

# **CSSM502 – ADVANCED DATA ANALYSIS FOR SOCIAL SCIENCES**

## **FINAL PROJECT**

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**AYŞE ZEYNEP ZÜLFİKAR**

**0087820**

### **I. Introduction**

#### **A. Background and Context**

The question of value change is a pivotal aspect of both modernization and democratization theses; it serves as a critical lens through which we can examine the evolving dynamics of societies undergoing transformative processes. While understanding how these values shift and adapt within these contexts emerges as an important topic of discussion which not only captures the attention of political scientists seeking insights into the mechanisms of societal change but also presents a fundamental inquiry for scholars across various social disciplines; in this context, the World Values Survey (WVS) stands out as a crucial global research initiative delving into people's values and beliefs for the purpose of documentation of this change – conducted in five-year intervals since 1981, the survey spans 120 countries and purports to encompass nearly 95 percent of the global population, exploring the ways of evolution of values over time and their social and political ramifications (World Values Survey, 2024).

To understand these ramifications, Founding President of the WVS Ronald Inglehart described two major value shifts occurring as part of his broader theory of cultural change with

the influence of democratization and modernization. The initial shift pertained to the rise of welfare and the transition from values centered around ‘survival’ to those focused on ‘self-expression’ and the second shift, as revealed by the surveys, involved a transition from ‘traditional’ to ‘secular-rational’ behavior (World Values Survey, 2024). However, due to the ambiguity associated with the initial labels and advancements in research and theorization process, the titles of these dimensions were revised; this revision aimed to precisely convey the observed phenomenon that, as individuals attain existential security, there is a parallel enhancement of independent thinking and self-reliance (Shirokanova, 2012). Inglehart and Welzel referred to this phenomenon as a part of 'human development,' asserting that its three components share a common emphasis on expanding human choices; they argued that socioeconomic development, acting as an objective facilitator, broadens the array of choices by augmenting individual resources and simultaneously give rise to the ascent of '*emancipative values*' which reinforces people's subjective inclination toward choice. Moreover, as democratization plays a pivotal role by institutionalizing freedom rights, thereby providing legal guarantees for individual choices, it enhances as a diminished role of religion in shaping worldviews and societal norms, resulting in a diminished influence of traditional religious institutions on various aspects of life, including moral and ethical beliefs, promoting secularization (Sterbenz, 2014).

In the name of adjusting the World Value Survey’s standance as well as support its position within their broader and now integrated theory of cultural change and modernization, as also outlined and discussed further in their book ‘Modernization, Cultural Change, and Democracy: The Human Development Sequence’ (2005), Ronald Inglehart and Christian Welzel

developed the concept of 'emancipative values' to bring an update to 'self-expression' values: they characterized emancipative values as embodying autonomy, self-expression, and individual freedom, cultivating a society that promotes personal choice, tolerance, and empowers individuals to lead meaningful lives. Moreover, priorly discussed underline 'secular-rational' values were now redefined in 'secular values' to discuss the current situation of assumption of secularization thesis – the diminished role of religion in shaping worldviews and societal norms. Although literature has extensively examined Türkiye's portrayal as an African-Muslim country with low secular and emancipative values in Inglehart and Welzel's famous 'cultural map' (Mertens et al., 2019), there exists a gap in the discussion regarding the transformations in 'secular and emancipative values' among the emerging adult population (aged 18-29) in Türkiye within the broader discourse on modernization, democratization, and secularization theses.

## **B. Objectives and Research Questions**

Although there has been limited scholarly output on emerging adulthood in the Turkish context, a phase of development typically spanning ages 18 to 29, delineated by the transition from adolescence to adulthood, an investigation of this nature could serve two purposes: (1) offering an analysis of assumptions regarding emerging adulthood in Türkiye and evaluating their validity, and (2) facilitating a deeper exploration of the conditions contributing to low emancipative and secular values within the broader context of Turkish democratization, modernization, and secularization processes. To achieve this, we can look for the changes in 'secular and emancipative values' among the emerging adult population (aged 18-29) in Türkiye over a span of time from World Values Survey (WVS) Wave 2 in 1990 to Wave 7 in 2018.

However, to conduct this research with a proper methodology to achieve our goal, we must shape our hypotheses:

As also discussed by Inglehart and Welzel, an increase in emancipative values is a part of ‘human development’; thus, even though Türkiye contrastingly has ‘low’ scores in these value indexes, it should increase with time. Moreover, as it will be more clearly understood when we discuss assumptions connected to emerging adulthood, these values should be higher when it comes to the score between the 18-29 age group compared to the general population. Therefore, the *H1*: “*There is a significant increase in secular values among emerging adults in Türkiye between 1990 and 2018.*” In a similar line, *H2*: “*There is a significant increase in secular values among emerging adults in Türkiye between 1990 and 2018.*” However, both of these are depended on the assumption of age group playing a determinant factor here, the youth of the country being the frontrunners of this ‘human development’, therefore H1 and H2 is depended on *H3*: “*The change in secular and emancipative values is more pronounced among the 18-29 age group compared to the rest of the population.*” However, taking age into account as an determining factor also allows for questioning the other explanatory factors for how the emancipative and secular value variables are shaped, which carries us to our last hypothesis with *H4*: “*Socio-demographic variables (age, sex, marital status, education level, income level, social class, and employment status) significantly contribute to explaining the observed changes in values.*” By taking not attitude variables that are shaped by the exact conceptualization of what emancipative and secular value defined on, but relying on less-structurally-described socio-demographic values in to our lenses, we aim to understand whatever if (1) there is indeed a

statistically significant change occurred for these values as Inglehart and Welzel hoped, and (2) its process or stagnation could be explained by non-conceptualized variables?

## **II. Literature Review**

Emerging adulthood, a concept introduced by Jeffrey Jensen Arnett in the early 2000s, characterizes a developmental phase typically occurring between ages 18 and 29, commonly observed in individuals in their twenties within Westernized cultures and potentially in other global regions (Arnett, 2000). This stage is marked by a period where numerous paths are open, the future remains largely uncertain, and independent exploration of life's possibilities is at its peak. During this time, individuals are actively shaping their identities and making decisions about their aspirations in areas such as work, education, and relationships (Arnett, 2001).

As of 2023, the literature is evolving due to (1) academic works focusing on this concept as an explanatory framework for the behavior patterns of this age group, and (2) the necessity to re-evaluate the theory of emerging adulthood in terms of (a) a more nuanced developmental perspective, recognizing the significant differences between the years 18-24 and 25-29 (Nelson, 2021), and (b) a more culture-specific approach (Çok & Atak, 2015). While the critiques of lack of a cross-cultural perspective in the development of the concept itself brought different time periods for different countries on the basis of their socio-cultural realities (Atak, 2011), such as underlined by the studies that suggest that the duration of emerging adulthood varies, exemplified by the cases of Finland (21-28 years), Argentina (25-27 years), Israel (20-24 years), and Türkiye (18-26 years), this re-formulation of age range for emerging adulthood in

culture-specific way underlined that differentiation within the brain development, educational and career trajectories, and marriage ages vary across these sub-periods, indicating the importance of a more nuanced developmental approach.

As an example of culture-specific approach, Çok and Atak (2015) revealed the Western-centric and deterministic nature of emerging adulthood literature, showcasing varied possibilities within different groups. Urban youth prioritize economic independence, while rural youth emphasize military service. The urban background group emphasizes independent decision-making, challenging traditional views of role transitions in adulthood. Social factors like child-rearing practices, unemployment, marriage patterns, education, and compulsory military service influence the transition, leading to diverse patterns within the groups. In conclusion, they propose a three conceptualizations for adulthood transition: 'Deserved Adulthood' for rural areas, influenced by family and societal expectations; 'Developmental Transition to Adulthood' for urban individuals, emphasizing individualistic values; and 'Default Transition to Adulthood' for urban individuals with rural backgrounds facing limited choices and societal pressures. These (re)conceptualizations within the emerging adulthood age group prompt consideration of the factors that might reshape the assumptions initially posited by Arnett when introducing this concept; by doing so, we can try to understand how changes in values in the modern world, which had created a rupture in the conventional transition from adolescence to adulthood and necessitated the formulation of a new concept for this distinct life phase, shaped the conditions of 'emerging adults' in Turkish context.

To achieve that, focusing on a aspect of emerging adulthood, the ‘emancipation’ that come from the possibility to not to be required to follow the conventional path to adulthood, is important. In that case, the conceptualization of ‘emancipative values’, which emphasize autonomy, choice, equality, and voice, and the ‘secular values’ of Inglehart and Welzel could be helpful to track these conditions and value changes, especially as they have found to be on the rise, particularly among younger, more educated, and wealthier individuals (Pavlović, 2018). Even though the measurement model for these values has been found to be noninvariant across cultural zones and countries and the current index composition has been criticized for mixing different value dimensions (Sokolov, 2018), it could be important for the literature to talk about the connection between emerging adulthood and changes occurring in the society in emancipative and secular values.

Welzel argues that emancipative values exert limited influence on people's actions amid strong existential constraints. However, as these constraints diminish, these values become more impactful, prompting a shift towards pro-social behavior and autonomy from authority (Moreno Alvarez & Welzel, 2011). The emancipative value index comprises four sub-indices: autonomy, equality, choice, and voice, emphasizing both freedom of choice and equal opportunities. In parallel, the secular value index, with its four sub-indices – defiance, agnosticism, relativism, and skepticism – gauges the extent of detachment from external, quasi-sacred authorities like religion, nation, and group norms (Welzel 2013). As culture's central elements, these value indices offer a broad measure; their significance lies in serving as indicative factors for cross-cultural differences, especially relevant to a country's economic productivity, regulatory quality, and democratic performance (Akaliyski, 2018).

Examining studies on emancipative and secular value changes in the Turkish context reveals that Turkey lags behind its geographically proximate countries in terms of emancipative and secular values. For instance, Shirokanova's (2012) investigation into the shift of postmaterialism and individualization in the Black Sea – Baltic Region highlighted an almost non-existent and non-significant average shift when considering all countries. However, when Türkiye is excluded from the sample, the shift becomes significant. Similarly, Kubicek's (2023) use of the Emancipative Values Index (EVI) to comprehend cultural values underlying political liberalism indicates that Turkey's EVI scores consistently show little evidence of a broader cultural shift towards emancipative values, despite 'economic growth, social transformation, and democratization' discussions that has been in public discourse since 1990. The majority of Turkish people fall in the middle or profess low emancipative values, with only a small minority expressing high emancipative values. Again, supportive of Shirokanova's (2012) findings, Türkiye's scores are notably lower than those of West European states and other countries in the region, suggesting that Turkish society diverges from broader global trends and does not strongly align with liberal values.

While there is no investigation of emancipative values and secular values in case of emerging adulthood, Pavlović's (2022) study on age-related influences on value preferences, specifically emancipative values, show that younger individuals consistently show stronger support for these values, aligning with their 'psycho-social development stages'. However, findings also show that age-related differences are better explained by period and lifecycle effects than generational effects; for example, a shift Serbia's emancipative values in 2006

attributed to democratic changes and a decline in 2017 due to transitional turmoil. Education also emerges as a crucial factor influencing emancipative values. However, to understand these age-related differences in Turkish context, we need to take a closer look at the changes in these values.

### **III. Methodology**

#### **A. Research Design**

This research aims to investigate changes in secular and emancipative values among emerging adults (aged 18-29) in Türkiye from 1990 to 2018 using World Values Survey data. Two primary objectives are outlined: (1) analyzing assumptions about emerging adulthood in Türkiye and assessing their validity, and (2) exploring conditions contributing to low emancipative and secular values within the context of Turkish democratization, modernization, and secularization processes.

Four hypotheses are proposed: (H1 and H2) predict a significant increase in secular and emancipative values, aligning with the human development perspective. H3 suggests a more pronounced change in values among the 18-29 age group compared to the rest of the population. H4 introduces socio-demographic variables as potential contributors to explaining observed changes in values, aiming for a comprehensive understanding beyond the conceptualization of these values.

The research will utilize statistical analyses on WVS data to test hypotheses and explore patterns over time. By incorporating socio-demographic variables, the study seeks to provide insights into the dynamics of secular and emancipative values among emerging adults in Türkiye and the potential role of socio-demographic characteristics in explaining observed changes.

## **B. Data Collection and Preparation for Data Analysis**

- 1. Dataset Selection:** The primary data source for this study is the World Values Survey, which has been conducted in Türkiye at regular intervals (W2: 1990, W3: 1996, W4: 2001/02, W5: 2007, W6: 2011, 27: 2018). Data from WVS Wave 2 (1990) to Wave 7 (2018) will be utilized to capture a comprehensive view of the changes in secular and emancipative values over time.
- 2. Variable Selection:** Dependent variables are emancipative values (coded as Y020) and secular values (coded as Y010). Independent variables are socio-demographic factors such as age (X003), sex (X001), marital status (X007), education level (X025 and X025R), income level (X047\_WVS), social class (X045), and employment status (X028).
- 3. Sample Selection:** The study focuses on the emerging adult population aged 18-29 in Türkiye.

Following the essential steps in data collection, we proceed to analyze the data through a data cleaning process. To enhance readability, I will continue this section using a first-person narrative.

**4. Data Cleaning:** Given the extensive dataset encompassing all 7 waves of data for 120 countries surveyed since 1990, a crucial task was extracting the essential variables for my research. In addition to the dependent and independent variables, the key variables for this step include 'COUNTRY\_ALPHA' and 'S002VS,' facilitating the selection of only Turkish data and distinguishing rows corresponding to different survey waves.

The subsequent phase involved data preparation, addressing missing values, outliers, and inconsistencies. To handle missing values, I referred to the WVS codebook and removed rows with survey-specific coding (-4 and -5) indicating missing or inapplicable data. Additionally, certain rows presented NaN errors due to literal missing values, which I resolved by using Python's 'drop rows with missing values' function designed for this purpose.

## **IV. Data Analysis and Findings**

### **1. Descriptive Analysis:**

Initially, we examined the validity of H1 and H2, determining the presence of a noteworthy distinction between waves concerning emancipative and secular values among emerging adults. To assess this, t-tests were conducted.

For the general population, a substantial shift in emancipative values occurred from wave 2 to wave 3 ( $p = 0.0158$ ) and from wave 5 to wave 6 ( $p = 0.0007$ ). Given the positive t-test statistics in both cases, we can assert that these values increased sequentially across these waves. Similarly, for secular values, the positive t-test statistic indicates a statistically significant increase from wave 4 to wave 5 ( $p = 0.0007$ ). Yet, when specifically examining the subset of emerging adults (aged 18-29), a statistically significant shift was identified exclusively in emancipative values during one instance — from wave 4 to wave 5, signifying a notable increase in these values ( $p = 0.0008$ ). This suggests that H1 and H2 can be falsified, as despite instances of increases, these increments were not consistently maintained across consecutive waves, particularly not extending until 2018.

Furthermore, it becomes apparent that H3, contending that the shift in secular and emancipative values is more noticeable among the 18-29 age group compared to the rest of the population, is also unsupported. Not only was there a less pronounced trend in the 18-29 age group for these value changes, evidenced by three distinct instances of increase for both dependent variables in the general public compared to just one for emerging adults, but the changes in the 18-29 age group precisely mirrored the direction observed in the general public. For instance, the general public exhibited a decrease in secular values, albeit not statistically

significant, between wave 2 to 3 and wave 5 to 6, and this identical pattern was observed in the 18-29 age group.

## **2. Regression Analysis**

As we took age into account as a determining factor allows for questioning the other explanatory factors for how the emancipative and secular value variables are shaped, which carried us to our last hypothesis H4, which argued that socio-demographic variables (age, sex, marital status, education level, income level, social class, and employment status) significantly contribute to explaining the observed changes in values, we were aiming for findings explanatory variables that did not take part in creating the conceptualization of emancipative and secular values in first place. If we took autonomy, equality, choice, and voice related variables in the dataset for emancipative or defiance, agnosticism, relativism, and skepticism related variables for secular values, due to how questions are shaped in the first place, we were going to find a connection regardless how we formulated our hypotheses. In addition to including age variable to the independent variable also enriching the emerging adulthood literature with its findings, I wanted to include sex, marital status, education level, income level, social class, and employment status as our independent variables to see how these values change for emerging adults in the context of their direct socio-economic conditions.

Since we already saw that there were no statistically significant change occurring between waves for both general public and emerging adults, I conducted only two OLS regressions to see if these changes can be explained by the independent variables.

## Output 1: Regression Analysis for Secular Values - Whole Population

OLS Regression Results									
Dep. Variable:	Y010	R-squared:	0.072						
Model:	OLS	Adj. R-squared:	0.071						
Method:	Least Squares	F-statistic:	94.41						
Date:	Sat, 20 Jan 2024	Prob (F-statistic):	2.13e-170						
Time:	23:08:50	Log-Likelihood:	4506.3						
No. Observations:	10955	AIC:	-8993.						
Df Residuals:	10945	BIC:	-8920.						
Df Model:	9								
Covariance Type:	nonrobust								
	coef	std err	t	P> t	[0.025	0.975]			
const	0.1949	0.010	19.569	0.000	0.175	0.214			
S002VS	-0.0055	0.001	-3.692	0.000	-0.008	-0.003			
X001	0.0230	0.003	7.015	0.000	0.017	0.029			
X003	-0.0009	0.000	-7.218	0.000	-0.001	-0.001			
X007	0.0086	0.001	11.148	0.000	0.007	0.010			
X025	0.0003	0.001	0.550	0.582	-0.001	0.001			
X025R	0.0174	0.002	7.937	0.000	0.013	0.022			
X028	-0.0039	0.001	-4.800	0.000	-0.005	-0.002			
X045	0.0049	0.001	6.148	0.000	0.003	0.007			
X047_WVS	0.0096	0.001	12.840	0.000	0.008	0.011			
Omnibus:	1161.640	Durbin-Watson:			1.523				
Prob(Omnibus):	0.000	Jarque-Bera (JB):			1575.447				
Skew:	0.871	Prob(JB):			0.00				
Kurtosis:	3.648	Cond. No.			267.				

Output 1 indicates that every variable, except the unrecoded education level variable (X025), demonstrates explanatory potential for secular values, as evidenced by their p-values surpassing 0.05. Notably, income level (X047\_WVS) and marital status (X007) exhibit high t-test statistics, suggesting a substantial percentage of explanation for changes in secular values. On the other hand, age (X003) and employment status (X028) display a negative relationship with secular values, signifying that as age and employment status increase, there is a statistically significant decrease in secular values. However, it is crucial to interpret the employment status situation in reverse, as the coding of the variable complicates the situation by representing 1 as full-time and 7 as unemployed; thus, we can say that as one's involvement in employment decreases, a corresponding decline in secular values is observed. Despite the model explaining only 7 percent of the changes in secular values, both the R-square and the F-statistic with the probability of the F-statistic highlight the statistical significance of this modest explanatory power.

## Output 2: Regression Analysis for Emancipative Values - Whole Population

OLS Regression Results									
Dep. Variable:	Y020	R-squared:	0.106						
Model:	OLS	Adj. R-squared:	0.105						
Method:	Least Squares	F-statistic:	143.9						
Date:	Sat, 20 Jan 2024	Prob (F-statistic):	7.90e-258						
Time:	23:08:50	Log-Likelihood:	5253.7						
No. Observations:	10955	AIC:	-1.049e+04						
Df Residuals:	10945	BIC:	-1.041e+04						
Df Model:	9								
Covariance Type:	nonrobust								
	coef	std err	t	P> t	[0.025	0.975]			
const	0.3356	0.009	36.082	0.000	0.317	0.354			
S002VS	-0.0101	0.001	-7.327	0.000	-0.013	-0.007			
X001	0.0241	0.003	7.862	0.000	0.018	0.030			
X003	-0.0009	0.000	-7.412	0.000	-0.001	-0.001			
X007	0.0088	0.001	12.108	0.000	0.007	0.010			
X025	0.0019	0.001	3.459	0.001	0.001	0.003			
X025R	0.0192	0.002	9.385	0.000	0.015	0.023			
X028	-0.0049	0.001	-6.460	0.000	-0.006	-0.003			
X045	-0.0018	0.001	-2.343	0.019	-0.003	-0.000			
X047_WVS	0.0100	0.001	14.445	0.000	0.009	0.011			
Omnibus:	347.823	Durbin-Watson:	1.696						
Prob(Omnibus):	0.000	Jarque-Bera (JB):	381.207						
Skew:	0.456	Prob(JB):	1.67e-83						
Kurtosis:	3.069	Cond. No.	267.						

Output 2 shows that, again, with high t-test statistics, income level (X047\_WVS) and marital status (X007) also have higher percentage of explaining the changes occurring in emancipative values. However, this time we see that all of our independent variables has explanatory potential for understanding changes in emancipative values. Again, age (X003) and employment status (X028) seems to have negative relationship with emancipative values, again showing a reverse relationship and now social class variable show a similar pattern (X028). However, similar to employment issue, since the social class variable is coded with 1 representing upper class and 5 representing lower class, we interpret this as a positive relationship: as the social class position increases, there is an observed rise in emancipative values. Moreover, f-statistic is 143.9, and the associated p-value is given by "Prob (F-statistic)," which is very close to zero (7.90e-258), which makes the 10.6 percent explanatory power of this model statistically significant.

However, as the low Omnibus and Jarque-Bera p-values suggest that the models might not fit the data well and that the residuals are not normally distributed, the Durbin-Watson values suggesting the possibility of positive autocorrelation and the positive Kurtosis values indicate heavier tails in the distribution of residuals, we can say that the on top of low explanatory power of, there are significant limitations of the regression models, which requires further adjustments and investigations.

### Output 3: Regression Analysis for Secular Values - Emerging Adults

OLS Regression Results									
Dep. Variable:	Y010	R-squared:	0.043						
Model:	OLS	Adj. R-squared:	0.041						
Method:	Least Squares	F-statistic:	19.26						
Date:	Sat, 20 Jan 2024	Prob (F-statistic):	7.01e-32						
Time:	20:33:19	Log-Likelihood:	1386.6						
No. Observations:	3854	AIC:	-2753.						
Df Residuals:	3844	BIC:	-2691.						
Df Model:	9								
Covariance Type:	nonrobust								
	coef	std err	t	P> t	[0.025	0.975]			
const	0.0963	0.029	3.309	0.001	0.039	0.153			
S002VS	-0.0094	0.003	-3.437	0.001	-0.015	-0.004			
X001	0.0266	0.006	4.617	0.000	0.015	0.038			
X003	0.0038	0.001	4.019	0.000	0.002	0.006			
X007	0.0133	0.001	9.875	0.000	0.011	0.016			
X025	0.0014	0.001	1.386	0.166	-0.001	0.003			
X025R	-0.0020	0.003	-0.590	0.555	-0.009	0.005			
X028	-0.0008	0.001	-0.674	0.501	-0.003	0.002			
X045	0.0045	0.001	3.143	0.002	0.002	0.007			
X047_WVS	0.0084	0.001	6.482	0.000	0.006	0.011			
Omnibus:	375.942	Durbin-Watson:	1.513						
Prob(Omnibus):	0.000	Jarque-Bera (JB):	493.469						
Skew:	0.832	Prob(JB):	6.99e-108						
Kurtosis:	3.552	Cond. No.	274.						

Output 3 shows that the explanatory power of these variables decrease further with subset of emerging adults' data to 4 percent, even though it stay to be statistically significant. Moreover,

education level and employment status no longer explain the changes in secular values when it comes to emerging adults. However, marital status and income level continues to be an important factor for understanding the changes in secular values.

#### Output 4: Regression Analysis for Emancipative Values - Emerging Adults

OLS Regression Results						
Dep. Variable:	Y020	R-squared:	0.088			
Model:	OLS	Adj. R-squared:	0.085			
Method:	Least Squares	F-statistic:	41.02			
Date:	Sat, 20 Jan 2024	Prob (F-statistic):	1.56e-70			
Time:	20:33:19	Log-Likelihood:	1693.7			
No. Observations:	3854	AIC:	-3367.			
Df Residuals:	3844	BIC:	-3305.			
Df Model:	9					
Covariance Type:	nonrobust					
	coef	std err	t	P> t	[0.025	0.975]
const	0.2889	0.027	10.751	0.000	0.236	0.342
S002VS	-0.0205	0.003	-8.094	0.000	-0.025	-0.016
X001	0.0425	0.005	7.985	0.000	0.032	0.053
X003	0.0014	0.001	1.625	0.104	-0.000	0.003
X007	0.0137	0.001	10.978	0.000	0.011	0.016
X025	0.0010	0.001	1.080	0.280	-0.001	0.003
X025R	0.0010	0.003	0.329	0.742	-0.005	0.007
X028	-0.0021	0.001	-1.785	0.074	-0.004	0.000
X045	0.0006	0.001	0.446	0.656	-0.002	0.003
X047_WVS	0.0112	0.001	9.402	0.000	0.009	0.014
Omnibus:	113.455	Durbin-Watson:	1.675			
Prob(Omnibus):	0.000	Jarque-Bera (JB):	123.045			
Skew:	0.436	Prob(JB):	1.91e-27			
Kurtosis:	3.070	Cond. No.	274.			

Output 4 shows that we also observe the similar trend of decrease of explanatory power of the variables in emerging adult period; however, again, it has 8.8 percent explanatory power which stay to be statistically significant. However, we see that only sex, marital status, income level has statistically significant prediction power for emancipative values. What is noteworthy in this context is that age ceases to function as an explanatory variable for emancipative values when constrained to the emerging adulthood period. While this may be attributed to the inability to reject the null hypothesis in this instance, it highlights the importance of conducting further

exploration and developing a contextual understanding to comprehensively interpret these findings.

### **3. An Attempt at Formulation of a Machine Learning Model for the 8th Wave**

As the regression analysis did not yield satisfactory results, despite the nullification of all my hypotheses, I remained hopeful for more meaningful outcomes. To enhance the predictive power, I decided to explore machine learning models. This time, I incorporated attitude variables, such as those reflecting stereotypes or biases against various groups like neighbors with a criminal record, of a different race, heavy drinkers, emotionally unstable people, Muslims, immigrants/foreign workers, people with AIDS, drug addicts, and homosexuals. Additionally, I included variables related to qualities deemed important for children, including independence, hard work, a sense of responsibility, imagination, tolerance and respect for others, thrift and saving money, determination and perseverance, religious faith, unselfishness, and obedience.

Throughout this exploration, only the Gradient Boosting method exhibited somewhat acceptable predictive power, achieving a 56 percent accuracy despite only having continuous variables at hand. Since I am still in the learning phase of fine-tuning the model, I won't be sharing detailed findings at this time. However, the code will be made available on the Github link for further examination and transparency.

## **V. Conclusion**

Supporting our conclusions, Saveliev (2014) already demonstrated that alterations in these variables do not solely result from demographic turnover but are also influenced by intracohort components and contextual factors; in our context, one could argue that marital status, employment, and high income bear significant implications for shifts in values within Türkiye. Within the framework of emerging adulthood, these results suggest alignment with Çok and Atak's (2015) perspective. They, too, identified these specific factors as focal points for discussions, prompting a reevaluation of assumptions about emerging adulthood based on country-level contextual factors.

Moreover, Welzel (2021) recently proposed a perspective asserting that we are undergoing generational shifts in value orientations. He challenged the notion that democracy's cultural foundation is undergoing deconsolidation, contending that mass support for democracy has increased in more countries than it has declined, particularly among younger generations. While I do not believe that I was able to show this significant generational shift with the proper evidence, I contend that the findings we had with showing how a decrease in age correlates with higher emancipative and secular values, I believe we indicated something that correlates to his argumentation. For example, the absence of statistically significant predictive power for emancipative values in the 18-29 age group may be interpreted as an indication that this demographic already demonstrates comparable levels of emancipative values, remaining in line with the within-group average. This is further supported by the persistent predictive power of secular values for the same age group, indicating that secular values remain a determining (and therefore changing) factor among emerging adults due to varying backgrounds.

Nevertheless, I consider the most noteworthy discovery to be the confirmation of Çok and Atak's (2015) assertion that different social settings yield different outcomes for how young adults transition into adulthood. This is evident in the predictive power of marital status, employment, and high income in the Turkish context, particularly regarding the possibility of a persistence of secular and emancipative values in the age of 'democratic backsliding.'

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