

OLS Regression Analysis of Education, Marriage and Self-Esteem Across Employment Status

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Abstract. This study examines the impact of years of education on self-esteem across different employment statuses, while controlling for marital status. Although previous research generally suggests that both education and marriage enhance self-esteem, limited attention has been given to differences across employment groups. Using data from 4,488 respondents in the National Longitudinal Survey of Youth (NLSY), standardized self-esteem scores were employed as the dependent variable, with years of education as the main independent variable. The sample was divided by employment status, and separate ordinary least squares regressions were conducted for the non-employed ($n = 449$) and the employed ($n = 4,039$). Descriptive statistics indicate that 57.9% of the respondents were married, 90% were employed, and the average years of education was 13. The results show that both education and marriage exert significant positive effects on self-esteem, with stronger impacts observed among the non-employed. Specifically, for the non-employed, the effects of education ($\beta = 0.626$, $p < 0.001$) and marriage ($\beta = 1.151$, $p = 0.007$) were both higher than those observed in the employed group ($\beta = 0.507$ and $\beta = 0.546$, respectively). These findings suggest that, in the absence of occupational identity, education and marriage serve as important sources of self-worth and social support.

Keywords: NLSY, OLS regression, self-esteem.

1. Introduction

Rosenberg defined self-esteem as an individual's overall sense of self-worth and developed the widely used Rosenberg Self-Esteem Scale (RSES) [1]. Self-esteem is closely tied not only to emotional well-being and psychological resilience but also to one's identity, sense of belonging, and perceived control within the social structure [2]. Despite its frequent appearance in research, self-esteem remains a concept that is often taken for granted or insufficiently explored. On the other hand, education, defined as the cumulative knowledge and skills gained through formal schooling [3], is commonly treated as a key predictor in social science research, influencing a wide range of social and psychological outcomes [4]. All those literatures showing the critical significance of educational attainment and self-esteem as key factors in this area of research.

Previous studies suggest that self-esteem has lasting effects on mental health, employment stability, and life satisfaction. For instance, Judge and Bono argued that self-esteem can enhance job persistence and productivity by strengthening self-efficacy and perceived control [5]. The above literature reveals that many studies on self-esteem treat education as a singular predictor, often overlooking the possibility that its influence may vary depending on employment status. Individuals who are employed versus those who are not may differ significantly in terms of social identity, role fulfillment, and perceived self-worth. These distinctions are frequently excluded from analytic frameworks. The present study aims to address this gap by examining how the relationship between education and self-esteem differs by work status. Specifically, it proposes that employment may serve as a moderating variable: the value of education—especially in the human capital context—may only be fully realized when it is actively applied in the labor market. Therefore, this research explores whether academic attainment affects self-esteem differently based on whether an individual is employed, and investigates the underlying mechanisms through which labor market participation shapes this relationship.

This study uses data from the National Longitudinal Survey of Youth (NLSY), focusing on 4,488 respondents. The analysis examines how years of education affect standardized self-esteem scores, with employment status ("employed" or "unemployed") considered as a moderating factor. Using ordinary least squares regression (OLS) and group-specific regressions, it estimates the marginal effect of education within employment groups. Results explore whether education's psychological benefits depend on workforce participation. Findings suggest that higher education without employment may harm self-esteem, emphasizing the need for policies that address both economic and psychological aspects of education and unemployment.

2. Method

2.1. Dataset Preparation

The source of dataset used in this study comes from the National Longitudinal Survey of Youth (NLSY) [6], a nationally representative dataset known for its large sample size and rich individual-level data. This analysis focuses on a subsample of 4,488 respondents, covering over 50 key variables such as education level, employment status and standardized self-esteem scores., Table 1 provides the sample data from original dataset. In addition, all continuous variables were standardized where appropriate to improve comparability.

Table 1. Sample display of data in the original table

year	working	self_empl	age	agesq	educ
1989	1	0	30	900	12
1989	1	1	27	729	10
1989	1	0	31	961	12
1989	1	0	25	625	16
1989	1	0	30	900	13
1989	1	0	29	841	16
1989	1	0	28	784	16
1989	1	0	26	676	16
1989	1	0	29	841	14
1989	0		29	841	16
1989	1	0	25	625	12
1989	1	0	28	784	12
1989	1	0	30	900	12
1989	1	0	26	676	12

2.2. OLS Regression

To estimate the association between educational attainment and self-esteem, this study employed Ordinary Least Squares (OLS) regression [7-9]. which is widely used statistical technique for modeling linear relationships between a dependent variable and one or more independent variables. For this study, the OLS regression model is:

$$\text{self-esteem} = \beta_0 + \beta_1 \text{Education} + \beta_2 \text{Married} + \beta_3 \text{Working} + u \quad (1)$$

Where sesteem_score1 is the individual standardized self-esteem score, serving as the dependent variable, while educ represents the years of education completed (continuous variable). In addition, afqt denotes the cognitive ability score, married is a dummy variable indicating marital status (1 = married, 0 = unmarried), and working is a dummy variable indicating whether the respondent is

employed (1 = employed, 0 = unemployed). Finally, u represents the error term capturing unobserved influences on self-esteem.

This method used alongside group-specific OLS to assess how education impacts self-esteem within each employment group. This method enables estimation of the marginal effect of education on self-esteem across differing labor force statuses. By comparing these effects, the study not only evaluates the direct link between education and self-esteem but also investigates whether the psychological benefits of education are contingent on an individual's participation in the workforce.

3. Results and Discussion

3.1. Descriptive Data

Before the analysis, descriptive statistics for the main variables were calculated shown in Table 2. Data analysis for all variables used in the analysis was performed. The sample included 4,488 respondents, of whom approximately 57.9% were married and 90.0% were employed. The average years of education was 13.04 years ($SD = 2.47$), and the mean standardized self-esteem score was 22.31 ($SD = 4.14$), with scores ranging from 6 to 30.

Table 2. The summary of data status

Variable	obs	mean	std.dev	min	max
married	4488	.5790998	.4937586	0	1
working	4488	.8999554	.3000928	0	1
sesteem_score	4488	22.30704	4.137941	6	30
educ	4488	13.03654	2.46771	5	20

With all ideal data available, education is the primary variable of interest in this analysis, while marital status (married) is included as a control variable. The relationship between education and self-esteem is examined separately under two conditions: when the control variable working equals 1 and when working equals 0, to assess how education influences self-esteem across these groups.

Table 3. The summary of regression result based on unemployed group

Variable	Coef	Std. err.	t	P	[95% Conf. Interval]
Educ	.6255308	.0903362	6.92	0.000	.4479933-0.8030683
married	1.150633	.4232411	2.72	0.007	.318839-1.982428
cons	12.97648	1.033642	2.55	0.000	10.94506-15.00789
R^2	0.1459				

Table 3 presents the OLS regression results for the non-working population ($n = 449$). Years of education ($\beta = 0.626$, $p < 0.001$) show a significant positive association with self-esteem, indicating that each additional year of education is associated with an average increase of approximately 0.63 points in the self-esteem score, controlling for marital status. Marital status ($\beta = 1.151$, $p = 0.007$) also has a significant positive effect on self-esteem. The model's R -squared value is 0.1459, suggesting that about 14.6% of the variation in self-esteem can be explained by education and marital status.

Table 4. The summary of regression result based on employed group

Variable	Coef	Std. err.	t	P	[95% Conf. Interval
Educ	.5068447	.0248914	20.36	0.000	.4580439-.5556456
married	.5463498	.123608	4.42	0.000	.3040099-.7886896
cons	15.45107	.3405433	45.37	0.000	14.78342-16.11872
R2	0.0973				

The analysis shown in Table 4 for the working population ($n = 4,039$) indicates that both education ($\beta = 0.507$, $p < 0.001$) and marital status ($\beta = 0.546$, $p < 0.001$) have significant positive effects on self-esteem. Compared to the non-working group, the coefficient for education is slightly lower. The model's R^2 is 0.0973, indicating that approximately 9.7% of the variance in self-esteem is explained by these two variables.

3.2. Comparative Analysis

A comprehensive comparison reveals that the effect of education on self-esteem is more affective among the unemployed population ($\beta = 0.626 > 0.507$). the reason may be for individuals lacking the social recognition given by employment, educational attainment serves as a crucial source of self-worth. While education also positively influences self-esteem within the working group, its impact is relatively weaker, possibly due to employment itself providing additional social roles and sources of value, thereby diminishing the relative influence of education. Moreover, marital status shows a significant positive effect on self-esteem in both groups; however, this effect is stronger among the unemployed population. This suggests that marriage may offer greater emotional support and social recognition for non-employed individuals, contributing to higher levels of self-esteem.

In this study, by conducting separate regression analyses for employed and non-employed groups, the effects of years of education and marital status on self-esteem were examined. Both variables showed significant positive impacts on self-esteem, although the magnitude of their effects differed between groups.

From those data characteristics the study draws some inferences, while education positively influences self-esteem overall, the effect of years of education on self-esteem was more pronounced in the non-employed group ($\beta = 0.626$, $p < 0.001$) compared to the employed group ($\beta = 0.507$, $p < 0.001$). This suggests that education not only enhances individuals' knowledge and skills but also serves as an important source of self-esteem in the absence of employment status. For non-employed individuals, education may represent social capital and personal value, helping them maintain higher self-esteem despite lacking occupational identity. Similarly, marital status also exhibited a significant positive effect on self-esteem. When comparing the two groups, the impact of marriage on self-esteem was stronger in the non-employed population ($\beta = 1.151$, $p = 0.007$) than in the employed group ($\beta = 0.546$, $p < 0.001$). This implies that marital relationships may provide greater social support and emotional security for the unemployed, buffering the psychological stress associated with unemployment and thus enhancing self-esteem. It also suggests that having a stable and extensive family network can contribute to greater self-esteem stability. Although marriage also positively affects self-esteem among employed individuals, its influence is relatively weaker, possibly because employment itself provides an established social role.

Prior to analyzing the current data, market research and previous studies provided partial support for these findings. Earlier research has shown that educational attainment is generally positively correlated with self-esteem [1], and marriage, as a key source of social support, has been confirmed to have beneficial effects on mental health [2]. Building on this foundation, the present study further refines the relationship by demonstrating that employment status acts as a moderating variable, influencing the strength of education's and marriage's effects on self-esteem.

3.3. Limitation

Although got the data which this study believe it will have some impact on some areas, however, this study has several limitations. First, it relies on binary indicators for education (years of schooling) and marital status without delving into the quality of education (e.g., field of study) or the quality of marriage (e.g., marital satisfaction, marital stability). These factors may have more nuanced effects on self-esteem, as individuals' social relationships and personal emotions are often difficult to fully capture through quantitative data alone. In addition, this study is based on cross-sectional data, which limits the ability to infer causal relationships. The sample may also be subject to regional or cultural constraints, reducing the generalizability of the findings. Future research could benefit from longitudinal or experimental designs to strengthen causal inference. With richer data, factors such as part-time employment, duration of unemployment, and job quality—omitted in this study—could be considered, as they may influence self-esteem and the strength of the relationships among variables.

4. Conclusion

In summary, this study analyzed the effects of years of education and marital status on self-esteem within employed and non-employed populations. The findings reveal that both education and marriage significantly and positively contribute to self-esteem, with stronger effects observed among the non-employed. Education serves as a crucial form of social capital for enhancing self-esteem in the absence of occupational identity, while marriage provides important emotional support that helps alleviate psychological stress for the non-employed. The study highlights the moderating role of employment status in shaping self-esteem and underscores the need for social policies that improve educational opportunities and social support networks for the unemployed, alongside promoting work-family balance for the employed. The limitations of the study are acknowledged, and future research is encouraged to explore the quality of education and marriage as well as the underlying psychological support mechanisms in greater depth.

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