

# The Impact of Selected Socioeconomic Factors on Amount of Earned Income Tax Credit Received by Low-Income Rural Residents

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### **Abstract**

This paper examines the impact of selected socioeconomic factors on amount of earned income tax credit (EITC) received by low-income rural residents. Using a questionnaire, data were obtained from a convenience sample of 82 respondents in South Central Alabama, and were analyzed using descriptive statistics and multiple regression analysis. The results showed that the average amount of EITC received was \$1470; a majority of recipients were females, younger, with lower education, lower household incomes, and single. In addition, gender had a statistically significant (p<0.05) effect on the amount of EITC received, with females receiving more EITC than males. Since females received more EITC than males, they could be specifically targeted to participate in programs, such as individual development accounts, that encourage low-income people to save. They could, at least, save part of their credit as they have relatively more disposable income and this will allow them to build wealth.

Keywords: EITC, low-income, rural residents, socioeconomic factors

## 1. Introduction

The earned income tax credit (EITC) is a federal tax benefit that stabilizes the incomes of lower-income households, especially the working class, and it enhances poverty reduction. Davis (2007) explained that the EITC is designed to help low-income workers improve their financial condition. It supplements the earnings of these workers, reduces their taxes, makes work more attractive than welfare, and is a fully refundable credit. The EITC is structured in three periods, namely, the phase-in period, the plateau period, and the phase-out period. There is an association between these periods and income; as income level changes so do the periods (explained in detail in the next section). Holt (2006) contended that for families struggling to make ends meet on earnings from low-wage jobs, the EITC has become an essential form of support, boosting the size of annual tax refunds by as much as several thousand dollars. The program is widely recognized for its accessibility, administrative efficiency and simplicity, and its effectiveness in lifting working poor households out of poverty.

Greenstein (2005), for example, emphasized that the EITC strongly complements the minimum wage. He explained that after the EITC expansions of 1990 and 1993, the combination of the EITC and minimum wage met the goal of ensuring that a family of four with a full-time minimum-wage worker would not have to raise its children in poverty. Meeting this goal would not have been possible with the minimum wage alone, and that is one reason why a broad array of policymakers has supported achieving poverty reduction through a combination of the EITC and minimum wage. The Center on Budget and Policy Priorities (2008) also stated that the EITC has proven to be one of the most effective economic policy strategies instituted in the last thirty-five years. In 1999, for instance, EITC payments were directly responsible for lifting almost five million people out of poverty, half of them children.

Moreover, the Annie E. Casey Foundation (2005) maintained that the EITC has become the nation's largest and most important anti-poverty program, offering an average of \$1,700 per year to 20 million low-income working families.



It argued that the EITC provides a unique financial opportunity for the working poor, and it makes a substantial impact on the economies of their communities through recipients' spending. Also, the EITC has been shown to influence welfare and the labor market. For instance, Dickert, Scott, & Scholz (1995) reported that earning minimum wage and higher unemployment rates increased welfare use among families with younger children than families with older children. They also found that expansions of the EITC between 1993 and 1995 induced more than half a million families to move from welfare to work.

Taking into consideration the Southeastern region of the U.S. in general and Alabama in particular, there have been limited studies on the EITC and related issues for low-income families. Indeed, none of the limited studies have focused particularly on low-income working families in South Central Alabama, a region that has many low-income rural families. In addition, South Central Alabama has other abysmal socioeconomic characteristics associated with it (the discussion on these will be dealt with later in the paper). An investigation into some of the socioeconomic factors that impinge on the receipt of EITC in this region will add to the literature and understanding of EITC issues. Based on the foregoing, the purpose of the study was to analyze the impact of selected socioeconomic factors on amount of EITC received by low-income rural residents. The specific objectives were to (1) identify and describe characteristics of respondents, (2) develop a model on the amount of EITC received, and (3) estimate the extent to which socioeconomic factors influence the amount of EITC received.

## 2. Literature Review

# 2.1 The EITC: What It Is, How It Operates, and Associated Factors

The Marguerite Casey Foundation (2005) emphasized that the EITC is a tax credit for low-income working people, and it was created in 1975 under the Tax Reduction Act. The purpose of the EITC was to counter the effects of social security taxes on the incomes of low-income families and provide the families with an increased incentive to work. In its first year, it was a small credit of up to \$400 for low-income taxpayers with children. Over time, it changed slowly; for example, in 1986, it was expanded and indexed for inflation. In 2001, it was expanded to reduce the "marriage penalty" on the credit. Currently, the EITC is a large tax benefit for lower-income working families; it lifts people out of poverty, and creates an incentive to work. It is structured in three periods: the phase-in period, the plateau period, and the phase-out period. In the phase-in period, the credit increases with income; in the plateau period, the credit levels off as income increases; and in the phase-out period, the credit gradually falls back to zero.

Mikleson & Lerman (2004), IRS (2009), Meyer (2010), IRS (2010), and IRS (2011) stressed that the amount of EITC received is based on household income, marital status, and number of children. The IRS (2009), for example, stated the qualifying criteria for the EITC for tax year 2008 as: household income must be less than: \$12,880 for single (\$15,880 for married filing jointly) with no qualifying children; \$35,995 for single (\$36,995 for married filing jointly) with one qualifying child; \$38,646 for single (\$41,646 for married filing jointly) with more than one qualifying child. Furthermore, the IRS (2010) stated the qualifying criteria for the EITC for tax year 2009 as: household income must be less than: \$13,440 for single (\$18,440 for married filing jointly) with no qualifying children; \$35,463 for single (\$40,463 for married filing jointly) with one qualifying child; \$40,295 for single (\$45,295 for married filing jointly) with two qualifying children; and \$43,279 for single (\$48,279 for married filing jointly) with three or more qualifying children. However, for 2011, the IRS indicated the qualifying criteria for the EITC for tax year 2010 as: household income must be less than: \$13,460 for single (\$18,470 for married filing jointly) with no qualifying children; \$35,535 for single (\$40,545 for married filing jointly) with one qualifying child; \$40,363 for single (\$45,373 for married filing jointly) with two qualifying children; and \$43,352 for single (\$48,362 for married filing jointly) with three or more qualifying children.

In fact, Meyer (2010) using separate data from the Current Population Survey (CPS) by the Census Bureau and data from the IRS found that families headed by single parents were the majority receiving EITC, followed by families with married couples and children. Moreover, families with more than one child received most of the EITC dollars; the average number of children was two. Based on the CPS data, the average amount of EITC received was \$2,381 for single women with children; \$1,848 for single men with children; \$2,284 for married couples with children; \$352



for singles without children; \$195 for couples without children; and \$1,781 for the overall group.

Also, receiving the EITC is based on age, gender, and education. Meyer (2010) found the average age for single EITC recipients as 36 years, and that for married recipients as 38 years. In addition, Meyer found that single women with children dominate the recipient group. Regarding education, he found that most EITC recipients had relatively low educational attainment (i.e., less likely to have a college degree). From the foregoing, therefore, it appears the amount of EITC received, among other things, is based on income, marital status, family size, age, gender, and education.

## 2.2 Previous Studies

This section examines previous studies dealing with EITC issues, such as welfare, employment, poverty, and other factors related to or that influence the EITC. The section also provides insights into the focus of these studies. Rhine, Su, Osaki, & Lee (2005), for instance, examined how low-income families responded to the EITC. They found that majority of respondents received a positive refund, and that unbanked and banked respondents, respectively, received on average \$740 and \$980 in EITC. Most of them planned to use their credit to pay debt; only a few planned to save their credit.

Moreover, Greenstein (2000) analyzed the EITC and its effects on workers without children. He reported that if the EITC is abolished, it will create an increase in tax for this group of workers, because they are generally taxed more relative to other group of workers. He surmised that expanding the EITC for very poor workers who are not raising minor children would benefit some of the nation's poorest workers in terms of accumulating assets or paying for current expenses. Additionally, Greenstein (2005) evaluated the EITC and its influence on employment. He found that in 2003, the EITC lifted 4.4 million people out of poverty, including 2.4 million children, and also, increased employment among single parents. This was especially the case among Hispanic children as well as children in the South, where lower wages prevailed and more low-income workers were likely to qualify for the EITC. In fact, without the EITC, the poverty rate would have been nearly one-fourth higher.

Furthermore, Grogger (2003) analyzed the effects of the EITC on welfare utilization. He reported that higher welfare benefits raised welfare use and this effect was greatest among families with younger children. He also found that a \$1,000 increase in the maximum EITC resulted in about 4% increase in employment, and ultimately decreasing welfare use. Grogger concluded that the EITC may be the single most important policy explaining recent increases in work earnings and declines in receipt of cash welfare assistance among low-income families.

Also, Meyer & Rosenbaum (2001) examined the impacts of the EITC on labor force participation rates. They found that the EITC expansions instituted between 1984 and 1996 were responsible for more than half of the large increase in employment among single mothers, and most of the gains in employment were for mothers with young children and mothers with low educational levels. Equally important, they stated that the EITC produced large declines in receipt of cash welfare assistance among low-income mothers. Similarly, Blank (2002) examined the effects of welfare reform in the 1990s on EITC recipients. She observed that the labor force participation rates of low-income women rose dramatically, especially among African American single mothers. She, as well, stated that the rise in labor force participation rates was attributable to welfare reform, the expansions of the EITC, and the strong economy of the 1990s. Over the same period, labor force participation rates among low-income or less-educated young men stagnated or declined especially for young African American men.

In another study by Ziliak (2004) designed to assess the EITC and its impact on poverty, he reported that the poverty threshold for families with children would have been 20% higher in 1999 without the EITC. He also indicated that a large portion of improvement in after-tax poverty among the poorest families occurred through expansions of the EITC in the 1990s. The timing of these expansions came during a period when other programs in the safety net were shrinking, thus, the EITC filled the poverty gap. In a related study, Ajilore (2008) investigated the effectiveness of the EITC on poverty, using selected socioeconomic variables on EITC participation rate. Gender was found to be



significant on EITC participation rate; specifically females participated more in the EITC than males.

To summarize the literature review, for instance, the EITC and how it operates, it appears that socioeconomic factors impinge on the EITC. In addition, several of the previous studies show that the EITC also reduces poverty; increases labor force participation rates, affects gender participation, and impacts children. This notwithstanding, there is still a need to understand how much EITC is received and to what extent this is influenced by socioeconomic factors, especially in low-income rural areas such as South Central Alabama; hence, the motivation for the study.

## 3. Methodology

## 3.1 Model Used

Based on the literature review, which deals with the EITC and its association with socio-economic factors, the following model that expresses the dependent variable as influenced by a vector of socioeconomic variables was developed:

$$AER = f(NCH, GEN, AGE, EDU, INC, MAS)$$
 (1)

The model hypothesizes the amount of EITC received (AER), dependent variable, as a function of the number of children in household (NCH), gender (GEN), age (AGE), education (EDU), income (INC), and marital status (MAS), independent variables. The estimation model is stated as follows:

$$\begin{aligned} AER &= \beta_0 + \beta_1 NCH + \beta_2 GEND_i + \beta_3 AGED_i + \beta_4 EDUD_i + \beta_5 INCD_i + B_6 MASD_i + \epsilon \\ where: & AER = amount of EITC received in dollars \\ NCH = number of children in household \\ GEND_i &= gender dummy; 1 if male, 0 otherwise \\ AGED_i &= age dummy; 1 if 35 years or less, 0 otherwise \\ EDUD_i &= education dummy; 1 if high school or less, 0 otherwise \\ INCD_i &= income dummy; 1 if income is $20,000 or less, 0 otherwise \\ MASD_i &= marital status dummy; 1 if married, 0 otherwise \\ \beta_i &= coefficients \\ \epsilon &= error term \end{aligned}$$

# 3.2 Explanation to the Relationship between the Dependent and Independent Variables and Expected Signs

The average amount of EITC received obviously is influenced by socioeconomic factors such as those previously mentioned. That said, it is assumed, for instance, that the higher the number of children in a household, the greater the amount of EITC received, a positive relationship. This is because the higher number of children in the household decreases the per unit income from working, and therefore, increases the chances of receiving a set amount of EITC. The amount of EITC received is also influenced by gender. It is expected that females will receive greater amounts of EITC than males because based on previous studies, females tended to file more and receive more in EITC than males. Therefore, this relationship is negative. With age, it is argued that younger persons will receive more in EITC than older persons. In general, older people have a higher and more stable income than younger people and, therefore, the older people are expected to receive less in amount of EITC. Consequently, this relationship is expected to be negative.

The more education one has, the less the amount of EITC that he or she is expected to receive. The reason is attributed to the fact that generally the more education one has, the more money one makes, and therefore, the less likely it is to receive government benefits. The relationship is expected to be negative. The relationship between the amount of EITC received and income is also expected to be negative. Those who earn relatively less in wages are expected to receive more in EITC than those who earn more wages; hence, a negative relationship. Furthermore, the



relationship between marital status and the amount of EITC received is expected to be negative. This means that single people are expected to earn more in the amount of EITC received than married people. The selection of variables, their categorization, and postulation of the expected signs is based on the literature [e.g., Meyer (2010), Ajilore (2008), Greenstein (2005), Grogger (2003), Blank (2002), and Meyer & Rosenbaum (2001)]. Table 1 presents a summary of the variables and their expected signs.

#### 3.3 Instrumentation

A survey instrument consisting of three sections was used for the study. The first section was on general information, such as whether participants have ever heard of the EITC, whether they file for the EITC or not, how much EITC they received, and what they use their EITC refund for. The second section was on knowledge about the alternative use of the EITC with questions on whether they are aware they can use the EITC as an asset building strategy, and whether they will be willing to participate in such a program. The third section was on demographic information, such as number of persons in the household under 18 years, annual household income, and marital status. In designing questions on the demographic information, the categorical style was chosen for characteristics, age, education, and income because prior experience has shown that the population base from which respondents were drawn feels more comfortable responding to this style of questions on these characteristics. They are, therefore, more forthcoming and less resistant to answering these questions. The survey instrument was approved by the Institutional Review Board, human subjects committee before being administered. To ensure clarity of the questions, the questionnaire was pilot tested, using eleven individuals. As a result of the pilot testing, the instrument was modified in terms of question wording and finalized. The eleven pilot tested responses were not included in the study. This paper focuses on socioeconomic factors affecting amount of EITC received.

## 3.4 Data Collection and Analysis

Convenience sampling was used in collecting data for the study. Lohr (1998) explained that convenience sampling generally assumes a homogeneous population and that one person is very much like another. It is used when one is unable to access a wider population, for example, due to time or cost constraints. Convenience sampling was used for this study because there was no known sampling frame from which the sample could be drawn. In addition, the subjects were easier to sample this way because of time and cost constraints. Although convenience sampling can lead to under-representation and over-representation of particular groups, it can also be used to generate useful data and information which other techniques will not allow the researcher to do. Data were collected from families in several counties of South Central Alabama, also known as the Black Belt, where the average annual income is below the state average. In fact, this region has some of the most abysmal socioeconomic characteristics in the State and it is a region where many low-income people reside, a place rife with potential EITC recipients. The counties used in the study were Marengo, Perry, Bullock, Barbour, Sumter, Greene, Hale, Montgomery, and Macon. County Extension agents and Expanded Food and Nutrition Education Program educators helped identify residents to be interviewed in their respective counties, and also assisted in collecting the data. Although the participants were not formally prescreened to determine their eligibility, the agents and educators used their best guesstimate to identify participants who they believed to be EITC eligible. The data were obtained through in-person interviews from a convenience sample of 138 respondents from June to November 2009. Of the 138 respondents, 82 filed for the EITC; of the 82 who filed for the EITC, 14 refused to disclose certain information or chose not to answer some questions, 12 specifically on how much EITC they received. Thus, buttressing the point made previously about residents sometimes not feeling comfortable disclosing certain information about themselves. Hence, 82 are used for the frequency responses analysis (Table 2); however, because of the problem of missing data (due to non-response) 68 observations are used for the regression analysis (Tables 3 and 4).

The data were analyzed using the Statistical Package for Social Sciences (SPSS) Windows Version. The primary statistical tools used to analyze the data were descriptive statistics, namely, means, frequency and percentages, and ordinary least square (OLS) regression analysis. The dependent variable, amount of EITC received, was regressed against six independent variables: number of children in household, gender, age, education, annual household income, and marital status.



## 4. Results and Discussion

Table 2 presents responses regarding selected socioeconomic characteristics of the respondents. About 74% of the respondents had children in their households. The average number of children in the household was 2 (not shown in table). Seventy-eight percent were females and 98% were Blacks. Nearly 71% were 35 years old or younger, and 41% had high school education or below. Additionally, 55% earned \$20,000 or less, and 65% were single and had never married. The predominance of households with children, females, younger persons, persons with relatively lower educational levels, households with relatively lower annual incomes, and singles is consistent with the U.S. Census Bureau Census statistics on South Central Alabama. About 62% received on average \$1,500 or less; the mean amount was about \$1,470 (not shown in table). The average amount of the EITC received was less than the average EITC of \$1700 reported by the Annie E. Casey Foundation (2005) or the \$1,781 reported by Meyer (2010), an indication of the low-income status of the respondents.

Table 3 depicts the descriptive statistics for the dependent and explanatory variables. The average amount of EITC received was \$1470; the minimum was \$600 and the maximum was \$5,000. The average number of children in a household was 2. The binary variables range between 0 and 1 and the means were decimal numbers within the range.

Table 4 shows the results for the OLS multiple regression analysis. Two multiple regression analyses were run, one with all independent variables and the other with only the significant variables from the first analysis. The results of the first regression show that gender was significant at the 10% level with the expected sign. The coefficient of -492.267 implies that males received an average of \$492 less than females in EITC. Marital status was statistically significant at the 5% level, but with the unexpected sign. A plausible explanation could be that, although more singles filed for the EITC than married people, the total amount they received was less than the total amount of EITC received by married people. Number of children in household variable was not significant but had the expected sign. The rest of the independent variables were not significant and did not have the expected signs. The F-value was 1.741 and was not statistically significant. The R<sup>2</sup> was 15%, which means that about 15% of the total variation in the amount of EITC received can be explained by the number of children in household, gender, age, education, annual household income, and marital status.

Garson (2009) and Neufeld (2001) recommended that insignificant variables should be dropped from a regression analysis such as described above. Thus, all the insignificant independent variables were dropped and a second regression was run using only the significant variables. Still, gender was significant, but this time, at the 5% level and with the expected sign. The second regression analysis revealed that males on average received about \$525 less in EITC than females. Marital status was again significant, but this time, at the 10% level with the unexpected sign. The F-value was significant at the 1% level and this means that gender and marital status together had a statistically significant effect on the amount of EITC received. The R² was 10%, implying that 10% of the total variation in the amount of EITC received is explained by gender and marital status. The low R² should not be a cause for concern as analysis with cross-sectional data usually produces low R² values; a model should be based on relevant variables and not on simply achieving high R² values (Pindyck and Rubinfeld, 1997; Schroeder, et al., 1986). That gender had more influence on the amount of EITC received than any of the other variables is supported by the findings of Meyer and Rosenbaum (2001), Blank (2002), Ajilore (2008), and Meyer (2010) who found gender to have a significant influence on EITC; female participation rates were higher than male participation rates, and that females received higher amounts in EITC than males.

# 5. Conclusion

A majority of respondents had children in the household, were females, younger, with relatively lower levels of education, relatively lower annual household incomes, and single. The average amount of EITC received was \$1470. The study also revealed that gender had a significant effect on the amount of the EITC received, with females receiving more EITC than males. Since females received more EITC payments than males, they could also be specifically targeted to participate in programs that encourage recipients to save, at least, part of their credit, and to build wealth as they have relatively more disposable income. One approach could be to assist them establish



individual development accounts (IDAs). CFED (2011) stated:

IDAs are special savings accounts that match the deposits of low- and moderate-income people. For every dollar saved in an IDA, savers receive a corresponding match which serves as both a reward and an incentive to further saving habit. Savers agree to complete financial education classes and use their savings for an asset-building purpose, typically for post-secondary education or job training, home purchase, or to capitalize a small business.

Alternatively, these recipients could be assisted to establish mutual fund accounts from which they could earn more "returns" than placing their extra monies into regular savings accounts. Thus, extra EITC funds, if used well can improve the wealth of recipients, and ultimately, improve the community's wealth status.

Overall, the contribution of the study is that it gives insights into factors that affect amount of EITC received in a low-income rural area such as South Central Alabama. Particularly, its key contribution is the indication and confirmation that gender matters in EITC receipts, and this has implications for EITC policy especially in the study area.

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Table 1. Explanatory Variables and their Expected Signs

	1 5
Variable	Expected Sign
NCH	+
GEN	-
AGE	-
EDU	-
INC	-
MAS	-

Key: NCH = number of children in household; GEN = gender; AGE = age; EDU = education;

INC = income; MAS = marital status

Table 2. Responses Regarding Selected Socioeconomic Characteristics of Respondents (N = 82)

Variable	Frequency	Percent
Number of Children		
No Child	15	18.3
One Child	28	31.4
Two or More Children	35	42.7



No Response	4	4.9
Gender		
Male	18	22.0
Female	64	78.0
Race		
Black	80	97.6
White	2	2.4
Age		
20 years or less	25	30.5
21-35 years	33	40.2
36-50 years	17	20.7
51-65 years	7	8.5
Over 65 years	0	0.0
<b>Educational Level</b>		
Some Grade School	1	1.2
High School	33	40.2
Some College	40	48.8
Associate degree	3	3.7
Bachelor's Degree	4	4.9
No Response	1	1.2
<b>Annual Household Income</b>		
\$10,000 or less	6	7.3
\$10,001-20,000	39	47.6
\$20,001-30,000	30	36.6
\$30,001-40,000	4	4.9
\$40,001-45,000	0	0.0
Over 45,000	3	3.7
Marital Status		
Married	17	20.7
Single Never Married	53	64.6
Separated	7	8.5
Divorced	5	6.1
Widowed	0	0.0
<b>Amount of EITC Received</b>		
\$500 or less	0	0.0
\$501-1,000	33	40.2
\$1,001-1,500	18	22.0
\$1,501-2,000	10	12.2
Over \$2,000	9	11.0
No Response	12	14.6



Table 3. Descriptive Statistics for Dependent and Explanatory Variables

Variable	N	Minimum	Maximum	Mean	Standard Deviation
AER	68	600.00	5,000.00	1,470.294	777.716
NCH	68	0.000	4.000	1.530	0.906
GEND	68	0.000	1.000	0.221	0.418
AGED	68	0.000	1.000	0.750	0.436
EDUD	68	0.000	1.000	0.427	0.498
INCD	68	0.000	1.000	0.956	0.207
MASD	68	0.000	1.000	0.176	0.384

Key: AER = amount of EITC received; NCH = number of children in household; GEND = gender dummy; AGED = age dummy; EDUD = education dummy; INCD = income dummy; MAS = marital status dummy

Table 4. Relationship of Explanatory Variables to the Amount of EITC Received

Variable	Coefficients	t-value	F <sub>6,61</sub>	$\mathbb{R}^2$
<sup>a</sup> NCH	12.887	0.097	1.741	0.146
GEND	-492.267	-1.926*		
AGED	195.493	0.790		
EDUD	181.970	0.831		
INCD	448.168	0.920		
MASD	650.418	2.218**		
Constant	791.773	1.580		
<sup>b</sup> GEND	-525.540	-2.344**	3.705***	0.102
MASD	454.652	1.864*		
Constant	1,505.989	13.985		

<sup>\*</sup>Significant at the 10 percent level; \*\*Significant at the 5 percent level; \*\*\* Significant at the 1 percent level; t-value df = 61.

Key: AER = amount of EITC received; NCH = number of children in household; GEND = gender dummy; AGED = age dummy; EDUD = education dummy; INCD = income dummy; MAS = marital status dummy

a. Regression with all the selected variables

b. Regression with significant variables; insignificant variables dropped as recommended by Garson (2009) and Neufeld (2001)

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