Does the Earned Income Tax Credit Affect Well-Being? *

Yasemin Akcan Barto†
University of Delaware‡

October 12, 2024

Abstract

The Earned Income Tax Credit (EITC) is one of the largest anti-poverty policy tools in the United States. This study estimates the causal relationship between the EITC and subjective well-being (SWB), which includes measures of happiness and life satisfaction, using two quasi-experimental approaches. First, I exploit state-level variation in EITC supplements over time to assess the impact of EITC generosity on SWB. Second, I use a simulated instrumental variable to analyze the effect of net income on SWB, accounting for endogenous labor supply responses. By leveraging policy changes at both the state and federal levels, depending on the number of children in a household, I find that while the EITC significantly increases household income, its direct impact on SWB is nuanced. Specifically, a $1,000 increase in EITC generosity is associated with a modest increase in SWB, particularly for individuals surveyed during the months when tax refunds are disbursed. However, changes in net income do not consistently lead to significant improvements in SWB.

Keywords: EITC, SWB, Simulated Instruments.
JEL Classifications: I31, H24, J38, C36, D19

*I thank my advisors Jeremy Tobacman, Carlos J. Asarta, Jens Schubert, and Katie Fitzpatrick for the continuous support during my studies. I would also like to express my gratitude to Peter G. VanderHart and the faculty of the Department of Economics at Bowling Green State University for their support.

†Department of Economics, 42 Amstel Ave Newark, DE 19716, yakcan@udel.edu

‡Department of Economics, 315 Maurer Center Bowling Green, OH 43402, yakcan@bgsu.edu

1 Introduction

Subjective well-being (SWB) encompasses happiness and life satisfaction, and it offers a holistic view of individuals' welfare that extends beyond traditional economic measures like income and GDP. A well-being focus provides valuable insights into various aspects of the human situation, enriching our understanding of how people experience and assess their lives. SWB is particularly valuable as a holistic welfare measure, which policymakers can target—and economists can study—as an objective. SWB sheds light on consumer behavior, showing how life satisfaction influences spending and saving behaviors. **?** found that higher life satisfaction leads to more spending on experiences over material goods. In labor market dynamics, SWB helps understanding the link between job satisfaction, work-life balance, and overall contentment. Clark (2019) noted that job satisfaction greatly affects overall life satisfaction. Additionally, SWB aids policy evaluations, as shown by Diener et al. (2018), ensuring policies enhance population well-being.

The Earned Income Tax Credit (EITC) plays a prominent role in alleviating poverty for low-income families in the United States. The EITC is a negative income tax that aims to help low- to middle- income families and increase labor force participation. At the US Federal level, the EITC has been modified six times since its inception in 1975, gradually increasing the maximum benefit amount and the budget expenditure by a factor of three in real terms. At the state level, the EITC generosity varies for each state. While some states do not offer the EITC benefits, other states supplement the federal EITC by as much as 85 percent.[1] The credit amount also varies by number of children in the households.

A growing body of literature evaluates the impacts of the EITC on various outcomes, including labor supply, health, fertility, and marriage.[2] This paper focuses on the impact

[1]The maximum credit per person rose from $400 to $6,557 for low-income families depending on number of the EITC qualifying children, while overall spending increased from $14 billion to $56 billion from 1975 to 2022. All dollar amounts in this paper have been deflated with the CPI-U to 2019 dollars.

[2]For instance, **?**), Kleven (2019) and Meyer (2002) investigate labor supply impacts of the EITC, Baughman and Dickert-Conlin (2003) and Baughman and Dickert-Conlin (2009) examine fertility impacts of the EITC.

of the EITC on SWB for several reasons. First, SWB can serve as a proxy [3] for utility , providing a more holistic measure of overall well-being and happiness beyond traditional economic indicators. Second, the Understanding America Study (UAS)- a six-year panel study conducted by the University of Southern California- provides enhanced data on subjective well-being, yielding deeper insights. Finally, aggregate measures of SWB [4] offer quantifiable assessments of overall well-being that are valuable for policymakers aiming to understand welfare levels.

Additionally, qualifying for EITC benefits may affect leisure time, as the credit is contingent upon employment. This study analyzes net income after EITC benefits to understand how changes in income influence the subjective well-being of low-income families. By generating after-tax net income levels for each respondent, I simulate the impact of policy changes on families with specific characteristics, such as income and family structure. This research contributes to the growing literature on the EITC and provides valuable insights into the broader causal relationship between income and subjective well-being.

To investigate the causal relationship between income and SWB, I utilize two quasi-experimental approaches. First, I take advantage of the EITC to measure changes in income, as the EITC significantly increases after-tax net income for low-income families. This provides a unique opportunity to estimate the causal relationship between income and SWB, given that exogenous changes in income are rarely identified in quasi-experimental designs. I begin with a reduced-form analysis to assess how changes in EITC generosity affect changes in SWB. Then, I employ a simulated instrumental variable (SIV) approach to isolate the causal effect of income on well-being. This SIV strategy leverages variations in EITC policy at both the state and federal levels, based on the number of children in a household and policy changes over time, enabling a more robust estimation of the impact of income on subjective well-being. Through this methodology, I aim to estimate both the direct impact of the EITC on SWB and to address the broader question of how income influences well-being.

[3] See Frey and Stutzer (2014) and Benjamin et al. (2012)
[4] Binder (013a)

I use panel data from the Understanding America Study (UAS), where SWB is measured through key indicators: (i) life satisfaction and (ii) happiness. In addition, the UAS contains sufficiently detailed information to simulate tax and benefit amounts using NBER's TAXSIM model (Feenberg, 1993). This enables me to generate after-tax net income levels for each respondent, simulating the impact of policy changes on families with specific characteristics, such as income and family structure.

In empirical results, I first show the partial correlations between the EITC and SWB. I find that any increase in the EITC leads to a decrease in SWB. Then, I focus on directional impact of the EITC on SWB using maximum credit, that an individual would be eligible, with different controls such as education, gender, and race. maximum EITC generosity that an individual qualify for appears to have a positive impact on SWB. Specifically, a $1,000 increase in EITC generosity is associated with 0.03-point increase in SWB for full sample and a 0.09-point increase for the sub-sample that took the survey during the months of March, April, and May. These results suggest that higher increase in SWB for the subsample is likely attributable to the receipt of EITC benefits during these particular months. Next, simulated instrumental variable by using NBER TAXSIM model allows me to capture the causality between net income and SWB. I find that changes in simulated EITC does not significantly change net income in general, however, it tends to increase net income by $5,900 for every $1,000 change for individuals with less than $60,000 income.

The structure of the paper is as follows: Section 2 provides additional background on the EITC and subjective well-being. Section 3 details the data sources, including the Understanding America Study (UAS) and the NBER's TAXSIM model. Section 4 outlines the reduced form and simulated instrumental variable research designs used to establish the causal link between the EITC, net income, and SWB. Section 5 presents the empirical results, while Section 6 covers robustness checks. Section 7 discusses the study's limitations, followed by Section 8, which provides the discussion of findings. Lastly, Section 9 concludes the study.

2 Background

The EITC is a highly effective tool for reducing poverty, supplementing income, and promoting work. It acts as a wage supplement for low-income families and individuals, providing a strong incentive to work. As a form of negative income tax for those earning the lowest wages, the EITC helps make work financially rewarding. Additionally, it increases the disposable income of low-income families and individuals, enhancing their overall economic well-being.

When first introduced, total dollar amount of the federal EITC generosity was approximately 14 billion dollars and remained around 14 billion dollars until 1986. After the expansion of TRA86, the generosity started to increase gradually over time. With OBRA90, it went up to $39 billion, and over $62 billion with OBRA93. In 2000s, the federal EITC generosity increased from $60 billion to $80 billion. After the expansion of ARRA in 2009, the federal generosity was approximately $76 billion. According to the Internal Revenue Service, 31 million workers and families received a total of $56 billion in EITC in 2022.

Furthermore, states also extended supplementary EITC benefits, which is calculated as a percentage of the federal EITC. Table AT2 illustrates the proportion of federal EITC that each state contributes. The contribution varies by state and time. While states like Alabama and Kentucky offer no state EITCs, others like California provide as much as 85% of the federal EITC.

Being one of the largest antipoverty programs has drawn interest from researchers. There have been several studies in the literature that investigate how the EITC affects different outcomes such as labor force participation, consumption, maternal health, child maltreatment, and infant health. In a broader aspect, the EITC has several impacts on the society. One of the major impacts is on labor supply. For instance, Hoynes (2019) suggests that the EITC positively impacts employment among single parents with children but unexpectedly reduces the likelihood of married couples returning to work both at the extensive and at the intensive margin. Meyer (2002) finds that the effect of the EITC on the labor supply of

single mothers exists at the extensive margin, increasing their labor force participation, but not at the intensive margin, as it does not significantly affect the number of hours they work. On the other hand, Kleven (2019) claims that only the 1993 EITC expansion led to increase employment at the extensive margin, while the other expansions were not effective. According to Moulton et al. (2016), the EITC has a significant impact on labor force participation among unmarried, less educated mothers. Their study indicates that when EITC recipients have children who qualify for the credit, they tend to leave the labor force. This results in a 3.3 percentage point decrease in labor force participation when one qualifying child becomes ineligible, leading to the conclusion that the EITC program does not effectively encourage employment within the targeted demographic.

The impacts are not limited with labor supply. Baughman and Dickert-Conlin (2003) find that birth rates increased with a large increase in income through the EITC program and these effects are larger for non-white families. In another paper, Baughman and Dickert-Conlin (2009) find that there was a positive correlation between the EITC and fertility, but the effects were minor, and the expansion of the EITC only resulted in a very small reduction in higher order fertility among white women between 1990 and 1999, based on state-level birth rates. [5]

2.1 Subjective Well-Being and Income

There has been an increase in attention in the literature to subjective well-being, which has been defined as the overall satisfaction with life (Diener, 1984). The research focuses on how we define and measure SWB, and what the determinants are. SWB is typically measured with self-report questionnaires and includes items related to feeling content, satisfied, and positive about life. SWB has been linked to various outcomes and it is an important factor to consider when assessing overall wellness. A person's SWB is influenced by several factors, including their physical and psychological health as well as their social support and financial

[5]For additional research, please check Rothstein (2005), Eissa and Hoynes (2006), Chetty et al. (013a), Dahl and Lochner (2012), Meyer and Rosenbaum (2001)

security. One of the key factors is financial security which leads to a continuous yet famous debate. Does money make people happy?

Over time, there have been several discussions to answer this question and a growing literature focusing on the relationship between SWB and income. Understanding whether higher income leads to greater SWB became crucial. The Easterlin Paradox, proposed by Easterlin (1974), asserts that while happiness varies directly with income at a specific time, both within and between nations, the long-term relationship between happiness and income growth rates is weak. Diener et al. (1993) furthered this debate by suggesting that income influences SWB primarily at lower income levels, without addressing the effects of relative income. In contrast,Stevenson and Wolfers (2013) critically reassessed the data used by Easterlin, highlighting methodological flaws such as the neglect of changes in question wording. Their findings refute the Easterlin Paradox, showing that the relationship between income and well-being is roughly log-linear, with no evidence of a satiation point as income increases. Jebb et al. (2018) add another dimension to the discussion by revealing significant regional variations in the income-SWB relationship, noting that a satiation point is observed in wealthier regions. This body of work underscores the complexity of the income-SWB relationship, suggesting that previous findings are not uniformly robust and highlighting the importance of methodological rigor in this research area.

In this paper, I will contribute to the literature by examining and providing new evidence on causal relationship between income, a net of taxes and tax credits, including the EITC, and SWB. To achieve that, I will test the following quantitative hypothesis: an exogenous $1000 increase in the EITC will raise net income by approximately 3%. Stevenson and Wolfers (2013) estimate that a one log point increase in income enhances SWB by 0.2-0.4 standard deviations. Applying this framework, a 3% increase in income corresponds to about 0.0296 log points. Given an SWB standard deviation of 1.94, this suggests that a $1000 increase in EITC would increase happiness by approximately 0.017 to 0.023 points. This hypothesis will be empirically tested using the reduced form and simulated instrumental

variable methodologies outlined in this study.

2.2 Simulated Instrumental Variable

Using simulated instrumental variables is particularly advantageous when investigating the causal relationship between the EITC and SWB. The EITC serves as an effective instrument because its variations are largely exogenous and policy-driven, minimizing the risk of endogeneity. By leveraging the simulated EITC, I can isolate the exogenous variation in net income, thus providing a more accurate estimation of the EITC's causal effects on SWB, while addressing potential biases such as omitted variable bias.

There have been several studies that employ simulated instrumental variable approaches to address various econometric challenges and establish causal relationships between key variables. By simulating instruments that mimic true instrumental variables, we can derive credible causal inferences and enhance the internal validity of their findings. One of the first research by Currie and Gruber (996a) utilizes a simulated instrumental variable approach to examine the effects of insurance coverages for low-income children by using the expansion of Medicaid eligibility. They construct a simulated instrument, "simulated fraction eligible," that varies with state legislative environments to avoid biases related to economic and demographic characteristics. The instrument's validity in addressing endogeneity concerns hinges on the exclusion restriction, which requires that the instrument affects health outcomes only through its impact on Medicaid eligibility. This approach generates robust estimates of Medicaid policy-related health outcomes. In another research from Currie and Gruber (996b), simulated instrumental variable was applied to examine the relationship between the health of newborns and recent changes in the eligibility of pregnant women for public insurance program under the Medicaid. Facing with omitted variable bias, they generate a "simulated fraction eligible" instrument that depends on the legislative environment and independent of other state characteristics.

Brown et al. (2020) investigates long-term impacts of expansions to childhood Medicaid

on outcomes during adulthood. They construct simulated measures of Medicaid eligibility to overcome measurement error and exploit policy-induced variation. By employing a reduced form specification using a simulated instrument, they estimate significant effects of Medicaid on college enrollment, fertility delays, and adult mortality. Biasi (2019) examines the causal role of school finance equalization on intergenerational income mobility using simulated instruments. The variation in per-pupil revenues generated by state-level reforms serves as the instrumental variable, capturing the exogenous changes in funding formulas. The instrument is not correlated with changes in house prices, migration rates and differences in the incomes of migrants. The IV estimates are larger than the OLS estimates, reinforcing the importance of addressing endogeneity.

Kroft et al. (2020) analyze optimal income tax policies under endogenous wages and unemployment without intention. They use simulated micro and macro tax liabilities to derive exogenous policy variation resulting from tax reforms. This approach allows them to consider spillover effects at the state level and obtain credible estimates of the optimal tax policy. Doleac (2017) investigates the effects of DNA databases on crime using a simulated instrumental variable approach. By predicting the number of qualifying offenders in each state-year combination, she creates a simulated instrument that is uncorrelated with crime rates through any other channel. The use of pre-period statistics helps eliminate simultaneity and omitted variable biases.

Overall, these studies highlight the significance of simulated instrumental variable approaches in econometric research, enabling researchers to draw robust causal inferences and contribute to evidence-based policymaking. Simulated IV strategies seek to exploit the plausibly exogenous variation due to complicated policy changes.

3 Data

3.1 Understanding America Study

In this research, I use panel data from waves of the Understanding America Study (UAS) conducted between 2014 and 2019.[6] The data consists of 18,556 observations across all 50 US states and the District of Columbia. The data provides information about each respondent's demographic backgrounds such as gender, age, marital status, education, number of household members, income, and labor status. In addition to demographic variables, the data also provides information about subjective well-being, other source of income such as business income, dividends, pensions, mortgage, and rent. In all analysis that follows, I apply the UAS population weights.

3.2 Variables

Federal and State EITC: Federal and state EITC is measured by using NBER TAXSIM program with given information on UAS data. On Panel A of Table 1, both conditional and unconditional EITCs are reported. Unconditional Federal EITC in 2019 dollars has an average of $378 with a median of $0; it equals $1,916 on average conditional on being positive with a median of $1,173. State EITC has an unconditional mean of $30 with a median of $0; it averages $340 when the EITC is conditional on being positive with a median of $165. Over 50% of the population isn't eligible for any EITC because they are above the top of the income phase-out region. The median income of $55,000 exceeds the threshold for qualification, resulting in zero EITC amounts for the majority.

Income and Net Income: One of the key variables of interest is income. In UAS, income is a self-reported categorical variable. After taking the geometric average, it has a

[6]When evaluating the impact of the EITC, most studies used Survey of Income Participation Program, Consumer Expenditure Survey, Survey of Consumer Finance, or Panel Study of Income Dynamics data. However, these data sets do not provide sufficient information on subjective well-being. In my research using UAS data will allow me to analyze the relationship between the EITC and subjective well-being.

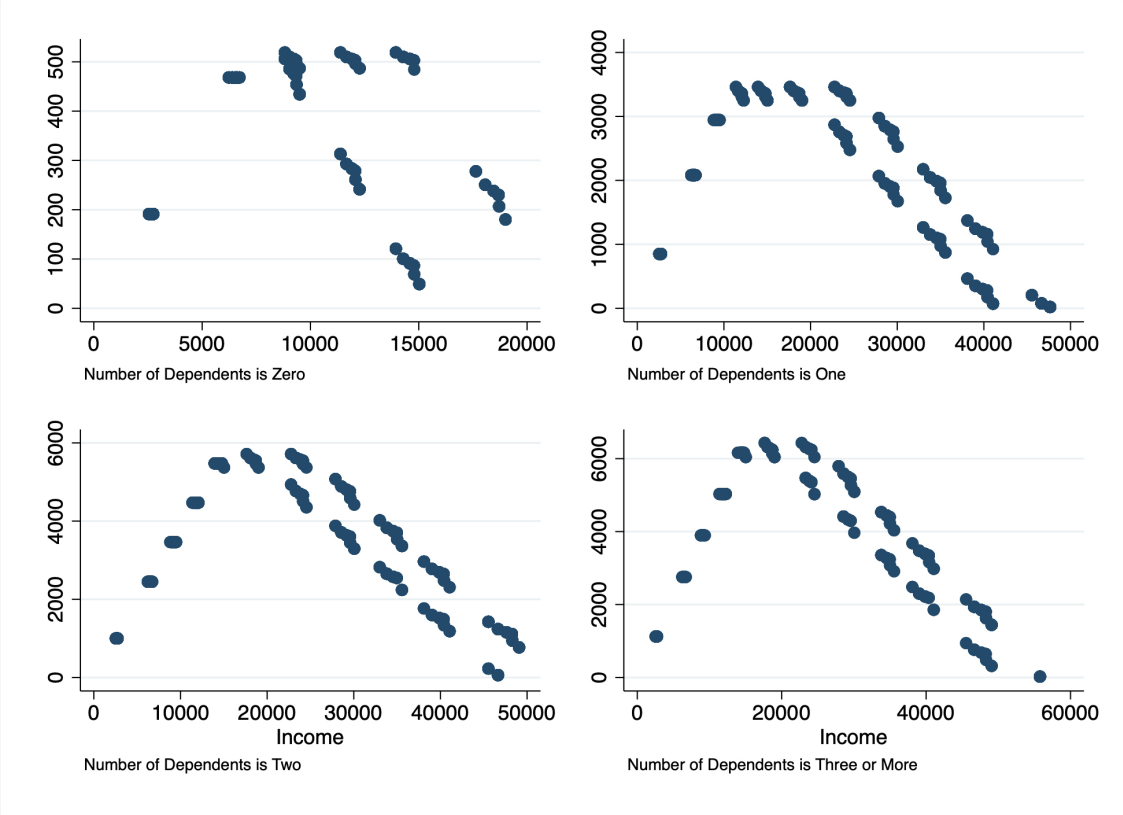


Figure 1A: Federal EITC by Income

mean of $67,200 as shown on Table 1. On the other hand, net income is after-tax income including deducted tax and any credits if eligible. Net income has a mean of $50,000. In addition to Table 3, Figure AF5, also shows the distribution of net income of respondents.

Labor Supply: Labor force participation is measured on the survey with the question of "are you currently employed", and Panel B in Table 1 shows the summary statistics for labor supply. While 65% of the population is in the labor force, only 58% is employed. Hours of work has an average of 39 hours, being conditional on greater than zero.

Subjective Well-Being: In UAS data, SWB [7] is measured by multiple well-being questions. These questions are "How happy are you?", "How satisfied are you with your life?", "How satisfied are you with your job?", "How satisfied are you with your health?", and "How satisfied are you with your family life?". Respondents were asked to rank these questions on a scale of 10, where 0 means "not at all" and 10 mean "completely". Panel C reports

[7]Table AT3 shows the pairwise correlations between each SWB measure.

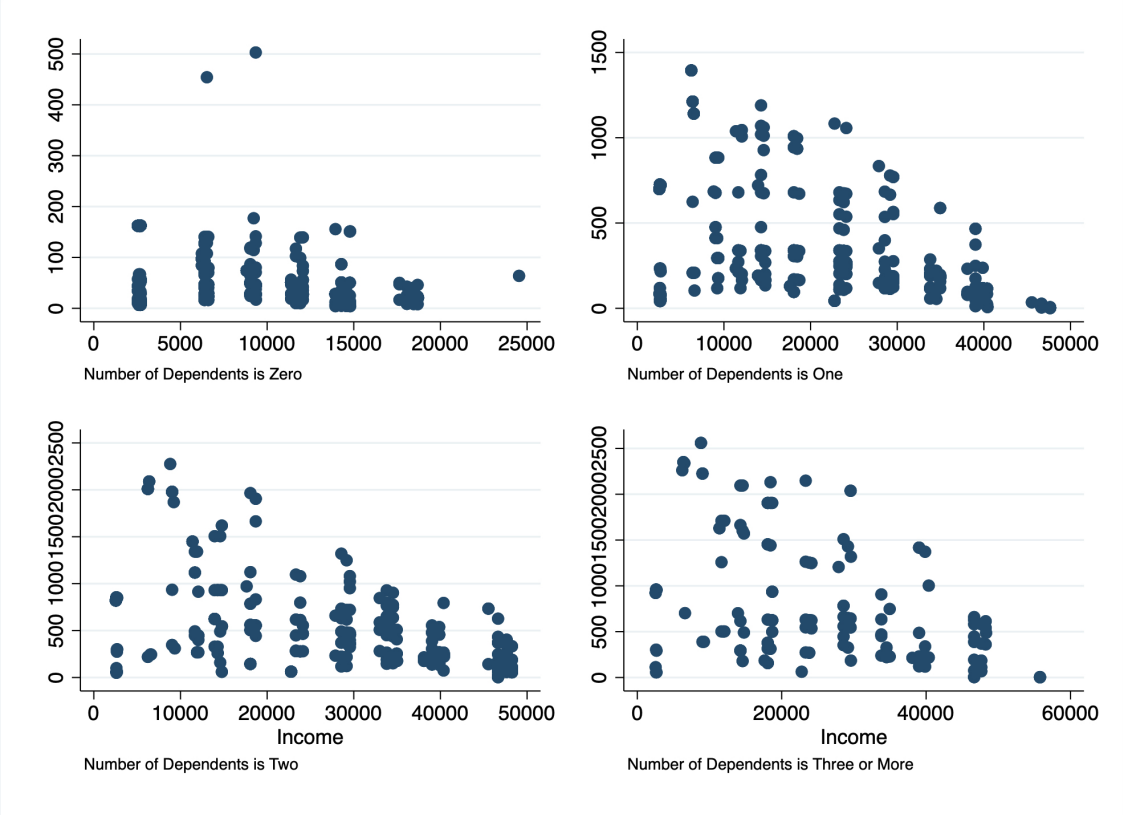


Figure 1B: State EITC by Income

subjective well-being variables and statistics. Average of happiness is 7.4 out of 10 while life satisfaction has a mean of 7.2. The lowest average is 5.8 for income satisfaction. Looking at changes in these variables for each year, the highest change is in income satisfaction with an average of 0.14, and the lowest is -0.1 for the change in happiness.

Demographics: Panel D of Table 1 presents background information on demographics. While 57% of the observations are female, only 57% files the tax jointly. On the other hand, 67% of the respondents do not have any dependents, 13% reports they have one dependent, 13% reports that they have 2 dependents, and only 8 percent of the respondents have three or more dependents.

3.3 TAXSIM

TAXSIM is a computer program developed by the National Bureau of Economic Research (NBER) (Feenberg and Coutts, 1993). It is designed to simulate the effects of federal, state, and local taxes on individuals, households, and firms. The program produces estimates of the distribution of tax liabilities, income, and economic welfare, as well as the effects of tax policy changes. The program provides detailed information on the effects of federal taxes, such as the individual income tax, the corporate income tax, the estate tax, and the payroll tax. It also covers state and local taxes, such as state income taxes, sales taxes, and property taxes. TAXSIM is mostly used by economists, tax policy analysts, and policymakers to study the effects of different tax policies, evaluate current policies, and develop alternative tax systems.

TAXSIM uses information from the survey. The year in TAXSIM program is defined as survey year minus one. Marital status is divided into 4 categories: single or head of household (unmarried), joint (married), separate (married), and dependent taxpayer who is a child with income. To measure the tax liabilities or refunds, the program also uses number of dependents to calculate federal and state EITCs. To be EITC eligible child, the dependents must be under 19, or under 24 if they are enrolled as student. The program distinguishes different income channels such as income from primary respondent or income from the spouse. For non-joint returns, income of spouse is set as zero. It counts for self-employment income of both primary respondents and spouse, dividend income, taxable interest they received, short- and long-term capital gains or losses, pensions, gross social security benefits, unemployment compensation for both primary tax payer or spouse, transfers rent paid, childcare, mortgage, business income, and property incomes such as unearned or limited partnership and passive S-Corp profits, rent that is not eligible for Qualified Business Income (QBI), nonwage fellowships, state income tax refunds or IRA contributions. In return, the program provides simulated tax information on taxable income, federal and state tax, general tax credit, child tax credit, and most importantly for the purpose of this paper, Earned Income Tax Credit amounts for both federal and state.

Table 1: Descriptive Statistics

Variables	Mean	SD	Median	N
Panel A: Income and the EITC				
Income ($)	67,200	46,900	57,100	18,556
Net Income ($)	50,100	25,473	41,600	18,556
AGI ($)	67,205	46,970	57,100	18,556
Federal EITC ($2019, TAXSIM, Unconditional)	378	1,138	0.00	18,556
State EITC ($2019, TAXSIM, Unconditional)	30	170	0.00	18,556
Federal EITC if >0 ($2019, TAXSIM)	1,916	1,904	1,173	5,192
State EITC if >0 ($2019, TAXSIM)	340	476	165	5,192
Change in Federal EITC ($, TAXSIM)	-27	636	0.00	14,396
Change in State EITC ($, TAXSIM)	5	97	0.00	14,396
Panel B: Labor Supply				
Labor Force	0.65	0.48	1	18,556
Employed	0.58	0.49	1	18,556
Full Time	0.48	0.50	0	18,556
Part Time	0.10	0.30	0	18,556
Hours of Work	39	12	40	18,556
Panel C: Subjective Well-Being (Scale from 0-10)				
Happy	7.4	1.94	8	18,457
Life Satisfaction	7.2	1.95	8	18,457
Income Satisfaction	5.8	2.70	6	18,457
Health Satisfaction	6.7	2.30	7	18,457
Family Satisfaction	7.6	2.20	7	18,457
Job Satisfaction	6.5	2.40	7	18,457
Change in Happy	-0.1	1.72	0	14,317
Change in Life Satisfaction	-0.07	1.68	0	14,317
Change in Income Satisfaction	0.14	2.18	0	14,317
Change in Health Satisfaction	-0.05	1.80	0	14,317
Change in Family Satisfaction	-0.04	1.94	0	14,317
Change in Job Satisfaction	-0.03	2.18	0	14,317
Panel D: Demographics				
Female	0.57	0.49	1	18,556
Joint Tax File	0.57	0.50	1	18,556
No Dependents	0.67	0.47	1	18,556
1 Dependent	0.13	0.33	0	18,556
2 Dependents	0.12	0.33	0	18,556
3+ Dependents	0.08	0.27	0	18,556

Note: Panel A: Summary statistics of Income, after-tax net income, AGI, unconditional Federal and State EITC, and conditional EITC when positive. All EITCs are in 2019 dollars. Panel B: Summary statistics of labor supply. Panel C: Summary statistics of SWB (scale 0-10). Panel D: Summary statistics for demographics.

4 Empirical Framework

4.1 Partial Correlations

This project will exploit the variation across time, across states, and across household demographics in the generosity of the EITC in pursuit of two main goals:

1. Directly measure the impact of EITC generosity on SWB.

2. Develop new evidence on the relationship between (net) household income and SWB.

First, to show the (not necessarily causal) partial correlation between SWB and a household's EITC, I run this OLS specification:

$$\text{SWB}_{idst} = \phi \text{EITC}_{idst} + \alpha X_{idst} + \gamma_t + \delta_i + \varepsilon_{idst} \tag{1}$$

Here, SWB_{idst} is one of several subjective well-being measures for household i with dependents d in state s at time t.[8] EITC_{idst} is the simulated benefit amount calculated by TAXSIM. X_{idst} is a vector of individual characteristics such as education, age, and gender.

The coefficient of interest is ϕ, which captures various drivers of correlation between SWB and the EITC program. For example, relative to the causal effect, ϕ would be biased downward if recipients of EITC benefits are negatively selected (e.g., because they became eligible after reductions in earnings). Alternatively, ϕ could be biased upward by reverse causality, if higher SWB increases the propensity to obtain the EITC. In addition, EITC_{idst} depends on labor supply and hence is endogenous.[9] Due to these various considerations, we turn to two other, better-identified strategies to investigate the causal impact of the EITC on SWB: a reduced-form difference-in-differences and an instrumental variable (IV) design.

[8] The UAS includes questions on happiness, life satisfaction, satisfaction with family life, and job satisfaction. I report effects on all of these measures below.

[9] EITC_{idst} could also depend endogenously on number of dependents and state of residence, but prior literature (e.g., Chetty et al. (013a)) finds little responsiveness on those dimensions.

4.2 Reduced Form

To estimate the effect of EITC generosity on SWB, first I employ a reduced-form specification. This approach allows me to identify a statistical relationship between these two variables that has a causal interpretation, though it does not have easily interpretable magnitudes. It provides a simpler and more transparent way to directly observe the effects of EITC generosity changes. I employ the following reduced-form regressions in levels using Equation (2), and in changes using Equation (3).

$$\text{SWB}_{idst} = \alpha X_{idst} + \mu \text{MaxEITC}_{dst} + \gamma_t + \delta_i + \varepsilon_{idst} \tag{2}$$

Here, MaxEITC_{dst} is the maximum EITC benefit in state s, at time t, and for a household with d dependents. X_{idst} is a vector of individual characteristics, such as education, age, and gender. In the UAS data, 19.71 percent of the population is eligible for the EITC, while 7.52 percent are eligible for receiving the maximum EITC benefit.

Then, I run the same reduced-form specification in first differences:

$$\Delta\text{SWB}_{idst} = \beta \Delta\text{MaxEITC}_{dst} + \gamma_t + \varepsilon_{idst} \tag{3}$$

I also report versions of this specification and the specification in levels with a variety of different sets of controls and fixed effects. Employing reduced-form on both changes and levels will be beneficial for the following reasons: (i) It is plausible to measure the direction of the impact of EITC generosity on SWB by estimating at levels and (ii) It will provide insight into how changes in the maximum EITC benefit affect changes in SWB for the purpose of robustness. I interpret the coefficient μ in regression (2) and the coefficient β in regression (3) as capturing the directional impact of EITC generosity on SWB. I estimate both Equation (2) and Equation (3) in the full sample and separately for different numbers of dependents.

4.3 Simulated Instrumental Variable

In this paper, in addition to estimating a reduced form to investigate the relationship between the EITC and SWB, I also employ a simulated instrumental variable (SIV) to explore the causal relationship between net income and SWB. Estimating a causal link between income and SWB requires a source of exogenous variation, and the EITC program is a suitable choice for this goal. Moreover, because the EITC incentivizes labor supply responses on both the intensive and extensive margin,[10] we would expect EITC impacts on SWB to be smaller than the impacts of equal-sized unconditional cash transfers or lottery winnings.

Using the NBER TAXSIM program, I simulate the dollar amount of the EITC received by each household given survey year, marital status, dependents, and state rules. However, using contemporaneous EITC benefits creates an endogeneity problem since the same year labor supply response is endogenous to the same year tax policy. I address this issue by using the previous year's labor supply (AGI) with the current year tax policies. This simulated EITC approach also allows me to capture the nonlinearity of the EITC schedule.

Formally, I define the variable $\text{simEITC}_{ids,t}$ as a function of year $t-1$ income and dependents, and year t state-specific tax rules:

$$\text{simEITC}_{ids,t} = f_{s,t}(Y_{i,t-1}, \text{Number of Dependents}_{i,s,t-1}, \text{rules}_{s,t}) \tag{4}$$

$$\text{EITC}_{ids,t-1} = f_{s,t-1}(Y_{i,t-1}, \text{Number of Dependents}_{i,s,t-1}, \text{rules}_{s,t-1}) \tag{5}$$

Equation (5) defines the variable $\text{EITC}_{ids,t-1}$ with income, dependents, and tax policy at time $t-1$, as above. Here, $Y_{i,t-1}$ is the earned income for individual i in year $t-1$, Number of Dependents is how many qualifying dependents each respondent has at time $t-1$, and $\text{rules}_{s,t}$ and $\text{rules}_{s,t-1}$ are state rules for tax filing for times t and $t-1$.

Then, I calculate the changes in predicted simulated EITC in Equation (6):

[10] Hoynes (2019), Kleven (2019), and Neumark and Williams (2020)

$$\Delta \text{simÊITC}_{ids,t} = \text{simEITC}_{ids,t} - \text{EITC}_{ids,t-1} \tag{6}$$

Using the changes in predicted simulated EITC and following Currie & Gruber (1996), I run the following two-stage least squares regressions:

$$\Delta \text{NetIncome}_{idst} = \alpha \Delta \text{simÊITC}_{idst} + \beta' \Delta X_{idst} + \gamma_t + v_{idst} \tag{7}$$

$$\Delta \text{SWB}_{idst} = \pi \Delta \text{NetÎncome}_{ist} + \beta' \Delta X_{idst} + \gamma_t + \varepsilon_{idst} \tag{8}$$

Here, the coefficient of interest is π, which can be interpreted as the impact of a \$1 increase in net income on subjective well-being. This approach relies only on the state-by-year variation in EITC generosity, so the IV exclusion restriction (while never directly testable) is plausibly satisfied.

Using EITC generosity with a simulated instrument is valuable for several reasons. First, the EITC program allows us to identify it as quasi-random assignment, as eligibility for the EITC is primarily determined by income and family size, and individuals or families with similar characteristics and income levels can be treated differently based on their eligibility. Second, the EITC provides a large increase in net income for eligible low-income individuals and families, and the change in income is plausibly exogenous since it is not driven by the individual's choices or behaviors but rather by changes in tax policy or personal circumstances such as having a child. This exogenous variation in income isolates the impact of income changes on SWB. The simulated IV approach here respects the full, non-linear complexity of the EITC.

Next, several millions of low-income individuals and families from various backgrounds benefit from the EITC program, which allows us to generalize findings to broader populations. Finally, UAS data provides several measures of SWB in addition to happiness and life satisfaction, allowing me to explore potential mechanisms through which income affects

SWB.

On the other hand, using the EITC as an instrument comes with a few challenges regarding the exclusion restriction. First, an increase in EITC generosity, which is exogenous, will lead to an increase in household net income for low-income families on the extensive margin; however, it may also come with some disutility from labor supply. Next, if SWB is perceived as a proxy for utility and if an individual's utility is a function of income and leisure, then there will be an increase in utility with an increase in income. On the other hand, an increase in income might be associated with higher hours of work, which will reduce the leisure time of individuals. As a result, the effect on SWB may be the net effect of the increase in income and the decrease in leisure. At this point, it is possible that π, the coefficient of $\Delta\text{Net}\hat{\text{I}}\text{ncome}_{ist}$, may be smaller than in other analyses of the impact of income on SWB that ignore the effect on leisure. Overall, to identify the impact of EITC generosity clearly, I report all reduced-form, IV, and OLS estimates to compare and derive meaningful results.

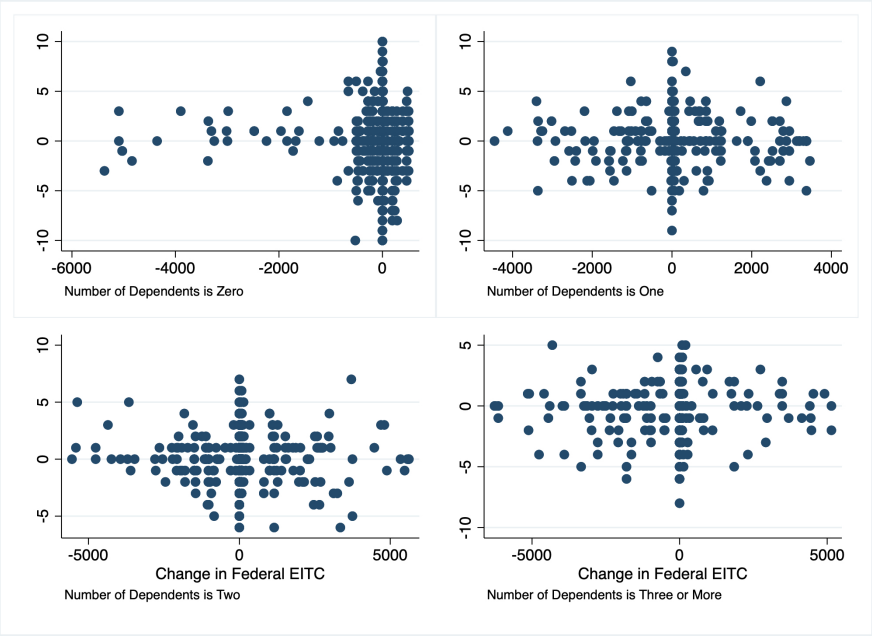


Figure 2: Change in Federal EITC vs Change in Happiness

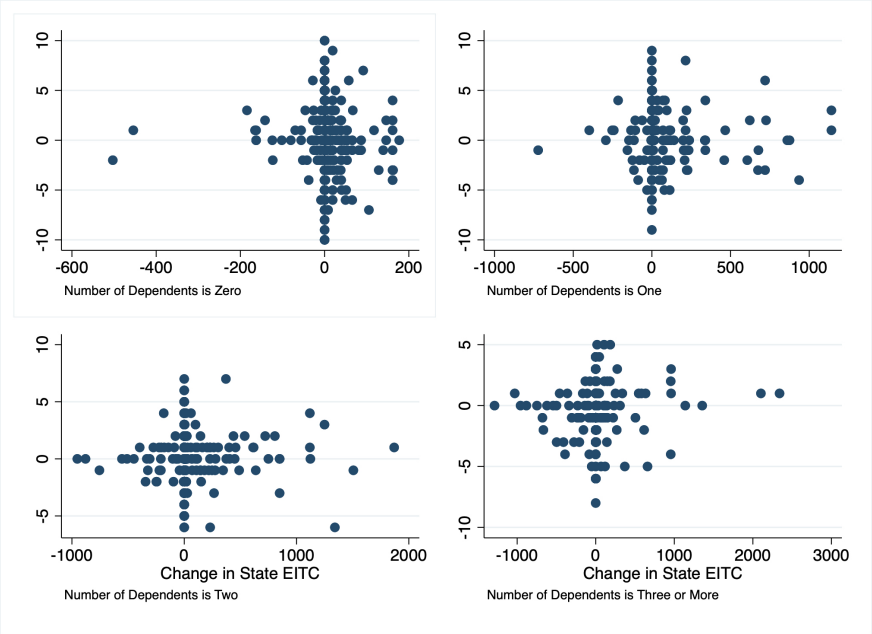


Figure 3: Change in State EITC vs Change in Happiness

5 Results

To begin with, results from estimating equation (1) on SWB is shown on appendix tables Table AT4A- AT4F. Each column of table shows the estimates from different regressions. The OLS regression results provide correlations between EITC amounts and various SWB measures. These results suggest a modest but consistent negative correlation between EITC and happiness, life satisfaction, and health satisfaction. Specifically, a $1,000 increase in EITC is correlated with a small decline in happiness (ranging from 0.062 to 0.11 points) and life satisfaction (a reduction of 0.077 to 0.134 points). Similarly, job satisfaction shows a negative correlation with EITC, declining by 0.092 to 0.182 points.

In contrast, the correlation between EITC and family life satisfaction is statistically insignificant, suggesting that family-related well-being is not strongly linked to EITC amounts. Despite EITC's role in boosting household income, its negative correlation with income satisfaction parallels the other SWB measures, indicating that higher EITC amounts do not necessarily improve overall satisfaction. These correlations highlight that while EITC provides financial support, it may not translate directly into increased well-being and may even

be associated with slightly lower satisfaction in several life domains.

However, since OLS is not sufficient to understand causation, we turn to more rigorous methods. To better assess the causal impact of EITC on subjective well-being, I report results from reduced form and instrumental variable approaches, which account for exogenous variation in EITC and help isolate its direct effect on well-being. These methods allow for a more reliable understanding of whether and how EITC influences well-being beyond mere correlations.

5.0.1 The Impact of EITC Generosity on SWB

Turning to causally identified estimates, I proceed in my investigation into the EITC by regressing SWB on the maximum credit amount that respondents are eligible for. MaxEITC serves as a meaningful and concise measure of EITC generosity because it captures the highest possible credit an individual can receive, based on their state, the year, and the number of dependents. This is particularly useful since over one-third of EITC recipients qualify for this maximum amount due to their income levels, making it a representative indicator of the credit's full benefit for a significant portion of the population. MaxEITC varies across tax years, dependent counts, and state regulations. However, the majority of households do not receive any EITC, and even fewer qualify for the maximum benefit. This reduces the strength of the estimates when compared to the true causal impact of monetary transfers, as many households are not benefiting from the EITC at its full potential.

Thus, I may conservatively interpret estimation of Equation (2) as indicating the directional effects. The findings are presented in Table 2, offering a reduced form specification in levels. Column 1 demonstrates a positive causal effect of EITC generosity on happiness. Specifically, increasing EITC generosity by $1,000 results in an average increase of 0.014 points on the happiness, accounting for fixed effects. [11] In addition, in column 8, there is a

[11] Furthermore, an increase of $1,000 in EITC generosity causes a 0.034 increase in happiness when fixed effects are not considered. Examination of other dimensions of SWB, as detailed in Table AT5A, suggests that MaxEITC significantly enhances Life Satisfaction by 0.014 when accounting for fixed effects and by 0.0435 without controls. Additionally, a pronounced impact is observed on Family Life Satisfaction, demonstrating

larger impact on happiness at 0.031 points when there is a $1,000 increase in the MaxEITC. This result suggests that MaxEITC tends to increase happiness for low-income families when accounted for control variables.

On the other hand, Table 3 investigates the effect of changes in MaxEITC on changes in happiness. It reveals that while MaxEITC enhances happiness, changes in MaxEITC do not significantly impact it. Moreover, changes in MaxEITC do not significantly affect other dimensions of SWB, except for changes in income satisfaction, which tends to increase when controlling for changes in age, education, and fixed effects. [12]

These results suggest that increasing the maximum EITC could significantly improve the SWB of individuals. Such measures hold promise for broader implications in poverty alleviation and improving the quality of life for EITC recipients. My analysis demonstrates that higher levels of the maximum EITC are directly associated with better SWB. This relationship suggests that simply raising the EITC could lead to tangible improvements in the lives of recipients.

The regressions in levels provide a clear and straightforward interpretation of how the current or adjusted maximum EITC impacts well-being, offering policymakers a solid foundation for setting and adjusting benefit levels to improve outcomes. In conclusion, the findings underscore the important role that a higher maximum EITC can play in enhancing subjective well-being among recipients, providing valuable insights for policymakers and researchers focused on improving quality of life through effective tax credit policies.

an increase of 0.07 (Table AT5B).In terms of Health Satisfaction, MaxEITC yields an impact of 0.036 when controlling for fixed effects. MaxEITC increases Job Satisfaction by 0.037 points (Table AT5D, Column 2) and Income Satisfaction by 0.07 points (Table AT5E, Column 2) per thousand dollars of credit.

[12]Demonstrated in Appendix Table AT6E.

Table 2: Reduced Form Estimates of the Effect of EITC on Happiness

					Income <$60,000			
VARIABLES	**Happy**	**Happy**	**Happy**	**Happy**	**Happy**	**Happy**	**Happy**	**Happy**
MaxEITC	0.0141**	0.0143**	0.0185***	0.0385***	0.0106	0.011	0.014*	0.031***
	(0.00674)	(0.00674)	(0.00468)	(0.00491)	(0.0164)	(0.0160)	(0.008)	(0.009)
Mean (Happy)	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41
Observations	18,451	18,451	18,451	18,317	8,500	18,451	18,451	18,317
R-squared	0.001	0.002	0.001	0.004	0.003	0.002	0.003	0.002
Individual FE	Yes	Yes	No	No	Yes	Yes	No	No
Year FE	Yes	No	Yes	No	Yes	No	Yes	No
Controls	No	No	No	Yes	No	No	No	Yes

Note: MaxEITC is the maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Column 1 presents reduced form estimates with year and individual fixed effects. Column 2 is reduced form estimates controlling for race, education, age, and sex. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Reduced Form Estimates of the Effect of Changes in Maximum EITC on Happiness

				Income <$60,000		
VARIABLES	$\triangle Happy$	$\triangle Happy$	$\triangle Happy$	$\triangle Happy$	$\triangle Happy$	$\triangle Happy$
Change in MaxEITC	0.0015	0.0013	0.003	0.0017	0.0011	0.066
	(0.005)	(0.005)	(0.005)	(0.008)	(0.008)	(0.009)
Mean (Happy)	-0.0004	-0.0004	-0.0004	-0.0004	-0.0004	-0.0004
Observations	6,593	6,593	6,583	3,008	3,008	3,004
Year FE	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes

Note: Change in MaxEITC is the change in maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Column 1 presents reduced form estimates without controls. Column 2 is reduced form estimates controlling for change in education and change in age. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

5.1 Estimating the Causal Impact of Income on SWB using a Simulated Instrument

In this section, I present the results of two-stage regression analysis employing a simulated instrument to assess the causal relationship between income and subjective well-being by instrumenting the EITC. The primary goal of the first stage is to investigate the relationship between net income and the EITC while the second stage sought to estimate the impact of net income on SWB.

In Table 4, I report estimates from simulated instrumental variable. Change in EITC is predicted changes in the simulated EITC as calculated in equation (6). In column (1) and (2), the results indicate that there is a statistically insignificant relationship between the predicted changes in EITC and changes in net income and it does not yield to any significant impact on happiness. It means that, controlling for high income individuals, the changes on simulated EITC do not lead to any changes on the net income.

Table 4: SIV Estimates of the Effect of EITC on Happiness

			Income <$60,000	
VARIABLES	$\triangle NetIncome$	$\triangle NetIncome$	$\triangle NetIncome$	$\triangle NetIncome$
Change in SimEITC	0.587		5.9***	
	(1.55)		(1.6)	
Change in Net Income		-0.078		0.001
		(0.0002)		(0.015)
Mean	-0.868	-0.0004	-0.868	-0.0004
Observations	6,593	6,593	3,595	3,595
Fixed Effects	No	No	No	No
R-squared	0.001	0.001	0.008	0.008

Note: Change in SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after-tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

However, column (3) and (4) shows the results for a subsample whose income is less than $60,000 per year. So, any $1000 increase in EITC tends to increase net income by 5.9 which means that when there is a $1,000 increase in simEITC, net income tends to go up

by $5,900. However, that increase in net income does not lead to any significant increase on SWB measures. This finding provides that the EITC significantly increases net income, however, it does not significantly affect happiness.

The results from Table 5 suggest that change in predicted simulated EITC does not significantly increase net income, and there is no significant impact on happiness even after controlling for change in education and change in age. However, similar to Table 4, we see that change in net income tends to increase by $7,600 after a $1000 increase in simulated EITC, and happiness does not appear to be significantly affected.

Table 5: SIV Estimates of the Effect of EITC on Happiness with Controls

			Income <$60,000	
VARIABLES	$\triangle NetIncome$	$\triangle Happy$	$\triangle NetIncome$	$\triangle Happy$
$\triangle SimEIT$	1.96		7.6**	
	(1.38)		(1.6)	
$\triangle NetIncome$		0.03		-0.0001
		(0.04)		(0.013)
$\triangle Education$	6.3***	-0.17	4.2***	0.012
	(0.15)	(0.3)	(0.2)	(0.06)
$\triangle Age$	-0.05***	-0.002	-0.05***	0.0015
	(0.002)	(0.002)	(0.025)	(0.002)
Mean	-0.87	-0.0004	-8.87	-0.0004
Observations	6,583	6,583	3,004	3,004
R-squared		0.008		0.008
Fixed Effects	Yes	Yes	Yes	Yes

Note: $\triangle SimEITC$ is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after-tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

In addition, if we look at the other aspects of SWB and the impact of the EITC on them, we see those similar results to happiness. On appendix tables AT7A1 to AT7E2, while net income increases by various amounts, I find no significant impact on SWB measures.

These findings underscore the need for a more in-depth investigation into the potential underlying factors that could influence SWB among the EITC recipients. While policies aimed at increasing income levels among marginalized groups offer potential for improving

financial security, their direct impact on SWB requires careful consideration of various factors. There for it is essential for further studies to explore these complex dynamics to gain a better comprehensive understanding. This understanding can then inform evidence-based policy interventions aimed at promoting the overall well-being of society.

6 Robustness

In this section, I conduct a series of robustness checks. When analyzing the simulated instrumental variable (SIV), I focused on changes in the predicted simulated EITC and how it affected changes in net income as my first-stage regression. In this section, however, I calculate changes in simulated net income using the given data, as follows:

$$\Delta \text{SWB}_{idst} = \lambda \Delta \text{simNetIncome}_{idst} + \beta' \Delta X_{idst} + \gamma_t + \varepsilon_{idst} \tag{9}$$

Here, ΔsimNetIncome is the change in simulated net income for individual i, in state s, at time t. It is calculated as the difference between simulated net income and actual net income.

Simulated net income is after-tax net income calculated using $\text{simEITC}_{ids,t}$, while actual net income is measured using the actual EITC, $\text{EITC}_{idst,-1}$.

The results from Table 6 indicates that the $1,000 increase in simulated net income tends to increase SWBn$ increase in simulated EITC. Life satisfaction tends to increase by 0.161 and job satisfaction goes up by 0.205 points. On the other hand, there is no significant impacts on other components of SWB measure. Overall, the findings highlight that income gains from the EITC can improve general well-being and job satisfaction, but other factors likely play a more important role in areas like family life and health.

To further validate the findings of the EITC analysis, I conduct a robustness check by focusing specifically on the survey months of March, April, and May. These months are critical as they coincide with the period when most individuals receive their tax refunds,

Table 6: Robustness Check

VARIABLES	$\triangle Happiness$	$\triangle Life$	$\triangle Family$	$\triangle Health$	$\triangle Job$	$\triangle Income$
$\triangle SimulatedNetIncome$	0.177*	0.161*	0.0420	0.0634	0.205*	0.0336
	(0.09)	(0.09)	(0.11)	(0.10)	(0.12)	(0.12)
$\triangle Age$	0.0002	0.0007	0.003*	0.0004	0.002	0.00034
	(0.001)	(0.0012)	(0.0014)	(0.001)	(0.0015)	(0.001)
$\triangle Education$	0.002	0.0067	0.003	-0.011	-0.005	-0.01
	(0.008)	(0.008)	(0.009)	(0.009)	(0.0103)	(0.0102)
Observations	6,583	6,586	6,585	6,585	6,586	6,581
R-squared	0.003	0.005	0.006	0.045	0.014	0.024
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: $\triangle SimulatedNetIncome$ is the difference between simulated net income and actual net income, in $1000s. Column 1 presents estimates without controls. Column 2 presents estimates controlling for changes in education and changes in age. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

which likely includes the EITC. By narrowing the focus to this time frame, I aim to capture the direct effects of the EITC disbursement on subjective well-being, providing a more precise assessment of the program's impact during the refund period.

Table 7: Robustness Check for Months March, April, and May for Reduced Form

VARIABLES	**Happy (1)**	**Happy (2)**	**Happy (3)**	**Happy (4)**
MaxEITC	0.0462	0.0448	-0.000498	0.0253**
	(0.0324)	(0.0319)	(0.0110)	(0.0118)
Observations	3,355	3,355	3,355	3,342
R-squared	0.008	0.005	0.001	0.002
Individual FE	Yes	Yes	No	No
Year FE	Yes	No	Yes	No
Controls	No	No	No	Yes

Note: MaxEITC is the maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Column 1 presents reduced form estimates with year and individual fixed effects. Column 2 is reduced form estimates controlling for race, education, age, and sex. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

When I estimate the correlation between the EITC and SWB for the entire dataset, I observe a negative and significant relationship. Specifically, every $1,000 increase in the EITC is associated with a 0.046-point decrease in SWB. However, when focusing on the months of March, April, and May—post-tax refund months—the correlation intensifies. As reported in Table AT8A, each $1,000 increase in the EITC corresponds to a more substantial

decrease in SWB, ranging between 0.175 and 0.442 points.

On the other hand, when I use a reduced-form approach to estimate the causal impact of the EITC on SWB, the maxEITC shows a larger effect on SWB in magnitude, though this result is not statistically significant.

7 Limitations

Despite the contributions of this research, there are limitations to acknowledge. First, the variation in state EITC was relatively small compared to federal EITC which may limit the generalizability of the findings. State EITC is a fraction of the federal credit and vary significantly in generosity, eligibility requirements, and refundability across states. As a result, the smaller variation in state EITC benefits may reduce the observed impact on income and SWB compared to the larger, more uniform effects of the federal EITC. This limited variation could make it difficult to capture substantial differences in outcomes across states, potentially leading to an underestimation of the overall effects of the EITC on SWB.

Second, the study relies on self-reported variables of income and SWB measures. Income is reported as a categorical variable in the survey. To address the issue, I used the geometric average of each income category as a continuous variable. While this approach provides a reasonable approximation, it may create a measurement error that may attenuate the estimated relationship between income and SWB. Additionally, it could obscure the nonlinear effects of income on SWB, particularly for lower-income households, where the EITC is expected to have a more pronounced impact. This limitation may lead to an underestimation of the EITC's true effect on well-being. In order to deal with this limitation, using an administrative data would be helpful.

In addition, I used TAXSIM simulation program to estimate tax liabilities and credits since it is the most reliable way due to nature of tax calculations with a survey data. However, TAXSIM's outputs depend on various assumptions about household characteristics and

state tax policies, which may not fully capture individual-level variations. This introduces potential inaccuracies in the generated income values, especially if the input data is incomplete or approximated. These limitations should be considered when interpreting the results and drawing conclusions.

8 Discussions

The results of this study contribute to the growing literature on the intersection of tax policies and subjective well-being. Despite the EITC's role in alleviating poverty and providing substantial financial support to low-income families, the analysis reveals a nuanced and somewhat unexpected relationship between EITC generosity and well-being outcomes. Specifically, the results suggest that higher EITC amounts are correlated with modest decreases in measures such as happiness, life satisfaction, and job satisfaction. This may reflect the reality that while the EITC provides financial relief, it may not address other socio-economic stressors that influence well-being, such as job insecurity, health concerns, or family dynamics.

Interestingly, when focusing on the months of March, April, and May—when tax refunds are typically disbursed—the negative correlation between EITC and SWB becomes even more pronounced. This suggests that receiving a tax refund may not immediately lead to improved well-being for recipients, possibly due to the challenges they face in managing financial instability or pre-existing debt obligations.

The instrumental variable approach, using MaxEITC as a proxy for EITC generosity, reveals a more positive, though not always statistically significant, impact on happiness. This is particularly true for lower-income individuals who qualify for the maximum benefit, indicating that the EITC could improve well-being under certain circumstances, especially when financial support is maximized.

Additionally, the analysis suggests that changes in MaxEITC are more likely to affect

income satisfaction than other SWB measures, highlighting the importance of financial stability as a component of overall life satisfaction. However, the lack of significant effects on other well-being domains, such as family life and health satisfaction, points to the limited scope of tax credits in addressing broader quality-of-life issues.

9 Conclusion

SWB, which includes measures like happiness and life satisfaction, provides an important alternative to traditional economic indicators for evaluating individuals' welfare. This study investigates the relationship between the EITC and SWB, offering new insights into how income support policies influence well-being among low-income families.

The reduced form regressions, leveraging state-by-year variation in EITC generosity, show that while EITC generosity has positive effects on SWB when examined in levels, there are zero effects when looking at changes over time. Similarly, two-stage least squares regressions using simulated instrumental variables suggest that while the EITC significantly increases net income, it has no discernible causal effect on SWB dimensions, including happiness. These results indicate that the financial boost provided by the EITC does not necessarily translate into improved subjective well-being.

These findings highlight the complex dynamics between income support policies and well-being. While increasing income through the EITC undoubtedly enhances financial security for low-income families, its direct impact on well-being is more nuanced. The modest or insignificant effects on SWB suggest that other socio-economic and psychological factors likely play an important role in shaping individuals' happiness and life satisfaction.

In conclusion, this study contributes to the broader discourse on poverty alleviation and well-being by illustrating the limits of income support in enhancing SWB. Policymakers must consider a more comprehensive approach that addresses not only financial hardship but also the broader social and emotional needs of vulnerable populations. By deepening our

understanding of these dynamics, we can craft more effective, evidence-based interventions aimed at improving the overall well-being of society's most at-risk individuals.

References

Baughman, R. and Dickert-Conlin, S. (2003). Did expanding the eitc promote motherhood? *American Economic Review*, 93(2):247–251.

Baughman, R. and Dickert-Conlin, S. (2009). The earned income tax credit and fertility. *Journal of Population Economics*, 22(3):537–563.

Benjamin, D. J., Heffetz, O., Kimball, M. S., and Rees-Jones, A. (2012). What do you think would make you happier? what do you think you would choose? *American Economic Review*, 102(5):2083–2110.

Biasi, B. (2019). *School Finance Equalization Increases Intergenerational Mobility: Evidence from a Simulated-Instruments Approach*. National Bureau of Economic Research, Cambridge, MA.

Binder, M. (2013a). Innovativeness and subjective well-being. *Social Indicators Research*, 111(2):561–578.

Brown, D. W., Kowalski, A. E., and Lurie, I. Z. (2020). Long-term impacts of childhood medicaid expansions on outcomes in adulthood. *The Review of Economic Studies*, 87(2):792–821.

Chetty, R., Friedman, J. N., and Saez, E. (2013a). Using differences in knowledge across neighborhoods to uncover the impacts of the eitc on earnings. *The American Economic Review*, 103(7):2683–2721.

Clark, A. E. (2019). Four decades of the economics of happiness: Where next? *The Review of Income and Wealth*, 65(2):245–269.

Currie, J. and Gruber, J. (1996a). Health insurance eligibility, utilization of medical care, and child health. *The Quarterly Journal of Economics*, 111(2):431–466.

Currie, J. and Gruber, J. (1996b). Saving babies: The efficacy and cost of recent changes in the medicaid eligibility of pregnant women. *Journal of Political Economy*, 104(6):1263–1296.

Dahl, G. B. and Lochner, L. (2012). The impact of family income on child achievement: Evidence from the earned income tax credit. *American Economic Review*, 102(5):1927–1956.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3):542–575.

Diener, E., Lucas, R., Schimmack, U., and Helliwell, J. (2018). *Well-being for public policy*. Oxford University Press.

Diener, E., Sandvik, E., Seidlitz, L., and Diener, M. (1993). The relationship between income and subjective well-being: Relative or absolute? *Social Indicators Research*, 28:195–223.

Doleac, J. L. (2017). The effects of dna databases on crime. *American Economic Journal: Applied Economics*, 9(1):165–201.

Eissa, N. and Hoynes, H. W. (2006). Behavioral responses to taxes: Lessons from the eitc and labor supply. *Tax Policy and the Economy*, 20:74–110.

Feenberg, D. and Coutts, E. (1993). An introduction to the taxsim model. *Journal of Policy Analysis and Management*, 12(1):189–194.

Frey, B. S. and Stutzer, A. (2014). Economic consequences of mispredicting utility. *Journal of Happiness Studies*, 15:937–956.

Hoynes, H. W. (2019). The earned income tax credit. *The Annals of the American Academy of Political and Social Science*, 686(1):180–203.

Jebb, A. T., Tay, L., Diener, E., and Oishi, S. (2018). Happiness, income satiation and turning points around the world. *Nature Human Behaviour*, 2(1):33–38.

Kleven, H. (2019). *The EITC and the Extensive Margin: A Reappraisal*. National Bureau of Economic Research, Cambridge, MA.

Kroft, K., Kucko, K., Lehmann, E., and Schmieder, J. (2020). Optimal income taxation with unemployment and wage responses. *American Economic Journal: Economic Policy*, 12(1):254–292.

Meyer, B. D. (2002). Labor supply at the extensive and intensive margins: The eitc, welfare, and hours worked. *The American Economic Review*, 92(2):373–379.

Meyer, B. D. and Rosenbaum, D. T. (2001). Welfare, the earned income tax credit, and the labor supply of single mothers. *The Quarterly Journal of Economics*, 116(3):1063–1114.

Moulton, J. G., Graddy-Reed, A., and Lanahan, L. (2016). Beyond the eitc: The effect of reducing the earned income tax credit on labor force participation. *National Tax Journal*, 69(2):261–284.

Neumark, D. and Williams, K. E. (2020). Do state earned income tax credits increase participation in the federal eitc? *Public Finance Review*, 48(5):579–626.

Rothstein, J. (2005). *The Mid-1990s EITC Expansion: Aggregate Labor Supply Effects and Economic Incidence*. Princeton University Working Paper.

Stevenson, B. and Wolfers, J. (2013). Subjective well-being and income: Is there any evidence of satiation? *American Economic Review*, 103(3):598–604.

10 Appendix

10.1 List of Tables

Table AT1:Maximum Federal EITC Generosity per Year by Number of Dependents (Nominal)

Dependents	2013	2014	2015	2016	2017	2018	2019
0 Child	$487	$496	$503	$506	$510	$519	$529
1 Child	$3,250	$3,305	$3,359	$3,373	$3,400	$3,461	$3,526
2 Child	$5,372	$5,460	$5,548	$5,572	$5,616	$5,716	$5,828
3 Child	$6,044	$6,143	$6,242	$6,269	$6,318	$6,431	$6,557

Note: EITC generosity is not inflation adjusted. All information is from the IRS website (irs.gov).

Table AT1B: Maximum Federal EITC Generosity per Year by Number of Dependents (Real, Inflation-Adjusted to 2019 Dollars)

Dependents	2013	2014	2015	2016	2017	2018	2019
0 Child	$525.92	$525.98	$527.25	$522.73	$519.35	$522.13	$529
1 Child	$3,509.72	$3,504.77	$3,520.96	$3,484.50	$3,462.32	$3,481.89	$3,526
2 Child	$5,801.30	$5,790.03	$5,815.51	$5,756.20	$5,718.94	$5,750.50	$5,828
3+ Child	$6,527.00	$6,514.32	$6,542.98	$6,476.24	$6,433.81	$6,469.82	$6,557

Note: EITC generosity is inflation-adjusted to 2019 US Dollars.

Table AT2: State EITC as a Percentage of Federal EITC

State	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
California	0	0	0	85	85	85	85
Colorado	0	10	10	10	10	10	10
Connecticut	30	27.5	30	27.5	23	23	23
Delaware	20	20	20	20	20	20	20
DC	40	40	40	40	40	40	40
Illinois	5	10	10	10	10	18	18
Indiana	6	9	9	9	9	9	9
Iowa	7	14	14	15	15	15	15
Kansas	18	17	17	17	17	17	17
Louisiana	3.5	3.5	3.5	3.5	3.5	3.5	5
Maine	5	5	5	5	5	5	5
Maryland	25	25	25	26	27	27	28
Massachusetts	15	15	15	23	23	23	30
Michigan	6	6	6	6	6	6	6
Minnesota	33	33	33	25-45	25-45	25-45	25-45
Montana	0	0	0	0	3	3	3
Nebraska	10	10	10	10	10	10	10
New Jersey	20	20	20	30	30	37	39
New Mexico	10	10	10	10	10	10	17
New York	30	30	30	30	30	30	30
North Carolina	5	5	5	0	0	0	0
Ohio	0	5	5	10	10	10	30
Oklahoma	5	5	5	5	5	5	5
Oregon	6	8	6	6	*	*	*
Rhode Island	25	25	25	13	12.5	15	15
South Carolina	0	0	0	0	12.5	21	42
Vermont	32	32	32	32	32	36	36
Virginia	20	20	20	20	20	20	20
Washington	10	10	10	0	0	0	0
Wisconsin	**	**	**	**	**	**	**

Notes: * 11% (0 children), ¡3 years; 8% for all other filers, 2017-2019. ** Wisconsin: 4% for 1 child, 11% for 2 children, 34% for 3 or more children. The average percentage is shared in the table.

Table AT3:Pairwise Correlations between SWB Measures

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
(1) Happiness	1.000					
(2) Life Satisfaction	0.848	1.000				
(3) Health Satisfaction	0.553	0.561	1.000			
(4) Family Life Satisfaction	0.665	0.649	0.444	1.000		
(5) Income Satisfaction	0.536	0.605	0.467	0.415	1.000	
(6) Job Satisfaction	0.628	0.650	0.570	0.510	0.612	1.000

Note: This table shows the pairwise correlations between each SWB measure.

Table AT4A:Regressions of Happiness on EITC Amounts

VARIABLES	**Happy (1)**	**Happy (2)**	**Happy (3)**
EITC ($ thousand)	-0.0946***	-0.110***	-0.0617***
	(0.0115)	(0.0159)	(0.0119)
Mean (Happy)	7.41	7.41	7.41
Observations	18,317	18,317	18,317
R-squared	0.005	0.005	0.005
Individual FE	No	Yes	No
Year FE	No	Yes	No
Controls	No	No	Yes

Note: EITC is inflation adjusted and in terms of $1000s. Happy ranges from 0 to 10. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT4B:OLS Estimates of the Effect of EITC on Life Satisfaction

VARIABLES	**Life Satisfaction (1)**	**Life Satisfaction (2)**	**Life Satisfaction (3)**
EITC	-0.126***	-0.134***	-0.0774***
	(0.0115)	(0.0159)	(0.0119)
Mean (Life Satisfaction)	7.27	7.27	7.27
Observations	18,317	18,317	18,317
R-squared	0.005	0.008	0.005
Individual FE	No	Yes	No
Year FE	No	Yes	No
Controls	No	No	Yes

Note: EITC is inflation adjusted and in terms of $1000s. Life Satisfaction is scaled from 0 to 10. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT4C:OLS Estimates of the Effect of EITC on Family Life Satisfaction

VARIABLES	**Family (1)**	**Family (2)**	**Family (3)**
EITC	-0.00828	-0.00492	0.00757
	(0.0130)	(0.0178)	(0.0136)
Mean (Family Life Satisfaction)	7.58	7.58	7.58
Observations	18,317	18,317	18,317
R-squared	0.02	0.001	0.02
Individual FE	No	Yes	No
Year FE	No	Yes	No
Controls	No	No	Yes

Note: EITC is inflation adjusted and in terms of $1000s. Family is Family Life Satisfaction, scaled from 0 to 10. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT4D:OLS Estimates of the Effect of EITC on Health Satisfaction

VARIABLES	**Health (1)**	**Health (2)**	**Health (3)**
EITC	-0.143***	-0.152***	-0.121***
	(0.0135)	(0.0187)	(0.0139)
Mean (Health Satisfaction)	6.67	6.67	6.67
Observations	18,317	18,317	18,317
R-squared	0.021	0.011	0.015
Individual FE	No	Yes	No
Year FE	No	Yes	No
Controls	No	No	Yes

Note: EITC is inflation adjusted and in terms of $1000s. Health is Health Satisfaction, scaled from 0 to 10. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT4E:OLS Estimates of the Effect of EITC on Job Satisfaction

VARIABLES	**Job (1)**	**Job (2)**	**Job (3)**
EITC	-0.166***	-0.182***	-0.0916***
	(0.0140)	(0.0193)	(0.0144)
Mean (Job Satisfaction)	6.53	6.53	6.53
Observations	18,317	18,317	18,317
R-squared	0.002	0.012	0.03
Individual FE	No	Yes	No
Year FE	No	Yes	No
Controls	No	No	Yes

Note: EITC is inflation adjusted and in terms of $1000s. Job Satisfaction is scaled from 0 to 10. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT4F: OLS Estimates of the Effect of EITC on Income Satisfaction

VARIABLES	**Income (1)**	**Income (2)**	**Income (3)**
EITC	-0.0946***	-0.110***	-0.0617***
	(0.0115)	(0.0159)	(0.0119)
Mean (Income Satisfaction)	5.65	5.65	5.65
Observations	18,317	18,317	18,317
R-squared	0.005	0.005	0.005
Individual FE	No	Yes	No
Year FE	No	Yes	No
Controls	No	No	Yes

Note: EITC is inflation adjusted and in terms of $1000s. Income Satisfaction is scaled from 0 to 10. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT5A:Reduced Form Estimates of the Effect of EITC on Life Satisfaction

VARIABLES	**Life Satisfaction (1)**	**Life Satisfaction (2)**
MaxEITC	0.0143**	0.0435***
	(0.00674)	(0.00492)
Mean (Life Satisfaction)	7.27	7.27
Observations	18,317	18,317
R-squared	0.001	0.034
Individual FE	Yes	No
Year FE	Yes	No
Controls	No	Yes

Note: MaxEITC is the maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Column 1 presents reduced form estimates with year and individual fixed effects. Column 2 is reduced form estimates controlling for race, education, age, and sex. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT5B: Reduced Form Estimates of the Effect of EITC on Family Life Satisfaction

VARIABLES	**Family (1)**	**Family (2)**
MaxEITC	0.0703***	0.0854***
	(0.00748)	(0.00557)
Mean (Family Life Satisfaction)	7.58	7.58
Observations	18,317	18,317
R-squared	0.010	0.022
Individual FE	Yes	No
Year FE	Yes	No
Controls	No	Yes

Note: MaxEITC is the maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT5C:Reduced Form Estimates of the Effect of EITC on Health Satisfaction

VARIABLES	**Health (1)**	**Health (2)**
MaxEITC	0.0356***	0.0206***
	(0.00793)	(0.00576)
Mean (Health Satisfaction)	6.67	6.67
Observations	18,317	18,317
R-squared	0.006	0.030
Individual FE	Yes	No
Year FE	Yes	No
Controls	No	Yes

Note: MaxEITC is the maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT5D:Reduced Form Estimates of the Effect of EITC on Job Satisfaction

VARIABLES	**Job (1)**	**Job (2)**
MaxEITC	0.00727	0.0366***
	(0.00820)	(0.00594)
Mean (Job Satisfaction)	6.53	6.53
Observations	18,317	18,317
R-squared	0.003	0.004
Individual FE	Yes	No
Year FE	Yes	No
Controls	No	Yes

Note: MaxEITC is the maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT5E:Reduced Form Estimates of the Effect of EITC on Income Satisfaction

VARIABLES	**Income (1)**	**Income (2)**
MaxEITC	0.00577	0.0684***
	(0.00942)	(0.00670)
Mean (Income Satisfaction)	5.65	5.65
Observations	18,317	18,317
R-squared	0.005	0.083
Individual FE	Yes	No
Year FE	Yes	No
Controls	No	Yes

Note: MaxEITC is the maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Column 1 presents reduced form estimates with year and individual fixed effects. Column 2 is reduced form estimates controlling for race, education, age, and sex. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT6A: Reduced Form Estimates of the Effect of Changes in Maximum EITC on Life Satisfaction

VARIABLES	$\triangle LifeSatisfaction$	$\triangle LifeSatisfaction$
$\triangle MaxEITC$	0.00161	0.0023
	(0.0045)	(0.005)
$\triangle Education$		0.0114*
		(0.00633)
$\triangle Age$		0.000904
		(0.00102)
$\triangle LifeSatisfaction(Mean)$	-0.011	-0.011
Observations	6,586	6,586
Number of ID	3,851	3,848
Year FE	No	Yes

Note: $\triangle MaxEITC$ is the change in maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Column 1 presents reduced form estimates without controls. Column 2 is reduced form estimates controlling for change in education and change in age. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT6B:Reduced Form Estimates of the Effect of Changes in Maximum EITC on Family Life Satisfaction

VARIABLES	$\triangle FamilyLife$	$\triangle FamilyLife$
$\triangle MaxEITC$	-0.009	-0.003
	(0.005)	(0.006)
$\triangle Education$		0.002
		(0.007)
$\triangle Age$		0.003**
		(0.001)
$\triangle FamilyLife(Mean)$	-0.037	
Observations	6,585	6,585
Number of ID	3,851	3,848
Year FE	No	Yes

Note: $\triangle MaxEITC$ is the change in maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Column 1 presents reduced form estimates without controls. Column 2 is reduced form estimates controlling for change in education and change in age. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT6C: Reduced Form Estimates of the Effect of Changes in Maximum EITC on Health Satisfaction

VARIABLES	**△ Health (1)**	**△ Health (2)**
△ MaxEITC	-0.00166	-0.0027
	(0.005)	(0.005)
△ Education		-0.008
		(0.007)
△ Age		0.0003
		(0.001)
△ Health Satisfaction	-0.04	
Observations	6,585	6,585
Number of ID	3,851	3,848
Year FE	No	Yes

Note: △ MaxEITC is the change in maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Column 1 presents reduced form estimates without controls. Column 2 is reduced form estimates controlling for change in education and change in age. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT6D: Reduced Form Estimates of the Effect of Changes in Maximum EITC on Job Satisfaction

VARIABLES	**△ Job (1)**	**△ Job (2)**
△ MaxEITC	-0.00110	0.0028
	(0.00588)	(0.0064)
△ Education		-0.00807
		(0.00825)
△ Age		0.00233*
		(0.00133)
△ Job Satisfaction (Mean)	0.05	
Observations	6,586	6,586
Number of ID	3,851	3,848
Year FE	No	Yes

Note: △ MaxEITC is the change in maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Column 1 presents reduced form estimates without controls. Column 2 is reduced form estimates controlling for change in education and change in age. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT6E:Reduced Form Estimates of the Effect of Changes in Maximum EITC on Income

VARIABLES	**△ Income (1)**	**△ Income (2)**
△ MaxEITC	0.007	0.013*
	(0.006)	(0.006)
△ Education		-0.018**
		(0.008)
△Age		0.003**
		(0.0013)
△ Income Satisfaction (Mean)	0.15	
Observations	6,581	6,581
Number of ID	3,851	3,848
Year FE	No	Yes

Note: △ MaxEITC is the change in maximum EITC eligibility in terms of $1000s for an individual depending on the number of dependents. Column 1 presents reduced form estimates without controls. Column 2 is reduced form estimates controlling for change in education and change in age. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT7A1:SIV Estimates of the Effect of EITC on Life Satisfaction

			Income <$60,000	
VARIABLES	**△Net Income**	**△Life Satisfaction**	**△Net Income**	**△ Life Satisfaction**
△ SimEITC	-0.581		5.7**	
	(1.55)		(1.6)	
△ Net Income		0.1		0.013
		(0.28)		(0.015)
Mean	-0.87	-0.011	-0.87	-0.011
Observations	6,596	6,596	3,223	3,223
Fixed Effects	No	No	No	No
R-squared	0.004	0.004	0.008	0.008

Note:△ SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after tax income including the EITC benefits. Both Net Income and predicted change in simEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT7A2:SIV Estimates of the Effect of EITC on Life Satisfaction with Controls

			Income <$60,000	
VARIABLES	**△ Net Income**	**△ Life Satisfaction**	**△ Net Income**	**△ Life Satisfaction**
SimEITC	1.9		5.6***	
	(1.4)		(1.48)	
Net Income		0.03		0.013
		(0.04)		(0.015)
Education	6.3***	-0.19	4.34***	-0.04
	(0.15)	(0.24)	(0.17)	(0.07)
Age	-0.05***	0.0024	-0.07***	0.0007
	(0.02)	(0.0024)	(0.024)	(0.002)
Mean	-0.87	-0.011	-0.87	-0.011
Observations	6,586	6,586	3,220	3,220
R-squared	0.11	0.11	0.11	0.11
Fixed Effects	Yes	Yes	Yes	Yes

Note: Change in SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after tax income including the EITC benefits. Both Net Income and predicted change in simEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT7B1: SIV Estimates of the Effect of EITC on Family Life Satisfaction

			Income <$60,000	
VARIABLES	**△ Net Income**	**△ Family Life Satisfaction**	**△ Net Income**	**△ Family Life Satisfaction**
△ SimEITC	2.02		5.7**	
	(1.75)		(1.6)	
△ Net Income		-0.008		-0.008
		(0.035)		(0.02)
Mean	-0.87	-0.04	-0.87	-0.04
Observations	6,593	6,593	3,223	3,223
Fixed Effects	No	No	No	No
R-squared	0.003	0.003	0.005	0.005

Note: △ SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after-tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT7B2: SIV Estimates of the Effect of EITC on Family Life Satisfaction with Controls

			Income <$60,000	
VARIABLES	**△ Net Income**	**△ Family Life Satisfaction**	**△ Net Income**	**△ Family Life Satisfaction**
△ SimEITC	1.9		5.63**	
	(1.38)		(1.5)	
△ Net Income		-0.0001		-0.005
		(0.0009)		(0.018)
△ Education	6.3***	0.925	4.4***	0.028
	(0.15)	(7.411)	(0.17)	(0.08)
△ Age	-0.052***	0.00223	-0.07	0.002
	(0.022)	(0.008)	(0.024)	(0.002)
Mean	-0.87	-0.04	-0.87	-0.04
Observations	6,585	6,585	3,220	3,220
R-squared		0.008		0.016
Fixed Effects	Yes	Yes	Yes	Yes

Note: △ SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after-tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT7C1:SIV Estimates of the Effect of EITC on Health Satisfaction

			Income <$60,000	
VARIABLES	**△Net Income**	**△Health Satisfaction**	**△Net Income**	**△Health Satisfaction**
△SimEITC	2.2		5.76***	
	(1.7)		(1.6)	
△Net Income		0.035		0.005
		(0.04)		(0.016)
Mean	-0.87	-0.04	-0.87	-0.04
Observations	6,593	6,593	3,223	3,223
Fixed Effects	No	No	No	No
R-squared	0.004	0.004	0.015	0.015

Note:△ SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after-tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT7C2: SIV Estimates of the Effect of EITC on Health Satisfaction with Controls

			Income <$60,000	
VARIABLES	**△ Net Income**	**△ Health Satisfaction**	**△Net Income**	**△Health Satisfaction**
△SimEITC	1.94		5.63***	
	(1.4)		(1.5)	
△Net Income		0.034		0.003
		(0.04)		(0.016)
△ Education	6.3***	-0.22	4.4***	-0.023
	(0.15)	(0.26)	(0.17)	(0.07)
△ Age	-0.05***	0.002	-0.07***	-0.0009
	(0.022)	(0.026)	(0.024)	(0.002)
Mean	-0.87	-0.04	-0.87	-0.04
Observations	6,585	6,585	3,219	3,219
R-squared		0.006		0.028
Fixed Effects	Yes	Yes	Yes	Yes

Note: △SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after-tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT7D1: SIV Estimates of the Effect of EITC on Job Satisfaction

			Income <$60,000	
VARIABLES	**△Net Income**	**△Job Satisfaction**	**△Net Income**	**△Job Satisfaction**
△ SimEITC	0.581		5.7***	
	(1.55)		(1.6)	
△ Net Income		0.16		0.012
		(0.46)		(0.02)
Mean	-0.87	0.05	-0.87	0.05
Observations	6,593	6,593	3,223	3,223
Fixed Effects	No	No	No	No
R-squared	0.001	0.001	0.008	0.008

Note: △ SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT7D2: SIV Estimates of the Effect of EITC on Job Satisfaction with Controls

			Income <$60,000	
VARIABLES	**△ Net Income**	**△Job Satisfaction**	**△ Net Income**	**△Job Satisfaction**
△SimEITC	1.94		5.63***	
	(1.38)		(1.48)	
△ Net Income		0.06		0.015
		(0.056)		(0.02)
△Education	6.3***	-0.4	4.4***	-0.08
	(0.15)	(0.35)	(0.17)	(0.09)
△Age	-0.05	0.004	-0.67***	0.003
	(0.022)	(0.03)	(0.024)	(0.002)
Mean	-0.87	0.05	-0.87	0.05
Observations	6,586	6,586	3,220	3,220
R-squared		0.09		0.208
Fixed Effects	Yes	Yes	Yes	Yes

Note: △ SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT7E1: SIV Estimates of the Effect of EITC on Income Satisfaction

			Income <$60,000	
VARIABLES	**△ Net Income**	**△ Income Satisfaction**	**△Net Income**	**△ Income Satisfaction**
△ SimEITC	1.14		5.71***	
	(1.67)		(1.6)	
△ Net Income		0.055		-0.009
		(0.1)		(0.02)
Mean	-0.87	0.15	-0.87	0.15
Observations	6,593	6,593	3,223	3,223
Fixed Effects	No	No	No	No
R-squared	0.001	0.001	0.008	0.008

Note: △ SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT7E2: SIV Estimates of the Effect of EITC on Income Satisfaction with Controls

			Income <$60,000	
VARIABLES	**△ Net Income**	**△ Income Satisfaction**	**△ Net Income**	**△ Income Satisfaction**
△ SimEITC	1.77		4.085**	
	(1.4)		(1.898)	
△ Education	6.3***	-0.29	5.229***	-0.08
	(0.15)	(0.34)	(213.3)	(0.086)
△ Age	-0.05**	0.004	-13.73	0.004*
	(0.02)	(0.003)	(29.95)	(0.002)
△ Net Income		0.044		0.014
		(0.05)		(0.02)
Mean	-0.87	0.15	-0.87	0.15
Observations	6,581	6,581	3,217	3,217
R-squared		0.002		0.028
Fixed Effects	Yes	Yes	Yes	Yes

Note: △ SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after-tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT8A: Robustness Check for Months March, April and May

VARIABLES	**Happy**	**Life Satisfaction**	**Family**	**Health**	**Job**	**Income**
EITC	-0.175***	-0.172***	-0.0318	-0.186***	-0.192***	-0.442***
	(0.0272)	(0.0281)	(0.0305)	(0.0338)	(0.0335)	(0.0390)
Observations	3,355	3,355	3,354	3,353	3,354	3,353
R-squared	0.002	0.002	0.003	0.028		

Note: EITC is in terms of thousands and in 2019 dollars. Each column shows the correlation between the EITC and subjective well-being (SWB) measures for the months of March, April, and May. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table AT8B: SIV Estimates of the Effect of EITC on Happiness for March, April, and May

VARIABLES	**△ Net Income**	**△Happy**	**△Net Income**	**△ Happy**
△SimEITC	2.4		6.5***	
	(4.5)		(4.1)	
△ Net Income		-0.078		0.05
		(0.0002)		(0.04)
Mean	-0.868	-0.0004	-0.868	-0.0004
Observations	819	819	819	819
Fixed Effects	No	No	No	No
Controls	No	No	Yes	Yes
R-squared	0.001	0.001	0.008	0.008

Note: △SimEITC is the predicted change in simulated EITC by using equation (6) in terms of $1000s. Net Income is after tax income including the EITC benefits. Both Net Income and predicted change in SimEITC are inflation adjusted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

10.2 List of Figures

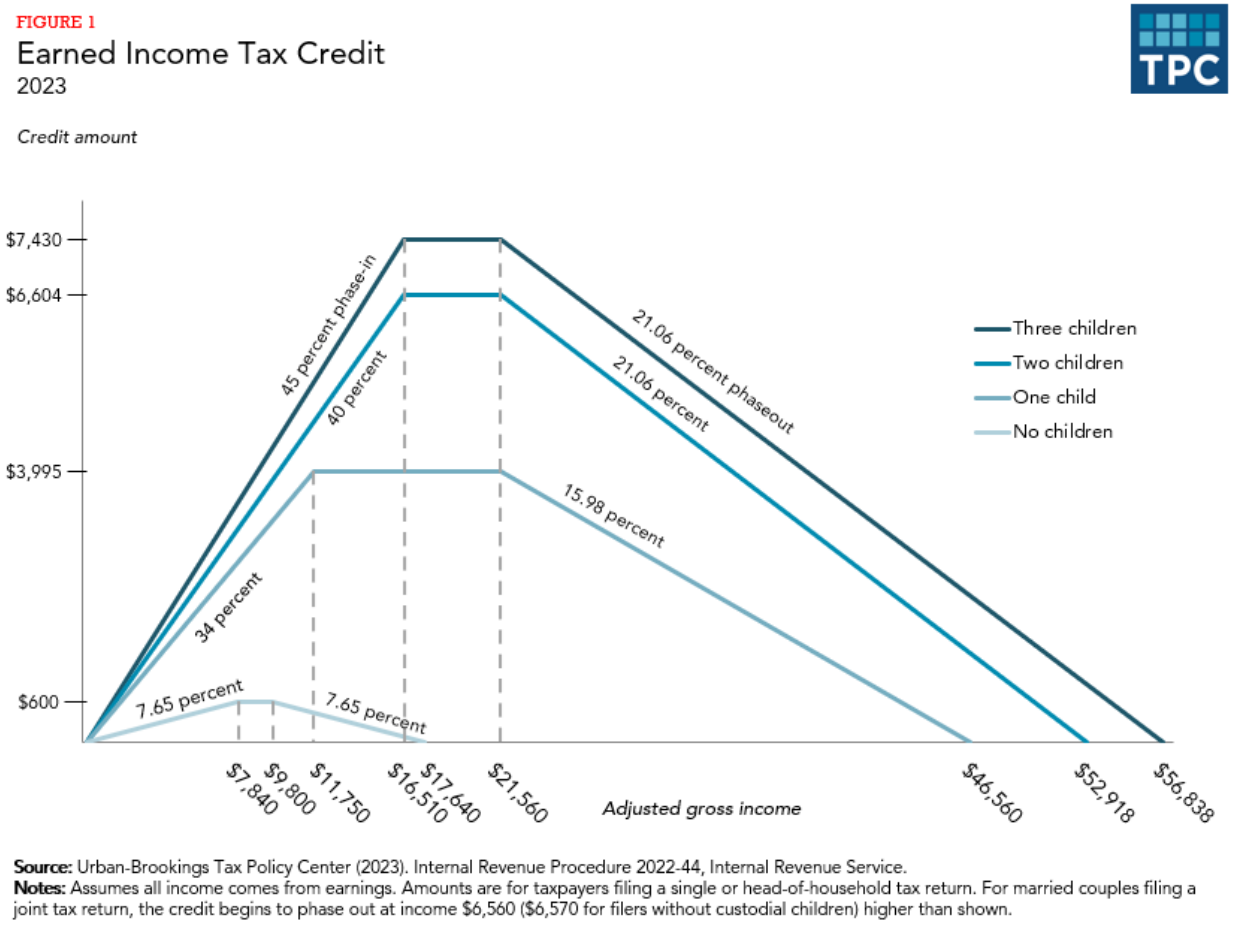


Figure AF1: Earned Income Tax Credit 2023

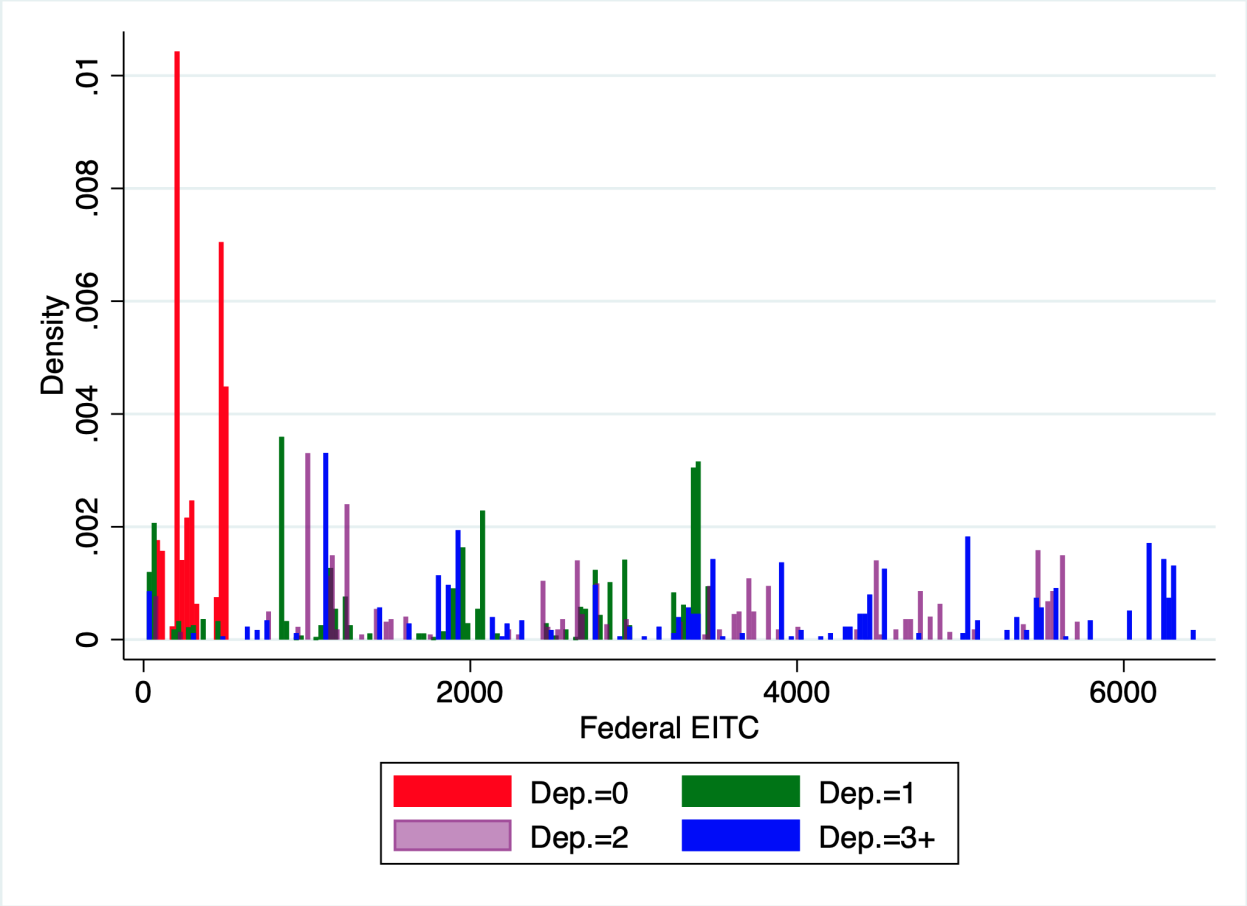


Figure AF2: Distribution of Federal EITC by Number of Dependents

Note: Figure AF2 shows the distribution of Federal EITC by number of dependents.

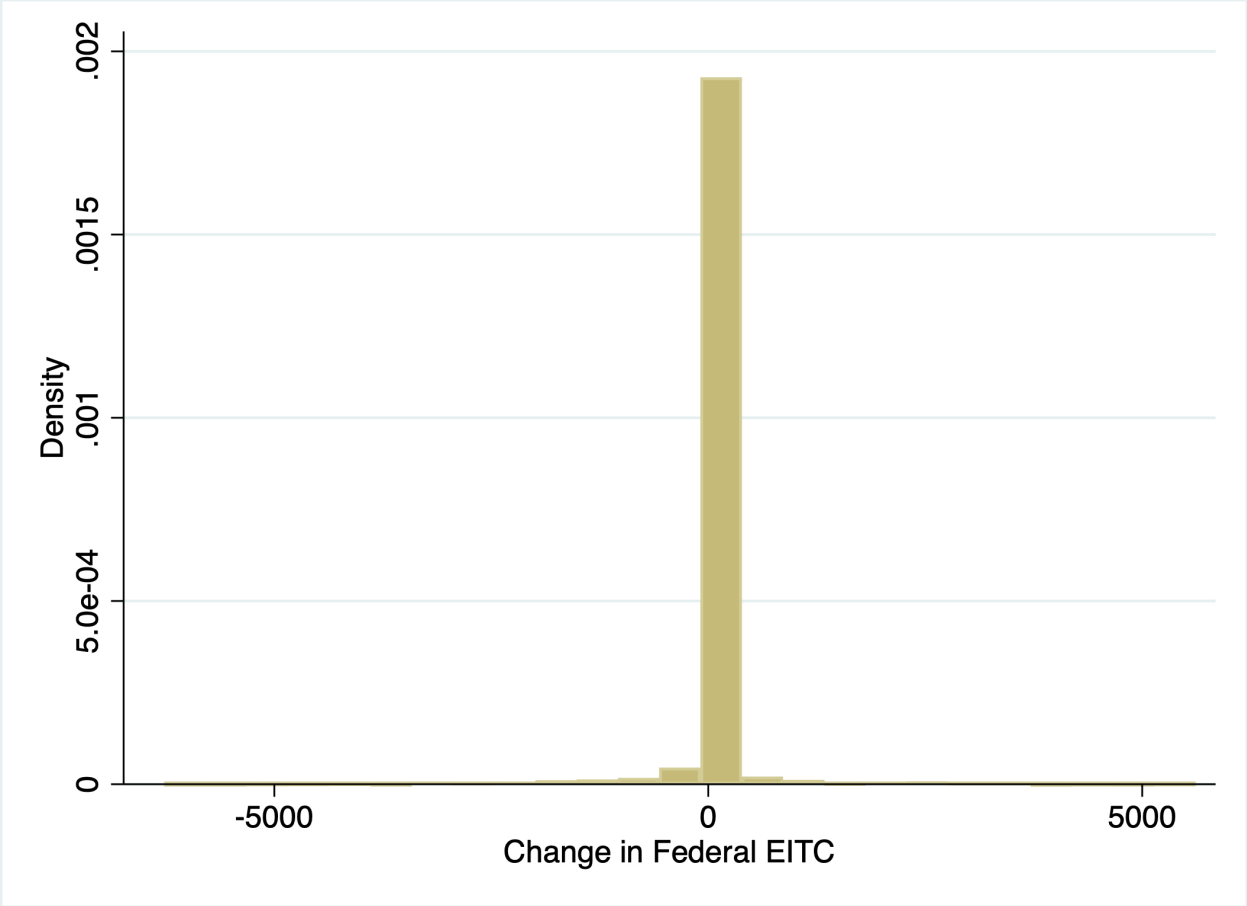


Figure AF3: Distribution of the Change in Fedral EITC

Note: Figure AF3 shows the distribution of Change in Federal EITC received by individuals.

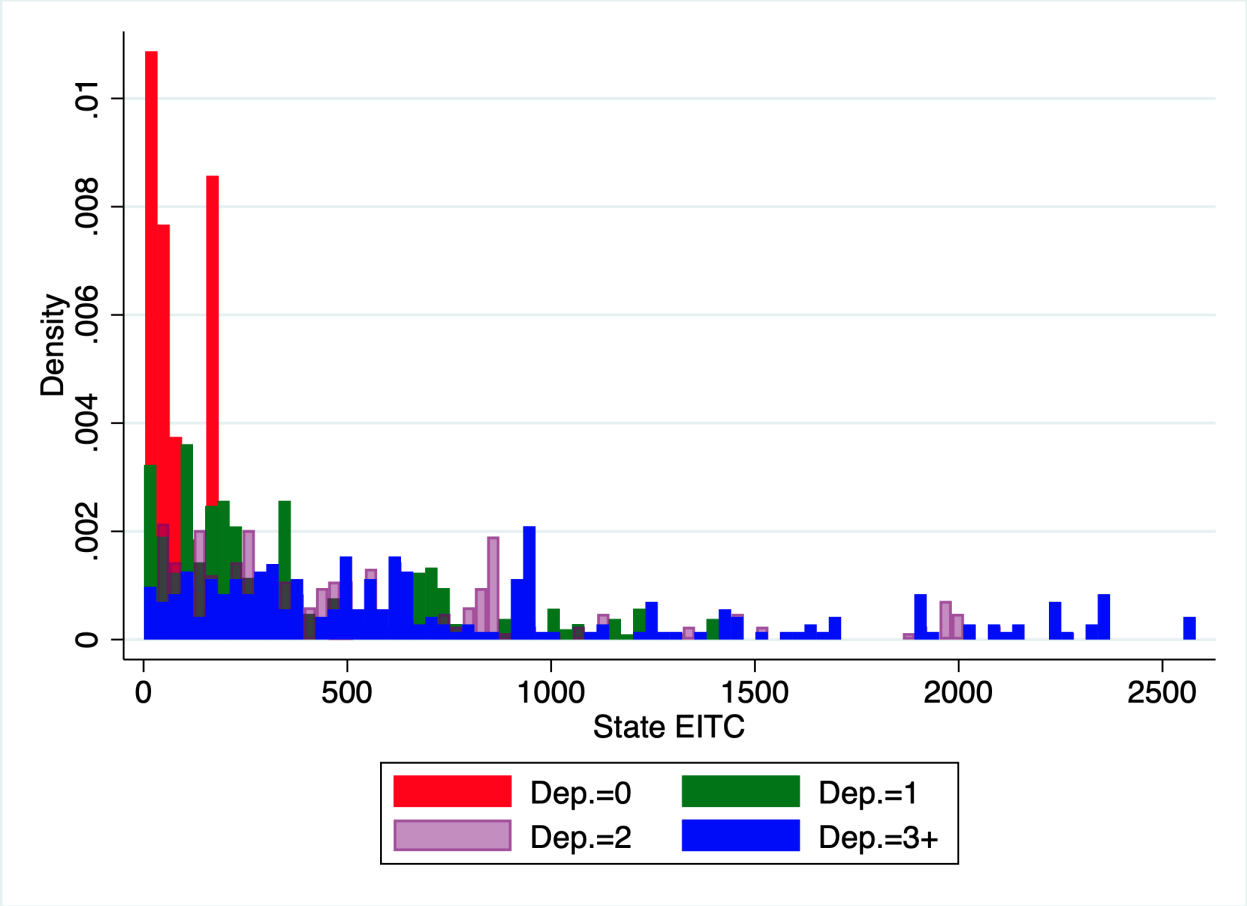


Figure AF4: Distribution of State EITC by Number of Dependents

Note: Figure AF4 shows the distribution of State EITC by number of dependents.

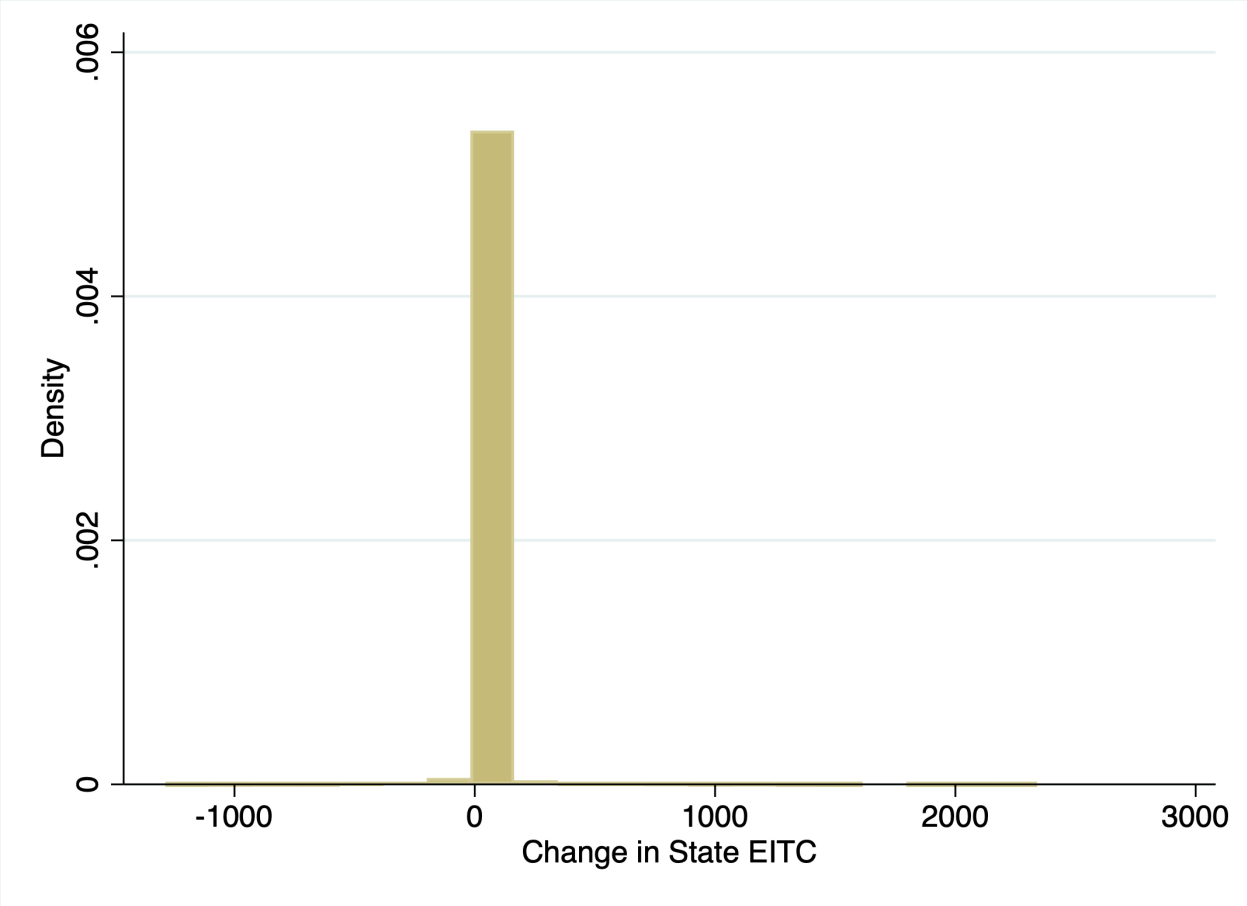


Figure AF5: Distribution of the Change in State EITC

Note: Figure AF5 shows the distribution of Change in State EITC received by individuals.

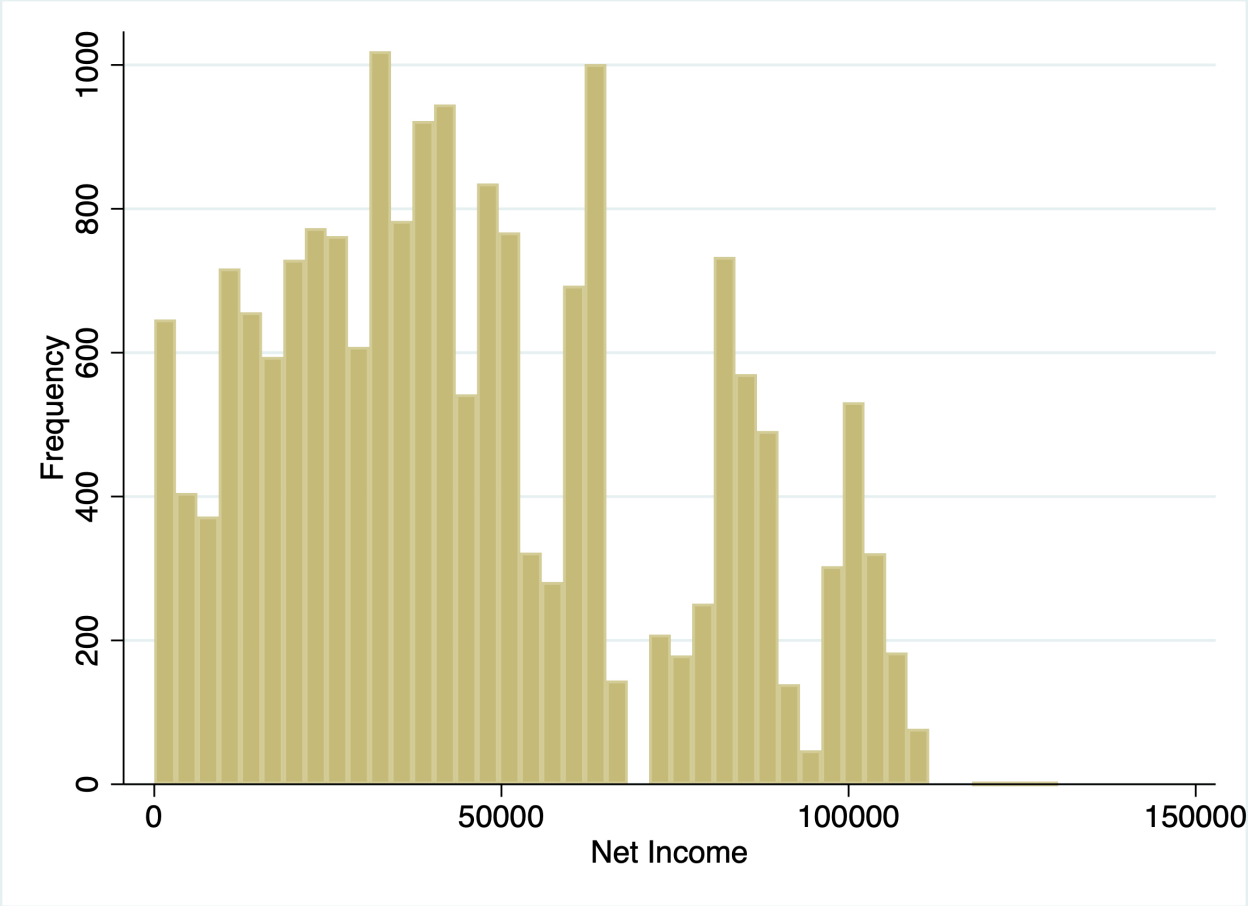


Figure AF6A: Distribution of Net Income

Note: Figure AF6A shows the distributuion of net income. Net income is measured as after tax income and inflation adjusted.

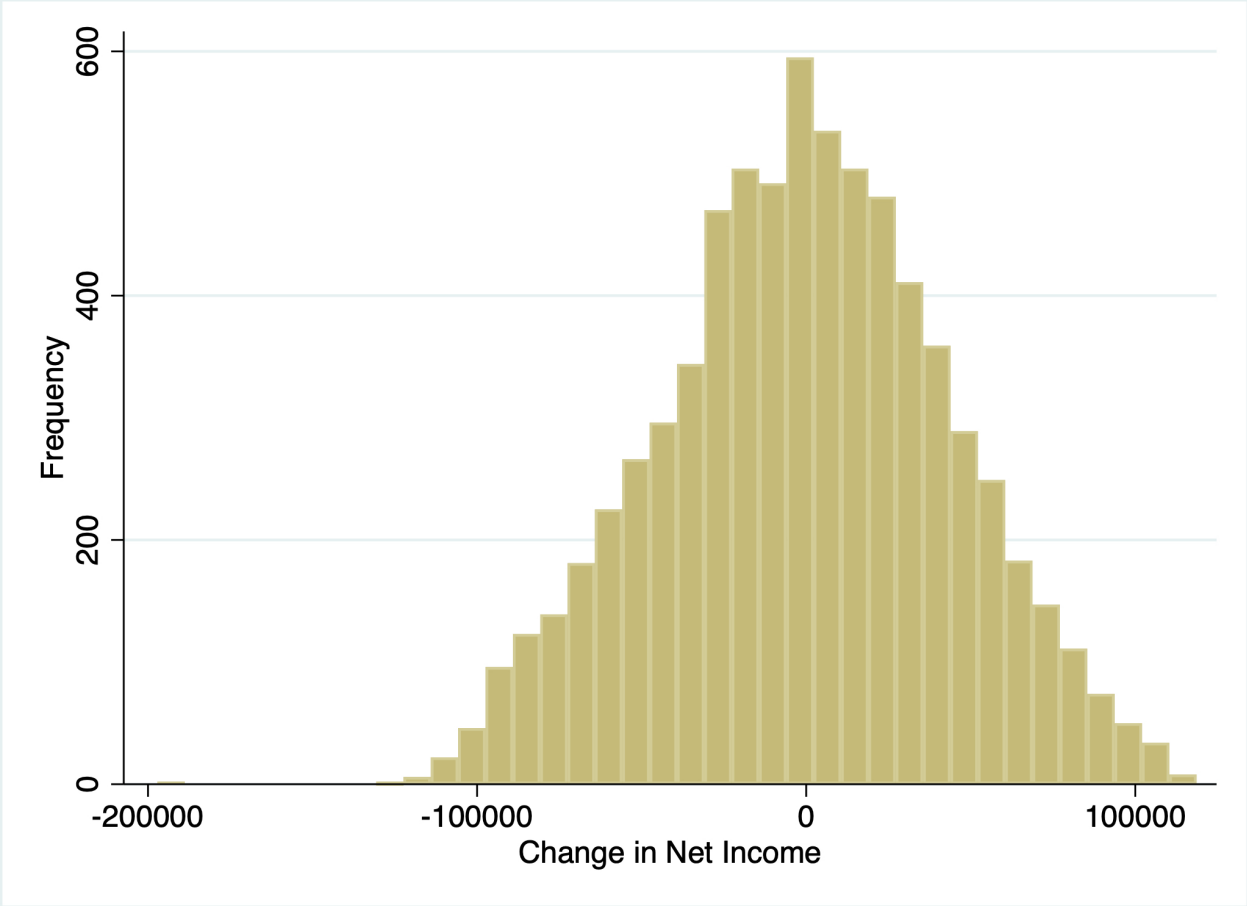


Figure AFB: Distribution of Change in Net Income

Note: Figure AF6B shows the distributuion of change in net income.

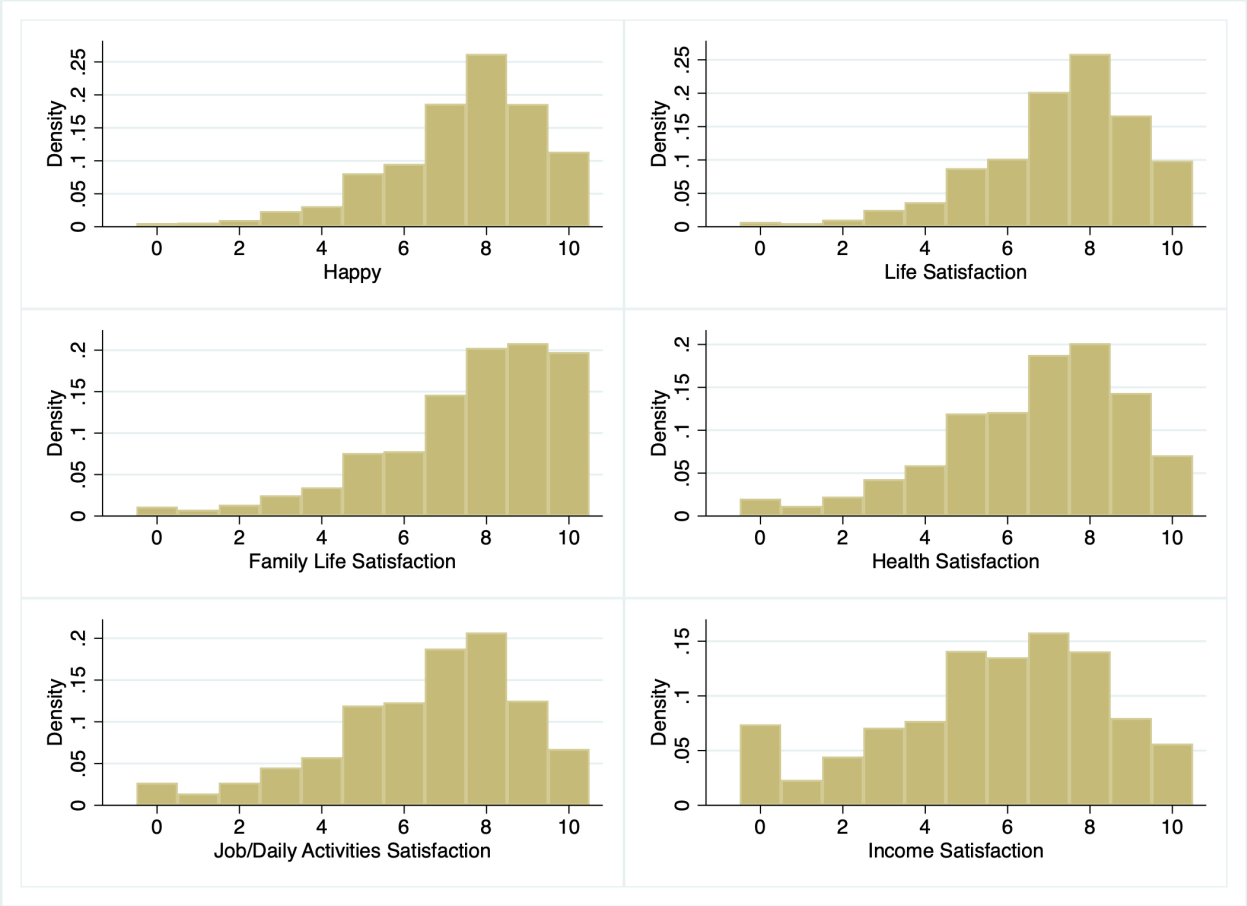


Figure AF7: Distribution of SWB

Note: Figure AF7 presents the distributions of SWB questions.

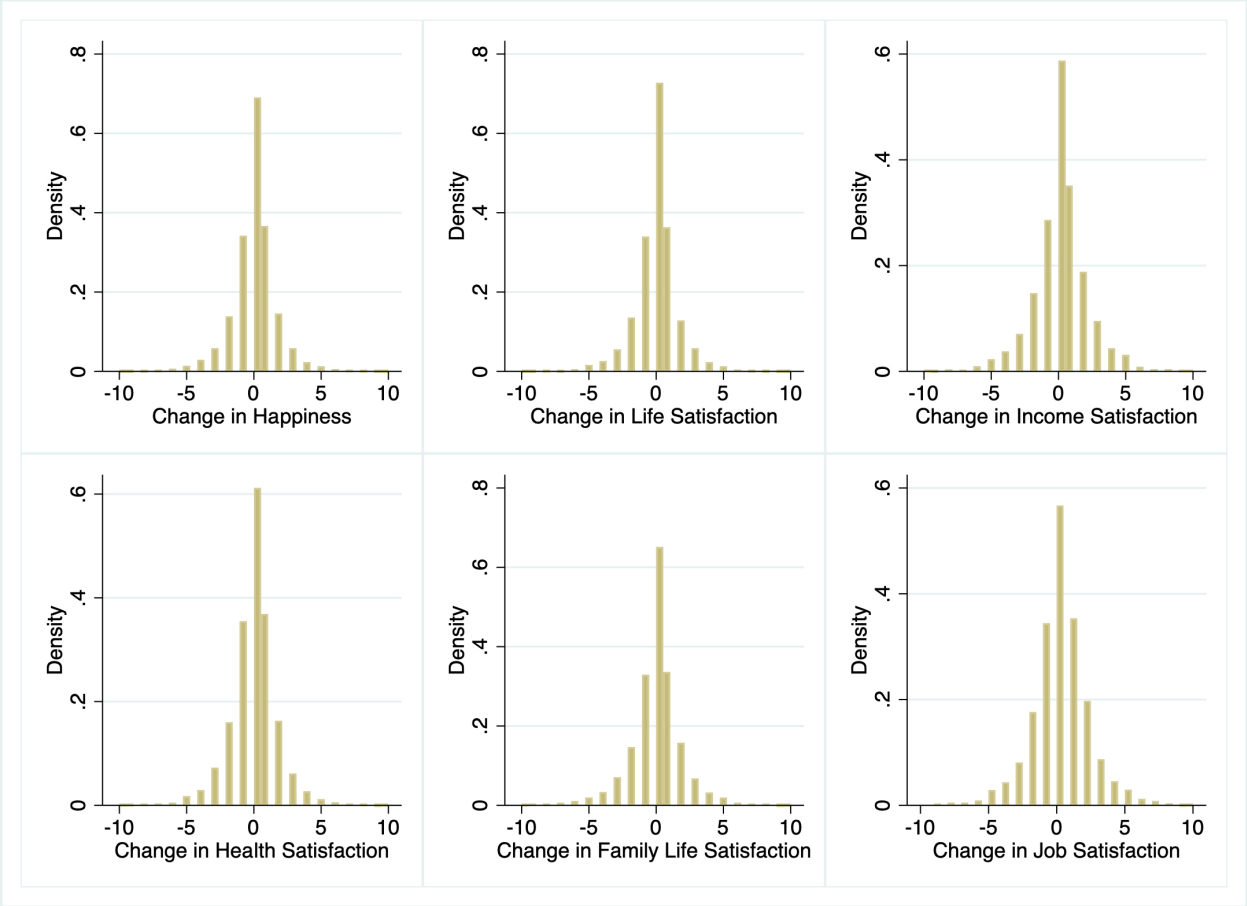


Figure AF8: Distribution of Changes in SWB

Note: Figure AF8 presents the distributions of change in SWB questions.

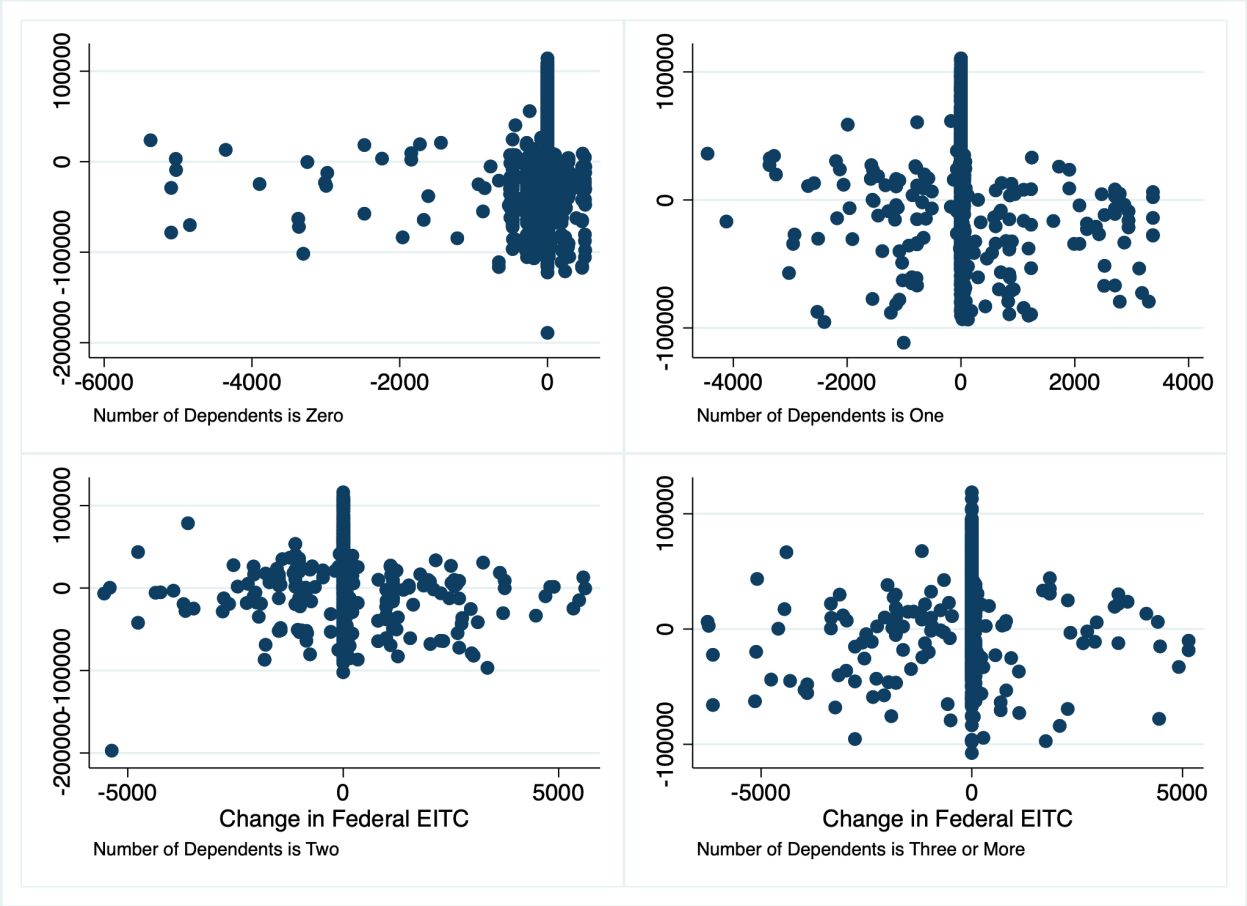


Figure AF9: Change in Net Income vs. Change in Federal EITC

Note: Figure AF9 shows the relationship between change in net income and change in Federal EITC

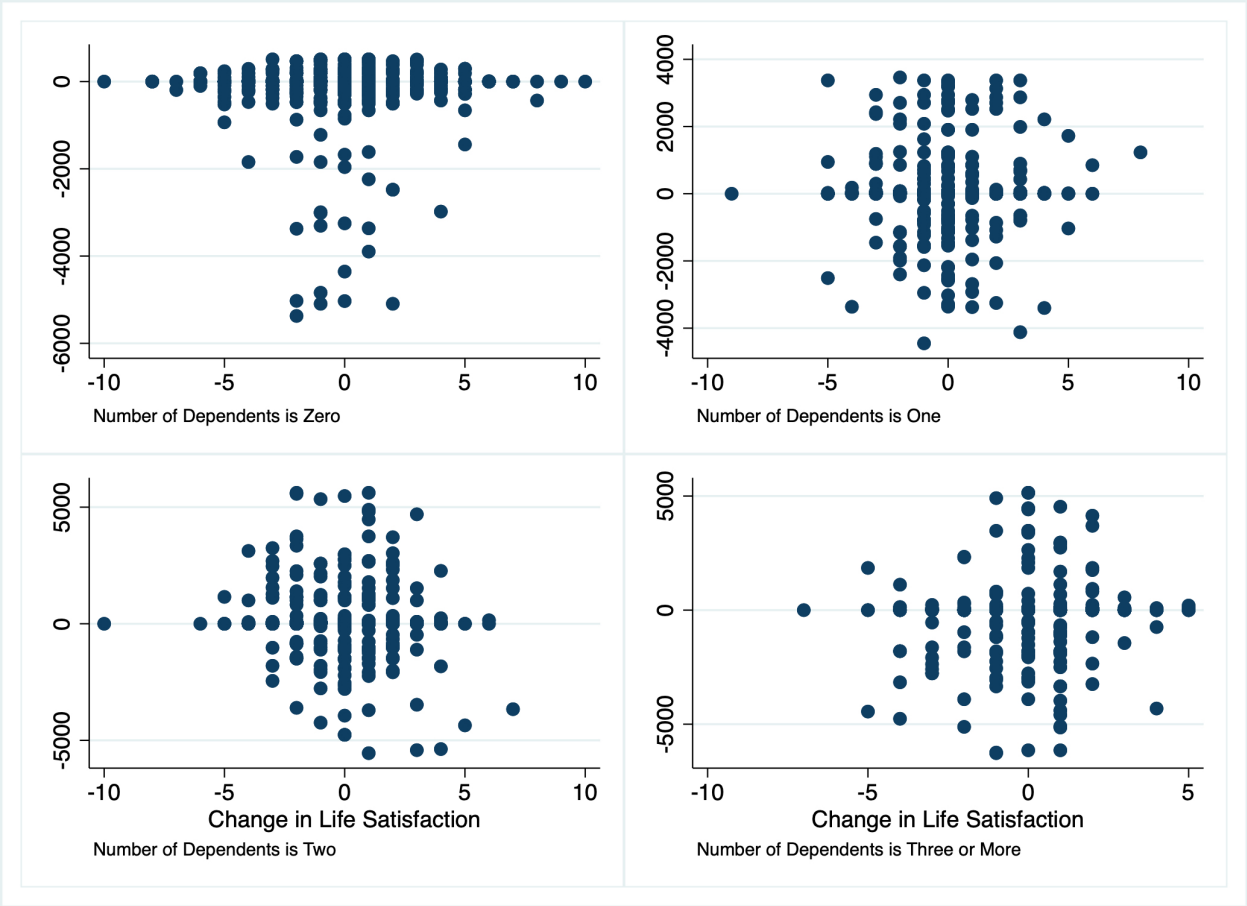


Figure AF9A: Change in Federal EITC vs. Change in Life Satisfaction

Note: Figure AF9A shows the relationship between and change in Federal EITC and change in life satisfaction.

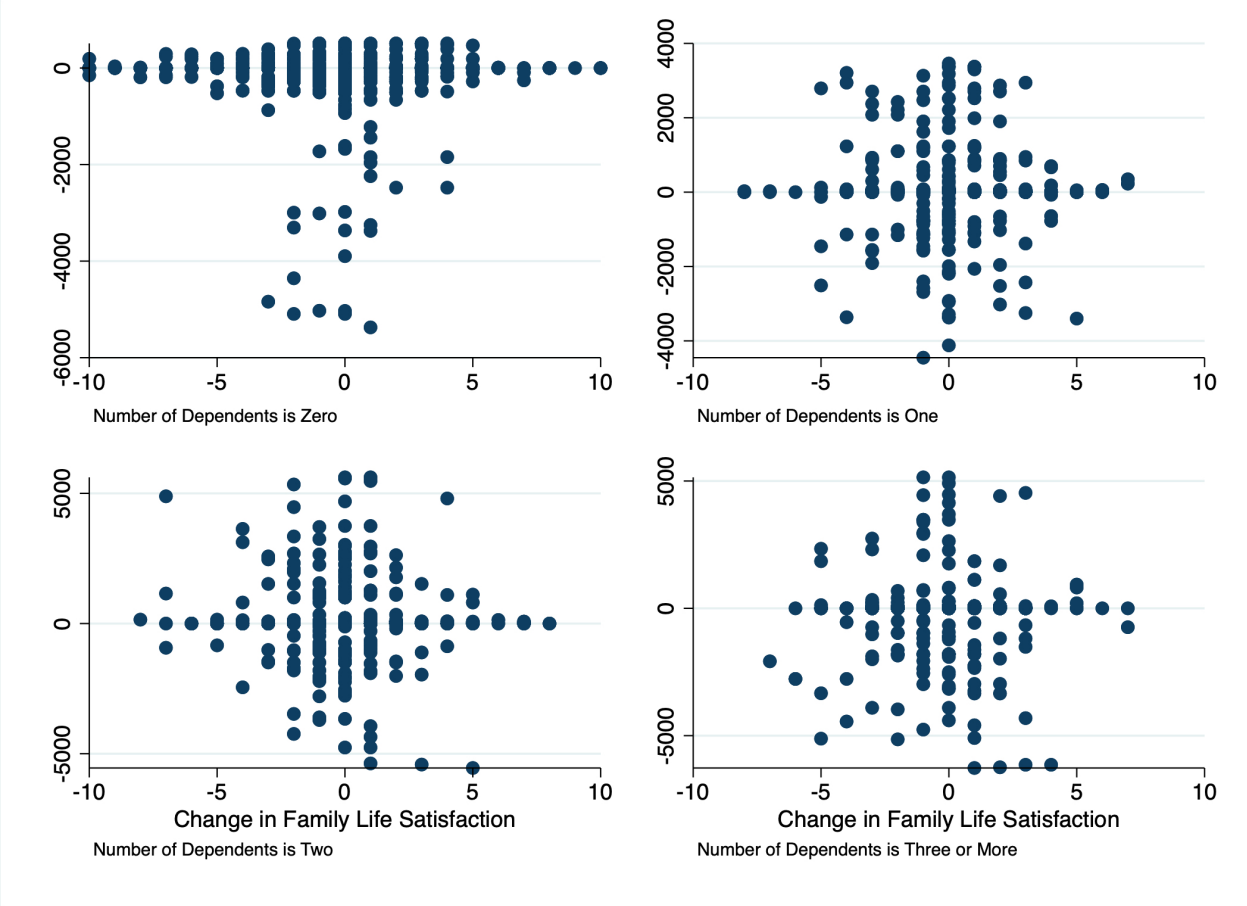


Figure AF9B: Change in Federal EITC vs. Change in Family Life Satisfaction

Note: Note: Figure AF9B shows the relationship between and change in Federal EITC and change in family life satisfaction.

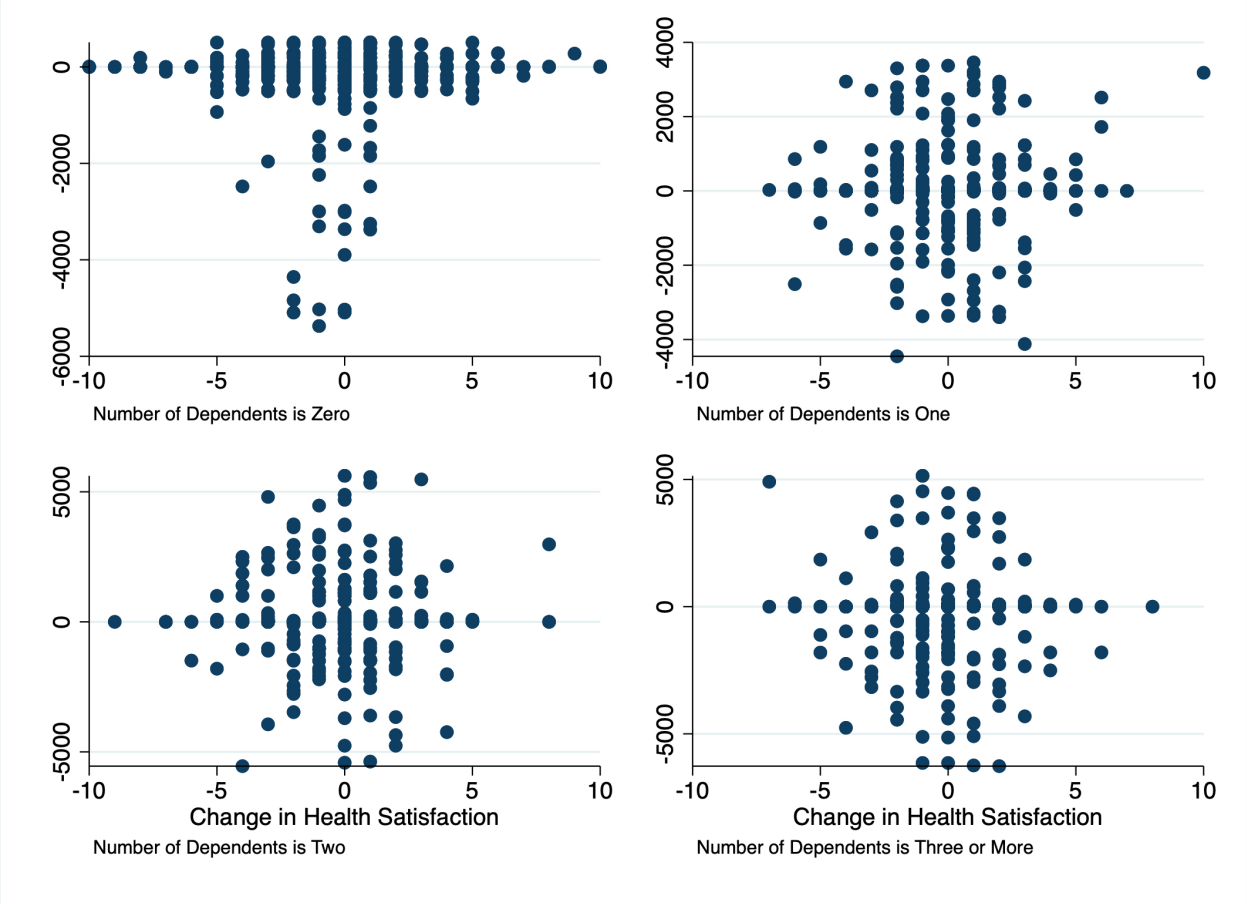


Figure AF9C: Change in Federal EITC vs. Change in Health Satisfaction

Note: Figure AF9C shows the relationship between and change in Federal EITC and change in health satisfaction.

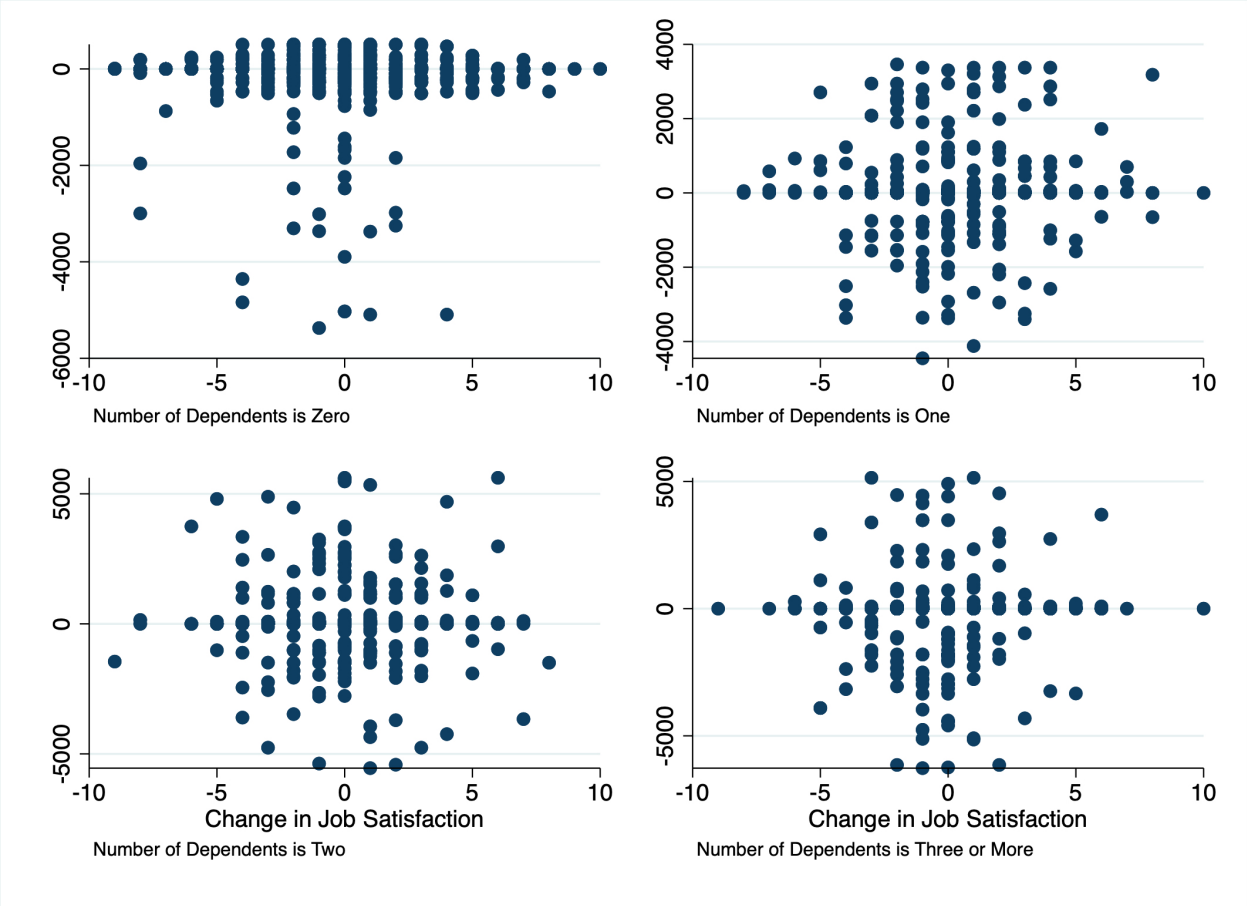


Figure AF9D: Change in Federal EITC vs. Change in Job Satisfaction

Note: Figure AF9D shows the relationship between and change in Federal EITC and change in job satisfaction.

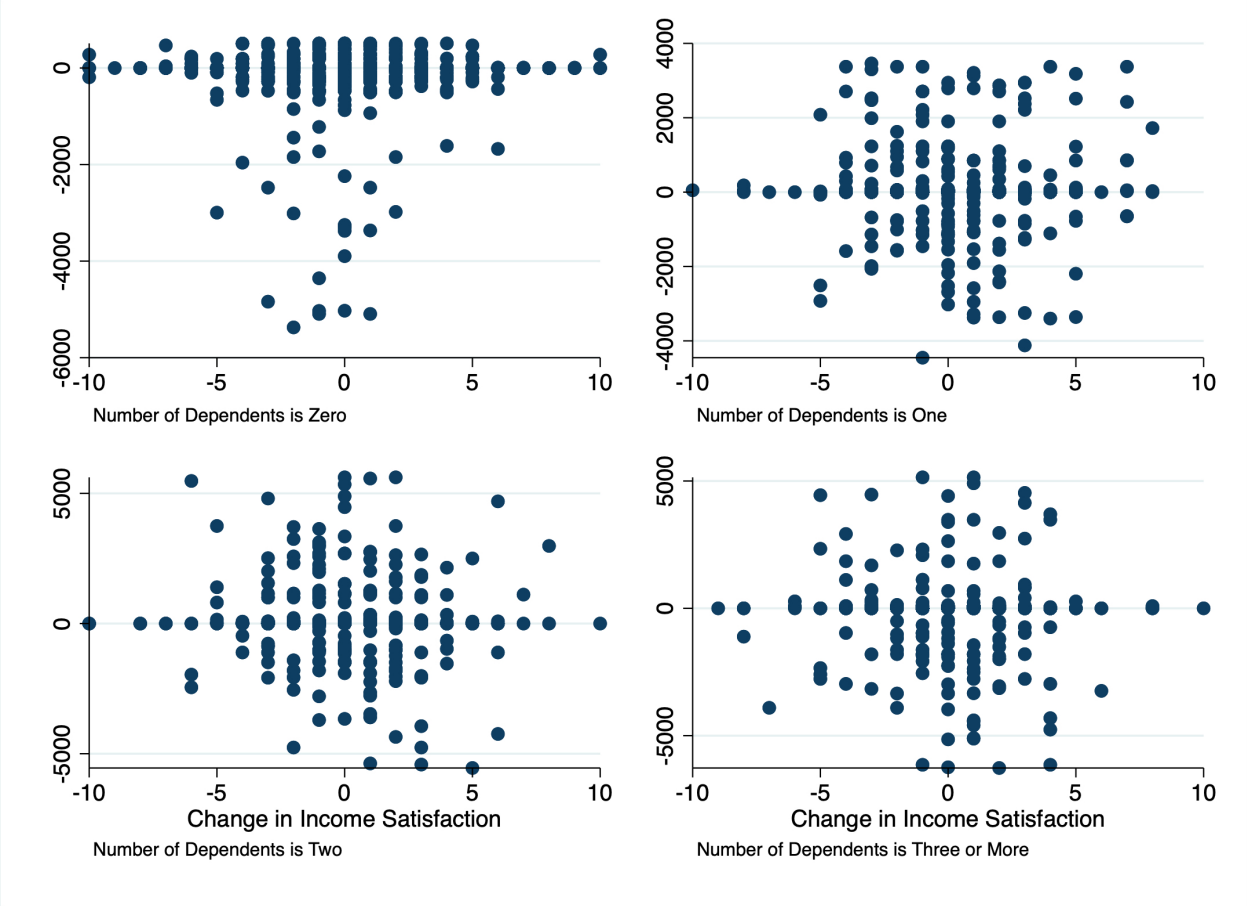


Figure AF9E: Change in Federal EITC vs. Change in Income Satisfaction

Note: Note: Figure AF9E shows the relationship between and change in Federal EITC and change in income satisfaction.

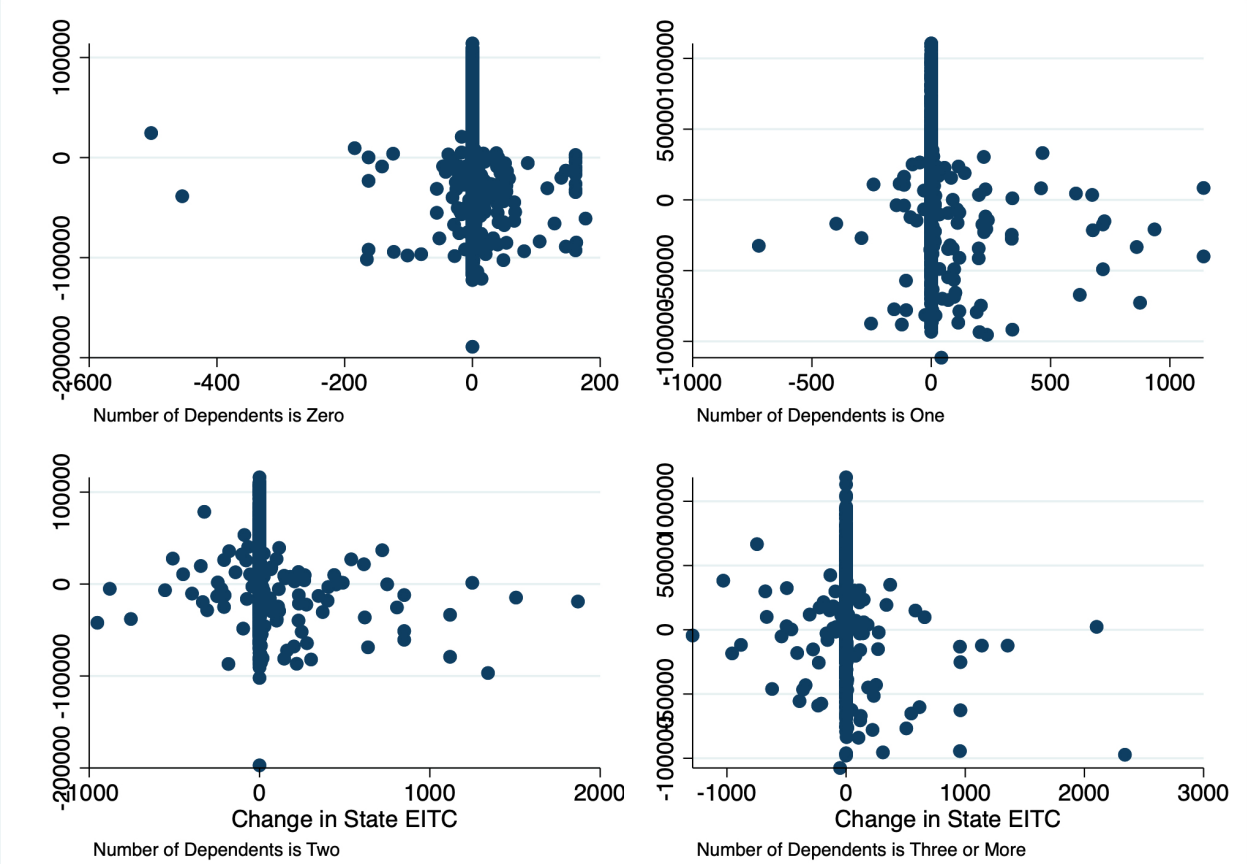


Figure AF10: Change in Net Income vs Change in State EITC

Note: Figure AF10 shows the relationship between change in net income and change in State EITC

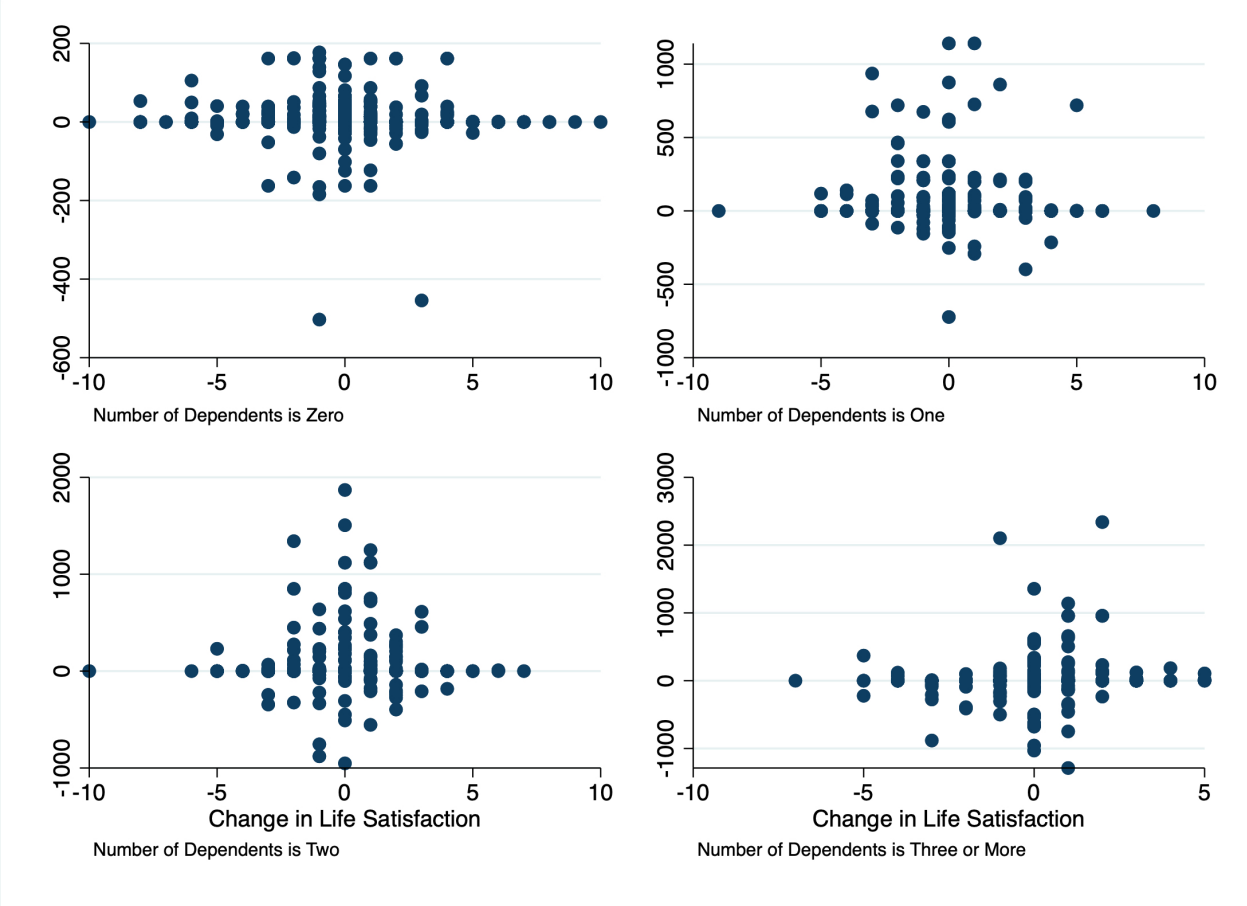


Figure AF10A: Change in State EITC vs. Change in Life Satisfaction

Note: Figure AF10A shows the relationship between and change in state EITC and change in life satisfaction.

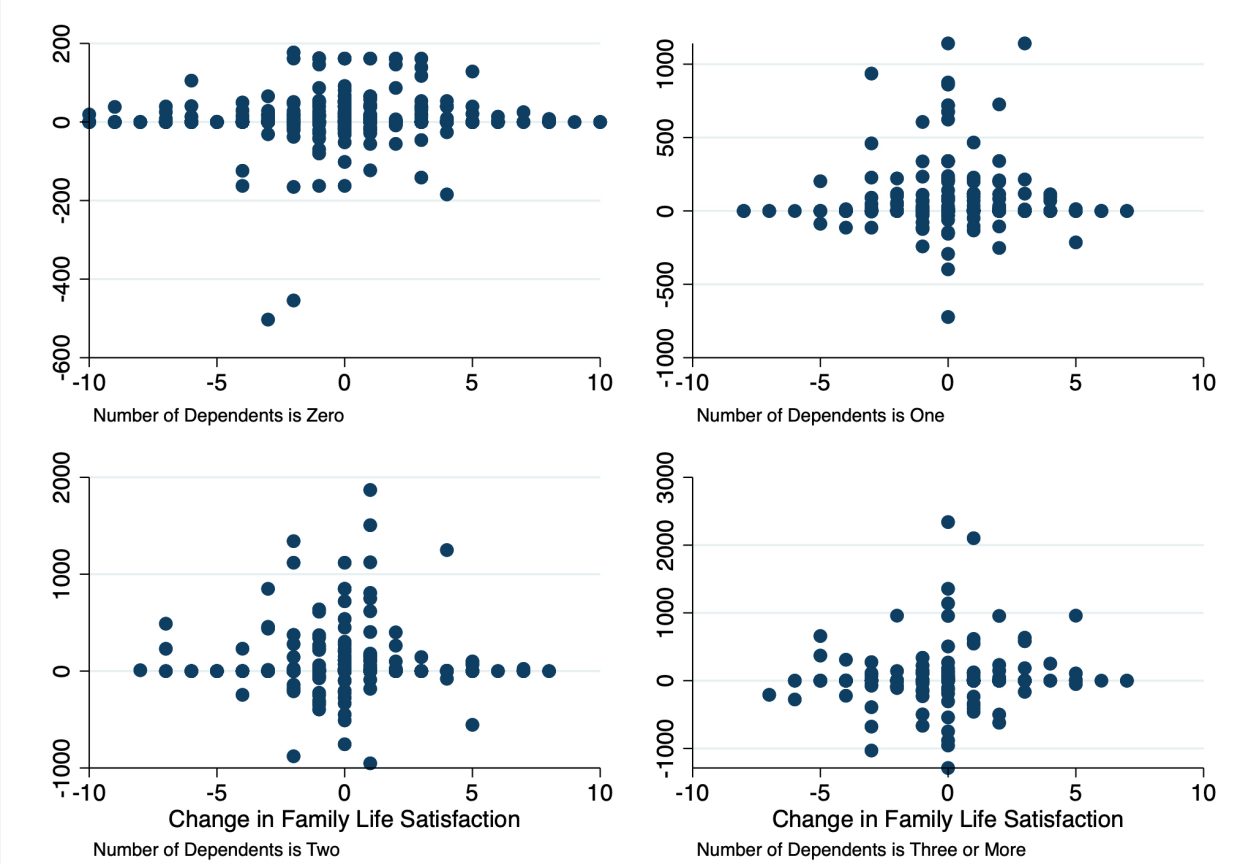


Figure AFB: Change in State EITC vs. Change in Family Life Satisfaction

Note: Figure AF10B shows the relationship between and change in state EITC and change in family life satisfaction.

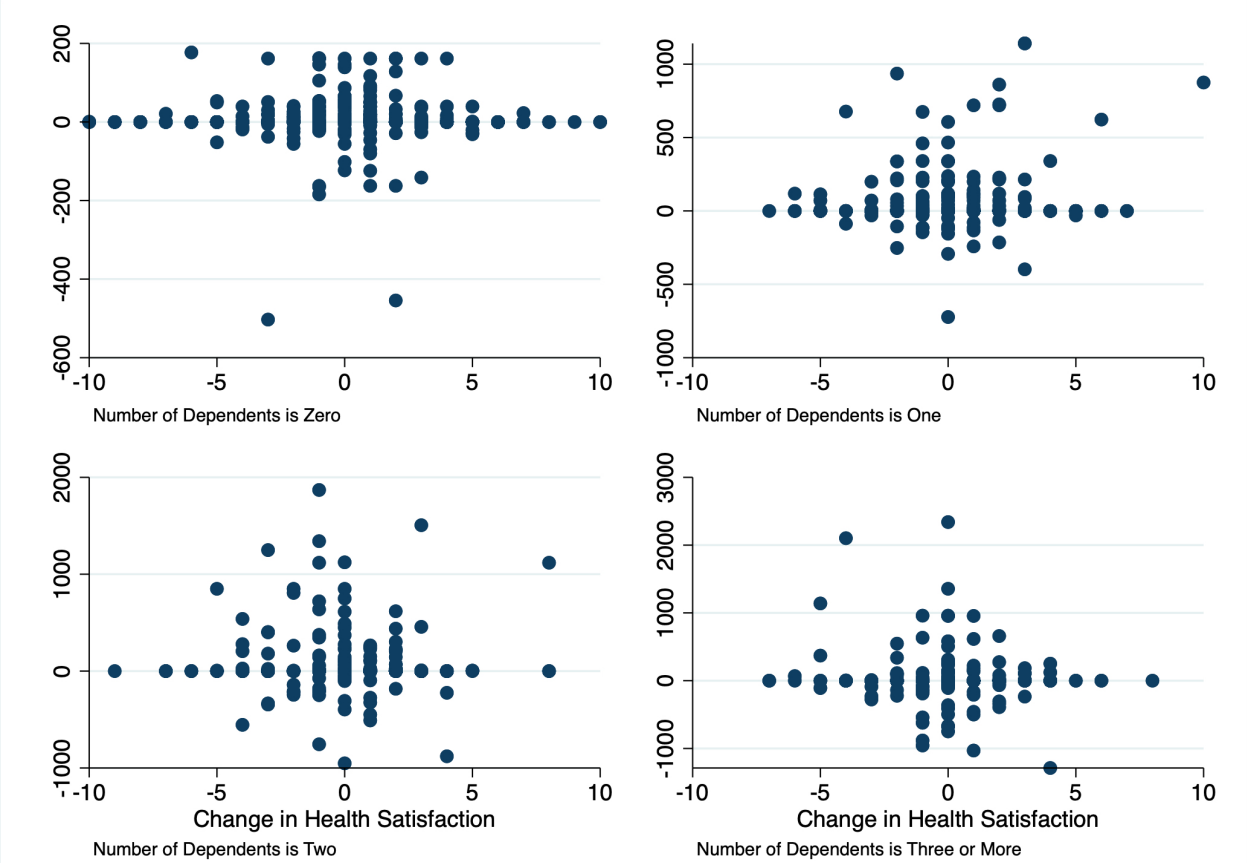


Figure AF10C: Change in State EITC vs. Change in Health Satisfaction

Note: Figure AF10C shows the relationship between and change in state EITC and change in health satisfaction.

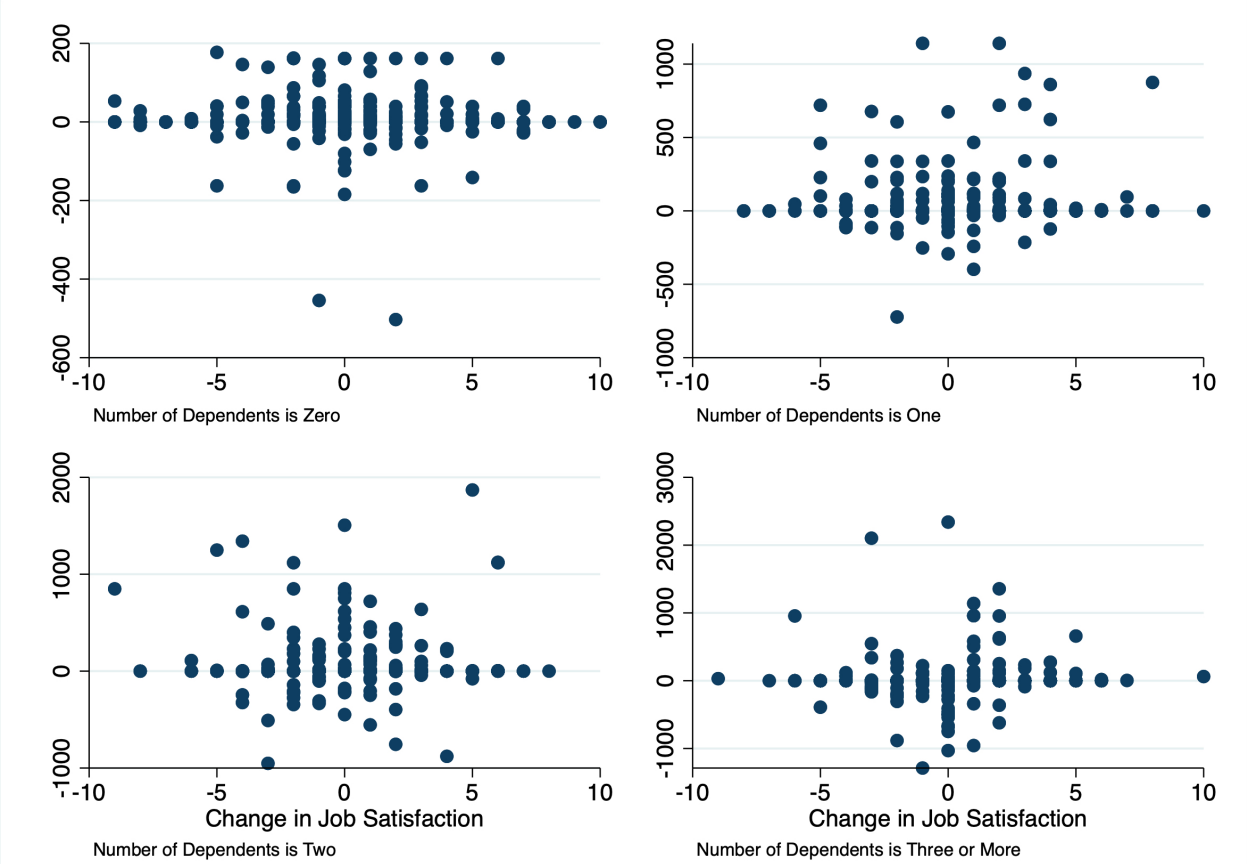


Figure AF10D: Change in State EITC vs. Change in Job Satisfaction

Note: Figure AF10D shows the relationship between and change in state EITC and change in job satisfaction.

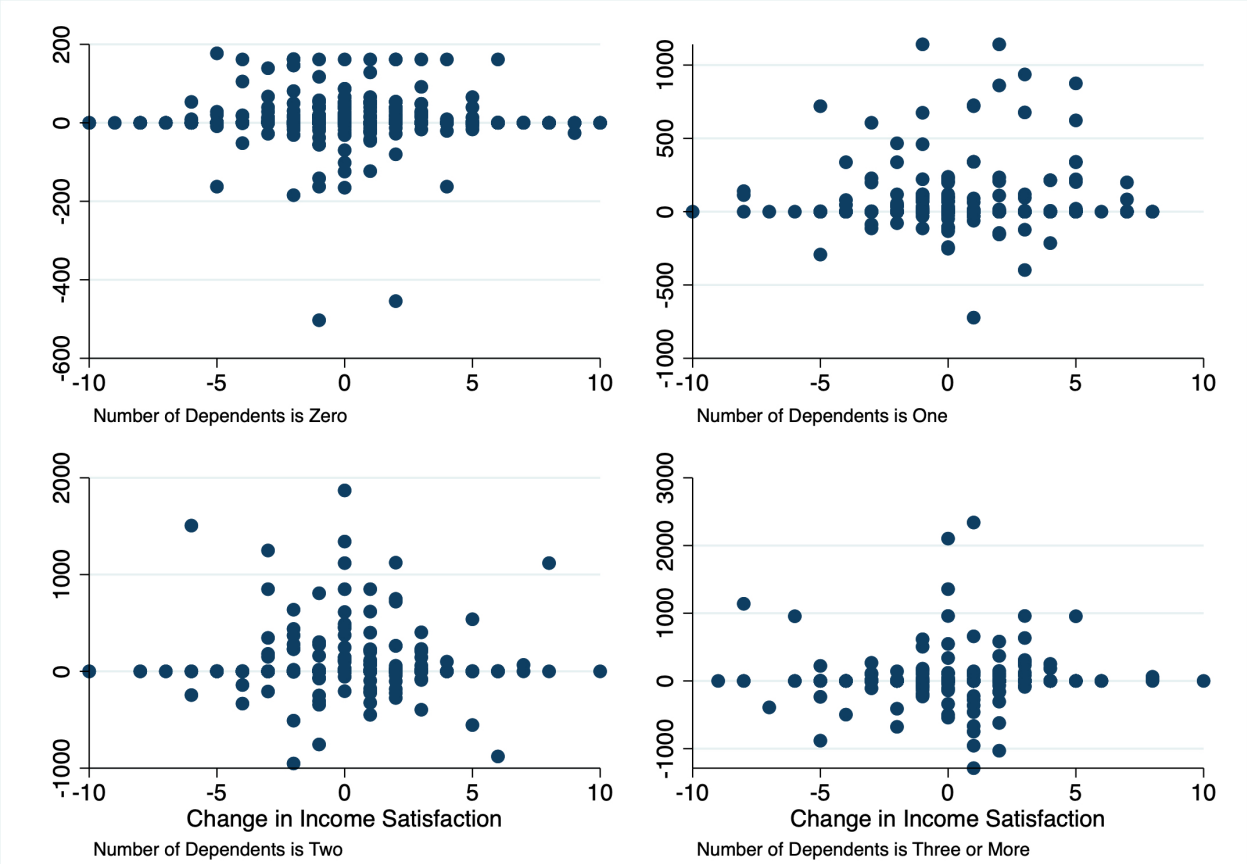


Figure AF10E: : Change in State EITC vs. Change in Income Satisfaction

Note: Figure AF10E shows the relationship between and change in state EITC and change in income satisfaction.

10.3 Appendix B

10.3.1 Background of the Earned Income Tax Credit

The program was first introduced as temporary basis, and the maximum credit amount was $400. Over time, the program was expanded to encourage labor force participation. The first federal expansion was in the Tax Reform Act of 1986 (TRA86) which increased maximum credit to $800. The second expansion, in the Omnibus Budget Reconciliation Act of 1990 (OBRA90), modified the EITC program by family size. In 1991, families with one qualifying child were eligible to receive a maximum of $1,192, and $1,235 for families that have 2 or more qualifying children. The third expansion, in the Omnibus Budget Reconciliation Act of 1993 (OBRA93), increased maximum credit for households with one child to $2,038 and to $2,528 for two or more qualifying children. Unlike the earlier expansions, OBRA93 also introduced a new credit at the amount of $306 for low-income families with no qualifying children. The next expansion took place as The Economic Growth and Tax Relief Reconciliation Act (EGTRRA) in 2002 temporarily increased the income level at which the EITC began to phase out for married taxpayers in comparison to unmarried taxpayers. This additional amount is referred to as "marriage penalty relief." From 2002 to 2004, the marriage penalty relief was equal to $1,000. From 2005 to 2007, it was equal to $2,000. And from 2008 to 2010, it was equal to $3,000. This temporary increase in the income level at which the Earned Income Tax Credit began to phase out was a significant change for married taxpayers. The next expansion The American Recovery and Reinvestment Act (ARRA) was in 2001 and introduced a larger credit amount for families with 3 or more children by setting the maximum credit as $5,657. The last expansion took place in 2021 and called The American Rescue Act Plan (ARPA). The expansion temporarily increased the amount of and the eligibility for the childless EITC that captures only 2021. As a result, maximum childless credit increased from $543 to $1,052. Table AT1 shows the maximum EITC benefit by year dependent on number of qualifying children.