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Investigation of the Influential Attributes on Subjective Economic Status and Life Satisfaction of Korean Middle-Aged Using the Korean Longitudinal Study of Elderly Employment (KLoEE) Data

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Abstract

This study examines the determinants of subjective economic status and life satisfaction among Korean middle-aged individuals, defined as those between 45 and 57 years old. The research explores the impact of eating out expenses, clothing expenses, employment status, and physical exercise on these factors. Data is drawn from the Korean Longitudinal Study of Elderly Employment (KLoEE) for the year 2022, with a sample size of 4392 observations. To test the research hypotheses, quadratic multiple regression analysis was employed. The findings reveal that subjective economic status is significantly influenced by both eating out and clothing expenses, exhibiting an inverted-U-shaped effect. Additionally, an inverted U-shaped relationship between clothing expenses and life satisfaction was also observed. Employment had a positive effect on subjective economic status but a negative impact on life satisfaction. Furthermore, regular physical exercise was found to influence both subjective economic status and life satisfaction positively. The study concludes that subjective economic status positively affects life satisfaction among the Korean middle-aged population. This research contributes to the literature by identifying key behavioral characteristics of this demographic in Korea and discussing relevant policy implications.

Keywords: life satisfaction; subjective economic status; eating out expense; clothing expense; employment; and physical exercise

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1. Introduction

The aging index is a figure obtained by dividing the population aged 65 and older by the population under 15, then multiplying by 100 [1]. In 2013, the index was 81.5, and by 2024, it had sharply increased to 181.2. This suggests that Korean society is entering an aging society [1]. In such a context, preparing for an aging society becomes crucial. As middle-aged and older adults approach their senior years, examining their behaviors can serve as a starting point for formulating appropriate policies. For this reason, this study aims to conduct research targeting the middle-aged population. This study leverages secondary data available from 2022, utilizing the Korean Longitudinal Study of Elderly Employment (KLoEE) dataset, which includes relevant variables starting from that year, making it an ideal data source for the present analysis.

The primary objective of this work is to investigate life satisfaction as the dependent variable. Life satisfaction is a key indicator of an individual's overall quality of life and well-being, widely adopted in the literature as a reliable measure of personal well-being [2–5]. It is considered an appropriate variable for assessing the subjective condition of individuals. In addition, the study employs subjective economic status as a central independent variable. Subjective economic status encompasses not only an individual's current financial situation but also their expectations regarding future income and financial security [6–8]. As such, it offers a comprehensive reflection of an individual's economic condition, which is pivotal to understanding their broader quality of life [7,9]. Thus, this research will explore the relationship between life satisfaction and subjective economic status. Prior works consistently demonstrated that subjective economic status is a critical determinant of life satisfaction [10,11], acting as a precondition for achieving a better living. Building on these findings, this study seeks to analyze how subjective economic status impacts life satisfaction.

The work includes eating expenses, clothing expenses, employment, and physical exercise as independent variables. Both eating and clothing expenses are inherently social, often spent to 'engage in social interactions' [12–14]. In the context of the post-COVID-19 environment in 2022, where social activities have resurged [15,16], these consumption patterns provide a useful lens for examining their effect on life satisfaction. Furthermore, the study incorporates the law of diminishing marginal utility to test the curvilinear effects of dining and clothing expenditures. According to this law, the additional utility derived from consumption decreases as the quantity of consumption increases [17,18], offering an insightful framework to analyze the patterns of expenditure related to dining and clothing.

Next, the study includes employment as an independent variable. While employment typically provides financial stability [19,20], it also imposes psychological and physical burdens [21,22], potentially affecting both subjective economic status and life satisfaction. Therefore, this research aims to investigate the dual impact of employment on individual life conditions, considering both its economic benefits and the possible strain it creates. Finally, physical exercise is considered a key independent variable. Physical exercise is widely recognized for its role in improving both physical health and mental well-being, and it is also linked to reduced medical expenditures [23–26]. Research has consistently shown that better health is positively associated with higher life satisfaction [27,28]. Therefore, exercise is hypothesized to have a significant, positive impact on life satisfaction by enhancing individuals' overall health and reducing illness-related financial strain.

Subjective economic status is closely associated with individuals' perceived financial security in later life, as older adults typically face more limited opportunities to generate income compared to younger individuals [6–8]. Despite its importance, empirical research examining this relationship in the Korean context remains limited, particularly when interpreted through the lens of the law of diminishing marginal utility, focusing on eating out and clothing expenditures. Against this backdrop, the present study seeks to address this gap by incorporating this theoretical perspective into the analysis of subjective economic status and perceived financial security in later life. Moreover, this study offers meaningful contributions by providing empirical evidence from Korea, a country experiencing one of the most rapid rates of population aging in the world. As demographic aging accelerates not only in Korea but also across many developed and emerging economies, understanding how subjective economic evaluations translate into perceived financial security becomes increasingly important. Accordingly, the findings of this study extend beyond the Korean context and offer broader implications for societies undergoing similar demographic transitions.

In sum, the purpose of this work is to investigate the antecedents of life satisfaction, focusing on subjective economic status, eating out expenses, clothing expenses, employment, and physical exercise as key variables. Moreover, the research aims to explore the factors influencing subjective economic status, with a particular focus on how expenditures on dining and clothing, employment status, and physical exercise contribute to individuals' perceptions of their economic condition. This study holds particular significance in the context of South Korea, where the aging population is growing rapidly. Examining the economic and social perceptions of the middle-aged population provides valuable insights into how individuals in this demographic navigate the challenges of an aging society. Furthermore, the application of the law of diminishing marginal utility to the South Korean middle-aged population contributes to theoretical advancements in understanding how consumption patterns influence life satisfaction. The empirical findings will offer critical data for the development of policies that promote well-being in an aging society, providing a foundation for future sociological research in this area.

2. Literature Review and Hypothesis Development

2.1. Life Satisfaction

Life satisfaction refers to individuals' overall evaluation of their lives [2,29]. Scholars argued that people who perceive themselves as satisfied with their lives tend to report a higher quality of life [29,30]. Numerous studies have used life satisfaction as a dependent variable. For example, Yaden et al. [2] conducted a meta-analysis, revealing that various factors influence life satisfaction. Kim et al. [6] and Tavares [5] also utilized life satisfaction as a dependent variable to explore the behavioral characteristics of older adults. Prior research examined life satisfaction across diverse populations and contexts. Cavioni et al. [31] focused on adolescents and identified key psychological and social determinants shaping life satisfaction during early developmental stages. He et al. [3] investigated the behavior of urban residents, using life satisfaction as a central outcome variable to capture overall well-being in rapidly changing urban environments. In organizational contexts, Yang et al. [28] analyzed employee behavior, positioning life satisfaction as an important dependent variable linked to workplace-related factors. Although these studies contributed to understanding life satisfaction in specific populations, they primarily concentrated on adolescents, urban residents, and employees. Consequently, relatively limited attention was given to middle-aged individuals, particularly with regard to how economic perceptions and consumption behaviors jointly influenced life satisfaction. These studies illustrate the widespread use of life satisfaction as a dependent variable in research across different populations and contexts.

2.2. Subjective Economic Status

Subjective economic status is defined as an individual's self-assessment of their economic position in society [6,9]. This concept encompasses a variety of factors, including job stability, income level, and lifestyle [32,33]. Many studies have highlighted subjective economic status as a key attribute. For example, Howell and Howell [9] used subjective economic status to examine populations in developing countries, while Hsu [7] employed it as a central variable to explore the concept of successful aging. Han and Song [34] focused on subjective economic status to investigate the experiences of Korean adolescents, while Feng et al. [32] applied this concept to analyze farmers' behavior, demonstrating its applicability across diverse population groups and socioeconomic contexts. Additionally, Powdthavee [8] and Kim et al. [6] explored subjective economic status in the contexts of Indonesia and China, respectively, highlighting the importance of contextual factors in

shaping individuals' economic perceptions. The extensive body of literature indicates that subjective economic status has been widely studied across various populations and settings.

Homocianu [35] alluded to the idea that life satisfaction is affected by financial condition and stability, which are related to subjective economic status. Hsu [7] claimed that subjective economic status significantly accounted for life satisfaction because wealth allows individuals to attain freedom. Kim et al. [6] found a positive influence of subjective economic status on life satisfaction in Chinese older adults. Ren et al. [10] also researched Chinese residents and found a positive association between subjective economic status and life satisfaction. Similarly, Mastrokoukou et al. [11] demonstrated a positive relationship between subjective economic status and life satisfaction among high school students, suggesting that this relationship holds across different populations and contexts. Therefore, this research proposes the following research hypothesis:

Hypothesis 1. *Subjective economic status positively affects life satisfaction.*

2.3. Eating Out and Clothing Expense

Eating out extends beyond the mere consumption of food; it embodies a social experience, often serving as an opportunity to engage with friends and acquaintances [14,36]. Although eating out is not a fundamental necessity, sharing meals in an enjoyable dining environment with loved ones can significantly enhance an individual's overall quality of life [14,37]. Similarly, while clothing is a basic necessity, purchasing new attire frequently serves a social function because clothing contains various meanings: self-expression, social status, promoting social interaction, and a sense of belonging [12,13,38]. In addition, scholars contend that wearing new clothes can positively influence individuals' emotional states [38,39], highlighting the social and symbolic dimensions inherent in both dining out and clothing consumption. In this context, the period following the subsidence of the COVID-19 pandemic in 2022 marked a notable resurgence in social activities [15,16,40], further underscoring the relevance of these consumption behaviors in shaping individual well-being. This revival of social engagement—such as dining out and shopping—may contribute to enhanced well-being, suggesting that expenditures on such activities are likely to have a positive impact on life satisfaction in the post-pandemic era.

In terms of expenditures related to dining out and clothing purchases, the law of diminishing marginal utility can be applied to consider the impact on an individual's utility. The main notion of the law of diminishing marginal utility is that if an individual consumes more units of a good, the marginal utility derived from each additional unit decreases [41,42]. Specifically, an appropriate level of spending on dining out and clothing can satisfy social needs and have a positive emotional effect. However, if spending in these areas becomes excessive, it is likely to lead to a reduction in disposable income. Scholars also addressed that excessive eating out increases the likelihood of gaining more weight, which causes costs for health management [43,44]. Therefore, it can be inferred that consuming an appropriate amount plays a crucial role in maximizing the benefits of expenditures on dining out and clothing purchases. The law of diminishing marginal utility posits that as consumption increases, the additional utility derived from each incremental unit declines [17,18], a principle that can be applied to expenditures on eating out and clothing. While moderate spending on such activities may enhance well-being, excessive expenditure can place a strain on an individual's overall financial position, as resources must be allocated across multiple competing needs. A reduction in disposable income may, in turn, limit the capacity to cover essential expenses [45,46], potentially undermining overall life satisfaction. Moreover, excessive consumption may have broader adverse consequences. For example, in the context of eating out, frequent or high levels of expenditure may be associated with unhealthy dietary patterns, which could increase the risk of health-related issues such as

obesity. Taken together, these considerations suggest that beyond a certain point, increased spending may yield diminishing—and potentially negative—returns in terms of both financial security and well-being. From this perspective, the law of diminishing marginal utility provides a useful framework for explaining the declining benefits of increased spending. Similarly, about clothing, excessive expenditure may impose a financial burden, particularly in later life when income tends to decline. In this sense, overspending in these categories may reduce overall utility rather than enhance it. Taken together, these arguments suggest that beyond a certain threshold, expenditures on both dining out and clothing are likely to diminish individual utility, highlighting the relevance of a nonlinear relationship. This research thus proposes the following research hypotheses:

Hypothesis 2a. *Eating out expenses exert an inverted-U-shaped effect on subjective economic status.*

Hypothesis 2b. *Eating out expenses exert an inverted-U-shaped effect on life satisfaction.*

Hypothesis 3a. *Clothing expenses exert an inverted-U-shaped effect on subjective economic status.*

Hypothesis 3b. *Clothing expenses exert an inverted-U-shaped effect on life satisfaction.*

2.4. Employment and Physical Exercise

Employment played a pivotal role in sustaining individuals' economic livelihoods by providing financial compensation [19,20,47]. While work was often perceived as a means of personal growth and self-development, its primary function as a source of subsistence also led to adverse outcomes, including psychological stress, fatigue, and various health-related issues [22,48]. Previous works indicated that the meaning and significance of work varied across generations, with younger and older individuals exhibiting different economic needs, priorities, and motivations [49,50]. For instance, younger individuals tended to place greater emphasis on career advancement and income growth, whereas older individuals were more likely to focus on stability and financial security. At the same time, existing research consistently documented the negative effects of work-related stress and fatigue on individual well-being [21,22], indicating that employment did not uniformly contribute to improvements in life satisfaction.

Moreover, the extant literature emphasized the critical role of regular physical exercise in promoting both physical and mental health [24,25]. Empirical findings demonstrated that regular exercise not only improved physical fitness and reduced the risk of chronic diseases but also enhanced psychological well-being by alleviating stress, anxiety, and depression, thereby contributing to higher levels of life satisfaction [27,51,52]. In addition, regular physical activity served a preventive function by lowering the likelihood of illness, which in turn enabled individuals to participate more consistently and productively in economic activities [23,26,53]. In this regard, prior research highlighted a close relationship between physical activity and individuals' economic conditions, as improved health was associated with higher productivity and greater work capacity [26,54]. Furthermore, maintaining good health reduced the probability of incurring substantial medical expenses, thereby alleviating financial burdens. Accordingly, regular physical exercise was found to play an important role in enhancing individuals' economic stability as well as their overall well-being [23,26,55]. Based on this, the following research hypotheses are proposed:

Hypothesis 4a. *Employment positively affects subjective economic status.*

Hypothesis 4b. *Employment negatively affects life satisfaction.*

Hypothesis 5a. *Physical exercise positively affects subjective economic status.*

Hypothesis 5b. *Physical exercise positively affects life satisfaction.*

3. Method

3.1. Research Model

Figure 1 is the research model. Subjective economic status is positively influenced by employment and physical exercise. Moreover, life satisfaction is positively affected by physical exercise. However, life satisfaction is negatively impacted by employment. Eating out expenses and clothing expenses exert an inverted-U-shaped effect on subjective health and life satisfaction.

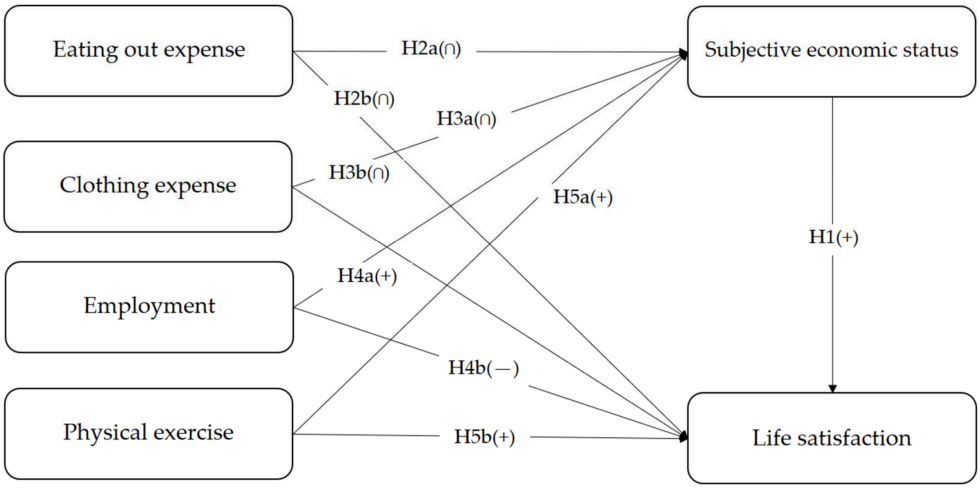


Figure 1. Research model.

3.2. Data Collection and Measurement Description

This work utilizes data from the Korean Longitudinal Study of Elderly Employment (KLoEE), which the Korea Employment Information Service collected. The primary objective of the KLoEE is to provide essential survey-based data for formulating and evaluating employment policies targeting the middle-aged population, specifically those born between 1964 and 1976. Although data collection began in 2021, the most recent dataset available is from 2022, which includes a broader range of variables. In contrast, the 2021 dataset contains significant missing information, making it unsuitable for analysis. As a result, this research exclusively used the 2022 data, comprising 4392 observations, for statistical analysis. The data is cross-sectional.

Table 1 displays the descriptions of the measurement items. Life satisfaction (LSA) and subjective economic status (SES) are measured on a scale ranging from 0 to 100, where 0 represents the worst condition and 100 represents the best condition. Eating out expenses (EOE) and clothing expenses (CLE) are measured in terms of monthly expenditure, with the unit being 10,000 Korean won. For reference, 10,000 Korean won is approximately equivalent to 7 US dollars, based on the exchange rate of $1 = 1400 KRW. Employment (EMP) reflects the participant's employment status, while physical exercise (PEX) indicates whether the survey participant engages in regular physical activity. Both EMP and PEX are measured using binary variables (0 = no, 1 = yes). Age (AGE) represents the legal age of the survey participants, and sex (SEX) indicates biological sex (0 = female, 1 = male). Household assets (HAS) and household debt (HDE) correspond to the assets and debts of the participants' households, respectively. AGE, SEX, HAS, and HDE are control variables of this work.

Table 1. Illustration of variables.

Variable	Measurement
Life satisfaction (LSA)	Life satisfaction score (range: 0–100)
Subjective economic status (SES)	Subjective economic status score (range: 0–100)
Eating out expense (EOE)	Monthly eating out expense
Clothing expense (CLE)	Monthly clothing expense
Employment (EMP)	(0 = no, 1 = yes)
Physical exercise (PEX)	(0 = no, 1 = yes)
Age (AGE)	Legal age of the participants
Sex (SEX)	(0 = female, 1 = male)
Household assets (HAS)	Household assets of the survey participant
Household debt (HDE)	Household debt of the survey participant

Note: The unit of currency is 10,000 KRW.

3.3. Data Analysis

This research performed descriptive analysis, including mean, standard deviation, minimum, and maximum, to examine the information in the data. Then, this work implemented a correlation matrix to examine the relationship between variables. To test the research hypotheses, this work employed an ordinary least squares multiple regression model. A 95% confidence interval was used to appraise statistical significance. As a sensitivity analysis, this work executed two sorts of regression models, including and excluding control variables. Additionally, this research employed quadratic regression, incorporating squared terms, to examine the curvilinear effects of EOE and CLE [56,57]. In the quadratic regression model, the values of the independent variables that maximize the value of the dependent variable can be determined through differentiation [56,57]. This research additionally carried out an independent *t*-test to inspect the group difference, focusing on LSA and SES using EMP and PEX as independent variables. This work also assessed multicollinearity using the variance inflation factor (VIF), adopting a threshold value of 10 [56,57]. The maximum VIF observed was 3.88, indicating that multicollinearity is unlikely to pose a serious concern in the estimation. To further address potential endogeneity bias, an instrumental variable regression approach was employed to enable the model to isolate the exogenous variation in the predictor and obtain consistent parameter estimates, following prior methodological recommendations [56,57].

4. Results

4.1. Descriptive Statistics and Correlation Matrix

Table 2 presents the descriptive statistics. The mean values of LSA and SES are 64.00 and 58.88, respectively. The mean values of EOE and CLE are 19.99 and 12.91, respectively. Table 2 also presents the information of EMP (mean = 0.96, SD = 0.18), PEX (mean = 0.48, SD = 0.49), AGE (mean = 51.18, SD = 3.66), SEX (mean = 0.47, SD = 0.49), HAS (mean = 42,386.05, SD = 49,226.17), and HDE (mean = 4978.83, SD = 11,813.55).

Table 3 is the correlation matrix. LSA positively correlates with SES (r = 0.76, $p < 0.05$), EOE (r = 0.25, $p < 0.05$), CLE (r = 0.31, $p < 0.05$), PEX (r = 0.19, $p < 0.05$), HAS (r = 0.31, $p < 0.05$), and HDE (r = 0.12, $p < 0.05$). However, LSA negatively correlates with AGE (r = −0.02, $p < 0.05$) and SEX (r = −0.05, $p < 0.05$). Regarding SES, it positively correlates with EOE (r = 0.24, $p < 0.05$), CLE (r = 0.30, $p < 0.05$), EMP (r = 0.05, $p < 0.05$), PEX (r = 0.15, $p < 0.05$), HAS (r = 0.33, $p < 0.05$), and HDE (r = 0.09, $p < 0.05$). In contrast, SES negatively correlates with AGE (r = −0.03, $p < 0.05$) and SEX (r = −0.02, $p < 0.05$).

Table 2. Results of descriptive statistics (n = 4392).

Variable	Mean	SD	Minimum	Maximum
LSA	64.00	17.09	0	100
SES	58.88	17.53	0	100
EOE	19.99	16.57	0	300
CLE	12.91	10.47	0	200
EMP	0.96	0.18	0	1
PEX	0.48	0.49	0	1
AGE	51.18	3.66	45	57
SEX	0.47	0.49	0	1
HAS	42,386.05	49,226.17	10	1,000,000
HDE	4978.83	11,813.55	0	200,000

Note: SD denotes standard deviation, LSA: life satisfaction, SES: subjective economic status, EOE: eating out expense, CLE: clothing expense, EMP: employment, PEX: physical exercise, AGE: age, SEX: sex, HAS: household assets, and HDE: household debt.

Table 3. Results of the correlation matrix.

Variable	1	2	3	4	5	6	7	8	9
1. LSA	1								
2. SES	0.76 *	1							
3. EOE	0.25 *	0.24 *	1						
4. CLE	0.31 *	0.30 *	0.43 *	1					
5. EMP	0.02	0.05 *	0.05 *	0.02	1				
6. PEX	0.19 *	0.15 *	0.12 *	0.12 *	0.01	1			
7. AGE	−0.02 *	−0.03 *	−0.06 *	−0.05 *	0.01	0.01	1		
8. SEX	−0.05 *	−0.02 *	0.01	−0.06 *	0.03 *	−0.05 *	0.04 *	1	
9. HAS	0.31 *	0.33 *	0.32 *	0.33 *	0.01	0.16 *	−0.01	−0.01	1
10. HDE	0.12 *	0.09 *	0.16 *	0.19 *	−0.01	0.05 *	−0.04 *	0.03 *	0.463 *

Note: * $p < 0.05$, LSA: life satisfaction, SES: subjective economic status, EOE: eating out expense, CLE: clothing expense, EMP: employment, PEX: physical exercise, AGE: age, SEX: sex, HAS: household assets, and HDE: household debt.

4.2. Results of Hypothesis Testing

Table 4 exhibits the results of hypothesis testing. All four models are statistically significant, given the F-values with a 95% confidence interval ($p < 0.05$). SES is significantly impacted by both EOE ($\beta = 0.09$, $p < 0.05$) and EOE^2 ($\beta = -5.16 \times 10^{-4}$, $p < 0.05$). SES is also influenced by CLE ($\beta = 0.39$, $p < 0.05$) and CLE^2 ($\beta = -3.22 \times 10^{-3}$, $p < 0.05$). It indicates that H1a and H2a are supported. Moreover, EMP ($\beta = 3.22$, $p < 0.05$) and PEX ($\beta = 2.89$, $p < 0.05$) significantly affected SES, which supports both H3a and H3b. AGE ($\beta = -0.14$, $p < 0.05$), SEX ($\beta = -1.09$, $p < 0.05$), HAS ($\beta = 9.34 \times 10^{-5}$, $p < 0.05$), and HDE ($\beta = -1.03 \times 10^{-4}$, $p < 0.05$) also significantly determined SES. For LSA, CLE ($\beta = 0.18$, $p < 0.05$) and CLE^2 ($\beta = -1.89 \times 10^{-3}$, $p < 0.05$) presented significance. EMP ($\beta = -2.30$, $p < 0.05$) and PEX ($\beta = 2.21$, $p < 0.05$) exerted a significant effect on LSA. Hence, H2b, H3b, and H4b are supported. SES positively affected LSA ($\beta = 0.67$, $p < 0.05$), supporting H5. SEX ($\beta = -1.19$, $p < 0.05$) and HDE ($\beta = 5.20 \times 10^{-5}$, $p < 0.05$) are significantly associated with LSA.

Table 4. Results of hypothesis testing using the multiple regression model.

Variable	Model 1 DV (SES) β(*t*-Value)	Model 2 DV (SES) β(*t*-Value)	Model 3 DV (LSA) β(*t*-Value)	Model 4 DV (LSA) β(*t*-Value)
Intercept	46.78 (36.12) *	53.92 (15.66) *	22.31 (22.07) *	20.20 (8.09) *
SES	-	-	0.67 (65.46) *	0.67 (63.17) *

Table 4. *Cont.*

Variable	Model 1 DV (SES) β(*t*-Value)	Model 2 DV (SES) β(*t*-Value)	Model 3 DV (LSA) β(*t*-Value)	Model 4 DV (LSA) β(*t*-Value)
EOE	0.13 (4.91) *	0.09 (3.47) *	0.03 (1.78)	0.03 (2.03) *
EOE^2	-5.03×10^{-4} (−2.14) *	-5.16×10^{-4} (−2.27) *	-6.25×10^{-5} (−0.39)	-1.17×10^{-4} (−0.73)
CLE	0.48 (10.91) *	0.39 (9.08) *	0.20 (6.55) *	0.18 (6.10) *
CLE^2	-3.51×10^{-3} (−4.78) *	-3.33×10^{-3} (−4.69) *	-1.90×10^{-3} (−3.78) *	-1.89×10^{-3} (−3.76) *
EMP	3.29 (2.67) *	3.22 (2.70) *	−2.38 (−2.83) *	−2.30 (−2.73) *
PEX	3.75 (7.92) *	2.89 (6.26) *	2.26 (6.92) *	2.21 (6.75) *
AGE		−0.14 (−2.34) *		0.05 (1.19)
SEX		−1.09 (−2.39) *		−1.19 (−3.70) *
HAS		9.34×10^{-5} (16.55) *		1.01×10^{-6} (0.24)
HDE		-1.03×10^{-4} (−4.65) *		5.20×10^{-5} (3.30) *
F-value	74.34 *	77.41 *	766.77 *	493.44 *
R^2	0.0911	0.1502	0.5504	0.5534

Note: * $p < 0.05$, DV stands for the dependent variable. LSA: life satisfaction, SES: subjective economic status, EOE: eating out expense, CLE: clothing expense, EMP: employment, PEX: physical exercise, AGE: age, SEX: sex, HAS: household assets, HDE: household debt, first-order condition for SES ($\Delta/\Delta EOE = 89.94$ and $\Delta/\Delta CLE = 58.60$), and first-order condition for LSA ($\Delta/\Delta CLE = 49.36$).

Table 5 presents the results of the hypothesis tests. All four models are statistically significant, as indicated by the F-statistics at the 95% confidence level ($p < 0.05$). SES is significantly influenced by both EOE ($\beta = 0.09$, $p < 0.05$) and its squared term, EOE^2 ($\beta = -5.16 \times 10^{-4}$, $p < 0.05$), suggesting a nonlinear relationship. Similarly, CLE ($\beta = 0.39$, $p < 0.05$) and CLE^2 ($\beta = -3.22 \times 10^{-3}$, $p < 0.05$) have significant effects on SES, supporting H1a and H2a. In addition, EMP ($\beta = 3.22$, $p < 0.05$) and PEX ($\beta = 2.89$, $p < 0.05$) are positively associated with SES, providing support for H3a and H3b. Among the control variables, AGE ($\beta = -0.14$, $p < 0.05$), SEX ($\beta = -1.09$, $p < 0.05$), HAS ($\beta = 9.34 \times 10^{-5}$, $p < 0.05$), and HDE ($\beta = -1.03 \times 10^{-4}$, $p < 0.05$) are also statistically significant predictors of SES. For LSA, CLE ($\beta = 0.18$, $p < 0.05$) and CLE^2 ($\beta = -1.89 \times 10^{-3}$, $p < 0.05$) exhibit significant effects, indicating a nonlinear relationship. EMP ($\beta = -2.30$, $p < 0.05$) and PEX ($\beta = 2.21$, $p < 0.05$) also significantly influence LSA, supporting H2b, H3b, and H4b. Furthermore, SES has a positive effect on LSA ($\beta = 0.67$, $p < 0.05$), supporting H5. Among the control variables, SEX ($\beta = -1.19$, $p < 0.05$) and HDE ($\beta = 5.20 \times 10^{-5}$, $p < 0.05$) are significantly associated with LSA.

Table 5. Results of hypothesis testing using the instrumental multiple regression model.

Variable	Model 5 DV (SES) β(*t*-Value)	Model 6 DV (SES) β(*t*-Value)	Model 7 DV (LSA) β(*t*-Value)	Model 8 DV (LSA) β(*t*-Value)
Intercept	46.78 (36.12) *	53.92 (15.66) *	22.31 (22.07) *	20.20 (8.09) *
SES	-	-	0.67 (65.46) *	0.67 (63.17) *
EOE	0.13 (4.91) *	0.09 (3.47) *	0.03 (1.78)	0.03 (2.03) *
EOE^2	-5.03×10^{-4} (−2.14) *	-5.16×10^{-4} (−2.27) *	-6.25×10^{-5} (−0.39)	-1.17×10^{-4} (−0.73)
CLE	0.48 (10.91) *	0.39 (9.08) *	0.20 (6.55) *	0.18 (6.10) *
CLE^2	-3.51×10^{-3} (−4.78) *	-3.33×10^{-3} (−4.69) *	-1.90×10^{-3} (−3.78) *	-1.89×10^{-3} (−3.76) *
EMP	3.29 (2.67) *	3.22 (2.70) *	−2.38 (−2.83) *	−2.30 (−2.73) *
PEX	3.75 (7.92) *	2.89 (6.26) *	2.26 (6.92) *	2.21 (6.75) *
AGE		−0.14 (−2.34) *		0.05 (1.19)

Table 5. *Cont.*

Variable	Model 5 DV (SES) β(*t*-Value)	Model 6 DV (SES) β(*t*-Value)	Model 7 DV (LSA) β(*t*-Value)	Model 8 DV (LSA) β(*t*-Value)
SEX		−1.09 (−2.39) *		−1.19 (−3.70) *
HAS		9.34×10^{-5} (16.55) *		1.01×10^{-6} (0.24)
HDE		-1.03×10^{-4} (−4.65) *		5.20×10^{-5} (3.30) *
F-value	74.34 *	77.41 *	766.77 *	493.44 *
R^2	0.0911	0.1502	0.5504	0.5534

Note: * $p < 0.05$, DV stands for the dependent variable. LSA: life satisfaction, SES: subjective economic status, EOE: eating out expense, CLE: clothing expense, EMP: employment, PEX: physical exercise, AGE: age, SEX: sex, HAS: household assets, HDE: household debt, first-order condition for SES (Δ/ΔEOE = 89.94 and Δ/ΔCLE = 58.60), and first-order condition for LSA (Δ/ΔCLE = 49.36).

Table 6 and Figure 2 exhibit the results of the independent *t*-test. For the SES, the mean difference between employed (mean = 60.70) and non-employed (mean = 55.56) groups was significant ($p < 0.05$). Also, the mean difference in terms of SES between regular physical exercise (mean = 61.68) and non-regular exercise (mean = 56.23) groups was significant ($p < 0.05$). Regarding LSA, the mean difference between regular physical exercise (mean = 67.48) and non-regular exercise (mean = 60.73) groups was significant ($p < 0.05$).

Table 6. Results of the independent *t*-test.

Variable	DV (SES) Mean (SD)	DV (LSA) Mean (SD)
EMP	*t*-value: 4.66 *	*t*-value: 1.79
Yes	60.70 (15.70)	65.47 (15.25)
No	55.56 (19.17)	63.55 (18.44)
PEX	*t*-value: 14.38 *	*t*-value: 18.40 *
Yes	61.68 (17.18)	67.48 (16.06)
No	56.23 (17.44)	60.73 (17.37)

Note: * $p < 0.05$, DV stands for the dependent variable. LSA: life satisfaction, SES: subjective economic status, EMP: employment, PEX: physical exercise.

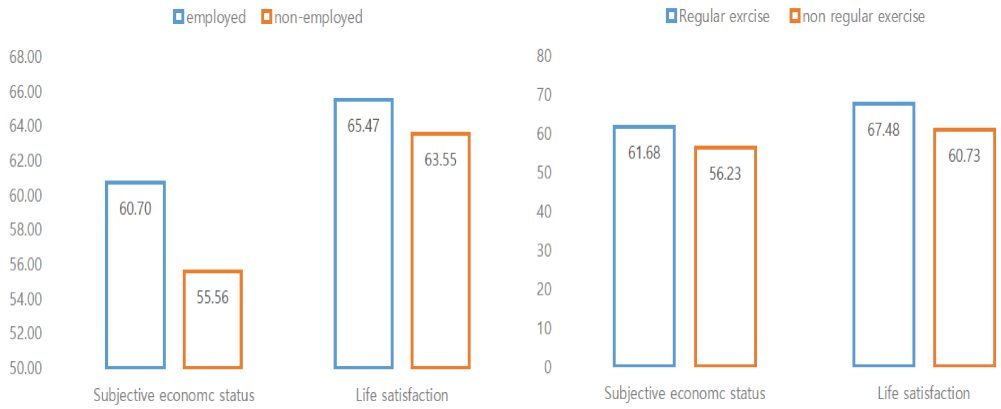


Figure 2. Results of the independent *t*-test. **Note**: All results are significant using *p*-value 0.05 as a threshold.

5. Discussion

This study was conducted to investigate the characteristics of middle-aged and older adults using secondary data. To achieve this, the study employed subjective economic status and life satisfaction as the dependent variables. The survey participants were adults

aged 45 to 57 residing in South Korea. In this study, the monthly eating out and clothing expenses were incorporated into a regression model with quadratic terms, and the values were maximized through differentiation. The results indicate nonlinear relationships between consumption expenditures and the outcomes of interest. Specifically, the estimated turning points occur at approximately 899,400 KRW for monthly eating out expenses and 586,000 KRW for monthly clothing expenses in relation to subjective economic status. For life satisfaction, the turning point for monthly clothing expenses is estimated at around 493,600 KRW. However, these values should not be interpreted as precise or prescriptive "optimal" levels. Rather, they reflect sample-specific inflection points that illustrate diminishing marginal effects within the observed data. Compared with the sample averages (199,900 KRW for dining expenses and 129,100 KRW for clothing expenses), the results suggest that, within the sample range, higher levels of spending are associated with increases in subjective economic status and life satisfaction up to a certain point, after which the marginal benefits diminish.

Regarding employment, the study found that work was positively associated with subjective economic status but had a negative relationship with life satisfaction. It can be inferred that while income from employment improves individuals' perceptions of their economic standing, the overall experience of work may not necessarily enhance their well-being. One possible interpretation is that certain aspects of job quality, such as stress or fatigue, may offset the positive financial benefits of employment for this demographic. In this context, it is also plausible that, for individuals aged 45 to 57, work may be perceived as more necessity-driven than intrinsically rewarding. However, this interpretation should be approached with caution, as the present analysis does not directly measure job characteristics or motivational factors. In terms of regular exercise, the study revealed a positive association with both subjective economic status and life satisfaction. This indicates that physical activity could lead older adults to accomplish improved psychological and physical well-being, which in turn could enhance individuals' perceptions of their economic condition and overall life satisfaction. Additionally, given the increasing health risks and potential financial burden of medical expenses among middle-aged and older adults, regular exercise may play a supportive role in maintaining quality of life. Nevertheless, further research is needed to clarify the underlying mechanisms driving these relationships.

The study also found that, in terms of gender, women generally reported higher life satisfaction and subjective economic status compared to men. In terms of age, the results showed a tendency for negative perceptions of subjective economic status to increase with age. Furthermore, the study revealed that household asset size positively influenced subjective economic status, while household debt negatively affected it. The results may imply that, in later life, women tend to report more positive perceptions of life overall. In addition, the findings indicate that, as individuals age, life conditions in the Korean context may become more challenging. However, these interpretations should be considered with caution, as they are inferred from the observed associations rather than directly tested mechanisms. Furthermore, the results suggest that individuals with greater financial security—such as those with sufficient economic resources or without debt—tend to experience better life conditions in later life. This finding noted the potential importance of financial stability in shaping well-being among older adults.

6. Conclusions

6.1. Theoretical and Policy Implications

This study was motivated by the growing need to understand the characteristics of middle-aged and older adults in South Korea's increasingly aging society. Utilizing

secondary data, the research provides valuable insights into the various factors influencing the characteristics of this demographic. Furthermore, the study contributes to the literature by examining the applicability of the law of diminishing marginal utility in the context of dining and clothing expenditures, and its impact on the subjective economic well-being and life satisfaction of middle-aged and older adults.

This study offers several policy implications. First, policymakers might consider providing support for expenses such as dining and clothing, as these could have a positive impact on life satisfaction and individuals' perceptions of their economic well-being. Such support could help improve the subjective economic status and overall life satisfaction of middle-aged and older adults. The sample data also showed that the average values were notably lower than those derived from the derivative calculations, indicating that policy interventions could help bridge this gap. Second, addressing employment challenges for middle-aged and older adults should be a priority for policymakers. While labor can be physically demanding for this demographic, the income from work can contribute to a more positive economic outlook. Therefore, allocating resources to improve job quality and create better employment opportunities for middle-aged and older adults may help enhance their economic perceptions and well-being. Finally, policymakers might consider supporting the development of accessible sports and recreational facilities for middle-aged and older adults. This could include constructing such facilities near residential areas or offering subsidies or tax incentives for sports-related activities. Such efforts could encourage physical activity and contribute to a better quality of life for this demographic.

6.2. Limitations and Directions for Future Research

This study has some limitations, as it uses data from only one year. Future research could benefit from utilizing panel data to explore the characteristics of middle-aged and older adults, which would help provide a clearer picture of how these characteristics change over time. Additionally, it would be valuable for future studies to consider cases from countries other than South Korea. Since population structures vary across countries, such comparisons could offer insights into how the characteristics of middle-aged and older adults differ depending on each country's specific context.

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Informed Consent Statement: Informed consent was obtained from all the subjects involved in the study.

Data Availability Statement: The data used in this study are secondary data obtained from publicly available sources. These datasets are openly accessible to the public and do not require any special permission for use. Therefore, no new data were created or collected for this study. Detailed information regarding the data sources can be provided by the corresponding author upon reasonable request.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Statistics Korea. Aging Index. 2025. Available online: https://www.index.go.kr/unify/idx-info.do?idxCd=5064 (accessed on 15 March 2026).
2. Yaden, D.; Batz-Barbarich, C.; Ng, V.; Vaziri, H.; Gladstone, J.N.; Pawelski, J.; Tay, L. A meta-analysis of religion/spirituality and life satisfaction. *J. Happiness Stud.* **2022**, *23*, 4147–4163. [CrossRef]

3. He, X.; Zhou, Y.; Yuan, X.; Zhu, M. The coordination relationship between urban development and urban life satisfaction in Chinese cities-An empirical analysis based on multi-source data. *Cities* **2024**, *150*, 105016. [CrossRef]
4. Kim, E.; Delaney, S.; Tay, L.; Chen, Y.; Diener, E.; Vanderweele, T. Life satisfaction and subsequent physical, behavioral, and psychosocial health in older adults. *Milbank Q.* **2021**, *99*, 209–239. [CrossRef]
5. Tavares, A.I. Health and life satisfaction factors of Portuguese older adults. *Arch. Gerontol. Geriatr.* **2022**, *99*, 104600. [CrossRef]
6. Kim, B.J.; Chen, L.; Xu, L.; Lee, Y. Self-rated health and subjective economic status in life satisfaction among older Chinese immigrants: A cross-sectional study. *Healthcare* **2021**, *9*, 342. [CrossRef] [PubMed]
7. Hsu, H.C. Trajectory of life satisfaction and its relationship with subjective economic status and successful aging. *Soc. Indic. Res.* **2010**, *99*, 455–468. [CrossRef]
8. Powdthavee, N. Feeling Richer or Poorer than Others: A Cross-section and Panel Analysis of Subjective Economic Status in Indonesia. *Asia Econ. J.* **2007**, *21*, 169–194. [CrossRef]
9. Howell, R.; Howell, C.J. The relation of economic status to subjective well-being in developing countries: A meta-analysis. *Psychol. Bul.* **2008**, *134*, 536. [CrossRef]
10. Ren, Z.; Yue, G.; Xiao, W.; Fan, Q. The influence of subjective socioeconomic status on life satisfaction: The chain mediating role of social equity and social trust. *Int. J. Environ. Res. Public Health* **2022**, *19*, 15652. [CrossRef] [PubMed]
11. Mastrokoukou, S.; Longobardi, C.; Fabris, M.; Lin, S. Subjective socioeconomic status and life satisfaction among high school students: The role of teacher-student relationships. *Soc. Psychol. Educ.* **2025**, *28*, 11. [CrossRef]
12. Grant, I.; Stephen, G. Buying behaviour of "tweenage" girls and key societal communicating factors influencing their purchasing of fashion clothing. *J. Fash. Mark. Manag. Int. J.* **2005**, *9*, 450–467. [CrossRef]
13. Atik, D.; Ozdamar Ertekin, Z. The restless desire for the new versus sustainability: The pressing need for social marketing in fashion industry. *J. Soc. Mark.* **2023**, *13*, 1–19. [CrossRef]
14. Ferrant, C.; Giacoman, C.; Lhuissier, A.; Bórquez, I. Social varieties of eating out: Evidence from Santiago and Paris. *Food Cult. Soc.* **2024**, *27*, 775–791. [CrossRef]
15. Liu, Y.; Li, X.; Yuen, K. Revenge buying: The role of negative emotions caused by lockdowns. *J. Retail. Consum. Serv.* **2023**, *75*, 103523. [CrossRef]
16. Le, H.; Park, J. Drives of in-store revenge consumption in the post-pandemic: A study in China. *J. Retail. Consum. Serv.* **2024**, *79*, 103844. [CrossRef]
17. Dittmer, T. Diminishing marginal utility in economics textbooks. *J. Econ. Educ.* **2005**, *36*, 391–399. [CrossRef]
18. Huh, W.; Li, H. Optimal pricing under multiple-discrete customer choices and diminishing return of consumption. *Oper. Res.* **2022**, *70*, 905–917. [CrossRef]
19. Pinto, E.P. The influence of wage on motivation and satisfaction. *Int. Bus. Econ. Res. J.* **2011**, *10*, 81. [CrossRef]
20. Mamycheva, D.; Melnichuk, A.; Taranova, I.; Chernykh, A.; Gadzhieva, E.; Ratiev, V. Instrumentation organizational and economic support of labor motivation of employees. *Int. Rev. Manag. Mark.* **2016**, *6*, 142–147.
21. Pasupuleti, S.; Allen, R.; Lambert, E.; Cluse-Tolar, T. The impact of work stressors on the life satisfaction of social service workers: A preliminary study. *Adm. Soc. Work.* **2009**, *33*, 319–339. [CrossRef]
22. Singh, S. Life satisfaction and stress level among working and non-working women. *Int. J. Indian Psychol.* **2014**, *1*, 121–128. [CrossRef]
23. Nicholl, J.; Coleman, P.; Brazier, J. Health and health care costs and benefits of exercise. *Pharmacoeconomics* **1994**, *5*, 109–122. [CrossRef] [PubMed]
24. Salmon, P. Effects of physical exercise on anxiety, depression, and sensitivity to stress: A unifying theory. *Clin. Psychol. Rev.* **2001**, *21*, 33–61. [CrossRef] [PubMed]
25. Moreno-Murcia, J.; Belando, N.; Huéscar, E.; Torres, M. Social support, physical exercise and life satisfaction in women. *Rev. Latinoam. Psicol.* **2017**, *49*, 194–202. [CrossRef]
26. Wang, F.; McDonald, T.; Champagne, L.J.; Edington, D. Relationship of body mass index and physical activity to health care costs among employees. *J. Occup. Environ. Med.* **2004**, *46*, 428–436. [CrossRef]
27. Teixeira, D.; Rodrigues, F.; Cid, L.; Monteiro, D. Enjoyment as a predictor of exercise habit, intention to continue exercising, and exercise frequency: The intensity traits discrepancy moderation role. *Front. Psychol.* **2022**, *13*, 780059. [CrossRef]
28. Yang, H.; Zhao, X.; Ma, E. A dual-path model of work-family conflict and hospitality employees' job and life satisfaction. *J. Hosp. Tour. Manag.* **2024**, *58*, 154–163. [CrossRef]
29. Pai, C.K.; Chen, H.; Lee, T.; Hyun, S.; Liu, Y.; Zheng, Y. The impacts of under-tourism and place attachment on residents' life satisfaction. *J. Vacat. Mark.* **2024**, *30*, 694–712. [CrossRef]
30. Clair, R.; Gordon, M.; Kroon, M.; Reilly, C. The effects of social isolation on well-being and life satisfaction during pandemic. *Humanit. Soc. Sci. Commun.* **2021**, *8*, 28. [CrossRef]
31. Cavioni, V.; Grazzani, I.; Ornaghi, V.; Agliati, A.; Pepe, A. Adolescents' mental health at school: The mediating role of life satisfaction. *Front. Psychol.* **2021**, *12*, 720628. [CrossRef]

32. Feng, D.; Ji, L.; Xu, L. Effect of subjective economic status on psychological distress among farmers and non-farmers of rural China. *Aust. J. Rural. Health* **2015**, *23*, 215–220. [CrossRef]
33. Wang, C.; Shen, J. How subjective economic status matters: The reference-group effect on migrants' settlement intention in urban China. *Asian Popul. Stud.* **2023**, *19*, 105–123. [CrossRef]
34. Han, J.M.; Song, H. Effect of subjective economic status during the COVID-19 pandemic on depressive symptoms and suicidal ideation among South Korean adolescents. *Psychol. Res. Behav. Manag.* **2021**, *14*, 2035–2043. [CrossRef]
35. Homocianu, D. Life satisfaction: Insights from the world values survey. *Societies* **2024**, *14*, 119. [CrossRef]
36. Edwards, J.S. The foodservice industry: Eating out is more than just a meal. *Food Qual. Prefer.* **2013**, *27*, 223–229. [CrossRef]
37. Zhong, Y.; Oh, S.; Moon, H. What can drive consumers' dining-out behavior in China and Korea during the COVID-19 pandemic? *Sustainability* **2021**, *13*, 1724. [CrossRef]
38. McKinney, L.; Legette-Traylor, D.; Kincade, D.; Holloman, L. Selected social factors and the clothing buying behaviour patterns of black college consumers. *Int. Rev. Retail. Distrib. Consum. Res.* **2004**, *14*, 389–406. [CrossRef]
39. Chen-Yu, J.; Seock, Y.K. Adolescents' clothing purchase motivations, information sources, and store selection criteria: A comparison of male/female and impulse/nonimpulse shoppers. *Fam. Consum. Sci. Res. J.* **2002**, *31*, 50–77. [CrossRef]
40. Yost, E.; Cheng, Y. Customers' risk perception and dine-out motivation during a pandemic: Insight for the restaurant industry. *Int. J. Hosp. Manag.* **2021**, *95*, 102889. [CrossRef]
41. Acland, D.; Greenberg, D.H. The elasticity of marginal utility of income for distributional weighting and social discounting: A meta-analysis. *J. Benefit-Cost. Anal.* **2023**, *14*, 386–405. [CrossRef]
42. Li, X.; Hsee, C. The psychology of marginal utility. *J. Consum. Res.* **2021**, *48*, 169–188. [CrossRef]
43. Kim, M.J. Relationship between BMI and the dining out behavior of university students in the Seoul area. *Korean J. Food Cook. Sci.* **2010**, *26*, 450–457. Available online: https://www.dbpia.co.kr/journal/articleDetail?nodeId=NODE09919759 (accessed on 15 March 2026).
44. Choi, M.K. An analysis of groups with diet problems associated with dining out. *Korean J. Food Nutr.* **2008**, *21*, 536–544.
45. O'Donoghue, C.; Morrissey, K.; Hayes, P.; Loughrey, J.; Banks, J.; Hynes, S. The spatial distribution of household disposable income. In *Spatial Microsimulation for Rural Policy Analysis*; Springer: Berlin/Heidelberg, Germany, 2013; pp. 193–211.
46. Scholderer, J.; Grunert, K. Consumers, food and convenience: The long way from resource constraints to actual consumption patterns. *J. Econ. Psychol.* **2005**, *26*, 105–128. [CrossRef]
47. Dunifon, R.; Duncan, G.J. Long-run effects of motivation on labor-market success. *Soc. Psychol. Q.* **1998**, *61*, 33–48. [CrossRef]
48. Xu, X.; Chen, L.; Yuan, Y.; Xu, M.; Tian, X.; Lu, F.; Wang, Z. Perceived stress and life satisfaction among Chinese clinical nursing teachers: A moderated mediation model of burnout and emotion regulation. *Front. Psychiatry* **2021**, *12*, 548339. [CrossRef]
49. Heyns, M.; Kerr, M. Generational differences in workplace motivation. *J. Hum. Resour. Manag.* **2018**, *16*, 1–10. [CrossRef]
50. Mahmoud, A.; Reisel, W.; Grigoriou, N.; Fuxman, L.; Mohr, I. The reincarnation of work motivation: Millennials vs older generations. *Int. Sociol.* **2020**, *35*, 393–414. [CrossRef]
51. Rodrigues, F.; Faustino, T.; Santos, A.; Teixeira, E.; Cid, L.; Monteiro, D. How does exercising make you feel? The associations between positive and negative affect, life satisfaction, self-esteem, and vitality. *Int. J. Sport Exerc. Psychol.* **2022**, *20*, 813–827. [CrossRef]
52. Yang, M.; Si, S.; Zhang, K.; Xi, M.; Zhang, W. Bridging the relationship between physical exercise and mental health in adolescents based on network analysis. *PsyCh J.* **2024**, *13*, 835–848. [CrossRef]
53. Stanton, R.; Happell, B.; Reaburn, P. The mental health benefits of regular physical activity, and its role in preventing future depressive illness. *Nurs. Res. Rev.* **2014**, *4*, 45–53. [CrossRef]
54. Ackermann, R.; Williams, B.; Nguyen, H.; Berke, E.; Maciejewski, M.; LoGerfo, J. Healthcare cost differences with participation in a community-based group physical activity benefit for medicare managed care health plan members. *J. Am. Geriatr. Soc.* **2008**, *56*, 1459–1465. [CrossRef]
55. Katzmarzyk, P.; Friedenreich, C.; Shiroma, E.; Lee, I. Physical inactivity and non-communicable disease burden in low-income, middle-income and high-income countries. *Br. J. Sports Med.* **2022**, *56*, 101–106. [CrossRef]
56. Gujarati, D.; Porter, D. *Basic Econometrics*; McGraw-Hill: New York, NY, USA, 2009.
57. Wooldridge, J. *Introductory Econometrics: A Modern Approach*; South-Western College Publishing: Cincinnati, OH, USA, 2009.

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