



An analysis of household health expenditure and subjective well-being

Rafa Fayza Afrizal^{1,*}

¹ Department of Economics, Faculty of Economics and Business, Universitas Padjadjaran, Bandung, West Java 45363, Indonesia.

*Correspondence: rafa21004@mail.unpad.ac.id

Received Date: January 21, 2026

Revised Date: July 14, 2026

Accepted Date: July 20, 2026

ABSTRACT

Background: Health is widely recognized as a key determinant of subjective well-being (SWB), yet the role of household health expenditure remains ambiguous, particularly in developing economies where out-of-pocket spending can threaten financial security. In Indonesia, health costs often represent a significant share of household consumption, creating both potential health benefits and financial strain. This examines how household health expenditure and health insurance ownership influence subjective well-being, measured through life satisfaction and happiness, among Indonesian households. **Methods:** Using nationally representative data from the fifth wave of the Indonesian Family Life Survey (IFLS5, 2014), this study applies probit models to estimate the effects of household health expenditure and insurance ownership on two binary SWB outcomes: life satisfaction and happiness. **Findings:** Neither health expenditure nor insurance ownership shows a significant association with life satisfaction or happiness in the full sample. Among the poorest 20% of households, however, higher health expenditure is negatively associated with happiness, suggesting that financial burden outweighs potential health benefits; no significant effects appear among wealthier households. Religiosity, education, and marital status are positively and significantly related to SWB. **Conclusion:** The largely insignificant results imply that raising household medical spending or insurance ownership alone is unlikely to improve subjective well-being. Policy should prioritize stronger financial risk protection and effective primary and preventive care, especially for the poorest households where higher spending is linked to lower happiness, through targeted subsidies and lower copayments. **Novelty/Originality of this article:** This study provides new empirical evidence from a developing-country context by jointly analyzing health expenditure and insurance ownership as determinants of subjective well-being. It highlights the dual nature of health spending, as both a potential investment in human capital and a source of financial stress, and underscores the need for equitable health financing to enhance population well-being.

KEYWORDS: financial protection; health expenditure; Indonesia; subjective well-being

1. Introduction

The relationship between health and subjective well-being operates through multiple, interrelated mechanisms, such as biological, psychological, and behavioral dimensions. Good health alleviates physical pain, fatigue, and functional limitations, allowing individuals to participate more actively in work, leisure, and social activities that contribute to a sense of purpose and fulfillment (Diener & Tay, 2018; Steptoe et al., 2015). It also reduces psychological distress and uncertainty about future illness, thereby fostering a sense of control and security over life circumstances. Healthier individuals are more likely to engage in positive health behaviors, such as regular exercise, balanced nutrition, adequate sleep,

Cite This Article:

Afrizal, R. F. (2026). An analysis of household health expenditure and subjective well-being. *Gender, Human Development, and Economics*, 3(2), 111–126. <https://doi.org/10.61511/ghde.v3i2.2026.3252>

Copyright: © 2026 by the author. This article is distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).



and preventive medical care, which in turn enhance mood, resilience, and cognitive functioning (Diener & Tay, 2018; Steptoe et al., 2015). Furthermore, the psychological benefits of health extend beyond behavioral pathways. Positive emotional states and optimism have been shown to influence physiological processes, including immune function and cardiovascular regulation. Individuals with higher levels of positive affect exhibit stronger immune responses and lower levels of systemic inflammation, which contribute to long-term well-being (Segerstrom & Sephton, 2010; Zuccarella-Hackl et al., 2024).

Health expenditure constitutes a crucial pathway through which individuals and households can enhance their health status and, consequently, their subjective well-being. Expenditure on healthcare services, preventive measures, and health-promoting goods such as nutritious food, clean water, and adequate housing contributes directly to better physical and mental health outcomes (Bloom et al., 2023; World Health Organization (WHO), 2021). Access to quality medical care enables early detection and treatment of diseases, reducing morbidity and prolonging life expectancy, while investment in preventive health—such as immunization, regular check-ups, and health education—lowers the likelihood of chronic illness and psychological distress (Organisation for Economic Co-operation and Development (OECD), 2023). Improved health, in turn, enhances individuals' ability to work, participate in social life, and maintain emotional stability, all of which are essential determinants of subjective well-being (Steptoe et al., 2013; Diener et al., 2018). Moreover, health spending can alleviate anxiety associated with the risk of illness and financial insecurity from medical shocks, particularly in contexts lacking comprehensive health insurance (Deaton, 2013; Van Doorslaer et al., 2007). By reducing health-related vulnerability, such expenditures strengthen individuals' sense of control and resilience, thereby improving both evaluative and emotional dimensions of well-being. Hence, household health expenditure should not only be seen as a cost but also as an investment in human capital that enhances life satisfaction and happiness through improved health outcomes.

Health expenditure serves as an important channel through which individuals and households can improve their health status and, in turn, their subjective well-being. Spending on healthcare services, preventive measures, and health-enhancing goods such as nutritious food, safe sanitation, and adequate housing contributes to improved physical and mental health outcomes (Bloom et al., 2023; WHO, 2021). Greater access to medical treatment enables early diagnosis and management of diseases, reduces morbidity, and enhances productivity and emotional stability (Steptoe et al., 2013; Diener et al., 2018). These improvements in health often translate into higher life satisfaction and a more positive sense of well-being. When health expenditures are moderate and preventive, the health promotion effect tends to dominate, improving well-being (Wang et al., 2024).

In contexts where healthcare costs are high, inefficiently managed, or not covered by insurance, households may experience significant financial strain and anxiety due to out-of-pocket payments (Flores et al., 2008; Van Doorslaer et al., 2007). Such catastrophic health expenditures can force households to reduce spending on other essential needs such as education, food, or housing, thereby undermining overall welfare and perceived life satisfaction (Xu et al., 2007). Furthermore, high medical spending can also reflect underlying health problems, meaning that greater expenditure may coincide with lower well-being because it signals poor health conditions rather than health improvement (McKee et al., 2013). Consequently, while reasonable and effective health spending can promote subjective well-being by improving health outcomes and reducing uncertainty, excessive or financially burdensome health expenditure may have the opposite effect, diminishing psychological stability and quality of life.

In many Indonesian households, health expenditure occupies a substantial portion of total consumption, which can pose serious pressures on financial security and household well-being. In 2023, Indonesia's total health spending reached IDR 614.5 trillion (USD 375.5 billion) (WHO, 2025b). Public financing covered 57.4% of that amount, while out-of-pocket payments made up 28.6% (WHO, 2025b). Even though Indonesia has implemented the national health insurance scheme (*Jaminan Kesehatan Nasional*, or JKN) aiming for

universal coverage, catastrophic health spending continues to afflict vulnerable households. A panel study across ten provinces found that between 2018 and 2019, 7.9 % of households in 2018 and 4.4 % in 2019 experienced health spending exceeding 10 % of total consumption (Fattah et al., 2023). Earlier research by Afrizal et al. (2025) also finds that household characteristics such as low income, absence of insurance, rural residence, and chronic illnesses increase the risk of catastrophic health spending. Because of this burden, households may reduce spending on essential goods, accumulate debt, or deplete savings to meet medical costs, which can reduce perceived life satisfaction and exacerbate psychological stress. Recognizing this dynamic is critical in a study of household expenditure and subjective well-being in Indonesia: health expenditure is not only a mechanism through which well-being may rise with a better health outcomes, but also a potential source of welfare loss when financial burden becomes too large.

More broadly, the empirical literature on subjective well-being remains skewed toward high-income countries, while evidence from low- and middle-income countries (LMICs) is still relatively limited (Deaton, 2008; OECD, 2013). This matters because key relationships between income, health, and well-being are not invariant across levels of development, so results from high-income settings may not generalize cleanly to LMIC contexts (Deaton, 2008). In many LMICs, health care financing still relies heavily on out-of-pocket payments, which can expose households to liquidity stress, consumption reallocation, and financial insecurity when medical needs arise (Wagstaff & van Doorslaer, 2003; Xu et al., 2003). As a result, health spending may affect subjective well-being through financial strain in addition to any welfare gains associated with improved health or access to care (World Health Organization & International Bank for Reconstruction and Development / The World Bank., 2021). Yet much of the LMIC evidence has emphasized catastrophic expenditure and impoverishment outcomes, with less direct attention to how health-related spending maps into standard subjective well-being measures (OECD, 2013; Wagstaff & van Doorslaer, 2003; Xu et al., 2003).

Despite the growing interest in subjective well-being research, studies that examine how household expenditure influences well-being remain limited, particularly in developing countries such as Indonesia. Previous studies have mainly focused on income, employment, and demographic characteristics as the primary determinants of well-being (Aryogi & Sari, 2016; Sujarwoto, 2021), while the effects of specific types of household expenditure have received less attention. The role of health spending, in particular, has not been thoroughly investigated, even though it can function both as an investment in human capital and as a potential source of financial strain. This study aims to fill this gap by analyzing the relationship between household expenditure patterns and subjective well-being in Indonesia, with a particular focus on health-related spending.

2. Methods

This study utilizes data from the fifth wave of the *Indonesian Family Life Survey* (IFLS), conducted in 2014 by RAND Corporation in collaboration with various Indonesian institutions. The IFLS is a nationally representative longitudinal survey covering approximately 83% of the Indonesian population, with rich information on household demographics, health, consumption, income, and individual well-being (Strauss et al., 2016). The 2014 wave is used in this study in a cross-sectional framework, as it provides the most recent complete data on both household expenditure and subjective well-being variables. The analysis focuses on individuals aged 15 years and older, for whom data on subjective well-being and relevant socio-economic characteristics are available. Households with missing information on key are excluded.

Table 1 sets out the operational definitions used in the analysis. Subjective well-being (SWB) is operationalized with two binary outcomes, life satisfaction and happiness, because together they capture the cognitive evaluation of one's life and the affective experience of

pleasant emotions that are standard in SWB research and recommended for cross-country and policy analysis (Diener et al., 2018; OECD, 2013; Stone & Mackie, 2013).

Table 1. Operational definition

Variable	Definition	Details
Dependent Variable		
Life satisfaction	How satisfied are you with your current life?"	Binary (1: satisfied; 0: unsatisfied)
Happiness	Considering the current situation, do you feel happy?	Binary (1: happy; 0 unhappy)
Main Independent Variable		
Household health expenditure	Health expenditures per household, including hospital costs, community health centers, private doctors, traditional healers, medicines, and others	Natural logarithmic
Health insurance ownership	Do you have any health insurance or receive any health coverage/benefits—for example, ASKES (<i>Asuransi Kesehatan</i>), ASTEK (<i>Asuransi Tenaga Kerja</i>)/Jamsostek (<i>Jaminan Sosial Tenaga Kerja</i>), employer-sponsored health insurance, a company/employee clinic, private health insurance, savings-linked health insurance, JAMKESMAS (<i>Jaminan Kesehatan Masyarakat</i>), JAMKESDA (<i>Jaminan Kesehatan Daerah</i>), JAMKESOS (<i>Jaminan Kesehatan Sosial</i>), JAMPERSAL (<i>Jaminan Persalinan</i>), or JKN (<i>Jaminan Kesehatan Nasional</i>)?	Binary (1: has health insurance; 0: does not have health insurance)
Control Variables		
Religiosity	In your opinion, how devout are you in your religion?	Categorical (0: Not religious; 1: Quite religious; 2: Religious; 3: Very religious)
Residence	Residential area	Binary (1: urban; 0: rural)
Employment	Working/striving to earn/help earn an income	Binary (1: Working; 0: Otherwise)
Years of schooling	Year of education completed	Continuous number
Age	Age of respondent	Continuous number
Age squared	Age (squared) of respondent	Quadratic
Married	Marital status	Binary (1: Married; 0: otherwise)
Household head	Household head status	Binary (1: If
Gender	Gender of respondent	Binary (1: Male; 0: female)
Chronic Illness	Individual who has been diagnosed with a chronic disease by a doctor/paramedic/nurse/midwife, including hypertension, diabetes, tuberculosis, asthma, other chronic lung diseases, heart attack or other heart problems, liver/heart disease, stroke, cancer or malignant tumors, arthritis/rheumatism, high cholesterol, prostate, kidney disease, stomach/digestive	Binary (1: has chronic illness; 0: otherwise)

Variable	Definition	Details
Household income	disorders, psychological problems, and memory-related diseases. Cumulative income of individuals in households, including income from primary employment & secondary employment, farming & non-farming businesses, and other sources of income	Natural logarithmic

The main empirical strategy consists of two distinct probit specifications, each run separately for life satisfaction and happiness. The first specification focuses on the log of annual per-capita household out-of-pocket health expenditure as the key regressor, alongside standard control variables. The second specification replaces the spending variable with a binary indicator of health insurance ownership (both private and public insurance) as the focal regressor while keeping the same controls. Including health insurance ownership alongside household expenditure is warranted because insurance captures risk protection and access channels that spending alone does not. Insurance reduces exposure to catastrophic out-of-pocket payments, preserves nonmedical consumption, and lowers financial stress, which are plausible pathways to higher life satisfaction and happiness. Recent evidence from Indonesia indicates continued risks of catastrophic health spending and highlights the financial protection role of JKN, implying welfare effects that are distinct from the level of household spending (Fattah et al., 2023; World Bank, 2020). Complementary quasi-experimental work shows that gaining public insurance improves subjective well-being, consistent with mechanisms operating through reduced financial hardship and improved perceived access (Kim & Koh, 2022). Modeling subjective well-being on both log health expenditure and insurance ownership therefore helps separate income or consumption effects from risk protection and access effects, which sharpens interpretation of estimated relationships in the Indonesian context. The log transform of health spending addresses right-skew and facilitates elasticity-style interpretation (Manning & Mullahy, 2001; Wooldridge, 2013).

A probit model is well suited for this study because the dependent variables are binary indicators of life satisfaction and happiness. Although the original items are ordinal, the responses are recoded into binary outcomes to highlight the policy-relevant distinction between high subjective well-being and otherwise. This specification allows the estimates to be interpreted directly as changes in the probability of reporting high well-being. Probit maps covariates to a probability through the standard normal cumulative distribution while keeping predictions within the 0–1 range and providing a clear latent-utility interpretation. This model assumes that the error terms follow a standard normal distribution, making it suitable for cases where the latent variable, such as well being, is influenced by unobserved factors that are normally distributed. In studies involving life satisfaction, researchers often use ordered probit models because responses are typically categorical and ordered, allowing for meaningful interpretation of marginal effects while respecting the ordinal nature of the data. The model has been widely applied in well-being research, including analyses linking health, income, and environmental factors to happiness, demonstrating its robustness in handling subjective survey data.

Estimated probit models that link the probability of reporting high life satisfaction to a linear index of covariates, with the mapping given by the standard normal cumulative distribution function $\Phi(\cdot)$. First specification is illustrated by equation below:

$$\begin{aligned} \Pr(\text{LifeSatisfaction}_i | \text{Happiness}_i = 1 | X_i) \\ = \Phi(\alpha_0 + \alpha_1 \ln \text{HealthExpenditure}_i + \alpha_2 \text{Other controls}) \end{aligned} \quad (\text{Eq. 1})$$

and in an alternative specification, health expenditure were replaced by health insurance ownership status:

$$\begin{aligned} & \Pr(\text{LifeSatisfaction}_i | \text{Happiness}_i = 1 | X_i) \\ & = \Phi(\alpha_0 + \alpha_1 \text{InsuranceOwnership}_i + \alpha_2 \text{Other controls}) \end{aligned} \quad (\text{Eq. 2})$$

For interpretation marginal effects were reported, which translate these coefficients into changes in the probability of high life satisfaction associated with a small change in each regressor, holding the others constant.

3. Results and Discussion

The final analytical sample consists of approximately 26,802 individuals. Table 2 presents the summary statistics and shows a relatively young sample with moderate schooling in Indonesia. Health spending varies widely across households relative to income, suggesting uneven financial exposure to medical needs. Most respondents report being happy and satisfied with life, indicating high levels of subjective well-being. The sample is mostly urban, with high rates of employment and marriage, and a near-balanced gender mix. Insurance coverage is close to half of the sample, which supports meaningful comparisons between insured and uninsured groups. A small share report chronic illness, and religiosity is common, which may matter for well-being. The inclusion of both age and age squared signals that the analysis will allow a non-linear age profile. Overall, the distribution of characteristics appears suitable for examining how health spending and insurance relate to subjective well-being.

Table 2. Summary statistics

Variable	Mean	Std. Dev.	Min	Max
Ln Health Expenditure	12.533	1.679	6.215	19.807
Education	8.879	4.279	0	22
Age	37.261	14.572	14	101
Age squared	1600.709	1243.71	196	10201
Ln income month	14.566	1.189	3.912	20.804

Variable	Mean (%)	Std. Dev.
Happiness	0.917	0.275
Life satisfaction	0.863	0.344
Religiosity		
<i>Not Religious</i>	0.028	0.164
<i>Quite Religious</i>	0.207	0.405
<i>Religious</i>	0.6	0.49
<i>Very Religious</i>	0.165	0.371
Urban	0.581	0.493
Employment	0.692	0.462
Married	0.747	0.435
Household head status	.0386	0.487
Male	0.471	0.499
Chronic Illness	0.118	0.323
Insurance Ownership	0.490	0.499

Table 3 reports marginal effects from probit models for life satisfaction and happiness. The two variables of interest do not show meaningful associations with subjective well-being. The marginal effects of logged household health expenditure are near zero and statistically insignificant in both outcomes, and health insurance ownership is insignificant for life satisfaction and only weakly negative for happiness, not significant at the 5 percent level. One plausible interpretation is that higher health spending reflects shocks rather than investment in well-being. In settings where out-of-pocket payments remain substantial,

health expenditures are often triggered by illness episodes and can impose financial stress on households. Evidence for Indonesia shows that, despite the expansion of *Jaminan Kesehatan Nasional* (JKN), out-of-pocket payments still account for more than 30 percent of current health expenditure and continue to be an important source of financial burden (Maulana et al., 2022). Recent work on catastrophic health expenditure in Indonesia confirms that many households face spending that threatens their capacity to pay for other basic needs (Afrizal et al., 2025).

Health spending reduces disposable income available for consumption or savings, which directly lowers life satisfaction. This is particularly impactful in households with lower income elasticity or limited financial buffers. The real income inhibitory effect occurs because medical costs crowd out other forms of consumption that contribute more directly to emotional well-being, such as leisure or social activities (Wang et al., 2024).

Table 3. Estimation results

VARIABLES	Life satisfaction		Happiness	
	(1) Marginal effect	(2) Marginal effect	(3) Marginal effect	(4) Marginal effect
Ln household health expenditure	-9.29e-05 (0.00125)		-0.00135 (0.000889)	
Health insurance ownership		-0.00482 (0.00416)		-0.00558* (0.00298)
Religiosity (base: Not religious)				
<i>Quite religious</i>	0.0937*** (0.0169)	0.0939*** (0.0169)	0.0954*** (0.0146)	0.0955*** (0.0146)
<i>Religious</i>	0.144*** (0.0164)	0.144*** (0.0164)	0.122*** (0.0142)	0.122*** (0.0142)
<i>Very religious</i>	0.156*** (0.0167)	0.157*** (0.0167)	0.116*** (0.0145)	0.117*** (0.0145)
Residence (base: Rural)	0.00101 (0.00431)	0.00149 (0.00433)	-0.00348 (0.00310)	-0.00280 (0.00311)
Employment	-0.00573 (0.00505)	-0.00578 (0.00509)	0.00511 (0.00354)	0.00526 (0.00354)
Years of schooling	0.00632*** (0.000565)	0.00636*** (0.000556)	0.00618*** (0.000401)	0.00618*** (0.000401)
Age	-0.00669*** (0.000833)	-0.00667*** (0.000885)	-0.00627*** (0.000568)	-0.00627*** (0.000567)
Age squared	6.51e-05*** (9.25e-06)	6.50e-05*** (9.89e-06)	5.16e-05*** (6.14e-06)	5.15e-05*** (6.13e-06)
Married	0.0244*** (0.00550)	0.0244*** (0.00564)	0.0587*** (0.00368)	0.0588*** (0.00368)
Household head	-0.000701 (0.00589)	-0.000561 (0.00598)	0.00982** (0.00410)	0.0102** (0.00410)
Gender (base: female)	-0.0346*** (0.00550)	-0.0347*** (0.00555)	-0.0173*** (0.00384)	-0.0175*** (0.00384)
Chronic illness	-0.00847 (0.00638)	-0.00830 (0.00641)	-0.00643 (0.00435)	-0.00656 (0.00435)
Ln household income	0.0283*** (0.00181)	0.0284*** (0.00176)	0.0182*** (0.00125)	0.0180*** (0.00124)
Observations	26,802	26,802	26,802	26,802

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

While health expenditures can improve physical condition, thereby enhancing subjective well-being, this effect is often gradual and uncertain. Moreover, many medical expenses are reactive, addressing illness rather than promoting preventive or long-term

health, and may not produce noticeable happiness gains. When health improvements merely restore normal functioning, happiness typically returns to baseline due to the hedonic adaptation effect (Wang et al., 2024).

The concept of hedonic adaptation, briefly invoked above, has a well-established foundation in the psychological literature on subjective well-being that merits closer elaboration given its centrality to interpreting this study's null results. Classical formulations describe a hedonic treadmill in which individuals return to a relatively stable baseline level of happiness after both positive and negative life events, implying that even meaningful improvements in circumstances, including health, may fail to produce lasting gains in reported well-being (Diener et al., 2006). Subsequent longitudinal research has qualified this classical view, showing that adaptation is neither universal nor complete: while individuals do adapt substantially to many life events, certain categories of shocks, including unemployment, bereavement, and disability, are associated with well-being changes that persist well beyond the timeframe the treadmill model would predict (Lucas, 2007). This refinement is directly relevant to the interpretation offered here. If health expenditure in the IFLS5 sample largely reflects treatment for acute or self-limiting conditions, reported well-being may indeed revert toward baseline once the immediate health threat resolves, consistent with the treadmill pattern and helping to explain the null average effect of expenditure in the full sample. However, for the subset of individuals facing chronic illness, whose objective health need is unlikely to fully resolve, the adaptation process may be markedly slower or incomplete, which is consistent with this study's finding that chronic illness carries a negative, and in the poorest quintile statistically significant, marginal effect on both life satisfaction and happiness even after controlling for expenditure and income. Distinguishing between these two illness trajectories, transient versus chronic, is therefore not merely a theoretical nuance but a substantive explanation for why health spending as a single aggregate measure fails to capture a meaningful average relationship with subjective well-being. It pools together expenditures associated with conditions that individuals largely adapt away from and expenditures associated with conditions to which adaptation is slow, partial, or absent. Health spending is also often viewed as compulsory or unexpected, which induces stress and financial insecurity. These psychological burdens reduce perceived well-being even when health outcomes improve. In contrast, discretionary spending, such as travel or gifts, is associated with more autonomy and immediate joy, reinforcing higher subjective well-being (Stenlund et al., 2024).

The negative association between health spending and subjective well-being among poor households can be more clearly interpreted by situating the findings within established theoretical frameworks in health economics and well-being research. In the health capital model, medical spending can be viewed as an investment that raises the stock of health and thereby increases utility through improved functioning and quality of life (Grossman, 1972). However, this benefit is conditional on households' ability to finance such spending without disrupting other welfare-enhancing consumption. When households face tight budget constraints and limited capacity to smooth consumption, health expenditures, especially when they are unplanned and triggered by illness shocks, can crowd out basic consumption and savings and generate acute financial stress, leading to lower life satisfaction and happiness (Deaton, 1992; Friedman, 1957). This mechanism is consistent with the stress process and resource-based perspectives, which emphasize that financial strain and threatened resources are central pathways through which economic shocks undermine psychological well-being (Hobfoll, 1989; Pearlin et al., 1981).

In addition, Table 4 displays an estimation for 20% lowest and highest income of households. In Q1 households, an increase of health spending lowers the probability of reporting happiness by about 0.57 percentage points while in Q5, the marginal effect is small and imprecise. For low-income households, health expenditures may place a heavy financial burden on limited disposable income. The Q1 pattern is consistent with evidence that out-of-pocket health payments can create financial hardship that undermines well-being. Global monitoring by WHO (2025a) links such payments to catastrophic spending and impoverishment, especially where prepayment and pooling are limited. The absence of

an effect in Q5 likely reflects better ability to pay and smoother budgets among richer households, so additional health spending does not translate into material financial stress. Comparative evidence shows that reliance on out-of-pocket payments tends to place a heavier relative burden on lower-income groups (OECD, 2023), which fits the heterogeneous pattern seen here.

Table 4. Estimation results

VARIABLES	Life satisfaction		Happiness	
	(1)	(2)	(3)	(4)
	ME Q1 Household	ME Q5 Household	ME Q1 Household	ME Q5 Household
Ln Household Health Expenditure	-0.000523 (0.00361)	0.000236 (0.00247)	-0.00569** (0.00287)	0.00139 (0.00163)
Religiosity (base: Not religious)				
<i>Quite religious</i>	0.162*** (0.0415)	-0.000419 (0.0319)	0.143*** (0.0382)	0.0198 (0.0259)
<i>Religious</i>	0.249*** (0.0396)	0.0219 (0.0310)	0.198*** (0.0367)	0.0401 (0.0253)
<i>Very religious</i>	0.256*** (0.0408)	0.0371 (0.0320)	0.181*** (0.0377)	0.0305 (0.0261)
Residence (base: Rural)	0.0156 (0.0115)	-0.0165* (0.00957)	-0.0260*** (0.00916)	-0.000390 (0.00619)
Employment	0.00643 (0.0135)	-0.0234** (0.0104)	0.0165 (0.0106)	0.00334 (0.00660)
Years of schooling	0.00616*** (0.00169)	0.00725*** (0.00111)	0.00851*** (0.00135)	0.00557*** (0.000724)
Age	-0.00844*** (0.00211)	-0.00432** (0.00173)	-0.00933*** (0.00165)	-0.00420*** (0.00107)
Age squared	7.68e-05*** (2.27e-05)	5.36e-05*** (1.98e-05)	8.06e-05*** (1.75e-05)	4.08e-05*** (1.18e-05)
Married	0.0117 (0.0150)	0.0243** (0.0104)	0.0741*** (0.0113)	0.0527*** (0.00660)
Household head	-0.0296* (0.0163)	-0.0168 (0.0115)	-0.0274** (0.0127)	0.00243 (0.00746)
Gender (base: female)	-0.00381 (0.0151)	-0.00994 (0.0107)	0.0145 (0.0119)	-0.0151** (0.00682)
Chronic illness	-0.0305* (0.0175)	-0.00514 (0.0127)	-0.0250* (0.0132)	-0.0131* (0.00786)
Ln household income	0.0312*** (0.00490)	0.0227*** (0.00378)	0.0219*** (0.00381)	0.0124*** (0.00241)
Observations	5,023	5,023	5,023	5,023

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Beyond the financial burden channel, the negative association between health spending and subjective well-being among poor households may also reflect several other mechanisms that are worth exploring. Health expenditure is often not a fully discretionary choice, and can be triggered by acute or worsening illness, so higher spending may partly proxy the severity of a health shock that directly lowers happiness and life satisfaction. In this case, the estimated relationship can be strengthened by reverse causality or omitted health severity, rather than capturing the welfare impact of spending per se (Smith, 1999; Wagstaff, 2007). The same spending episode can also be psychologically costly when it is financed through coping strategies that increase insecurity, such as borrowing, drawing down savings, or selling assets, which can reduce well-being even if care is obtained and symptoms improve (Gertler & Gruber, 2002; Xu et al., 2003). In addition, poorer households

may face lower returns to each additional unit of spending if they confront higher effective prices, informal fees, or lower quality of care, so spending more does not translate into commensurate perceived health gains and can instead heighten frustration and stress (Donabedian, 1988).

The pattern of findings across Table 3 and Table 4 can be further situated within the Andersen Behavioral Model of health services use, a framework long employed in medical sociology to explain how predisposing, enabling, and need factors jointly shape health-related outcomes (Andersen, 1995). In this study's specification, predisposing characteristics such as religiosity, education, and age describe an individual's underlying propensity toward particular health and life outcomes; enabling factors such as insurance ownership, household income, and urban residence capture the resources and access conditions that translate propensity into realized well-being; and need factors, proxied here by chronic illness, represent the objective and perceived health conditions that trigger expenditure in the first place. Viewed through this lens, the largely insignificant coefficient on health expenditure is not necessarily evidence that health spending is irrelevant to well-being, but rather that spending alone, stripped of the enabling and predisposing context in which it occurs, is an incomplete proxy for the welfare consequences of illness. The framework helps explain why insurance ownership performs differently from expenditure: as an enabling factor, insurance is theorized to operate primarily by removing barriers to timely care and by pooling financial risk before a health shock occurs, rather than by directly signaling the severity of an ongoing illness episode (Andersen, 1995). This distinction is consistent with the weak but directionally negative marginal effect of insurance ownership on happiness observed in Table 3, which may reflect adverse selection into insurance among individuals who already anticipate greater healthcare needs, a possibility that the cross-sectional design of this study cannot fully rule out.

The Andersen framework is particularly well suited to the Indonesian case because it has been extensively applied and adapted across low- and middle-income country settings to explain uneven patterns of healthcare-seeking behavior, including in decentralized health systems where enabling resources vary substantially by region (Babitsch et al., 2012). In such contexts, two households with identical need factors, such as an equivalent chronic illness burden, may exhibit markedly different well-being trajectories depending on their enabling resources: a household with insurance coverage, adequate income, and proximity to quality facilities can convert health spending into an effective health capital investment, whereas a household lacking these enabling conditions may experience the same nominal expenditure as a pure financial shock. This heterogeneity in enabling resources offers a sociologically grounded explanation for why the present study detects a significant negative association between health expenditure and happiness only within the poorest quintile (Q1), where enabling factors are most constrained, while no such association emerges in the richest quintile (Q5), where enabling resources are comparatively abundant. Framing the results in this way also clarifies the policy implication discussed later in this paper: because financial risk protection functions as an enabling factor, interventions that strengthen it, such as premium subsidies or reduced copayments, are theoretically positioned to shift the marginal effect of health expenditure on well-being from a source of strain toward a genuine investment in health capital, particularly for households at the bottom of the income distribution.

Several controls display clear relationships with well-being. The largest and most precise marginal effects are found for religiosity and marriage. Relative to the non-religious group, every higher level of religiosity is associated with a markedly higher probability of reporting both life satisfaction and happiness, and the gains rise with intensity. Religious belief provides existential certainty—a sense that life has meaning, purpose, and direction. This coherence helps individuals interpret hardships as part of a meaningful order, buffering negative emotions and promoting resilience against stress and loss (Fabricators et al., 2000; Villani et al., 2019). This is in line with Indonesian evidence from nationally representative data, which shows that self-reported religiosity is positively associated with

life satisfaction even after controlling for socioeconomic characteristics (Choirina et al., 2021). It is also consistent with a broader meta-analysis that finds a generally positive relationship between religiosity and life satisfaction across countries (Sholihin et al., 2022). In the Indonesian context, religious involvement may provide social support, a sense of meaning, and coping resources, which help individuals evaluate their lives more positively independent of their material circumstances.

A further pattern worth highlighting is the consistently negative and statistically significant coefficient on the male gender indicator across both outcomes and both specifications in Table 3, indicating that women in this sample report higher probabilities of life satisfaction and happiness than men, holding other characteristics constant. At first glance this may appear counterintuitive given that women in many developing-country settings face greater constraints in education, labor market participation, and decision-making autonomy. However, this pattern closely mirrors what the subjective well-being literature has termed the gender well-being paradox: across a substantial body of cross-national evidence, women tend to report higher evaluative well-being, including life satisfaction and happiness, even while simultaneously reporting worse outcomes on measures of negative affect, stress, and mental health (Kaiser et al., 2025). This apparent contradiction has been attributed to several non-mutually-exclusive explanations in the literature, including differences in affect intensity and coping styles, cultural norms that shape expectations against which individuals evaluate their own lives, and measurement-related factors such as systematic differences in how men and women use response scales when answering subjective survey questions (Kaiser et al., 2025).

The gender pattern observed here is also consistent with evidence specific to lower- and middle-income countries, where the relationship between formal gender equality and the well-being gap tends to differ from patterns observed in high-income settings. In some LMIC contexts, greater legal gender equality is associated with a larger relative well-being advantage for women rather than a smaller one, a finding that has been linked to the way formal rights interact with local social expectations and family support structures (Kaiser et al., 2025). Within the Indonesian context specifically, women's evaluative well-being may be further shaped by strong norms around family roles and religious and communal participation, both of which are independently associated with higher subjective well-being in this study's estimates. Because religiosity and marital status are both significant and positive predictors of well-being in Table 3, and because women in the IFLS5 sample may occupy social roles more closely tied to these domains, such as household and community religious participation, part of the observed gender gap may operate indirectly through these predisposing factors rather than through gender alone. This possibility cannot be fully disentangled with the current cross-sectional specification, but it suggests a valuable direction for future work using interaction terms between gender and religiosity, or between gender and marital status, to determine whether the well-being returns to these social roles differ systematically by gender.

It is also worth noting a caution raised consistently in this literature, where self-reported life satisfaction and happiness are subject to differential scale use across genders, meaning that part of the observed gap may reflect how men and women translate their internal states into a binary or ordinal response rather than a true difference in underlying well-being (Kaiser et al., 2025). This measurement caveat does not invalidate the finding, but it does suggest that the gender coefficient in this study should be interpreted as a robust empirical regularity consistent with the broader literature, rather than as direct evidence of a specific underlying mechanism.

Being married also shows a large positive association, especially for happiness, where the effect is among the biggest in Table 3 and Table 4. Having a committed partner provides a stable source of empathy and practical help during challenges, fostering higher life satisfaction and happiness (Grover & Helliwell, 2015). Marriage is also associated with healthier behaviors, fewer risk-taking tendencies, and better mental health outcomes.

Spouses often monitor each other's well-being, encouraging medical care, healthier routines, and emotional stability (Huntington et al., 2021).

Overall, the results imply that increasing household health spending alone is unlikely to raise subjective well-being in Indonesia and may even be associated with lower happiness when it reflects costly episodes of illness. Instead, factors such as religiosity, education, income, and marital status appear to play a more central role in shaping both life satisfaction and happiness. From a policy perspective, this suggests that efforts to improve well-being should focus on preventing illness and reducing the financial risk of health shocks through stronger financial protection and more effective JKN implementation, while also addressing broader determinants of well-being, including income opportunities, education, and community and family support

4. Conclusions

Across the full sample, neither logged household health expenditure nor insurance ownership is associated with higher subjective well-being. The marginal effects are very small and statistically insignificant for both life satisfaction and happiness. When the sample is split by quantile of household income, a clearer pattern appears. In the poorest quintile (Q1), higher health spending is linked to lower happiness, with an effect around half a percentage point for a one-unit increase in log spending, while no effect is detected for life satisfaction. In the richest quintile (Q5), there is no meaningful association for either outcome. Insurance ownership remains statistically null in both groups. Taken together, the results point to financial strain rather than medical spending per se as the likely channel that matters for well-being among low-income households.

Policy should prioritize stronger financial protection for poor households through targeted premium subsidies, lower copayments, and caps on out-of-pocket spending. These recommendations, however, cannot be separated from the practical realities of how financial protection is actually delivered on the ground. Expanding subsidies or lowering copayments on paper is only meaningful if households can convert that formal entitlement into real reductions in out-of-pocket burden, which in turn depends on whether adequate facilities, health workers, and medicines are actually reachable where poor households live. In many parts of Indonesia, particularly in remote and rural areas, the constraint on financial protection is not only how generous the subsidy scheme is, but also whether the supply side of the health system, including provider availability, referral pathways, and administrative capacity, can absorb and deliver on that entitlement without long delays or informal costs that erode its intended benefit. This is especially relevant for informal-sector households, who often struggle most with maintaining continuous premium contributions and who are frequently the same households identified in this study as most exposed to the negative well-being consequences of health spending. A policy design that expands financial protection without simultaneously strengthening service readiness risks leaving the underlying mechanism connecting health expenditure to lower happiness among low-income households largely unresolved, since households may technically hold entitlements they cannot easily use. For this reason, demand-side measures such as premium subsidies and copayment caps should be treated as complementary to, rather than a substitute for, continued investment in the supply-side capacity needed to make those entitlements functional in daily practice. Future evaluations of health financing reform in Indonesia would therefore benefit from assessing not only enrollment or nominal coverage rates, but also realized reductions in household financial burden and corresponding gains in subjective well-being, particularly among the poorest segments of the population where this study finds the sharpest welfare costs of health spending. Benefit design should emphasize effective primary and preventive care, essential medicines, and chronic disease management to reduce the stress and welfare losses associated with illness and medical bills. Programmatic complements such as mental health screening can further support well-being, particularly when financial strain is high. A key limitation is potential endogeneity between health expenditure and well-being, including reverse causality and unobserved

health shocks that may jointly affect spending and subjective outcomes. In addition, self-reported well-being and health expenditure may contain measurement error, which can attenuate estimated effects; future work could address these issues using longitudinal data and instrumental-variable or control-function approaches.

Acknowledgement

The author thank Faisal Madjid Alyasa for the constructive feedback to the manuscript written.

Author Contribution

R.F.A. was solely responsible for all aspects of this research, including conceptualization, methodology design, data collection, formal analysis, investigation, writing of the original draft, and review and editing of the final manuscript.

Funding

This research received no external funding.

Ethical Review Board Statement

Not available.

Informed Consent Statement

Not available.

Data Availability Statement

The dataset used in this study is available from the corresponding author on reasonable request.

Conflicts of Interest

The author declare no conflict of interest.

Declaration of Generative AI Use

During the preparation of this work, the author used Perplexity to assist in finding of literature for the manuscript. After using this tool, the author reviewed and edited the content as needed and took full responsibility for the content of the publication.

Open Access

©2026. The author. This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

References

- Afrizal, R. F., Hasya, N., Harda, F. P., Alfathin, W. A., Latifah, V. N., Nainggolan, M. R., Jaelani, F. R., & Sihalohe, E. D. (2025). Determinants of catastrophic health expenditure of households in Indonesia. *Jurnal Ekonomi Kesehatan Indonesia*, 10(1), 3. <https://doi.org/10.7454/eki.v10i1.1136>
- Aryogi, I., & Sari, D. W. (2016). Subjective well-being individu dalam rumah tangga di Indonesia. *Jurnal Ilmu Ekonomi Terapan*, 1(1), 1–10. <https://doi.org/10.20473/JIET.V1I1.1900>

- Choirina, V. N., Ayrisa, Y., & Wibowo, Y. S. (2021). Religiosity and life satisfaction in Indonesia: Evidence from a community survey. *Journal of Educational, Health and Community Psychology*, 10(1), 38–47. <https://doi.org/10.12928/JEHCP.V10I1.19625>
- Deaton, A. (1992). Understanding consumption. *Understanding consumption*. <https://doi.org/10.1093/0198288247.001.0001>
- Deaton, A. (2008). Income, health, and well-being around the world: Evidence from the Gallup World Poll. *The Journal of Economic Perspectives*, 22(2), 53–72. <https://doi.org/10.1257/jep.22.2.53>
- Deaton, A. (2013). *The great escape: Health, wealth, and the origins of inequality*. Princeton University Press. <https://doi.org/10.2307/J.CTT3FGXBM>
- Diener, E., Lucas, R. E., & Oishi, S. (2018). Advances and open questions in the science of subjective well-being. *Collabra. Psychology*, 4(1). <https://doi.org/10.1525/COLLABRA.115>
- Diener, E., & Tay, L. (2018). *Handbook of well-being*. Salt Lake City, UT: DEF Publishers.
- Donabedian, A. (1988). The quality of care. How can it be assessed? *JAMA*, 260(12), 1743–1748. <https://doi.org/10.1001/jama.260.12.1743>
- Fabricators, A. N., Handal, P. J., & Fenzel, L. M. (2000). Personal spirituality as a moderator of the relationship between stressors and subjective well-being. *Journal of Psychology and Theology*, 28(3), 221–228. <https://doi.org/10.1177/009164710002800305>
- Fattah, R. A., Cheng, Q., Thabrany, H., Susilo, D., Satrya, A., Haemmerli, M., Kosen, S., Novitasari, D., Puteri, G. C., Adawiyah, E., Hayen, A., Gilson, L., Mills, A., Tangcharoensathien, V., Jan, S., Asante, A., & Wiseman, V.. (2023). Incidence of catastrophic health spending in Indonesia: Insights from a household panel study 2018–2019. *International Journal for Equity in Health*, 22(1), 1–12. <https://doi.org/10.1186/S12939-023-01980-W/TABLES/5>
- Flores, G., Krishnakumar, J., O'Donnell, O., & Van Doorslaer, E. (2008). Coping with health-care costs: Implications for the measurement of catastrophic expenditures and poverty. *Health Economics*, 17(12), 1393–1412. <https://doi.org/10.1002/HEC.1338>
- Friedman, M. (1957). A theory of the consumption function. *A Theory of the Consumption Function*, 1, 1–6. <https://www.nber.org/books-and-chapters/theory-consumption-function>
- Gertler, P., & Gruber, J. (2002). Insuring consumption against illness. *American Economic Review*, 92(1), 51–70. <https://doi.org/10.1257/000282802760015603>
- Grossman, M. (1972). On the concept of health capital and the demand for health. *Journal of Political Economy*, 80(2), 223–255. <https://www.jstor.org/stable/1830580>
- Grover, S., & Helliwell, J. F. (2015). *How's life at home? New evidence on marriage and the set point for happiness*. <https://doi.org/10.3386/W20794>
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513–524. <https://doi.org/10.1037/0003-066X.44.3.513>
- Huntington, C., Stanley, S. M., Doss, B. D., & Rhoades, G. K. (2021). Happy, healthy and wedded? How the transition to marriage affects mental and physical health. *Journal of Family Psychology*, 36(4), 608. <https://doi.org/10.1037/FAM0000913>
- Kim, S., & Koh, K. (2022). Health insurance and subjective well-being: Evidence from two healthcare reforms in the United States. *Health Economics*, 31(1), 233–249. <https://doi.org/10.1002/HEC.4448>
- Manning, W. G., & Mullahy, J. (2001). Estimating log models: To transform or not to transform? *Journal of Health Economics*, 20(4), 461–494. [https://doi.org/10.1016/S0167-6296\(01\)00086-8](https://doi.org/10.1016/S0167-6296(01)00086-8)
- Maulana, N., Soewondo, P., Adani, N., Limasalle, P., & Pattnaik, A. (2022). How Jaminan Kesehatan Nasional (JKN) coverage influences out-of-pocket (OOP) payments by vulnerable populations in Indonesia. *PLOS Global Public Health*, 2(7), e0000203. <https://doi.org/10.1371/JOURNAL.PGPH.0000203>
- McKee, M., Balabanova, D., Basu, S., Ricciardi, W., & Stuckler, D. (2013). Universal health coverage: A quest for all countries but under threat in some. *Value in Health*, 16(1), S39–S45. <https://doi.org/10.1016/J.JVAL.2012.10.001>

- OECD. (2013). OECD guidelines on measuring subjective well-being. *Psychological Science*, 20(2), 215–234. <http://dx.doi.org/10.1787/9789264191655-en>
- OECD. (2023). *Health at a glance 2023 (Health at a Glance)*. OECD. <https://doi.org/10.1787/7A7AFB35-EN>
- Pearlin, L. I., Lieberman, M. A., Menaghan, E. G., & Mullan, J. T. (1981). The stress process. *Journal of Health and Social Behavior*, 22(4), 337–356. <https://doi.org/10.2307/2136676>
- Segerstrom, S. C., & Sephton, S. E. (2010). Optimistic expectancies and cell-mediated immunity: The role of positive affect. *Psychological Science*, 21(3), 448–455. <https://doi.org/10.1177/0956797610362061>
- Sholihin, M., Hardivizon, H., Wanto, D., & Saputra, H. (2022). The effect of religiosity on life satisfaction: A meta-analysis. *HTS Theological Studies*, 78(4), 1–10. <https://doi.org/10.4102/HTS.V78I4.7172>
- Smith, J. P. (1999). Healthy bodies and thick wallets: The dual relation between health and economic status. *The Journal of Economic Perspectives*, 13(2), 144. <https://doi.org/10.1257/jep.13.2.145>
- Stenlund, S., Guo, Y., Rights, J., Dwyer, R., & Dunn, E. (2024). How spending decisions shape happiness in everyday life. *Communications Psychology*, 2(1), 1–6. <https://doi.org/10.1038/S44271-024-00166-6>
- Steptoe, A., Deaton, A., & Stone, A. A. (2015). Subjective wellbeing, health, and ageing. *The Lancet*, 385(9968), 640–648. [https://doi.org/10.1016/S0140-6736\(13\)61489-0](https://doi.org/10.1016/S0140-6736(13)61489-0)
- Stone, A. A., & Mackie, C. (2013). *Subjective well-being: Measuring happiness, suffering, and other dimensions of experience [Internet]*. 1–190. <https://doi.org/10.17226/18548>
- Strauss, J., Witoelar, F., & Sikoki, B. (2016). *The fifth wave of the Indonesia Family Life Survey (IFLS5): Overview and field report*. In RAND Labor & Population.
- Sujarwoto. (2021). Development as happiness: A multidimensional analysis of subjective well-being in Indonesia. *Economics and Sociology*, 14(2), 274–293. <https://doi.org/10.14254/2071-789X.2021/14-2/15>
- van Doorslaer, E., O'Donnell, O., Rannan-Eliya, R. P., Somanathan, A., Adhikari, S. R., Garg, C. C., Harbianto, D., Herrin, A. N., Huq, M. N., Ibragimova, S., Karan, A., Lee, T.-J., Leung, G. M., Lu, J.-F. R., Ng, C. W., Pande, B. R., Racelis, R., Tao, S., Tin, K., Tisayaticom, K., Trisnantoro, L., Vasavid, C., & Zhao, Y. (2007). Catastrophic payments for health care in Asia. *Health Economics*, 16(11), 1159–1184. <https://doi.org/10.1002/hec.1209>
- Villani, D., Sorgente, A., Iannello, P., & Antonietti, A. (2019). The role of spirituality and religiosity in subjective well-being of individuals with different religious status. *Frontiers in Psychology*, 10, 1525. <https://doi.org/10.3389/FPSYG.2019.01525>
- Wagstaff, A. (2007). The economic consequences of health shocks: Evidence from Vietnam. *Journal of Health Economics*, 26(1), 82–100. <https://doi.org/10.1016/j.jhealeco.2006.07.001>
- Wagstaff, A., & van Doorslaer, E. (2003). Catastrophe and impoverishment in paying for health care: With applications to Vietnam 1993–1998. *Health Economics*, 12(11), 921–933. <https://doi.org/10.1002/hec.776>
- Wang, W., Sun, Y., Li, G., & Tang, Y. (2024). Household health expenditure does not improve people's subjective well-being in China. *Frontiers in Public Health*, 12, 1402191. <https://doi.org/10.3389/FPUBH.2024.1402191>
- WHO. (2025a). *SDG 3.8.2 catastrophic health spending (and related indicators)*. <https://www.who.int/data/gho/data/themes/topics/financial-protection/GHO/financial-protection>
- WHO. (2025b). *Tracking every rupiah: Indonesia's bold step towards universal health coverage*. <https://www.who.int/indonesia/news/detail/24-01-2025-tracking-every-rupiah-indonesia-s-bold-step-towards-universal-health-coverage>
- Wooldridge, J. M. (2013). *Introductory econometrics: A modern approach* (5th ed.). South-Western Cengage Learning.
- World Bank. (2020). *Indonesia public expenditure review: Spending for better results*. <https://www.worldbank.org/en/country/indonesia/publication/indonesia-public>

[expenditure-review](#)

- World Health Organization, & International Bank for Reconstruction and Development / The World Bank. (2021). *Global monitoring report on financial protection in health 2021*. <https://www.who.int/publications/i/item/9789240040953>
- Xu, K., Evans, D. B., Carrin, G., Aguilar-Rivera, A. M., Musgrove, P., & Evans, T. (2007). Protecting households from catastrophic health spending. *Health Affairs*, 26(4), 972–983. <https://doi.org/10.1377/HLTHAFF.26.4.972>
- Xu, K., Evans, D. B., Kawabata, K., Zeramardini, R., Klavus, J., & Murray, C. J. L. (2003). Household catastrophic health expenditure: A multicountry analysis. *Lancet*, 362(9378), 111–117. [https://doi.org/10.1016/S0140-6736\(03\)13861-5](https://doi.org/10.1016/S0140-6736(03)13861-5)
- Zuccarella-Hackl, C., Princip, M., Sivakumar, S., & von Känel, R. (2024). Positive psychological well-being and cardiovascular health. *Frontiers in Psychiatry*, 15, 1443978. <https://doi.org/10.3389/FPSYT.2024.1443978/BIBTEX>

Biography of Author

Rafa Fayza Afrizal, Department of Economics, Faculty of Economics and Business, Universitas Padjadjaran. She is pursuing a Master's degree in Applied Economics with a concentration in Health Economics. Her research interests include health economics, household welfare, and public policy analysis.

- Email: rafa21004@mail.unpad.ac.id
- ORCID: 0009-0009-2906-0852
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A