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ANALYSİS OF LİFE SATİSFACTİON LEVEL OF UNİVERSİTY STUDENTS USİNG HİERARCHİCAL LİNEAR MODELİNG

Abstract: Life satisfaction is among the basic components which demonstrate that individuals can lead a quality life. Many intertwined factors affect individuals' life satisfaction. Analyzing these factors at different levels will allow the analysis results to be more significant. This study aimed to reveal the effects of variable at the student and department level that will affect the life satisfaction level of university students, using the Hierarchical Linear Modeling. In addition, the study aimed to reveal which variables have a significant effect on life satisfaction in this two-level structure. The sample of the research consists of 1237 students, studying in 30 departments in different faculties at Inönü University in the 2020-2021 academic year. The variables about students represent the first level while variables about department represent the second level. Considering the life satisfaction levels of individuals, it was concluded that 13% of the variability was due to the differences between departments and that 87% of variability due to the differences between students. It was also concluded that variables that became important in explaining the differences between students' life satisfaction at the first level were: working, self-regulation, physical discomfort, physical activity variables and that variables such as gender, age, income, having a sibling, relationship status, family cohesion, emotion regulation, parents' education level, having close friends and a religious belief were found to be insignificant in explaining life satisfaction at the student level and that the added variables could explain 75% of students' life satisfaction. Variables at the department level explain 6% of the differences between departments. It was concluded that the variable that could explain the differences between students' life satisfaction at this level was the variable of departments' scores on assigning teachers and that the number of students and faculty members in the department were found to be insignificant.

Keywords: Life satisfaction, Hierarchical Linear Modeling, University student, Students variables, Department variables.

Introduction

Life satisfaction, which is a component of subjective well-being, plays an important role in people's ability to have a meaningful life and lead a happy life. According to Diener (2000), subjective well-being, which is a part of the positive science of psychology, is defined as the individual's cognitive and emotional evaluation of their own life and providing information about their positive or negative well-being as a result of these evaluations. Subjective well-being is also associated with the concept of happiness in the literature. The concept of subjective well-being consists of three different structures: positive emotions, negative emotions and life satisfaction. Positive and negative emotions constitute the affective/

emotional dimension of subjective well-being. *Life satisfaction* is the cognitive/judgmental dimension of subjective well-being (Diener, Emmons, Larsen, & Griffin, 1985: 71).

The concept of life satisfaction, in its most general definition, is defined as the quality of life that an individual determines as a result of their complete evaluation of their own life (Veenhoven, 1996). Life satisfaction, which is a key indicator of subjective well-being, is also considered as a personality trait that has various effects on the individual's evaluations of social support, health, own thoughts and feelings, stress, and coping methods (Dubey & Agarwal, 2007). The individual makes sense of the life satisfaction by questioning whether their own life is good in cognitive terms (Lucas et al., 2004).

In its general characteristics, life satisfaction is also related to self-regulation and emotion regulation skills. Bandura approaches the concept of self-regulation from a social cognitive perspective and defines self-regulation as controlling one's own emotions, thoughts and feelings (Pajares, 1996). In another definition, self-regulation is explained by learning processes. Self-regulation is explained as the active participation of individuals in learning processes in terms of metacognition, motivation and behavior, that is, the individual's obtaining learning responsibilities (Schunk & Zimmerman, 1994). In this process, the individual also uses emotion regulation strategies. Emotion regulation involves observing, evaluating and regulating the individual's internal and external functions, emotional reactions and the severity of these emotional reactions (Thompson, 1994). The individual's need to avoid negative emotions and to enjoy positive emotions affects emotion regulation (Chris Fraley et al., 2006). It is possible to say that the cognitive/judgmental dimension of life satisfaction is closely related to self-regulation skills and that the affective/behavioral dimension is closely related to emotion regulation skills. Analyzing factors related to life satisfaction on university students has also become an interesting topic in the literature.

This structure, which gives meaning to an individual's life, is affected by many factors. In general, the individual's family relations and social connections, profession and societal status, policies of the country in which they live, income level, and opportunities are among the dynamic structures affecting life satisfaction (Appleton & Song, 2008). From a more specific perspective, life satisfaction is also affected by the individual's control over their own life, having a healthy body and mental state, being free, being able to express their feelings and thoughts with ease, and feeling good both physically and mentally (Khakoo, 2004). From an educational point of view, one of the most important tools of the educational mission is to strengthen students' life satisfaction (O'Neil, 1981). Hermon and Hazler (1999) state that life satisfaction and creativity should be increased in higher education and that institutional efforts in this context are important in terms of students' psychological well-being and holistic development.

When the studies in the literature are examined, it has been concluded that age (Hong and Giannakopoullos, 1994), stress level (Chang, 1998; Makinen and Pychyl, 2001; Simons et al., 2002), physical health (Pilcher, 1998), working style (Cheung, 2000), parenting style (Seibel and Johnson, 2001), economic level (Dorahy et al., 2000), lifestyle (Bailey & Miller, 1998), and personality structures (Cha, 2003; Yetim, 2003) are the main determinants of life satisfaction in students. In the literature, it is seen that there are no studies in different designs that analyze life satisfaction levels of students studying in different departments, together with self-regulation, interpersonal emotion regulation skills, and other variables.

While stratified sampling is used in most studies, the assumption of independence of the observed data is violated. This causes the standard error to be smaller. Therefore, information

loss occurs as a result of analyzing variables at different levels as if they were at the same level. For data with a multi-level structure, before analyzing the levels, creating a hierarchical linear model will support the correct interpretation of results. The use of Hierarchical Linear Models provides more significant results in the analysis of nested structures (Sullivan, Dukes, & Losina, 1999). In this context, this study aimed to reveal the effects of variables that will affect the life satisfaction levels of university students, using the HLM model. To this end, answers to the following questions were sought:

1. Do students' life satisfaction differ across departments?
2. What is the explanation rate of the variability among students' life satisfaction by the variables analyzed at the student level?
3. What is the explanation rate of the variability among students' life satisfaction by the variables analyzed at the department level?

Method

A two-phase structure, consisting of student and department levels, were used in the study. The research was conducted in relational screening model (Fraenkeli Wallen & Hyun, 2012) in order to determine the variables belonging to these two levels that will affect individuals' life satisfaction and to reveal the relationship between these variables and life satisfaction. Two-level Hierarchical Linear Modeling (HLM) was used to analyze the effect of the variables at these two levels on the Life Satisfaction variable.

Study Group

While the universe of this study consists of university students, its sample is comprised of 1237 students, studying in 30 departments in different faculties of Inönü University in the 2020-2021 academic year. Due to the structure of hierarchical data, the data is nested. Due to this aspect of the research, first of all, the departments that do not have missing data in the research and that show normal distribution according to the dependent variable as well as the intensity of participation in the research are considered as the second level. Then, the students studying in these departments were considered as the first level. The departments participating in the study and descriptive information about these departments are given in Table 1.

Table 1. *Descriptive information about the departments*

Department	N	Mean	Skewness	Skew Stand Error	Skewness/ Skewness Standard	Kurtosis	Kurtosis Standard Deviation	Kurtosis/ Kurtosis Standard
Science Teaching	51	12.1	-0.293	0.333	-0.8798799	-0.886	0.656	-1.35061
Preschool Teaching	70	13.5	-0.681	0.287	-2.3728223	-0.389	0.566	-0.68728
Special Education Teaching	55	11.1	0.407	0.322	1.2639752	-0.887	0.634	-1.39905
Music Teaching	88	13.7	-0.45	0.257	-1.7509728	-0.701	0.508	-1.37992
Turkish Language Teaching	78	9.92	0.63	0.672	0.9375	-0.883	0.538	-1.64126
Psychological Counseling and Guidance	74	15.9	-0.713	0.479	-1.48852	-0.324	0.552	-0.58696
Social Sciences Teaching	45	10.6	0.685	0.354	1.9350282	-0.691	0.695	-0.99424

Elementary School Mathematics Teaching	32	13.0	0.262	0.414	0.6328502	-0.387	0.809	-0.47837
Physical Education Teaching	34	14.6	0.0935	0.403	0.2320099	-0.966	0.788	-1.22589
English Language Teaching	34	15.1	-0.0816	0.403	-0.2024814	-0.948	0.788	-1.20305
Child Development	32	15.9	-0.0617	0.414	-0.1490338	-0.915	0.809	-1.13103
Midwifery	34	16.5	-0.252	0.403	-0.6253102	-0.916	0.788	-1.16244
Physiotherapy and Rehabilitation	31	15.4	-0.347	0.421	-0.824228	-0.927	0.821	-1.12911
Audiology	36	17.3	-0.288	0.393	-0.7328244	-0.919	0.768	-1.19661
Nursing	36	18.4	-1.07	0.693	-1.54401	1.68	0.768	1.315104
Elementary School Teaching	36	18.7	-0.554	0.393	-1.4096692	-0.0487	0.768	-0.06341
Economics	34	14.2	0.355	0.403	0.8808933	-1.46	0.788	-1.85279
Theology	34	14.1	0.3	0.403	0.7444169	-0.799	0.788	-1.01396
Computer Eng.	33	13.7	0.335	0.409	0.8190709	-0.619	0.798	-0.77569
Mechanical Eng.	34	14.2	0.368	0.403	0.9131514	-1.08	0.788	-1.37056
Electrical and Electronic Eng.	32	16.1	-0.203	0.414	-0.4903382	-0.982	0.809	-1.21384
Civil Eng.	34	14.5	0.103	0.403	0.2555831	-1.1	0.788	-1.39594
Law	35	13.5	0.36	0.398	0.9045226	-1.18	0.778	-1.51671
Art Teaching	34	17.5	-0.88	0.403	-2.1836228	0.15	0.788	0.190355
Business Administration	35	17.1	-0.567	0.398	-1.4246231	-1.08	0.778	-1.38817
Finance	35	14.3	-0.0332	0.398	-0.0834171	-1.48	0.778	-1.90231
Political Science and Public Administration	33	16.8	-0.348	0.409	-0.8508557	-0.927	0.798	-1.16165
Political Science & International Relations	31	13.8	0.236	0.421	0.5605701	-0.797	0.821	-0.97077
Labor Economics	36	14.6	0.0098	0.393	0.0249364	-0.932	0.768	-1.21354
Food Eng.	31	12.7	0.0702	0.421	0.1667458	-0.733	0.821	-0.89281

The frequencies of departments with complete data, the means of life satisfaction and the kurtosis-skewness coefficients of departments participating in the research are given above. According to this table, the department with the lowest mean is Special Education Teaching whereas the department with the highest life satisfaction mean is the Department of Elementary School Teaching. When the kurtosis and skewness values of departments were analyzed, it was that they generally had a value ranging between +1 and -1. It can be stated that the distributions of life satisfaction levels of departments are normally distributed due to the fact that the standardized coefficients obtained as a result of dividing the kurtosis and skewness values exceeding these range values into their own standard errors are between -1.96 and +1.96 according to the 0.05 significance level.

Data Collection Tools

Life Satisfaction Scale, Self-Regulation Scale, Interpersonal Emotion Regulation Scale, and departmental and student-level variables were used as data collection tools in the study.

Life Satisfaction Scale: The scale developed by Diener, Emmons, Larsen, and Griffin (1985) consists of 5 items in one dimension and is a 7-point Likert type. Items are graded between 1: Strongly disagree and 7: Strongly agree. The scale was adapted into Turkish by many researchers. In this study, the form adapted by Durak, Şenol-Durak and Gençöz (2010) for university students was used. The reliability coefficient in the adaptation study in the university sample was found to be .81. The Cronbach Alpha reliability coefficient for this study was found to be .82. It is seen that values found in the confirmatory factor analysis are at an acceptable level ($\chi 2/df=4.88$, RMSEA=.08, CFI=.98, IFI=.98 and NFI=.97).

Self-Regulation Scale: The Turkish adaptation of the Self-Regulation Scale, whose original form was developed in German by Schwarzer, Diehl and Schmitz (1999) and later adapted into English by Diehl, Semegon and Schwarzer (2006), was made by Demiraslan-Çevik, Haşlaman, Kuşkaya-Mumcu and Gökçearslan (2015). The Cronbach Alpha internal consistency coefficient of the scale, which was applied to 389 undergraduate students studying in different departments of a state university in Ankara, was found to be 0.84 whereas the test-retest reliability coefficient was found to be .67. In addition, the criterion validity was analyzed by looking at its correlation with the General and Academic Self-Efficacy Scales and it was determined that it showed a significant and positive relationship with this scale.

Interpersonal Emotion Regulation Scale: The scale developed by Hofmann, Carpenter, and Curtiss (2016) was adapted into Turkish by Saruhan, Başman, and Ekşi (2019). The scale has a 5-point Likert structure and consists of 20 items and 4 sub-dimensions. The scale was applied to university students. It was observed that the fit indices ($\chi 2/df = 2.56$, RMSEA = 0.08, SRMR = 0.06, RMR = 0.08, CFI = 0.96, NFI = 0.94, NNFI = 0.95) obtained in the verification of the structure of the scale were met. The Cronbach alpha internal consistency coefficient of the scale was found to be .914 for the whole scale and ranged between .798 and .871 for sub-dimensions. The test-retest correlation coefficient of the scale was found to be .797 for the whole scale and ranged between .649 and .786 for sub-dimensions. The scale has four sub-dimensions: enhancing positive affect, perspective taking, soothing, and social modeling.

Variables used in the research

In order to examine the effect on life satisfaction among nested structures in the research, the variables of the two-level structure were determined by analyzing the literature. While student's gender, age, monthly income, working in a different job, number of siblings, relationship status, family cohesion, mother's educational level, father's educational level, interpersonal emotion regulation scores, self-regulation scores whether they have a physical illness, physical activity, number of close friends and religious belief (Başerer & Kısaç, 2017; Capone, Joshanloo & Scheifinger, 2019;Chen, 2001; Dahlan, Nicol & Maciver, 2010; Fernandez-Ballesteros., Dolores-Zamarrón & Angel-Ruíz, 2001; Han, 2015; Han & Hong, 2011; Lodi, et al., 2019; Tuzgöl-Dost, 2007) were analyzed at the student level, which was the first level; Assignment Score, the number of faculty members and the number of students in the department (Gencay, 2009; Iverson & Maguire, 2000; Zullig, Huebner and Patton, 2011) variables on life satisfaction were discussed at the department level, which was the second level.

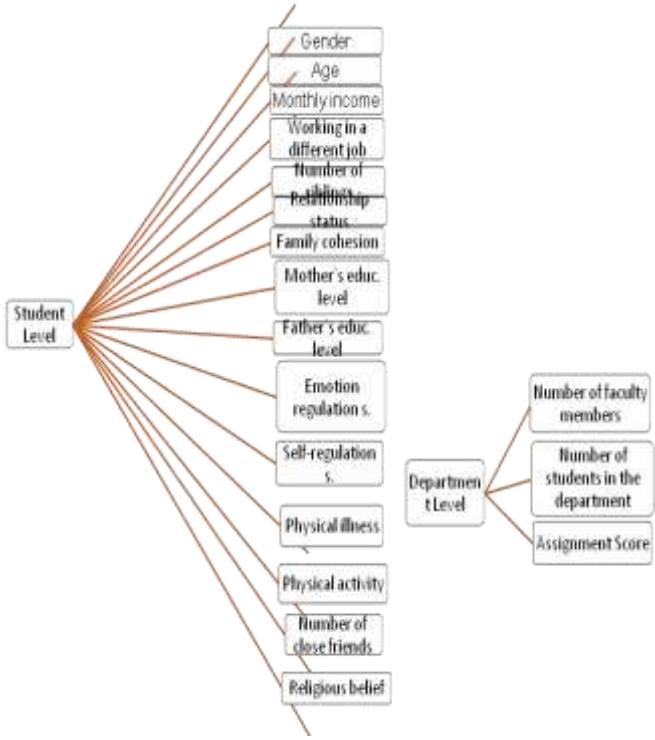

Figure 1. *Variables used in the study*

Variables that will affect life satisfaction and used in the study are given in Figure 1 according to their levels.

Data Analysis

After examining the extreme values and missing values during the sample selection process, the assumptions of the HLM analysis were checked in the study. A total of four different models were created for the research. The first model was defined as the empty model. Models consisting of student-level variables were created in the second model while models with department-level variables were created in the third model. After determining variables affecting life satisfaction in the second and third models, the final model including the variables of both levels was created. The homogeneity of error variances in all models and the normality of the residual value of both levels were checked and it was concluded that assumptions were met.

The study was conducted with R open software and lme4 (Bates et al., 2015) and merTools (Knowles and Frederick, 2018) packages were used for HLM analysis.

Results

Results Related to Subproblem 1

The study aimed to analyze the differentiation of life satisfaction levels of model students created for the research question according to departments. To this end, a random effects ANOVA model, also known as an empty model, was created. It is possible to get an idea about whether HLM analysis will be conducted by using this model (Hox, 2002).The final equation of this model is as follows:

$$LIFE_{ij} = \gamma_{oo} + u_{oj} + r_{ij}$$

As seen in the equations, Life Satisfaction scores are modeled according to the effect of three parameters. *$LIFE_{ij}$, represents the life satisfaction level of individual i in j department* ;γ_{oo} parameter is the mean of life satisfaction levels of 30 departments; u_{oj}parameter is the random effect in *j* department, and r_{ij} represents the random effect at the first level belonging to i individual in *j* department. In the analysis, the deviance value was analyzed for the significance of the model that was first created. The values obtained for the model fit are given in Table 2.

Table 2. *Fit indices of the model*

AIC	BIC	logLik	Deviance	p
7594.73	7610.08	-3794.4	7588.7	.000

The deviance value for the empty model was found to be 7588.7 whilep (.000) value was found to be significant. This is an indication that the established model is significant (Garson, 2013).The table demonstrating the estimation results of the empty model found to be fit is given below.

Table 3 *.Fixed Effects of the Empty Model*

Fixed Effects	Coefficients	Standard Error	t
INTRCPT1, β_{0j}			
INTRCPT2, γ_{oo}	14.6083	0.3945	37.03

$\beta_{0j=j}$ mean life satisfaction constant in the department
$\gamma_{oo=}$mean of life satisfaction levels

Considering the table showing fixed effects, it was found that the assumption on the mean of life satisfaction levels was 14.6083 and the standard error of the consumption was 0.3945. 95% confidence interval for the mean of overall life satisfaction was found to be

$$95\%CI = 14.6083 \pm 1.96(0.3945) = (15.39; 13.84)$$

Therefore, the real value of the mean of overall life satisfaction ranges between 15.39 and 13.84 with 95% probability. Random effects related to the established model are given in Table 4.

Table 4. *Random Effects of the Empty Model*

Random Effects	Variance Components	Standard Deviation
INTRCPT1, (Department) u_{0j}	3.987	1.997
level-1, *rj*	25.905	5.090

rj = error term of level1
u0j = error term of level2

Considering the variance estimations, the variance value in life satisfaction between departments was found to be 3.987 while the variance value at the student level was found to be 25.905.Considering these variances, the explained rate of variance was as follows:

Variance components of errors / (Variance components of errors + level 1 variance component) = 3.987 / (3.987 + 25.905) = 0.1333

Considering the variances, the variability in the level of overall life satisfaction was due to differences between departments (13%) and due to differences between among students (87%) . Therefore, the student-level variables to be added to the model have a greater effect on individuals' life satisfaction.

Results Related to Subproblem 2

After this phase, a Random Effects Model was created by including student's gender, age, monthly income, which are student-level variables (first level) and working in a different job, the number of siblings, relationship status, family cohesion, mother's educational level, father's educational level, emotion regulation scores, perceived self-regulation scores, physical discomfort, physical activity, number of close friends and religious belief in the model, in order to define the source of the variances explained in the model.

The level of added variables in explaining the variance explained at the student level was analyzed. The equation of the random effects model created in this context is as follows:

$LIFE_{ij} = \gamma_{00} + u_{0j} + \gamma_{10}$*(Gender) $+ \gamma_{20}$*(Age) $+\gamma_{30}$*(Income) $+\gamma_{40}$*(Job) $+ \gamma_{50}$*(Brother) $+ \gamma_{60}$*(Relationship)$+ \gamma_{70}$*(Family Cohesion) $+ \gamma_{80}$*(MomE) $+ \gamma_{90}$*(FatherE) $+ \gamma_{100}$*(EmotionR) $+ \gamma_{110}$*(SelfR) $+ \gamma_{120}$*(PhysicalI) $+ \gamma_{130}$*(PhysicalA) $+ \gamma_{140}$*(CloseFriends) $+ \gamma_{150}$*(Religion)$+r_{ij}$

In the model;γ_{00}parameter represents the mean estimated life satisfaction of departments, γ_{10}parameter is students' gender, γ_{20} parameter is students' age, γ_{30} parameter is students' income, γ_{40} parameter is whether students have a job, γ_{50} parameter is the number of siblings, γ_{60}parameter represents whether students have a relationship, γ_{70} parameter represents family cohesion, γ_{80}parameter represents mother's educational level, γ_{90}parameter represents father's educational level, γ_{100} parameter is students' interpersonal emotion regulation behaviour, γ_{110}parameter represents students' self-regulation levels, γ_{120} parameter is the state of having a physical illness, γ_{130} parameter is the state of doing exercise, γ_{140} parameter is the number of close friends, and γ_{150} parameter is whether students have a religious faith. The effect of these parameters on life satisfaction was analyzed by looking at their random effects. The fit indices of the model are as follows:

Table 5. *Fit indices of the second model*

AIC	BIC	logLik	Deviance	p
5953.6	6045.7	-2958.8	5917.6	.000

It was observed that the fit indices obtained in the random effects model decreased compared to the fit indices obtained in the empty model. It was concluded that the level of significance obtained for the random effects model was statistically significant (p <.000) and therefore the model created with these variables is significant in explaining students' life satisfaction levels. The values obtained as a result of the analyses of which of the variables added at the first level have an effect on the model are given in Table 6.

Table 6. *Fixed Effects of the Second Model*

	Estimate	Std. Error	t value
(Intercept)	18.887420	1.357716	**13.911***
gender	-0.157431	0.255735	0.616
Age	-0.006069	0.027286	-0.222
income	0.022720	0.088499	0.257
job	0.680700	0.376142	**1.810***
siblings	0.054500	0.086317	0.631
relationship status	0.352936	0.24387	1.447
family cohesion	0.238070	0.227536	1.046
mother's education level	0.038529	0.120857	0.319
father's educational level	0.059661	0.122112	0.489
emotion regulation	0.04891	0.03556	1.376
self-regulation	0.14058	0.0476	**2.953***
physical illness	3.679135	0.277694	**13.249***
physical activity	3.369596	0.274483	**12.295***
close friends	0.38162	0.04967	0.768
religion	0.367311	0.505832	0.726

When Table 6 was analyzed, it was seen that the mean overall life satisfaction level increased According to the table, it was found that the variables of having a job, self-regulation, physical discomfort, and physical activity had a statistically significant effect on the life satisfaction variable. Among the variables found to be significant in the model, the variable with the highest coefficient to affect life satisfaction is the state of physical discomfort while the variable with the lowest coefficient is self-regulation scores. According to the model, the mean of students who do not have a physical illness are approximately 3.7 points higher than the mean of students without physical illness. Students' level of physical activity is the second variable that contributes the most to the model. This variable is graded as follows: 1 = "I do not do exercise, "I do exercise rarely", "I do exercise occasionally", and 4 = "I do exercise regularly" . This variable shows that students' doing exercise will increase their life satisfaction by 3.37 points for each category level increase. Having a job provides an increase of 0.68 points on students' life satisfaction. In addition, it was observed that a 1-unit increase in self-regulation scores, another variable that had a significant effect on the model, would cause an increase of 0.14 points. Random effects of the second model are given in Table 7.

Table 7. *Random Effects of the Second model*

Groups Name	Variance	Std.dev
Department (Intercept)	1.890	1.375
Residual	6.613	2.572

As a result of adding student-level variables to the model according to variance estimations, the variance value in life satisfaction between departments was found to be 1.890. While the variance value at the student level was 25.905 in the empty model, it was found to be 6.613 in the random effects model. Considering these variances, the rate of variance explained bythe variables added to the model at the student level is as follows:

$$1.890 / (1.890 + 6.613) = 0.22$$

Approximately 22% of the difference between the inclusion of student-level variables in the model and life satisfaction is due to the difference between departments. The following equation was used to see the effectiveness of the variables added to the model in explaining the first-level variance:

$$\sigma 2_{\text{(empty model)}} - \sigma 2_{\text{(random effects)}} / \sigma 2_{\text{(empty model)}} * 100$$

$$(25.905 - 6.613/25.905) * 100 = 74.47$$

Therefore, the level of student variance explained by adding student variables to the model was found. In other words, it was concluded that approximately 75% of the difference between students' life satisfaction could be explained by variables added to the model. The remaining 25% of the variance shows that there are different student variables that can be included in this model.

Therefore, it was concluded that the variables that were important in explaining the differences between students' life satisfaction at the first level were the variables of having a job, self-regulation, the status of physical illness, and physical activity, and that the variables of gender, age, income, siblings, relationship status, family cohesion, emotion regulation, parents' educational level, having close friends and a religious faith were found to be insignificant in explaining the life satisfaction at the student level. In addition, it was concluded that 75% of students' life satisfaction could be explained according to first-level variables by the variables added with the random effects model.

Results Related to Subproblem 3

During another process of this study, the effect of difference between grades on life satisfaction was analyzed. The mean of the lowest assignments scores to departments in the last 20 years, the number of students and the number of faculty members were added as variables to the model on departments at the second level. The level of added variables in explaining the variance explained at the department level was analyzed. The equation of the model created in this context is as follows:

$$LIFE_{ij} = \gamma_{00} + \gamma_{01} * \text{AssignmentS}_{ij} + \gamma_{02} * \text{Facultymember}_{ij} + \gamma_{03} * \text{Students}_{ij} + u_{0j} + r_{ij}$$

γ_{00}represents the mean estimated life satisfaction score; γ_{01} is the effect of Assignment Score on the department's mean life satisfaction; γ_{02} is the effect of the number of faculty members, and γ_{03} represents the effect of the number of students. The results of the effects of departmental variables on life satisfaction are given in Table 8.

Table 8. *Fixed Effects of the Third Model*

	Estimate	Std. Error	t value
(Intercept)	11.3476	3.69	**3.07***
Assignment Score	-0.0498	0.04577	**-1.204***
Faculty members	0.04615	0.0739	0.624
Number of students	0.000116	0.00207	0.053

According to Table 8, it was concluded that the number of faculty members and the number of students in the department did not have a statistically significant contribution to life satisfaction for variables at the department level and that only the assignment score of the

departments had a significant contribution. Considering the coefficients, it was concluded that the 1-unit increase in the assignment scores of the departments caused a decrease of approximately 0.05 points on the overall life satisfaction score. The fact that other variables do not have a large effect can be seen as an indicator that the school environment has no effect on life satisfaction, especially during the current pandemic. Random effects obtained by adding department-level variables to the model as random coefficients are given in Table 9.

Table 9. *Random Effects of the Third Model*

Groups Name	Variance	Std.dev
Department (Intercept)	3.75	1.937
Residual	25.91	5.090

When Table 9 was examined, the difference between departments' life satisfaction scores as a result of adding the second-level variables to the model were found to be as follows:

$$3.75/3.75+25.91 = 0.13$$

. Therefore, in the model consisting of department-level variables, the difference between students' life satisfaction is 13%. In the empty model, the estimated variance of students on the level of life satisfaction was found to be 3.987 while the variance obtained by adding variables at the department level decreased to 3.75. The variance explained by the department level variables added to the model at this level was as follows:

$$3.987\text{-}3.75/3.987 = 0.06$$

Therefore, variables at the department level explain 6% of the differences between departments. It was concluded that the variable that could explain the differences between students' life satisfaction at this level was the variable of departments' scores on assigning teachers and that the number of students and faculty members in the department were found to be insignificant.

Discussion and Conclusions

In the study, it was concluded that 13% of the students' life satisfaction was caused by the differences between the departments that and 87% of them were due to the differences between students.

Studies conducted on university students indicate that academic success also has important effects on students' life satisfaction, beyond satisfaction at school. Students with a high level of life satisfaction are less vulnerable to academic failures; however, they make more effort to succeed. Students with low life satisfaction show lower academic performance (Arthaud-Day et al., 2005). In this direction, it can be thought that students' departments meet their own interests and needs and that their life satisfaction is high if it is a good tool in reaching their future goals.

Factors affecting life satisfaction may differ across individuals. These factors are variables such as the individual's age, gender, educational level, personality traits, negative or positive emotions, and expectations (Diener, 1984; Judge & Locke, 1993; Judge et al., 1998; Heller, Watson, & Lilies., 1987; Iverson, 1992, Iverson and Magiure, 2000; George and Brief, 1992). Therefore, in our study, it was observed that 75% of the variability in life satisfaction level was due to differences between students. Although demographic and socioeconomic factors affect individuals' happiness levels, some people may be happier than others due to their

personality traits (Hayes & Joseph, 2003; Diener, Lucas & Scollon, 2006). In short, individuals can be satisfied due to many factors in their life; however, a single factor may prevent the individual from achieving overall life satisfaction (Pavot et al., 1991). The top-down model, one of the models explaining life satisfaction, focuses on personality traits. According to the model, genetic factors account for 80% of the subjective well-being variance. In this case, it is stated that the differences between individuals' life satisfaction stems from their biological differences (Onyishi & Okongwu, 2013). For example, if an individual is restless, nervous and anxious, he or she is generally dissatisfied or not satisfied with their job, education or life level. It is thought that the difference obtained in our study is due to the fact that many factors affecting life satisfaction vary depending on personal characteristics. These findings are consistent with the literature.

As another finding of the research suggested, it was concluded that the variables that were important in explaining the differences between students' life satisfaction at the first level werethe variables of having a job, self-regulation, the state of having physical discomfort, physical activity and that the variables of age, gender, income, siblings, relationship status, family cohesion, emotion regulation, parents' educational level, having close friends and a religious faith were found to be insignificant in explaining life satisfaction at the student level . Among the main factors affecting life satisfaction, having a good job, freedom, democracy, being open-minded, being active, political stability, feeling in control of one's own life, being physically and mentally sound, having good relations with family and friends, and doing exercise, living in a safe area, having a wide social circle are defined as positive individual identity (Khakoo, 2004; Dockery, 2003). In this respect, the studies state that the effects of demographic factors on life satisfaction are quite low compared to the effects of personality traits on life satisfaction (Diener & Suh, 2003; Gutierrez et al., 2005). In a study, demographic factors explain less than 10% of the subjective well-being variance (Diener, 1984) whereas personality traits explain 39-65% of it (Schimmack, Diener, & Oishi, 2002; Baudin et al., 2011). Diener (1984) states that sleep, physical exercise, and seasonal changes affect life satisfaction. Self-regulation skills, one of the variables added to the model, also have significant effects on life satisfaction. The ability of an individual to control own feelings, thoughts and behavior, to live in harmony with the society, that is, the fit of their self-regulation skills also has an effect on life satisfaction. The findings are consistent with the literature and related studies. Therefore, the variables used in the research and found to be significant can be preferred in studies on life satisfaction.

Variables at the department level explain 6% of the differences between departments. The fact that other variables do not have a large effect can be seen as an indicator that changing life conditions and the school environment has no effect on life satisfaction, especially during the current pandemic. Because life satisfaction can be affected by events that the individual encounters in daily life in the context of the dynamic equation model. In the study, students with different personality traits and experiences were taken into the sample in many departments. Events that individuals encounter in daily life may temporarily change their individual satisfaction (Onyishi and Okongwu, 2013).

Limitations

There are two types of limitations in this study. The first one is the level of representation of the measured feature of scales used in the data collection process and the online data collection process. The second limitation is that it is a cross-sectional study, that it was conducted on a certain group in a certain time period, and that variables affecting life satisfaction were limited to demographic variables included in the study. In this respect, these

limitations should be considered in predicting the results. The relations of the variables can be re-analyzed with longitudinal studies to be conducted in different time periods. In conclusion, among the factors affecting life satisfaction, it was observed that physical condition, self-regulation skills and the status of having a job had an effect at the student level while the number of faculty members, number of students and assignment scores had an effect at the department level. In line with these results, it is thought that students should be meticulous in terms of which department to choose for studying, should feel physically comfortable and happy, and acquire self-regulation skills, which are important for life satisfaction, in a correct and healthy way, from an early age.

Data Availability Statement

The datasets analysed during the current study are available from the corresponding author on reasonable request.

Ethics Committee Approval

In this study, all the rules that must be followed within the scope of the Higher Education Institutions Scientific Research and Publication Ethics Directive were complied with. No action has been taken under the heading of Scientific Research and Publication Ethics.
Board conducting the ethical review: Inönü University Social and Human Sciences Scientific Research Ethics Committee
Date of decision: 16.03.2021
Number of decisions: 2021 / 6-14

Conflict of Interest

The authors declare that they have no conflict of interest.

Informed Consent

Informed consent was obtained from all the individual participants that were included in the study.

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