0.326*	0.283*	0.190*	0.083*
P1	-0.118*	-0.055	-0.141*	-0.093*	-0.067
P2	-0.004	0.054	0.015	0.030	-0.005
P3	-0.182*	-0.092*	-0.206*	-0.195*	-0.102*

***p** < 0.05

Source: Own estimations

II.VI. Multivariate Analysis

Multivariate regression analysis is applied to investigate the relationship of optimisim and personal characteristics with LS in more detail. All variables in the regression analysis are in standardized scores. LS as dependent variable, and optimism, pessimism, PA and NA as potential predictors were all entered into the model. The results show that predictors explain 32.80% of the total variation in LS. Optimism, negative and positive effects all significantly predicted life satisfaction but pessimism did not.

II.VII. Negative and Positive Effects As Predictors

Hierarchical regression analysis is used to investigate the contribution of affects to optimism. After Life satisfaction is input as the dependent variable, optimism is input in the first block as potential predictor, and NA and PA in the second block.

Table 7. Hierarchical Regression Analysis

	LS			
	Model 1		Model 2	
Standardized Predictors	β	t	β	t
Optimisim	0.496	14.95*	.271	7.54*
NA			-.460	-8.60*
PA			.400	8.47*
F(df)	223.61(1, 853)		138.48(3, 851)	
F(df) change		76.21(2, 851)		
R^2	0.208		0.328	
R^2 change		0.120		
p		.000		

*p < 0.001

Source: Own estimations

Hierarchical regression analysis results in Table 7 showed that NA and PA jointly significantly predicted LS (F (2,851) = 76.21, ΔR^2 = .120, p <.001). NA and PA explains an additional 12 percent of variance in LS above and beyond optimism. For statistical significance of the difference between the two models, t test is used. p<0.001 indicates a statistically significant improvement in the second model compared to the first model. Actually, adding NA and PA to Model 1 decomposed total effect of optimism into direct and indirect effects of optimism. In particular, total effect of optimism 0.496 is reduced to direct effect 0.271. Beta coefficient in Model 1 indicates total effect of optimism whereas in Model 2 it indicates the direct effects over LS.

II.VIII. Positive and Negative Affects as Mediator

Correlations between variables in Table 2 show that PA has the strongest correlation with LS. However, according to hierarchical regression results, the fact that PA significantly predicts LS above and beyond optimism provides sufficient evidence that PA may be a mediator between LOT-R and LS.

Significance of indirect effects of PA and NA variables was tested using SEM in order to find mediating role of PA and NA. Models are calculated with maximum likelihood (ML) method using Stata. The results show that the indirect effect of optimism is significant through NA and PA. That is, NA and PA significantly mediated the effect of optimism (z = 7.34, p <.001) over life satisfaction.

Hierarchical regression analyzes are used to find whether the mediation is partial or not. In each regression, optimism factor is input in second block after a PANAS factor is input in the first block of the regression equation. When NA is in the first block, the second model showed that optimism (ΔR^2 =.084, p<.001) was still significant in predicting LS, which implies that NA is a partial mediator of the

relationship between optimism and LS. Similarly, when PA is in the first block, the second model showed that optimism (ΔR^2=.108, p<.001) was still significant in predicting LS, which again implies that PA is a partial mediator of the relationship between optimism and LS.

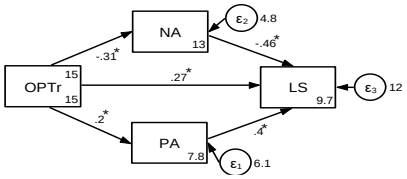

Figure 2. Mediation Model For PANAS.

*p<.001

Structural model in Figure 2 shows the direct and indirect effects of OPTr over LS. OPTr is the total score of three optimism items and three reversed pessimism items. All variables of the SEM model show the sum of items. The coefficients and significance levels that explain LS are indicated on the three paths from OPTr to LS. NA and PA indicate total score of five negative and five positive affect items. Figure 2 indicates significant indirect effects of optimism (p<.001) over LS. NA and PA are the mediator variables for the relationship between OPTr and LS. For example, direct effect of OPTr over LS is 0.271 and indirect effect is -.31(-0.46) + 0.24(0.4)= 0.223. Adding direct effects to indirect effects gives total effect that is 0.271+0.223=0.494. This is the standardized beta coefficient of optimism in the first model of hierarchical regression analysis in Table 7.

For more detailed analysis of the relationships between the variables, latent constructs are included in SEM in Figure 3. Estimates in Figure 3 are unstandardized in order to observe direct and indirect effects. All paths are significant (p<0.001). Decomposition of the effects into direct, indirect and total shows that indirect effect of optimism over LS is -0.48(-0.41)+1.2(0.22)=0.42. The total effect is 0.30+0.42=0.72. When 10 items of LOT-R are included in the SEM of Figure 3, the total effect of optimism (LOT-R) is 0.68 based on standardized estimates in which all paths are significant.

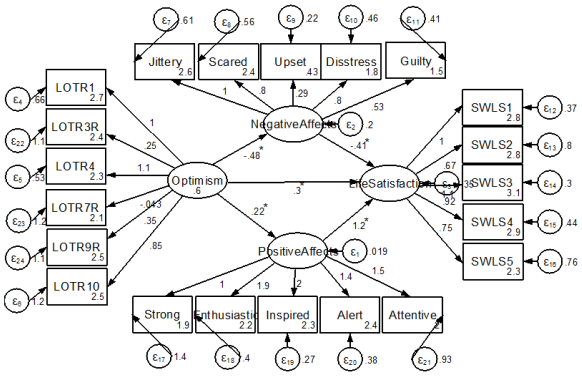

Figure 3. Latent Mediation Model For the Relationship Between Optimism and LS.

*p<.001

II.IX. Negative and Positive Affects as Moderator

Hierarchical regression analysis is used to find potential moderator effect of affects over the relationship between optimism and LS. All predictor optimism variables, the moderator variable (NA and PA one at a time) and interaction terms were input respectively. A significant interaction term

indicates of a moderator effect. First, interactions are run with PA and then with NA separately. The results did not show any significant interaction effects with NA at 0.05 level.

Table 8 shows hierarchical regression results, in which Model 1 shows that LOTR2 (b=0.90; p<0.01), LOTR4 (b=0.89; p<0.01), LOTR6 (b=0.28; p<0.05), LOTR8 (b=0.38; p<0.01) and LOTR9 (b=-0.34; p<0.01) significantly predict LS. In model 2, NA (-0.34; p<0.01) and PA (b=0.27; p<0.01) significantly predicts LS. Finally, Model 3 shows only one significant interaction LOTR1*PA which is between "usually expect the best" and PA (b=-0.169, p<0.01). Thus, PA construct is a moderator. In other words, PA moderates the relationship between "usually expect the best" and LS.

But does this moderation also hold in factorwise interaction? In other words, which PA factor is potential moderator? Thus, marginal analysis is needed at this point. An ordered logistic regression model (OR) can be run with all PA factors included in the interactions. The results of the OR model indicates that LOTR1*Alert (OR=8.66; p<.05) and LOTR1*Enthusiastic (OR=.035; p<.05) interactions were significant. The odds of LS of partcipants who somewhat expect the best but extremely enthusiastic is 96.5 percent less compared to those who never expect the best and very slightly or not at all enthusiastic. On the other hand, the odds of LS of those who moderately expect the best and moderately feeling alert is 8.66 times more compared to those who never expect the best and very slightly or not at all alert. This means moderately expecting the best and moderately feeling alert increases the odds of LS by 766 percent compared to those who never expect the best and very slightly or not at all alert. These results imply that being moderately alert and being extremely enthusiastic are moderators.

Table 8. Hierarchical Regression Analysis For Moderating Effect of PANAS

Standardized predictors	β	t
Model 1 Optimism R^2=0.358		
Optimism1: In uncertain times, I usually expect the best.	0.116	0.81
Filler1: It's easy for me to relax.	0.708	4.69*
Pessimism1: If something can go wrong for me, it will.	-0.19	-.0.15
Optimism2: I'm always optimistic about my future.	0.830	6.00*
Filler2: I enjoy my friends a lot.	0.024	0.18
Filler3: It's important for me to keep busy.	0.290	2.42***
Pessimism2: I hardly ever expect thingsto go my way.	-0.111	-0.96
Filler4: I don't get upset too easily.	0.359	3.30**
Pessimism3: I rarely count on good things happening to me	-0.179	-1.40
Optimism3: Overall, I expect more good things tohappen to me than bad.	0.120	1.15
Model 2 R^2=0.379 ΔR^2=0.021 p=0.000		
PA added	0.273	5.39*
Model 2 R^2=0.386 ΔR^2=0.028 p=0.000		
NA added	-0.341	-6.24*
Model 3 R^2=0.396 ΔR^2=0.017 p=0.011		
Interaction PA*Optimism added		
PA*Optimism1	-0.169	-3.00**
PA*Filler1	0.035	0.59
PA*Pessimism1	-0.068	-1.32
PA*Optimism2	-0.036	-0.62
PA*Filler2	0.006	0.12
PA*Filler3	0.026	0.52
PA*Pessimism2	0.084	1.94
PA*Filler4	0.071	1.68
PA*Pessimism3	0.050	1.05
PA*Optimism3	-0.025	-0.59
Model 3 R^2=0.398 ΔR^2=0.013 p=0.070		
Interaction NA*Optimism added		
NA*Optimism1	0.093	1.70
NA*Filler1	0.007	0.13
NA*Pessimism1	0.041	0.88
NA*Optimism2	0.067	1.22
NA*Filler2	-0.008	-0.15
NA*Filler3	0.006	0.14
NA*Pessimism2	0.032	0.71
NA*Filler4	0.074	1.76
NA*Pessimism3	0.021	0.44
NA*Optimism3	-0.046	-1.20

*p<.001, **p<.01, ***p<.05

Source: Own estimations

CONCLUSION AND IMPLICATIONS

This article investigated mediating and moderating effects of positive and negative affectivities over the relationship between optimism and life satisfaction for a sample of Çukurova University students. Positive affectivity construct was found as a moderator but negative affectivity was not. However, marginal analysis revealed that not all positive affectivity factors were significant and contributions of significant moderating factors were low. Only being moderately alert and being extremely enthusiastic moderated the relationship between expecting the best and life satisfaction. Thus, these two positive factors have protective role on the effect of expecting the best over life satisfaction. High enthusiasm was not enough for better life satisfaction due to low expectation of best, but under the effect of moderately expecting best, being moderately alert contributed to higher life satisfaction.

As expected, the results of correlation analysis indicated significant and positive relationships of optimism and positive affectivity with life satisfaction based on scale scores. This finding was in line with Chang et al (2003:1201), Kapıkıran (2012:336), Uğurlu (2013:500), Jiang et al (2014:4), Rezaei and Khosroshahi (2018:155) and Oriol et al (2020:5).

With total scores in mediation models, all paths were highly significant. Direct effect of optimism was greater than indirect effect. Mediation effects of negative affectivity was slightly greater than that of positive affectivity. The indirect effect via negative affectivity was significant. Positive affectivity and negative affectivity partially mediated the relationship between optimisim and life satisfaction. This finding was in line with Chang et al. (2003: 1203), Daukantaite and Zukauskiene (2012: 8), Kapıkıran (2012: 337), Uğurlu (2013: 501), but Oriol et al (2020: 10) found no mediation effect of only positive affectivity over life satisfaction.

An important implication is that alert students with moderate expectations report higher life satisfaction. This study suggests longitudinal research to university administrations and mentor services to be provided higher education authorities for undergradute students to maintain their positivity and improve their life satisfaction through optimisim.

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The data used in the related study were collected in 2019 and the data were analyzed. Since the data were collected before 2020, an ethics committee decision is not required.

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