

Changes in perceived job satisfaction during the transition from adolescence to young adulthood

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Abstract

Aim: This study aims to identify and compare the determinants of perceived overall job satisfaction among post-adolescents (aged 18-24) and young adults (aged 25-29) in Poland.

Methodology: In considering the differences in the early adulthood life phases corresponding with financial independence, education level, and professional experience, the author concentrated on

post-adolescence as the phase of life before young adulthood. Using data from a survey of 800 respondents, divided equally between the two age groups in Poland, ordered logit models were estimated and a scenario analysis derived.

Results: The results revealed that perceived job satisfaction was higher in the group of young adults. Economic factors, particularly salary and consumption satisfaction, had a significantly greater impact on post-adolescents. The scenario analysis indicated that improvements in these factors could yield substantial gains in perceived job satisfaction, especially for the younger group.

Implications and recommendations: The functioning of the labour market, especially of youth and young adults, is associated with challenges for employers at microeconomic level and with employment policy at macroeconomic level. For these reasons it was justified to create a system for monitoring the broadly understood satisfaction with various aspects of life and professional activity that consider life-cycle stages and generational differences. Monitoring satisfaction will allow employers to respond to changing moods, especially regarding young employees.

Originality/value: This study updates and contextualises the literature on job satisfaction by incorporating a life-cycle perspective and comparing two adjacent generational cohorts (early Gen Z and late Gen Y). Answers to the research questions regarding: the relationship between age and job satisfaction, the difference between the factors shaping job satisfaction in both groups, and the strategies that could help increase job satisfaction among young people fill the gap between the well-established recognition of job satisfaction factors made in the 1990s, and the current trends.

Keywords: job satisfaction, young adults, ordered logit model, scenario analysis

1. Introduction

Job satisfaction is an attitude that reflects an evaluation judgment of the job (Spector, 2022; Weiss, 2002), and is usually directed to how people like or dislike their jobs and is related to emotions and feelings about that work, therefore how they place their jobs along with a scale evaluation. In the literature there are two concepts of approaching job satisfaction, i.e. the analysis of a broad picture of the overall job satisfaction and subtypes in different dimensions. The consequence of the first approach is that job satisfaction includes a single-item measure characterising an effective mean. A job is evaluated using that global measurement approach (Ock, 2020; Wanous, 1997). In turn, job satisfaction in multiple items applies to the various aspects of a job, e.g. promotion, pay, working hours, co-workers, and job security are included (Block et al., 2015; Marquina, & Rebello, 2013; Gambacorta, & Iannario, 2013), also the workplace and the employer (Furaker et al., 2012) or organizational context (Spector, 2022).

The study aimed to identify and compare the determinants of perceived overall job satisfaction among post-adolescents and young adults and formulate recommendations for employers and labour policymakers. Referring the careers to the age-related stages associated with psychological tasks that must be addressed in one's development, the author added a life-cycle approach to the job satisfaction discussion. The division of the age groups in this study corresponds to the generations (birth cohorts) as the totality of people born in the same period of about 20 years (Strauss, & Howe, 1991). Those aged 25-29 (born between 1991 and 1995) are included in the late Generation Y, and those aged 18-24 (born between 1996 and 2002) the early Generation Z, respectively (Dimock, 2019). It is essential to study job satisfaction determinants from the perspective of differences between age groups because of the various values shared by them, namely stressing that Generation Y is focused on competition and self-development at work, while Generation Z is not committed to work (Bencsik et al., 2016; Osińska, & Wasilewska, 2020). Moreover, based on the differences in the early adulthood life phases corresponding with financial independence, education level, and professional experience, the study analysed post-adolescence as the phase of life before adulthood that stretches from 18 to

24 years of age (Sawyer et al., 2018) and young adulthood as 25-29. From a psychological viewpoint, individuals change their goals in these periods and increase investments in their goal pursuit (Zacher, & Froidevaux, 2021), moving from general dependence and living with parents to independence and their own long-term relationships (Halfon et al., 2017).

Sociologists devote much attention to youth characteristics that help understand the motives of their actions and decision-making. According to recent studies, the young in Poland are motivated by salary level and other economic factors, but do not focus on self-esteem, competence, or a sense of control. Their fundamental goal is to minimise the risk of economic insecurity through hard work (Marody et al., 2019).

Based on the literature, the author assumed that perceived job satisfaction changes over time during employment. Typically, the relationship between age and job satisfaction is U-shaped (Clark et al., 1996), meaning that after the initial moderate level observed in the early years of a career, it declines and then – typically over 30 years old – increases steadily up to retirement. As the life standards, expectations, and abilities of young people change, this requires continued studies to monitor the actual situation as closely as possible.

Three research questions were included in the study. The first relates to the dependency between age and job satisfaction, and asks whether post-adolescents are more satisfied than young adults. The second addresses the difference between factors shaping job satisfaction in both groups, where behavioural ones are also emphasised along with economic and socio-demographic features. The last question relates to the strategies that could help increase youth job satisfaction. Therefore, the study fills the gap between the well-established recognition of job satisfaction factors recognised in the 1990s and current tendencies.

The study assumes that subjective job satisfaction differs between the two analysed groups in univariate dimensions regarding answers collected on the Likert scale and multivariate – referred to as the factors determining the analysed variable. The former approach comes directly from the questionnaire distributed in December 2020 among 400 young adults aged 18-24 and 400 aged 25-29 in Poland, with the latter based on the ordered logit model. The following factors were included in the study: behavioural, economic, educational, and socio-demographic. Furthermore, based on the estimated model, the author constructed two scenarios (positive and negative) that enabled the identification of the crucial factors that allow for increasing job satisfaction. By comparing positive and negative strategies, their symmetry was also tested, and the results allowed for the formulation of practical implications.

The remainder of the paper is organized as follows. Section 2 briefly reviewed the relevant literature. In Section 3, the model and scenario analysis were presented, Section 4 shows data characteristics, while Section 5 describes the model estimation results and identifies strategies for increasing job satisfaction. Section 6 includes discussion and conclusion.

2. Theoretical framework

The determinants of job satisfaction are described in the context of the broad picture of job satisfaction and the defined subtypes. Characteristics like age, education, race, health, marital status, work values, income, hours of work, occupation, incentive payments, variation of working hours, skill utilisation, promotion opportunities, autonomy, and mental strenuousness, among others, are widely discussed in the literature (Spector, 2022; Jasinski, & Derbis, 2019; Furaker et al., 2012; Warr, 2008; Crossman, & Abou-Zaki, 2003; Clark, & Oswald, 1996). These factors may be assigned to individual characteristics (such as age, gender, education level, marital status), job characteristics (income, variation of working hours, skill utilisation), and work environment (autonomy, incentive payments, mental strenuousness) (Jedrzejczak-Gas, & Wyrwa, 2020; Izvercian et al., 2016; Grund, & Sliwka, 2001).

Job satisfaction presented by particular workers reflects the subjective assessment of satisfaction (Furaker et al., 2012; Clark, & Oswald, 1996; Clark, 1996). In other words, the same job may be satisfactory for one person, whereas it can be viewed as not satisfying by another (Haywood, 2016). Nevertheless, the individual evaluation of the job as a subjective variable implies, among others, the decision to participate in the labour force, the well-being of employees, productivity, or organizational commitment (Guest, 2017; Gambacorta, & Iannario, 2013; Grund, & Sliwka, 2001).

The perception of job satisfaction changes over time (Dobrow Riza et al., 2016; Chen et al., 2011). Prospect theory and the sense-making theory are used to investigate individual perspectives and help understand how employees experience changes in job satisfaction (Zacher, & Rudolph, 2017; Chen et al., 2011). Individuals consider decisions based on their frame of reference and subjective value function. The frame of reference captures the internal standards used to evaluate jobs, and the subjective value function reflects positive or negative discrepancies with the reference point. The evaluation result depends on the individual reference point, which reflects the appropriate standard (Diener et al., 1985). Greater emphasis on losses rather than gains placed by individuals demonstrates that the same level of discrepancy reflects that the loss relative to a reference point is valued more than the gain close to the reference point (Zacher, & Rudolph, 2017; Chen et al., 2011; Tversky, & Kahneman, 1991). Additionally, according to the sense-making theory, employees must make sense of mismatched events at work. Employees should understand such mismatches and develop expectations that allow for comparisons of current work conditions to previous ones. The literature highlights that satisfaction results from past experiences connected to the job (Zacher, & Rudolph, 2017; Tan, & Waheed, 2011), however references may not be directed only to the past – they may also apply to individual aspirations or other people (Clark et al., 2008).

Job satisfaction literature analyses different groups of people, for example PhD holders, academic professionals, women, and young adults (Escardíbul, & Afcha, 2017; Bentley et al., 2013; Bender et al., 2005; Stein et al., 1993) or different sectors, such as social services, banking, and public healthcare (George, & Zakkariya, 2018; Goula et al., 2022). However, the lifespan perspective justifies the analysis of different age groups of people in work, e.g. job satisfaction (Zacher, & Froidevaux, 2021; Baltes et al., 1980; Baltes et al., 2006). Perceiving a continuous and flexible development process confirms the necessity of analysis of contextual changes across the lifespan. Young adults belong to that particular group that entered the labour market and developed career interests and personal agenda (Zacher, & Froidevaux, 2021; Harpaz et al., 2002). Additionally, according to the idea of adaptation, characteristics of childhood and parental forecast future results (Powdthave, & Stutzer, 2014). Kollmann et al. (2020) highlighted that the “aging perspective can help resolve inconsistencies and mixed findings that have persisted within the job satisfaction literature.” In that study, contrary to the typically identified positive relation between pay and job satisfaction, the authors pointed out the marginal role of wages in facilitating satisfaction from a job (Kollmann et al., 2020; Clark, 1998), and identified a positive relation between age and overall job satisfaction (Dobrow Riza et al., 2016; Ng, & Feldman, 2010).

An example of a scant analysis of job satisfaction among young workers is the paper by McKay, Newell and Rienzo (2018). Using the ordered probit model, the authors analysed young workers aged 15-29 in Eastern and South Africa (McKay et al., 2018). The results indicated that self-employed and unpaid family workers were more satisfied than employees, moreover a low level of job satisfaction was identified among those who considered themselves under or particularly over-qualified (McKay et al., 2018). Ueno and Krause used ordinal logistic regression models to predict the work satisfaction of overeducated young adults aged between 24 and 34. Researchers found that they gained lower satisfaction than adequately educated workers because they felt more doubts about their progress toward career goals (Ueno, & Krause, 2018). Identifying the organizational factors that influence employees' job satisfaction from generations X and Y supported the research goal presented by Matveichuk, Voronov and Samul (2019). According to their findings, remuneration, the chance to acquire knowledge, stable employment, work-life balance, and a comfortable working place belong to the critical determinants of increasing job satisfaction of

Generation Y. Moreover, the research showed that the older generation of workers (Generation X), more than Generation Y, appreciate relations with co-workers.

Recent trends related to job satisfaction issues are also worth mentioning. For instance, Webster, Dunne and Hunter (2021) suggested the relations between subjective well-being and young people's social networks based on the systematic literature review. In turn, in the context of the profession area, Chen et al. (2020) investigated the degree to which contextual influences can predict youth development through career adaptability, and emphasised the association of career adaptability with job satisfaction (Chen et al., 2020). On the other hand, Caroleo et al. (2022) tried to understand how the individuals' socio-cultural background affects the Not in Education, Employment or Training (NEET) status in selected countries. According to their findings, education, occupational status, family background, and area of residence influence the propensity to being NEET (Caroleo et al., 2022).

3. Method

In this study the young respondents were asked to what extent they were satisfied with their job. The data were collected based on the authors' questionnaire in December 2020 among young people aged 18-29 all over Poland, divided into post-adolescents (18-24 years old) and young adults (25-29 years old) to identify the differences in job satisfaction considering their life-cycle phases.

The statistical sample consisted of 800 Poles in the following age groups: 400 at 18-24 and 400 at 25-29. The group was randomly drawn for the research using a stratified random sampling scheme, covering such socio-economic and demographic factors including age, region, gender, education, income, etc. The interview was conducted by Kantar, Poland, based on the authors' questionnaire using the computer-assisted web interviewing (CAWI) method. Their consent to participate in the survey was preceded by providing reliable information on the scope, purpose, and possibility of refusing to participate in the study and the answers' anonymity, which means that the research results were used solely for collective statistical analyses and not identified with a given respondent. The questionnaire was reviewed by seven experts and validated by a preliminary examination of 100 young respondents. Additionally, the survey questionnaire was approved by the Research Ethics Committee in the Faculty of Economic Sciences and Management in the Nicolaus Copernicus University in Torun (decision no. 1/2022/FT).

The logit model was selected as a tool for quantitative analysis. The limited endogenous variable models, such as a logit model, are intended to predict the probability of fulfilling conditions for job satisfaction. In the ordered form, job satisfaction (endogenous variable) is defined as follows:

$$y_i = \begin{cases} 1 & \text{if variant 1 was selected,} \\ \vdots & \vdots \\ J & \text{if variant } J \text{ was selected,} \end{cases} \quad (1)$$

where $i = 1, 2, \dots, n$ denotes sequent observations corresponding to the questionnaire respondents, where n is the sample size. Variants $j = 1, 2, \dots, J$ correspond to the variants of the answer, which in the study ranged between 1 and 5 ($J = 5$).

As the endogenous variable has only a few variants and exogenous variables can be either metric or non-metric, it was necessary to transform the model to obtain consistent estimates. The dependent variable and its transformation were then defined as follows. Firstly, assume that ordered variable y_i (observed) represents a particular case of a continuous (or latent) variable

$$y_i^* = \beta_0 + \sum_{k=1}^K \beta_k x_{ki} + e_i, \quad (2)$$

where y_i^* is a transformed endogenous (latent) variable, x_{ki} is a k^{th} observed exogenous variable, β_0 is a constant, β_k is a model parameter, e_i is an error term, and $i = 1, 2, \dots, n$ denotes sequent observations. It was assumed that the following groups of factors were included in the model:

behavioural, economic, educational, and socio-demographic. The explanatory variables X_{ki} are presented in the Appendix.

Variable y was observed and classified according to several J values (variants) corresponding to natural numbers. Mapping y^* on y is monotonic. Firstly, the author defined $J + 1$ cut points, namely $\alpha_j, j = 0, 1, 2, \dots, J$, which divided the entire domain of y^* into several intervals such that $y = j$ if y^* belonged to the interval limited by α_{j-1} and α_j . It was assumed that $\alpha_0 = -\infty$ and $\alpha_J = +\infty$. The mapping was then defined as follows:

$$\begin{aligned} y_i = 1 & \leftrightarrow -\infty < y_i^* \leq \alpha_1, \\ y_i = 2 & \leftrightarrow \alpha_1 < y_i^* \leq \alpha_2, \\ \text{and so on } \dots & \dots \end{aligned} \quad (3)$$

By replacing (3) with the RHS of model (2) without a constant term and its rearranging, the ordered logit model was obtained, which corresponds to:

$$p_{ij} = P(y_i = j) = \frac{\exp(\alpha_j - \sum_{k=1}^K \beta_k x_{ki})}{1 + \exp(\alpha_j - \sum_{k=1}^K \beta_k x_{ki})} - \frac{\exp(\alpha_{j-1} - \sum_{k=1}^K \beta_k x_{ki})}{1 + \exp(\alpha_{j-1} - \sum_{k=1}^K \beta_k x_{ki})}. \quad (4)$$

An estimation of β_k and α_j was effectively ensured using the maximum likelihood method. It can be shown that the odds ratio $\exp(\beta_k)$ in model (4) was constant, which means that parameters β_k were estimated at the same level across all variants of y_j (Gruszczyński, 2010).

A sequence of indicators measures the quality of the logit model, widely described in Cameron and Trivedi (2009) and Gruszczyński (2010). One of the simplest indicators is pseudo-R-squared, defined by McFadden (1974). It should be noted that this indicator is typically on a low level in logit models. Testing for individual parameter significance uses standard z statistics, and the joint significance of the model is based on the likelihood ratio (LR) chi-squared distributed test. The parameter's insignificance was assumed in the null hypothesis, so rejecting the null supports the existing relationship and further inference.

The estimated models were used for simulation. Two scenarios were assumed: (1) job satisfaction increase and (2) job satisfaction decrease. The simulation was originally projected to solve the problem described in this paper, namely to identify the most likely factors influencing job satisfaction and to measure the average scale of the increase/decrease. The simulation consists of the following five steps:

Step 1: Calculating unadjusted job satisfaction across the respondents (Norman, 2010; Bellmann, & Hubler, 2020; Maurya, 2023; Cacanindin, 2023):

$$job_{sat} = \frac{\sum_{i=1}^n y_i}{n} = \frac{n_1 + 2n_2 + 3n_3 + 4n_4 + 5n_5}{n}, \quad (5)$$

where n_j – denotes the number of answers equal to j in the sample.

Step 2: Calculating adjusted job satisfaction:

$$adj\ job_{sat} = \sum_{j=1}^5 j \cdot p_j = p_1 + 2p_2 + 3p_3 + 4p_4 + 5p_5, \quad (6)$$

where p_j – the probability of obtaining an answer at a level equal to j . Adjusted satisfaction estimates were obtained using the sample's mean values of independent variables.

Step 3: Calculating probabilities p_j , conditionally on the values of specific factors influencing job satisfaction with an estimated ordered logistic model:

$$p_j = P(y = j) = \frac{\exp(\alpha_j - \bar{x}'\beta)}{1 + \exp(\alpha_j - \bar{x}'\beta)} - \frac{\exp(\alpha_{j-1} - \bar{x}'\beta)}{1 + \exp(\alpha_{j-1} - \bar{x}'\beta)}, \quad (7)$$

where $\bar{x}' = [\bar{x}_1, \bar{x}_2, \dots, \bar{x}_k]'$ is the vector of mean values of factors influencing job satisfaction (independent variables).

Step 4: Calculating possible increase of job satisfaction:

In this step it was assumed that all lower levels of independent variables increase to higher by one level, thus the structure of answers changed, along with the mean values of corresponding variables in the model. If the mean value changes, the probabilities will change, and a new estimate of satisfaction will be obtained. In general, a new estimate of job satisfaction takes higher values than the original estimate. The difference between the new adjusted job satisfaction estimate $adj\ job_{sat,i}^+$ and adjusted job satisfaction estimate for mean values from the sample $adj\ job_{sat}$ can be interpreted as an opportunity to increase job satisfaction:

$$opportunity_i = adj\ job_{sat,i}^+ - adj\ job_{sat}, \quad (8)$$

where $i = 1, 2, \dots, k'$, k' denotes the number of changed variables.

Step 5: Calculating possible decrease of job satisfaction:

In this step it was assumed that all levels of independent variables, except the lowest one, decreased by one level. As a result, a new estimate of job satisfaction was calculated as $adj\ job_{sat,i}^-$, in general lower than the original job satisfaction estimate. The difference between job satisfaction estimate $adj\ job_{sat,i}^-$ and adjusted job satisfaction estimate $adj\ job_{sat}$ was defined as a threat decreasing job satisfaction:

$$threat_i = adj\ job_{sat,i}^- - adj\ job_{sat}. \quad (9)$$

Based on the value of opportunities and threats, it was possible to analyse the factors influencing job satisfaction from the strongest to the weakest.

4. The empirical results

The study focuses on post-adolescents aged 18-24 who have just entered the labour market. This group is very fragile in terms of job conditions as they start their first workplace experience, with expectations of matching their education and skills with the job. The first experience often impacts the other positions, etc. As the period of being so young is relatively short, the study compared them with young adults aged between 25 and 29, more experienced and established in the labour market.

4.1. Data characteristics

The survey questionnaire comprised 61 questions, of which 46 were used in this study (see Appendix). The responses were categorised into the following three groups: binary, ordinal, and metric data. The ordinal data were ordered logically on a five-point Likert scale, where '1' means 'strongly disagree,' and '5' represents 'strongly agree.' The Likert scale is typically defined as a five (or more) point scale, which allows the individual to express how much they agree or disagree with a particular statement while the central response remains neutral. It falls within the ordinal level of measurement (Likert, 1932; McLeod, 2019), however it is possible to construct sums and means based on the assumption that the variable under study is continuous in the population (Alkharusi, 2022). The estimated Cronbach's alpha was 0.64, and the McDonald's omega 0.70. The value of Cronbach's alpha between 0.6 to 0.8 was deemed acceptable (Shi et al., 2012); Nájera Catalán (2019) recommended that McDonald's omega higher than 0.65 indicates satisfactory reliability.

The data were cross-validated with the control variables such as income, number of people in the household, and type of economic activity. Due to missing responses, the final observation numbers were 373 in groups 18-24 and 379 in 25-29, respectively. The distribution of the answers to the question concerning job satisfaction is presented in Figure 1.

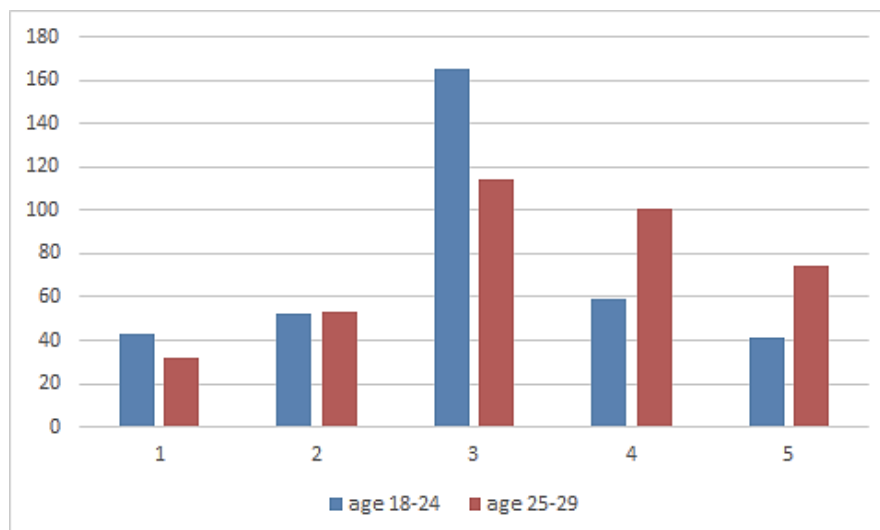


Fig. 1. Distribution of answers concerning job satisfaction

Source: own elaboration.

It is clear from Figure 1 that in the age group 25-29, the respondents marked a higher number of answers 4 and 5 compared to the younger group. The average score for respondents aged 18-24 was 3.01, while for 25-29, the same score was 3.35. A similar situation was observed when satisfaction with salary was analysed, and the difference was not as big as in the case of job satisfaction since the average score was 2.27 in the 18-24 group and 3.10 in the 25-29 one. Therefore, the investigated sample showed job and satisfaction with their salary increasing with age. A possible explanation is that the youngest adults are often part-time employees, thus their first job is not linked to their skills and aspirations, which improve when they are a few years older. The wage satisfaction was very close to the average score of 3 in both groups. Detailed results (mean, median, and standard deviation) for the entire set of variables are presented in Appendix 2.

4.2. Empirical ordered logit models

The collected statistical data were used to estimate the ordered logit models defined in (4), separately for the age groups 18-24 and 25-29, and the model for both groups. The results of the model estimations are presented in Table 1. To clarify the interpretation, the table only shows the odds ratios for statistically significant variables.

Table 1. Odds ratios for variables in models for age groups

| Type of factor | Variables | Age 18-24 | | | Age 25-29 | | | Age 18-29 | | |
|----------------|-----------|------------|---------|-----|------------|---------|-----|------------|---------|-----|
| | | odds ratio | p-value | | odds ratio | p-value | | odds ratio | p-value | |
| Behavioural | B1_3 | 0.642 | 0.056 | * | | | | | | |
| | B2_3 | 0.651 | 0.073 | * | 0.620 | 0.027 | ** | 0.684 | 0.013 | ** |
| | B2_5 | 0.407 | 0.015 | ** | | | | | | |
| Economic | E1_2 | 13.319 | 0.000 | *** | | | | 4.544 | 0.000 | *** |
| | E1_3 | 17.528 | 0.000 | *** | 4.107 | 0.000 | *** | 9.265 | 0.000 | *** |
| | E1_4 | 43.575 | 0.000 | *** | 9.457 | 0.000 | *** | 21.005 | 0.000 | *** |
| | E1_5 | 39.736 | 0.000 | *** | 44.478 | 0.000 | *** | 48.758 | 0.000 | *** |
| | E2_2 | 4.407 | 0.001 | *** | 5.496 | 0.000 | *** | 5.303 | 0.000 | *** |
| | E2_3 | 11.388 | 0.000 | *** | 10.440 | 0.000 | *** | 10.063 | 0.000 | *** |
| | E2_4 | 39.140 | 0.000 | *** | 22.167 | 0.000 | *** | 26.176 | 0.000 | *** |
| | E2_5 | 307.894 | 0.000 | *** | 101.165 | 0.000 | *** | 152.827 | 0.000 | *** |
| | E3_1 | 24.989 | 0.008 | *** | | | | | | |
| | E3_2 | 25.660 | 0.007 | *** | | | | | | |
| | E3_3 | 34.646 | 0.003 | *** | | | | | | |

| Type of factor | Variables | Age 18-24 | | | Age 25-29 | | | Age 18-29 | | |
|-------------------|-----------|------------|---------|-----|------------|---------|-----|------------|---------|-----|
| | | odds ratio | p-value | | odds ratio | p-value | | odds ratio | p-value | |
| | E3_4 | 25.229 | 0.008 | *** | 2.341 | 0.004 | *** | | | |
| | E3_5 | 77.027 | 0.001 | *** | | | | | | |
| | E5 | | | | 1.711 | 0.025 | ** | 1.837 | 0.000 | *** |
| | E6 | | | | | | | 1.807 | 0.018 | ** |
| | E11_5 | | | | | | | 1.765 | 0.069 | * |
| Educational | D9 | 1.842 | 0.043 | ** | | | | | | |
| | D11 | 1.893 | 0.023 | ** | | | | | | |
| Socio-demographic | S2 | | | | | | | 0.674 | 0.093 | * |
| | S4 | | | | | | | 0.524 | 0.028 | ** |
| | S7 | 1.683 | 0.079 | * | 0.658 | 0.061 | * | | | |
| | S9 | | | | | | | 0.705 | 0.023 | ** |

Note: significance levels *** 1%; ** 5%; * 10%. The odds ratio values lower than 1.00 mean a negative impact of a given variable on job satisfaction.

Source: own elaboration.

The presented results revealed that in each model, behavioural factors reduce the probability of greater job satisfaction, while economic ones increase this probability. Among these factors, satisfaction with remuneration has the most substantial positive impact on job satisfaction. In each model, satisfaction with the level of consumption also remained statistically significant. The household income level stayed statistically significant in models for separate groups but not in the joint model. The source of household income significantly influenced the probability of being more satisfied in the model for the 25-29 age and the model for both groups. The form of economic activity was statistically significant in the model for both groups and reduced the chance for greater job satisfaction. Educational factors increased the probability of greater adolescent job satisfaction (18-24), and in general economic and IT education remained statistically significant. In the group of socio-demographic factors, the number of household members increased the probability of greater job satisfaction only in the model for the 18-24 group, whereas in the model for young adults (25-29) this factor reduced the likelihood of greater job satisfaction.

4.3. Scenario analyses

The estimated models were used for simulations of the level of job satisfaction. Two simulation scenarios were performed based on each model. The first was based on an optimistic assumption, and the second on the negative one. The results are presented in Tables 2-4 and Figures 2-4. The results of the calculations for 18-24, 25-29, and for both groups indicated that the increase in job satisfaction was most influenced by satisfaction with remuneration and consumption.

Table 2. Simulation results for the 18-24 group (post-adolescents)

| Job satisfaction variable | Labels | The response rate in the sample | p_i | | | | | | | | | | |
|---------------------------|--------|---------------------------------|----------|-------------------|-------|-------|-------|-------|-------------------|-------|-------|-------|-------|
| | | | average | positive scenario | | | | | negative scenario | | | | |
| | | | | B1 | B2 | E1 | E2 | E3 | B1 | B2 | E1 | E2 | E3 |
| J_1 | 1 | 0.119 | 0.039 | 0.036 | 0.043 | 0.021 | 0.012 | 0.033 | 0.034 | 0.032 | 0.085 | 0.107 | 0.087 |
| J_2 | 2 | 0.144 | 0.135 | 0.127 | 0.146 | 0.081 | 0.046 | 0.117 | 0.122 | 0.116 | 0.241 | 0.278 | 0.245 |
| J_3 | 3 | 0.458 | 0.649 | 0.648 | 0.648 | 0.613 | 0.516 | 0.646 | 0.647 | 0.645 | 0.589 | 0.547 | 0.585 |
| J_4 | 4 | 0.164 | 0.144 | 0.152 | 0.132 | 0.224 | 0.318 | 0.164 | 0.158 | 0.165 | 0.071 | 0.056 | 0.069 |
| J_5 | 5 | 0.114 | 0.034 | 0.037 | 0.031 | 0.061 | 0.108 | 0.040 | 0.038 | 0.041 | 0.015 | 0.012 | 0.015 |
| job satisfaction estimate | | unadjusted | adjusted | | | | | | | | | | |
| | | 3.01 | 3.00 | 3.03 | 2.96 | 3.22 | 3.47 | 3.06 | 3.04 | 3.07 | 2.69 | 2.59 | 2.68 |
| opportunities/threats | | - | - | 0.03 | -0.04 | 0.22 | 0.47 | 0.06 | 0.04 | 0.07 | -0.31 | -0.41 | -0.32 |

Source: own elaboration.

The unadjusted level of job satisfaction for post-adolescents was 3.00. In the optimistic scenario for satisfaction with remuneration, the level increased to 3.47. The negative scheme for the same variable was 2.59. Scenario analyses related to the satisfaction of consumption revealed that a negative assumption's impact was stronger than an optimistic one. The satisfaction estimates were as follows: for the optimistic scenario 3.22, and for the adverse scenario 2.69. Analysis of the household income level showed that the job satisfaction estimate equalled 2.68 in the pessimistic scenario, but for the optimistic scenario, 3.06.

The differences between the results for the scenarios and the total adjusted estimates of the level of job satisfaction revealed both opportunities and threats. Opportunities describe a possible increase in job satisfaction if a given factor increases. Threats, on the other hand, suggest a possible drop in job satisfaction in the event of a decrease in a given factor.

Figure 2 shows that only in the case of wage satisfaction was the impact of an optimistic scenario stronger than that of a negative strategy, which means that a unit increase in wage satisfaction increases job satisfaction to a greater extent than a unit decrease in wage satisfaction reduces job satisfaction.

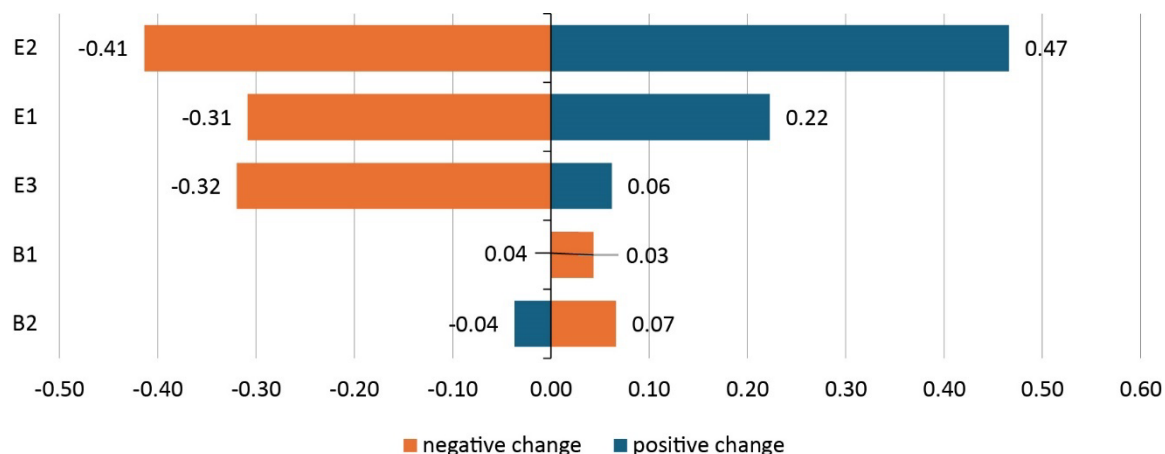


Fig. 2. Opportunities and threats for selected variables for the 18-24 group

Source: own elaboration.

The adjusted level of job satisfaction for the young adult generation was 3.42. In the case of an optimistic scenario for wage satisfaction, the level increased to 3.84. The pessimistic scenario for this variable arrived at 3.02. In the optimistic scenario, satisfaction with the level of consumption was 3.83, and for the reverse this was 2.97.

Table 3. Simulation results for the 25-29 group (young adults)

| Job satisfaction variable | Labels | The response rate in the sample | p_j | | | | | | | | |
|---------------------------------|--------|------------------------------------------|----------|-------------------|-------|-------|-------|-------------------|-------|-------|-------|
| | | | average | positive scenario | | | | negative scenario | | | |
| | | | | B2 | E1 | E2 | E3 | B2 | E1 | E2 | E3 |
| J_1 | 1 | 0.086 | 0.023 | 0.022 | 0.009 | 0.009 | 0.020 | 0.020 | 0.058 | 0.052 | 0.023 |
| J_2 | 2 | 0.142 | 0.090 | 0.087 | 0.039 | 0.038 | 0.082 | 0.083 | 0.196 | 0.179 | 0.091 |
| J_3 | 3 | 0.305 | 0.425 | 0.418 | 0.267 | 0.262 | 0.406 | 0.409 | 0.503 | 0.502 | 0.425 |
| J_4 | 4 | 0.270 | 0.374 | 0.381 | 0.487 | 0.489 | 0.393 | 0.390 | 0.208 | 0.228 | 0.373 |
| J_5 | 5 | 0.198 | 0.089 | 0.092 | 0.197 | 0.202 | 0.099 | 0.097 | 0.035 | 0.040 | 0.088 |
| job satisfaction estimate | | unadjusted | adjusted | | | | | | | | |
| | | 3.35 | 3.42 | 3.43 | 3.83 | 3.84 | 3.47 | 3.46 | 2.97 | 3.02 | 3.41 |
| opportunities/threats | | - | - | 0.02 | 0.41 | 0.42 | 0.05 | 0.05 | -0.45 | -0.39 | -0.00 |

Source: own elaboration.

Figure 3 shows that the impact on the job satisfaction of a positive scenario for satisfaction with salary and satisfaction with the level of consumption was similar. The negative plan for the satisfaction of the consumption level influenced job satisfaction more than the same scenario for satisfaction with salary.

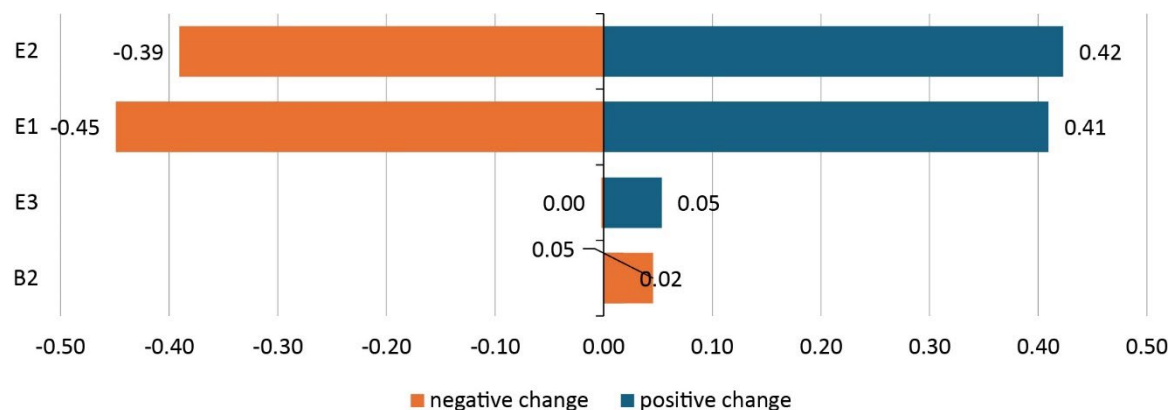


Fig. 3. Opportunities and threats for selected variables for the 25-29 group

Source: own elaboration.

The scenario analysis for the salary satisfaction and satisfaction of the consumption level for both groups confirmed the results presented for individual groups. Only in the case of salary satisfaction was the impact of an optimistic scenario stronger than the reverse scenario.

Table 4. Simulation results for both age groups (post-adolescents and young adults)

| Job satisfaction variable | Labels | The response rate in the sample | p_j | | | | | | | | |
|---------------------------|------------|---------------------------------|----------|-------------------|-------|-------|-------|-------------------|-------|-------|-------|
| | | | average | positive scenario | | | | negative scenario | | | |
| | | | | B2 | E1 | E2 | E11 | E1 | E2 | E11 | B2 |
| J_1 | 1 | 0.102 | 0.031 | 0.030 | 0.015 | 0.011 | 0.029 | 0.069 | 0.075 | 0.032 | 0.029 |
| J_2 | 2 | 0.143 | 0.110 | 0.107 | 0.056 | 0.043 | 0.104 | 0.206 | 0.219 | 0.114 | 0.104 |
| J_3 | 3 | 0.380 | 0.544 | 0.540 | 0.432 | 0.375 | 0.536 | 0.559 | 0.552 | 0.548 | 0.537 |
| J_4 | 4 | 0.218 | 0.255 | 0.260 | 0.376 | 0.414 | 0.266 | 0.139 | 0.129 | 0.248 | 0.266 |
| J_5 | 5 | 0.157 | 0.060 | 0.062 | 0.121 | 0.157 | 0.065 | 0.027 | 0.025 | 0.058 | 0.064 |
| job satisfaction estimate | unadjusted | | adjusted | | | | | | | | |
| | 3.18 | | 3.20 | 3.22 | 3.53 | 3.66 | 3.23 | 2.85 | 2.81 | 3.18 | 3.23 |
| opportunities/threats | - | | - | 0.02 | 0.33 | 0.46 | 0.03 | -0.36 | -0.39 | -0.02 | 0.03 |

Source: own elaboration.

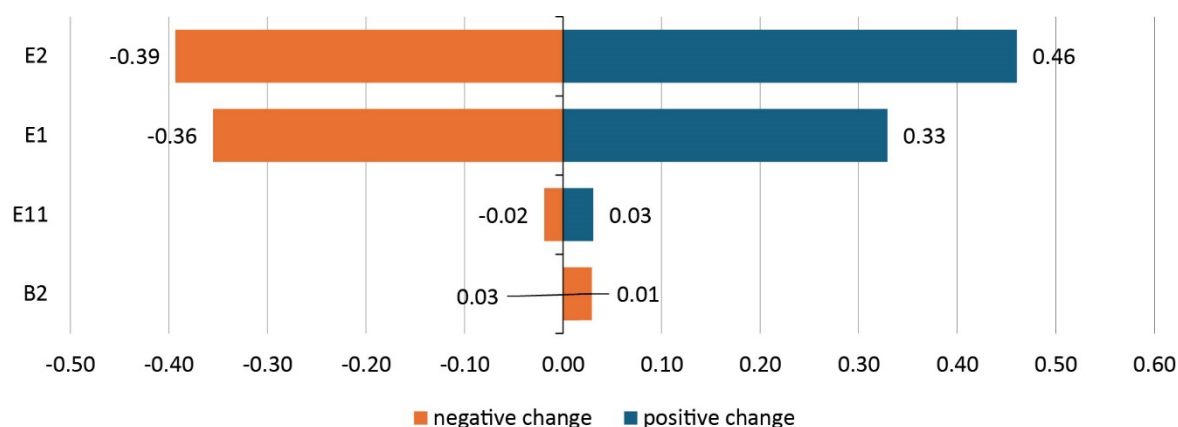


Fig. 4. Opportunities and threats for selected variables for the 18-29 group

Source: own elaboration.

Figure 4 demonstrates that only in the case of wage satisfaction was the impact of an optimistic scenario stronger than that of a negative strategy.

5. Robustness check and discussion

The models presented in Table 1 were tested for robustness using the bootstrap simulation method. The simulation procedure consisted of drawing 1000 times by replacing random samples and estimating logit models on these samples. The model specifications corresponded to the final form of the validated models (after removing insignificant variables).

As a result of the simulation, the averaged parameter estimates and p -values were obtained. A comparison of the results revealed a strong similarity between the parameter estimates of the resulting logit models and the average estimates obtained with the bootstrap method. Comparison of significance levels also shows high compatibility, yet some exceptions were revealed, however the differences were slight. The results of bootstrapped p -values demonstrated that when p -values are averaged over 1000 models, the results can slightly differ from one empirical model due to outliers, which influence the average value. Therefore, the estimated logit models can be considered consistent when referring to parameter estimates. The results of the bootstrap simulations are presented in Appendix 3.

The robustness check results allowed both simulations and a wider discussion of the results. The study results can be considered from the viewpoint of the research questions. Firstly, the study results demonstrated that perceived job satisfaction was higher in the group of young adults than among the post-adolescents. The positive relationship between age and job satisfaction is similar to Ng and Feldman (2010) and Pugliesi (1995). The results proved that job satisfaction changes with the different life phases, but the decline of job satisfaction among young adults after the initial moderate level was not confirmed, contrary to Clark, Oswald and Warr (1996). The inconsistency of the age and job satisfaction dependency, particularly in the transition from adolescence to young adulthood, requires further analysis, notably in the era of the enormous technological development seen over recent decades. Moreover, rising aspirations due to social media and urbanisation can foster opportunity and prosperity among adolescents only in one way, however when aspirations are unfulfilled, they can lead to frustration and dissatisfaction in the job and life (World Bank, 2019).

Secondly, the study revealed essential differences in the determinants of job satisfaction between post-adolescents and young adults, allowing policy recommendations to increase job satisfaction concerning life-cycle phases. The identified differences are related mostly to economic factors, namely the positive effect of satisfaction with salary on one's job satisfaction is much stronger for post-adolescents than for young adults. The author explained such results by both different reference points and expectations. Suppose the salary is considered a reference point for evaluating job satisfaction for post-adolescents, in which case the probability of satisfaction with their job is much higher than for young adults with a comparable salary level because of lower average remuneration in the younger group. Moreover, individuals can make comparison to peers' incomes or past peak incomes (Easterlin, 2021; Clark, & Oswald, 1996). If post-adolescents (aged 18-24) start their professional life with no previous salary, such a reference point strongly increases their probability of job satisfaction (getting a salary in a first job usually comes along with its increase). Furthermore, the stronger effect of salary for post-adolescents results from different aspirations and expectations than in the case of young adults. The older group enters the labour market being better qualified, corresponding to their higher expectations for the monetary returns from their jobs, hence they are more easily dissatisfied (Clark, & Oswald, 1996). Inter-country analyses also demonstrated the importance of wage satisfaction for job satisfaction in Poland and Czechia (Szulc-Obłóza et al., 2023). Even though the study analysed individual income and wealth in this model, it was not statistically significant in predicting the probability of job satisfaction.

Interestingly, educational factors were considered; education in economic sciences and computer science plays an essential role for adolescents when evaluating job satisfaction. This means that

students in these fields enter the labour market at a young age (18-24) with a higher probability of being satisfied with their jobs. For the older group of 25-29, no specific kind of education was significant for their job satisfaction. The former can be related to increasing technological progress's role in the current workplace, which was noted by the group of post-adolescents.

Behavioural factors such as concern and preference for consumption instead of savings reduced the probability of high job satisfaction for post-adolescents. For those earning their own money, a preference for saving and obtaining funds was necessary to achieve greater job satisfaction. A difference also occurred when the two groups were compared in terms of demographic factors, specifically the number of persons in the household. The household income per person strongly increased the likelihood of high job satisfaction. For post adolescents, living in a multiperson household increased the probability of being highly satisfied with the job. However, the transition to young adulthood connected with becoming financially independent, running one's household, starting a family, and living in a multiperson household decreased the probability of being highly satisfied with the job. The study did not confirm gender differences in job satisfaction in favour of women having higher job satisfaction than men because of their lower expectations of reward conditions (cf. Clark, 1996).

To answer the third research question, the author analysed how the increases and decreases in the identified determinants changed the perceived job satisfaction, thus allowing to formulate practical implications. An increase in salary satisfaction had a significant and positive impact on job satisfaction, which complied with the results of Grund and Sliwka (2001) and Clark (1999). Moreover, a more substantial effect was identified in the post-adolescent group with a lower average salary than the young adult group. A possible explanation was that the higher the previous wages, the more effort the employee has to exert to attain a higher current remuneration (as pay increases are increasingly costly to achieve) since wages are upward-sloping and concave in relation to employees' age (Grund, & Sliwka, 2001). For both groups, the change in satisfaction with salary and with the current consumption level played the most crucial role in determining changes in job satisfaction, both in positive and negative scenarios. The increase in household income only slightly increased job satisfaction in both groups, however a reduction in household income strongly decreased job satisfaction in the post-adolescent group. This means that a reduction in financial security provided by their families influenced their job satisfaction, revealing their dependence on household incomes when entering the labour market at a relatively young age.

At the same time, optimistic scenarios showed that both groups, become accustomed to a higher standard of living based on their family's economic situation, therefore the increase in household income only slightly increases their job satisfaction, which proves that people's desires and expectations grow as their income increases (Clark, & Oswald, 1996).

Behavioural factors, such as economic attitudes to spending compared to saving, significantly impacted job satisfaction changes. For both groups job satisfaction increases if they agree with the preference of saving over consumption to a greater extent, and in the adolescent group this effect is stronger. This indicates that saving behaviour is essential to increasing job satisfaction, particularly for post-adolescents. Moreover, given that happiness is attained through consumption (see Powdtharee, & Stutzer, 2014), this study demonstrated that the higher the pleasure from the current level of consumption, the higher the job satisfaction.

The effect of all economic factors was more decisive for post-adolescents, whose job satisfaction depends more on their salary and household income than for their older counterparts (aged 25-29). Apart from the reference point based on behavioural theory (Diener et al., 1985), another possible explanation is related to the expectations and preferences reflected upon and individuals' assessment of their working conditions and job satisfaction. Younger employees tend to have lower-level status and expectations because of their brief or non-existent experience (see Warr, 1999). Sirgy (2021) argued that the lower the discrepancies between the perception of job achievements and some standards, the higher the job satisfaction.

6. Practical implications

Young people entering the labour market or gaining professional experience constitute a particular category of participants in social and economic life. The approach to functioning in the labour market, specifically for post-adolescents and young adults, is associated with challenges for employers at microeconomic level, and with employment policy at macroeconomic level. For these reasons, creating a system for monitoring broadly understood satisfaction with various aspects of life and professional activity is justified. Observation of satisfaction will allow employees to react to the changing moods, especially young employees. In particular, satisfaction with consumption, wages, job, and factors related to work and functioning in the workplace and the labor market are certainly worth studying.

Some implications refer to economic security. First, systemic measures should concern the maintenance of real incomes, which is particularly important in a period of high inflation. Tax preferences – reduced or zero tax rates – may also be beneficial for young people. Second, social security preferences in the form of reduced social security contributions until workers reach a certain age can play an important role. An essential element of economic security is the stability of the tax system, which plays a vital role in entrepreneurship development. A stable tax system makes it possible to predict the effects of activity at the individual and macroeconomic levels. The above should be accompanied by the economic and financial education of post-adolescents.

Safety is essential for young people, particularly those owning accommodation. The limited earning potential of young people could be compensated for, for example, by low-interest preferential loans for the purchase of flats, or programmes increasing the supply of housing.

7. Limitations and future research

There are several limitations of the study. Firstly, the data are not longitudinal, which limits the possibility of observing the changes in job satisfaction within generations. Instead, two independent samples were observed. Secondly, psychological characteristics were not explicitly included in the study. They were not of primary interest and were beyond the scope of the study, and they could merely reflect the respondent's answers – they were captured indirectly using the Generations Y and Z characteristics.

Concerning future research, not enough is known as yet about post-adolescents' and young adults' values, attitudes, and satisfaction, hindering the ability to respond best and design effective interventions around expectations-based choices and behaviour (World Bank, 2015). From this perspective, it is interesting to analyse job satisfaction in conjunction with a great variety of factors that, among others, reflect the situation in the labour market. In this approach, the labour market institutions, involving employment protection, are related to job satisfaction. Labour market policies aimed at higher flexibility with a low risk of unemployment that affects employees' opportunities and perceived job security increase job satisfaction (Szczepaniak, & Szulc-Obłóza, 2021).

Many other research questions raised in the analysis of job satisfaction determinants could be addressed in future research. Job satisfaction is a proxy for the well-being of employees concerning their work (Clark, & Oswald, 1996). Given certain job and wages, satisfaction measures one's subjective well-being that aims to capture individual job and salary level assessment; this direction requires temporal updating of research results.

On the one hand, the literature describes job satisfaction as one of the domains of life satisfaction, which is an important determinant of overall life satisfaction (Sirgy, 2021), and on the other, job satisfaction is affected by different work-life domains (salary level, career opportunity, relations with co-workers, etc.). Therefore, the limitation of this study remains that job satisfaction is the individual's evaluation of how satisfied they are with their job. However, the most recent studies focused on a broader approach to employee satisfaction with life (Sirgy, 2021), hence an important topic for

further research is to extend the scope of the investigation to work-life satisfaction and to understand the mediating and moderating condition of employee well-being.

Economic factors (incomes from different sources and remuneration levels) play the most important role in job satisfaction (see Ehrenberg, & Smith, 2009; Jayarante, 1993), whilst other predictors of job satisfaction can be grouped into the work environment (Judge, & Church, 2000), employee characteristics, work behaviour (Jayarante, 1993; Warr, 1999), and values (intrinsic value, financial value, career value, etc.) (Kalleberg, 1977). Other job aspects include an opportunity to take action, freedom to work in one's own way, learning opportunities, etc. (McFarlin, & Race, 1991).

Although the different factors influencing job satisfaction were analysed in this study, it did not address the dispositional and psychological characteristics of the employee, which might also affect job satisfaction. Since individual judgments may be sensitive to economic factors, the feelings strongly depend on work circumstances that evolve positive and negative emotions, such as good co-worker relationships (Kahnemann, & Deaton, 2020). Appropriate scales measuring work well-being could be a solution (e.g. Hart's, by adapting Diener et al., 1985).

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Appendix 1. Definition of variables

| Variable | Question | Scale of measurement |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| J | To what extent are you satisfied with your job? (1: strongly disagree, 5: strongly agree) | Ordinal (Likert) |
| | Behavioural | |
| B1 | To what extent do you agree that you prefer to spend income on enjoyment than to save, as spending money improves your life satisfaction? (1: strongly disagree, 5: strongly agree) | Ordinal (Likert) |
| B2 | To what extent do you agree that you prefer spending income to saving? (1: strongly disagree, 5: strongly agree) | Ordinal (Likert) |
| B3 | Are you saving for the future at present (without any aim and time horizon)? (0: no; 1: yes) | Nominal |
| | Economic | |
| E1 | To what extent you are satisfied with the level of your current consumption? (1: strongly disagree, 5: strongly agree) | Ordinal (Likert) |
| E2 | To what extent are you satisfied with your wage? (1: strongly disagree, 5: strongly agree) | Ordinal (Likert) |
| E3 | What is the approximate net monthly disposable income (from all sources combined) per person in your household (in PLN) (0: less than 1000; 1: between 1000 and 2000; 2: between 2000 and 3000; 3: between 3000 and 4000; 4: more than 4000) | Ordinal |
| E4 | What is the source of your income (lack of current income)? (0: no; 1: yes) | Nominal |
| E5 | What is the source of your income (work)? (0: no; 1: yes) | Nominal |
| E6 | What is the source of your income (capital)? (0: no; 1: yes) | Nominal |
| E7 | What is the source of your income (various sources of social security)? (0: no; 1: yes) | Nominal |
| E8 | What is the source of your income (from your parents)? (0: no; 1: yes) | Nominal |
| E9 | What is the source of your income (other)? (0: no; 1: yes) | Nominal |
| E10 | How much do you estimate your wealth (assets, e.g., computer, car, flat) to be (in 1000 PLN)? (0: less than 10; 1: between 10 and 20; 2: between 20 and 50; 3: between 50 and 100; 4: more than 100; 5: more than 200) | Ordinal |
| E11 | To what extent do you agree that most current income affects your consumption and saving decisions? (1: strongly disagree, 5: strongly agree) | Ordinal (Likert) |
| | Educational | |
| D1 | What is your education level (primary)? (0: no; 1: yes) | Nominal |
| D2 | What is your education level (vocational)? (0: no; 1: yes) | Nominal |
| D3 | What is your education level (secondary)? (0: no; 1: yes) | Nominal |
| D4 | What is your education level (high)? (0: no; 1: yes) | Nominal |
| D5 | What is the highest educational level of your parents? (primary) (0: no; 1: yes) | Nominal |
| D6 | What is the highest educational level of your parents? (vocational) (0: no; 1: yes) | Nominal |
| D7 | What is the highest educational level of your parents? (secondary) (0: no; 1: yes) | Nominal |

| Variable | Question | Scale of measurement |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------|
| D8 | What is the highest educational level of your parents? (high) (0: no; 1: yes) | Nominal |
| D9 | What is your education profile (economic)? (0: no; 1: yes) | Nominal |
| D10 | What is your education profile (human)? (0: no; 1: yes) | Nominal |
| D11 | What is your education profile (informatic)? (0: no; 1: yes) | Nominal |
| D12 | What is your education profile (another)? (0: no; 1: yes) | Nominal |
| D13 | What is your education profile (medical)? (0: no; 1: yes) | Nominal |
| Socio-demographic | | |
| S1 | What is your status of professional activity (employment in public or private enterprise)? (0: no; 1: yes) | Nominal |
| S2 | What is your status of professional activity (work under a civil-law contract in public or private enterprise)? (0: no; 1: yes) | Nominal |
| S3 | What is your status of professional activity (self-employment)? (0: no; 1: yes) | Nominal |
| S4 | What is your status of professional activity (work without contract)? (0: no; 1: yes) | Nominal |
| S5 | What is your status of professional activity (education/studies)? (0: no; 1: yes) | Nominal |
| S6 | What is your status of professional activity (not in education and not in employment)? (0: no; 1: yes) | Nominal |
| S7 | Does your household consist of more than one person? (0: no; 1: yes) | Nominal |
| S8 | What is your gender? (0: male; 1: female) | Nominal |
| S9 | Age between 18 and 24 (0: no; 1: yes) | Nominal |

Source: own elaboration

Appendix 2. Descriptive statistics

| Variable | Mean | Standard deviation | Median | Variable | Mean | Standard deviation | Median |
|----------|-------|--------------------|--------|----------|-------|--------------------|--------|
| J | 3.184 | 1.167 | 3.000 | E3 | - | - | 3.000 |
| B1 | 2.695 | 1.070 | 3.000 | E4 | 0.086 | 0.280 | 0.000 |
| B2 | 2.755 | 1.236 | 3.000 | E5 | 0.632 | 0.482 | 1.000 |
| B3 | 0.830 | 0.376 | 1.000 | E6 | 0.108 | 0.310 | 0.000 |
| D1 | 0.247 | 0.431 | 0.000 | E7 | 0.183 | 0.386 | 0.000 |
| D2 | 0.124 | 0.330 | 0.000 | E8 | 0.249 | 0.433 | 0.000 |
| D3 | 0.386 | 0.487 | 0.000 | E9 | 0.011 | 0.104 | 0.000 |
| D4 | 0.244 | 0.429 | 0.000 | E10 | - | - | 2.000 |
| D5 | 0.089 | 0.284 | 0.000 | E11 | 2.455 | 1.248 | 2.000 |
| D6 | 0.297 | 0.457 | 0.000 | S1 | 0.465 | 0.499 | 0.000 |
| D7 | 0.335 | 0.472 | 0.000 | S2 | 0.109 | 0.324 | 0.000 |
| D8 | 0.279 | 0.449 | 0.000 | S3 | 0.072 | 0.259 | 0.000 |
| D9 | 0.166 | 0.372 | 0.000 | S4 | 0.068 | 0.252 | 0.000 |
| D10 | 0.150 | 0.357 | 0.000 | S5 | 0.301 | 0.459 | 0.000 |
| D11 | 0.241 | 0.428 | 0.000 | S6 | 0.093 | 0.290 | 0.000 |
| D12 | 0.180 | 0.384 | 0.000 | S7 | 0.238 | 0.426 | 0.000 |
| D13 | 0.076 | 0.265 | 0.000 | S8 | 0.489 | 0.500 | 0.000 |
| E1 | 3.134 | 1.064 | 3.000 | S9 | 0.490 | 0.500 | 0.000 |
| E2 | 3.038 | 1.172 | 3.000 | | | | |

Source: own elaboration.

Appendix 3. Models' validation results

| Variable | 18-24 | | 18-29 | | 25-29 | |
|----------|--------------|--------------|--------------|--------------|--------------|--------------|
| | original | bootstrap | original | bootstrap | original | bootstrap |
| B1_3 | -0.443 | -0.469 | | | | |
| | 0.056 | 0.156 | | | | |
| B2_3 | -0.429 | -0.453 | -0.382 | -0.393 | -0.478 | -0.495 |
| | 0.073 | 0.167 | 0.012 | 0.058 | 0.027 | 0.100 |
| B2_5 | -0.899 | -0.972 | | | | |
| | 0.015 | 0.101 | | | | |
| E1_2 | 2.589 | 2.824 | 1.455 | 1.475 | | |
| | 0.000 | 0.004 | 0.000 | 0.012 | | |
| E1_3 | 2.864 | 3.103 | 2.187 | 2.211 | 1.413 | 1.457 |
| | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 |
| E1_4 | 3.774 | 4.053 | 3.032 | 3.065 | 2.247 | 2.321 |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| E1_5 | 3.682 | 3.917 | 3.859 | 3.909 | 3.795 | 3.893 |
| | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 |
| E2_2 | 1.483 | 1.565 | 1.733 | 1.760 | 1.704 | 1.731 |
| | 0.001 | 0.040 | 0.000 | 0.000 | 0.000 | 0.005 |
| E2_3 | 2.433 | 2.566 | 2.372 | 2.410 | 2.346 | 2.399 |
| | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 |
| E2_4 | 3.667 | 3.861 | 3.308 | 3.367 | 3.099 | 3.172 |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| E2_5 | 5.730 | 6.072 | 5.032 | 5.126 | 4.617 | 4.769 |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| E3_1 | 3.218 | 4.148 | | | | |
| | 0.008 | 0.026 | | | | |
| E3_2 | 3.245 | 4.178 | | | | |
| | 0.007 | 0.024 | | | | |
| E3_3 | 3.545 | 4.501 | | | | |
| | 0.003 | 0.015 | | | | |
| E3_4 | 3.228 | 4.187 | | | 0.851 | 0.880 |
| | 0.008 | 0.028 | | | 0.004 | 0.036 |
| E3_5 | 4.344 | 5.366 | | | | |
| | 0.001 | 0.006 | | | | |
| E5 | | | 0.502 | 0.513 | 0.537 | 0.537 |
| | | | 0.002 | 0.025 | 0.025 | 0.110 |
| E6 | | | 0.438 | 0.450 | | |
| | | | 0.070 | 0.185 | | |
| E11_5 | | | 0.540 | 0.551 | | |
| | | | 0.083 | 0.198 | | |
| D5 | | | -0.423 | -0.436 | | |
| | | | 0.097 | 0.203 | | |
| D9 | 0.611 | 0.631 | | | | |
| | 0.043 | 0.132 | | | | |
| D11 | 0.638 | 0.655 | | | | |
| | 0.023 | 0.123 | | | | |
| S7 | 0.520 | 0.548 | | | -0.419 | -0.426 |
| | 0.079 | 0.200 | | | 0.061 | 0.170 |
| S9 | | | -0.395 | -0.400 | | |
| | | | 0.010 | 0.065 | | |
| cut1 | 5.463 | 6.621 | 1.387 | 1.404 | 0.543 | 0.532 |
| | 0.000 | 0.002 | 0.000 | 0.014 | 0.144 | 0.262 |
| cut2 | 7.116 | 8.354 | 3.023 | 3.068 | 2.251 | 2.297 |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| cut3 | 10.211 | 11.598 | 5.593 | 5.671 | 4.463 | 4.573 |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| cut4 | 12.024 | 13.494 | 7.552 | 7.656 | 6.641 | 6.807 |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: The sample-based model parameters are compared to the bootstrapped values. For each variable, two rows are presented: in the top one, the parameter estimates are shown, while in the bottom row, the p-values are shown; p-values below or equal to 0.1 are in bold.

Source: own elaboration.