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# Examining Literacy Skill Performance of Black Adults in the U.S.: A Case of Civic Engagement and Political Efficacy

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**Examining Literacy Skill Performance of Black Adults in the U.S.: A Case of Civic Engagement and Political Efficacy**

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# Examining Literacy Skill Performance of Black Adults in the U.S.: A Case of Civic Engagement and Political Efficacy

By Geleana Drew Alston, Takashi Yamashita; Ramon B. Goings, and Leah Katherine Saal

## Executive Summary

<p><b>The Issue</b></p>	<ul style="list-style-type: none"> <li>• Black adults’ beliefs about civic and political engagement are possible avenues toward social equality.</li> <li>• The Black population is far from a monolith (Saal et al., 2023).</li> <li>• Little is known about how Black adults’ literacy skill level impacts their civic engagement and political efficacy.</li> <li>• Within the Black adult population, a better understanding of gender differences is critical to inform civic and democratic educational initiatives.</li> </ul>
<p><b>The Research Question</b></p>	<ol style="list-style-type: none"> <li>1. Are the levels of information processing skills (i.e., adult literacy proficiency) associated with civic engagement and political efficacy among Black adults in the U.S.?</li> <li>2. Are there any gender differences in the associations between civic engagement, political efficacy, and information processing skills (i.e., adult literacy proficiency) among Black adults in the U.S.?</li> </ol>
<p><b>The Findings</b></p>	<ul style="list-style-type: none"> <li>• Black adults have comparable civic engagement and political efficacy to the general adult population.</li> <li>• Black adults with college degrees (s) tend to volunteer more often than those without.</li> <li>• Black adults with higher levels of literacy proficiency, college education, and older age tend to have higher political efficacy than those without.</li> <li>• Black women and Black men had similar literacy proficiency.</li> <li>• Black women with higher educational attainment had greater civic engagement.</li> <li>• Black men who live with their spouses had greater civic engagement.</li> <li>• Black women with high literacy proficiency had greater political efficacy than their counterparts with low literacy proficiency.</li> <li>• Black men with higher educational attainment had greater political efficacy.</li> </ul>
<p><b>The Implications</b></p>	<ul style="list-style-type: none"> <li>• Promoting the political efficacy of Black adults with low literacy skills should be on a policy agenda.</li> <li>• Civic and political education should be provided throughout adult life stages, and be considerate of sociocultural (e.g., race, gender) differences.</li> </ul>

## The Issue

### Intersection of Literacy, Political Efficacy, and Civic Engagement for Black Adults in the U.S.

Information-processing skills, such as adult literacy, are linked with social, economic, cultural, and civic participation in the United States and other nations. Specifically, “education, including information processing skills and civic knowledge, is one of the key developers of civic [practice]” (Saal et al., 2020, p. 178). Given the importance of this topic, in previous analyses of national data, many racial groups such as Black adults, the focus of this study, are treated as a monolith and much of this work has found Black adults to have low levels of information processing skills. As explained in our previous analyses (Saal et al., 2023), we found that conducting within-group analysis of Black adults in the U.S. provides a more nuanced view of the questions and in some areas, such as information processing skills, most Black adults have mid-to-high levels of this skillset. While this previous research (Saal et al., 2023) suggests that Black adults tend to have higher levels of information processing skills (e.g., over 65% had medium or high literacy proficiency), we also recognize the reality that for Black women and men there may be a difference in the relationship between their level of information processing skills and their political efficacy and civic engagement. Conducting within-group analyses on the intersection of race and gender in terms of literacy skill, political efficacy, and civic engagement for the Black adult population can lead to more socially and culturally sustaining civic education programs and policies which promote civic and political engagement and foster racial equity in communities as well as societies, rather than a one-size-fits-all approach (Saal et al., 2020).

According to the U.S. Chamber of Commerce *America’s Opportunity Gaps by the Numbers Report* (2020), approximately 45% of Black students do not receive formal education beyond high school. Most Black adults in the U.S. say “racism (63%), police brutality (60%) and economic inequality (54%) are extremely or very big problems for Black people living in the U.S.” (Cox & Edwards, 2022, p. 9). Many Black adults also cite the “affordability of health care (47%), limitations on voting (46%), and the quality of K-12 schools (40%)” in the U.S. as extremely big problems for them (Cox & Edwards, 2022, p. 9). As reported in the 2018 U.S. Census Data, of the 38.1 million people living in poverty in the U.S., 56% (21.4 million) were women. Also, Black women have the second-highest rate of poverty (21%) but make up only 13% of all women in the U.S. population.

Following widespread protests for racial equality in the United States in response to the murder of George Floyd and other Black citizens, an extensive public debate has resurfaced around the best political and civic engagement strategies to pursue greater racial equality. Yet, based on a recent Pew Research Survey of Black adults in the U.S., many have clear preferences on the types of political and civic engagement they believe will advance justice and equality (Cox & Edwards, 2022).

About six-in-ten Black adults say voting (63%) and supporting Black businesses or “buying Black” (58%) are extremely or very effective strategies for moving Black people toward equality in the U.S. Smaller though still significant shares say the same about volunteering with organizations dedicated to Black equality (48%), protesting (42%) and contacting elected officials (40%). (p. 40)

However, when these metrics are analyzed by gender, differences emerge. For example, 68% of Black women say voting is extremely or very effective for promoting Black equality, as opposed to 58% of Black men. Moreover, 53% of Black women view volunteering with organizations dedicated to Black equality as very effective at promoting equality compared with 42% of Black men (Cox & Edwards, 2022). Increasingly, Black women are identified as one of the most consistently politically engaged U.S. constituencies and “vote at higher rates than other voting groups by approximately 7 percent and have voted at 60 percent or above in the past five U.S. presidential elections” (Belknap & Hawkins, 2020, p. 12).

Two important constructs in political and civic engagement include both political efficacy and volunteerism. Political efficacy, or “the feeling that individual political action does have, or can have, an impact upon the political process, i.e., that it is worthwhile to perform one’s civic duties” (Campbell et al., 1954, p. 187), is an important predictor of political engagement. Further, according to Ehrlich (2000), civic engagement is defined as working to make a difference in the civic life of communities through political and non-political processes, including volunteering and service.

The Program for International Assessment of Adult Competencies (PIAAC) is an internationally representative assessment of information-processing skills needed in adult life and the demographic, socioeconomic, educational, and behavioral (e.g., civic activities) characteristics associated with those skills. This includes information about both political efficacy and civic engagement. For PIAAC, political efficacy was measured based on the statement, “people like me don’t have any say about what the government does.” Civic engagement was measured using the PIAAC response to the statement, “In the last 12 months, how often, if at all, did you do voluntary work, including unpaid work for a charity, political party, trade union or other non-profit organization?”

Therefore, the current study documents associations between Black adults’ information-processing skills and civic engagement --- defined as volunteering, and political efficacy, in comparison to the general adult population, and conducts a within-group analysis of the Black adult population by gender in the United States, using the 2012/2014/2017 PIAAC data. A description of the analytic approach is provided in Appendix 1.

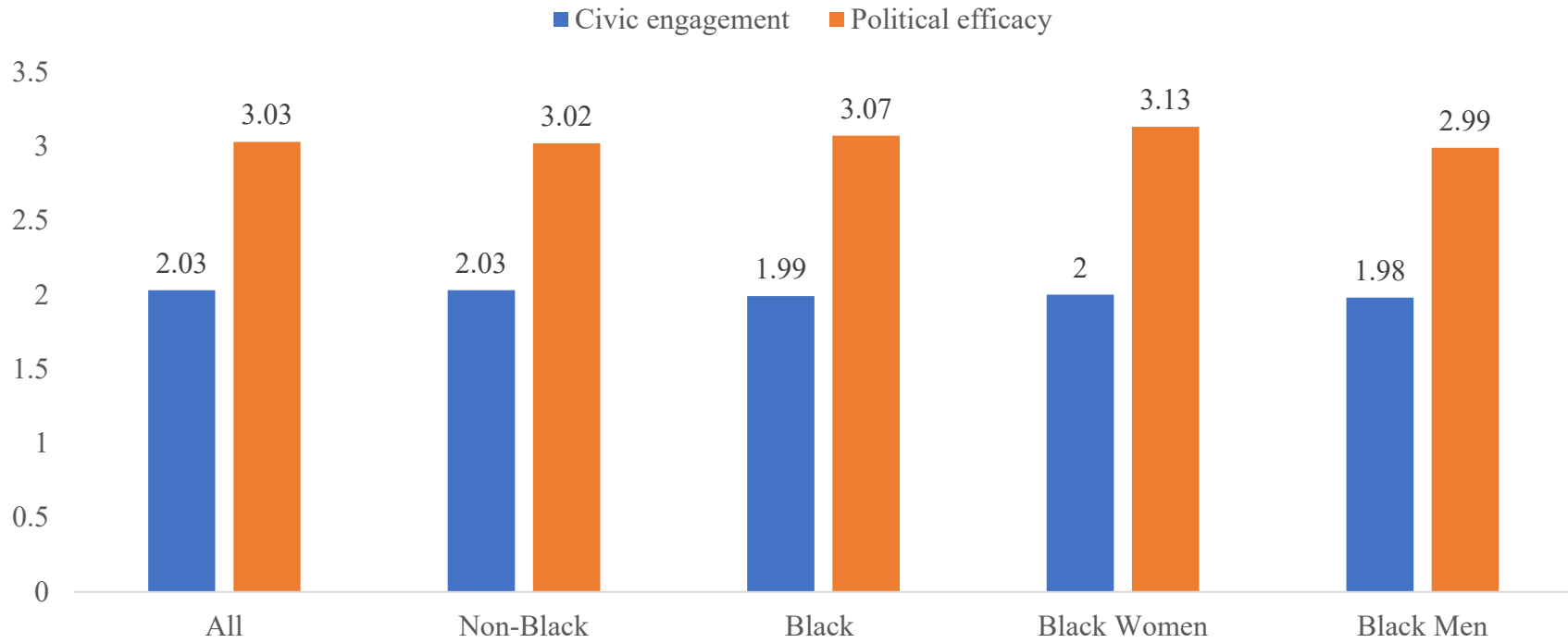
### **The Research Questions**

1. Are the levels of information processing skills (i.e., adult literacy proficiency) associated with civic engagement and political efficacy among Black adults in the U.S.?
2. Are there any gender differences in the associations between civic engagement, political efficacy, and information processing skills (i.e., adult literacy proficiency) among Black adults in the U.S.?

### **The Findings**

The main findings are summarized in Figures 1-6 and the detailed results are presented in Appendix 2 Tables 1-3.

Figure 1a: Weighted Mean for the Civic Engagement and Political Efficacy



Note: See Figure 1a and Figure 1b, and Appendix 2-Table 1 for more details  
Civic engagement (1-5: Never – Every day)  
Political Efficacy (1-5: Strongly agree – Strongly disagree)

Figure 1b: Weighted Percentages for the Civic Engagement

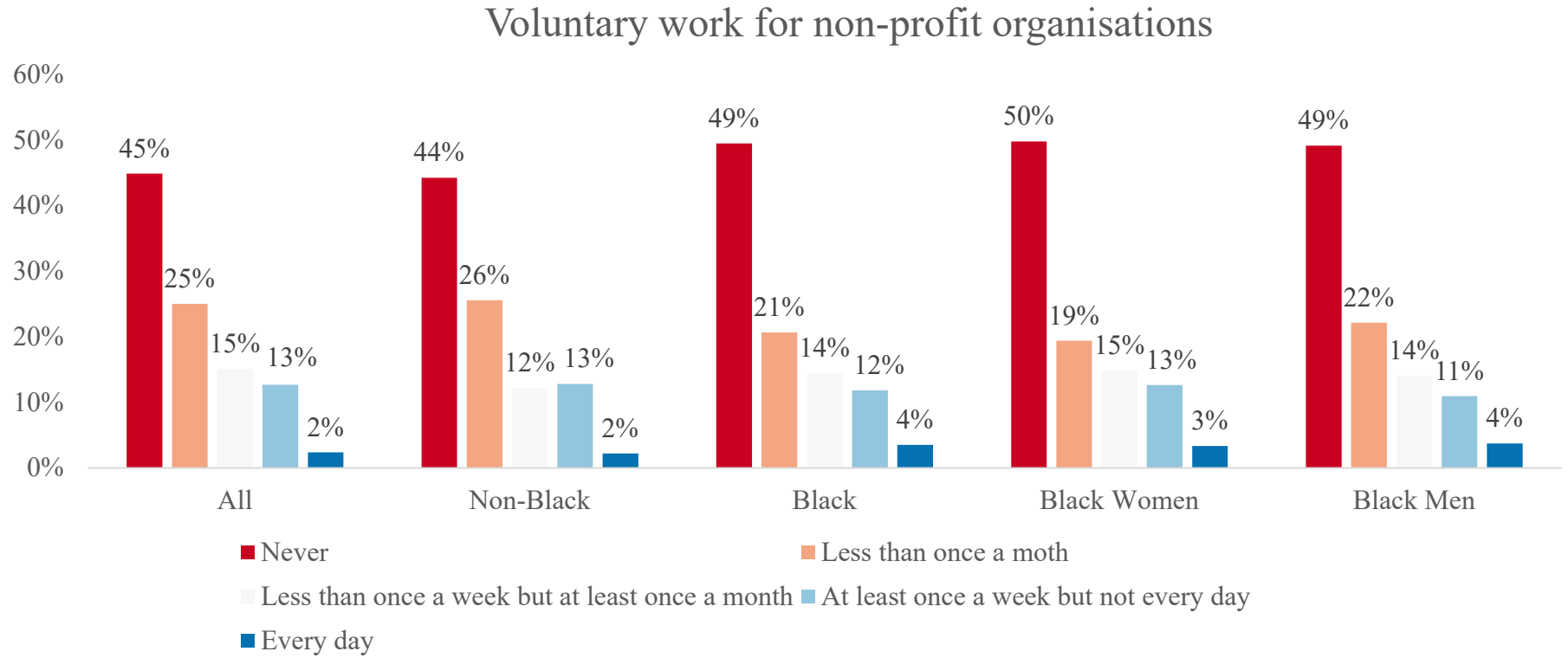




Figure 1c: Weighted Percentages for the Political Efficacy

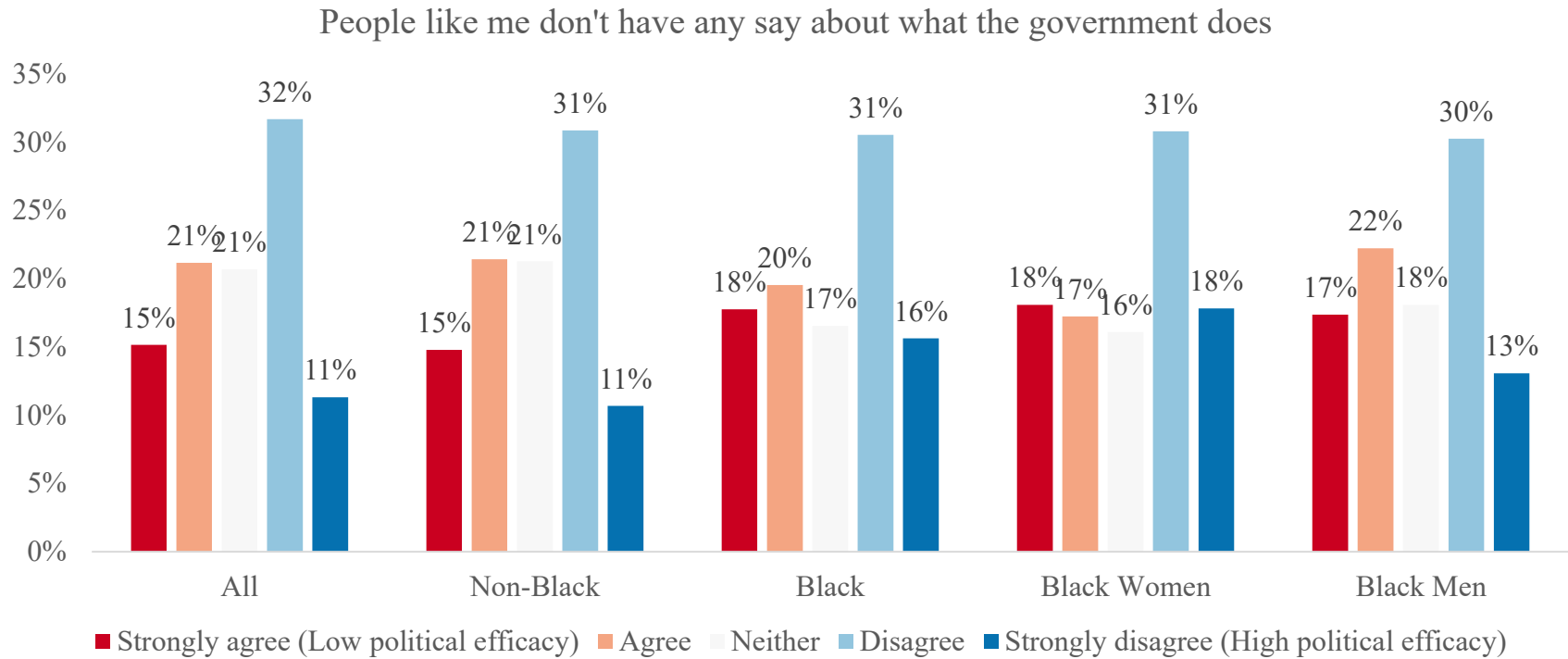
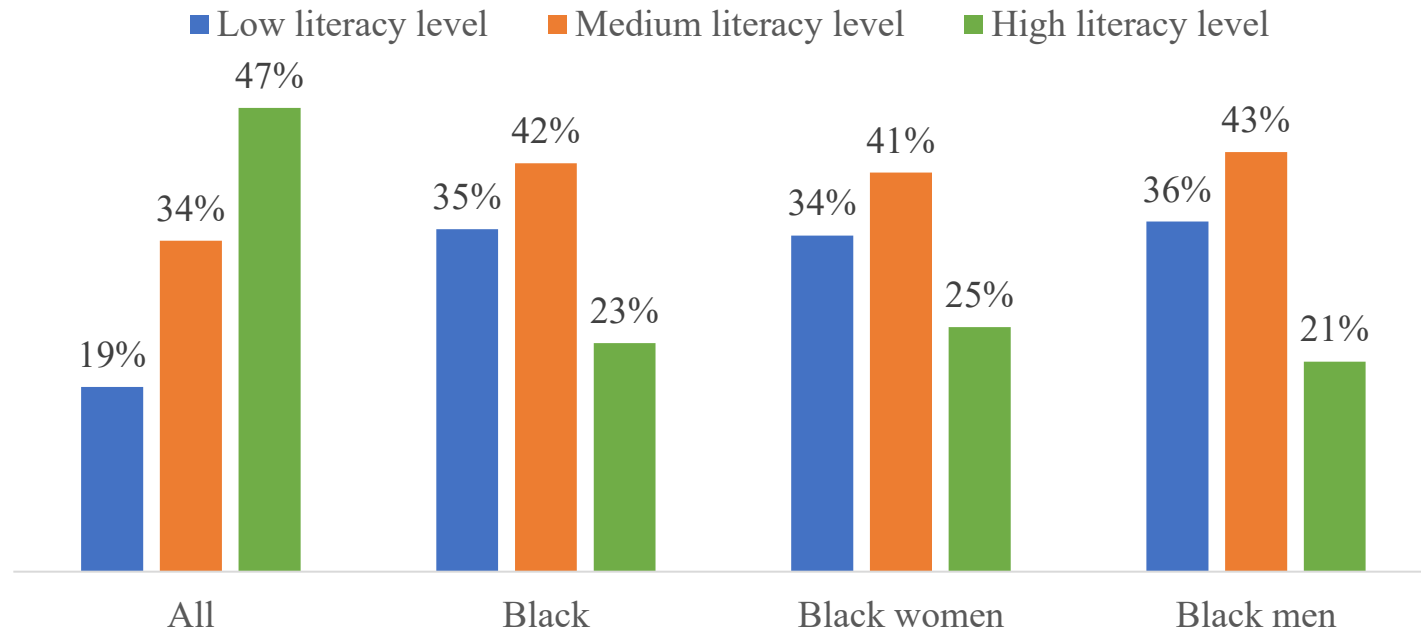


Figure 2: Distributions of the Literacy Levels



Note: See Appendix 2-Table 1 for more details

Figure 1a, 1b, and 1c present the distributions of civic engagement and political efficacy by race and gender. On average, Black adults in the U.S. reported participating in formal volunteering, about once a month. The frequency of civic engagement is equivalent to the general adult population in the U.S., and statistically significant gender differences were not observed. About half of adults do not volunteer. No statistically significant mean differences were observed. The frequency distributions are similar across all adults, Black adults, Black women, and Black men.

On average, Black adults in the U.S. rated their political efficacy around three, meaning their perception of political efficacy is ambivalent. Like volunteering, no statistically significant differences from the general population or gender differences were observed. About one in three adults have moderate political efficacy. Black adults (16%) tended to report higher political efficacy than the general population (11%). Black women (18%), in particular, had high political efficacy. At the same time, Black adults also had a greater percentage of low political efficacy (18%) compared to the general population (15%).

One in four Black adults (23%) had high literacy proficiency, while nearly one in two adults (47%) had high literacy proficiency in the general population (see Figure 2). The difference in the distribution of literacy proficiency levels between Black and the general population of adults was statistically significant. Black women had a slightly higher percentage (25%) of high literacy proficiency, compared to Black men (21%). However, the difference in the literacy proficiency level distributions between Black women and Black men was not statistically significant.

Black women had a significantly greater percentage (31%) of having a college or higher degree than Black men (22%). However, Black women had a significantly lower percentage (32%) of their parents having a college or higher degree than Black men (36%). Additionally, Black women had a significantly lower percentage (35%) of living with a spouse than Black men (45%).

## **All adult population and Black adult population**

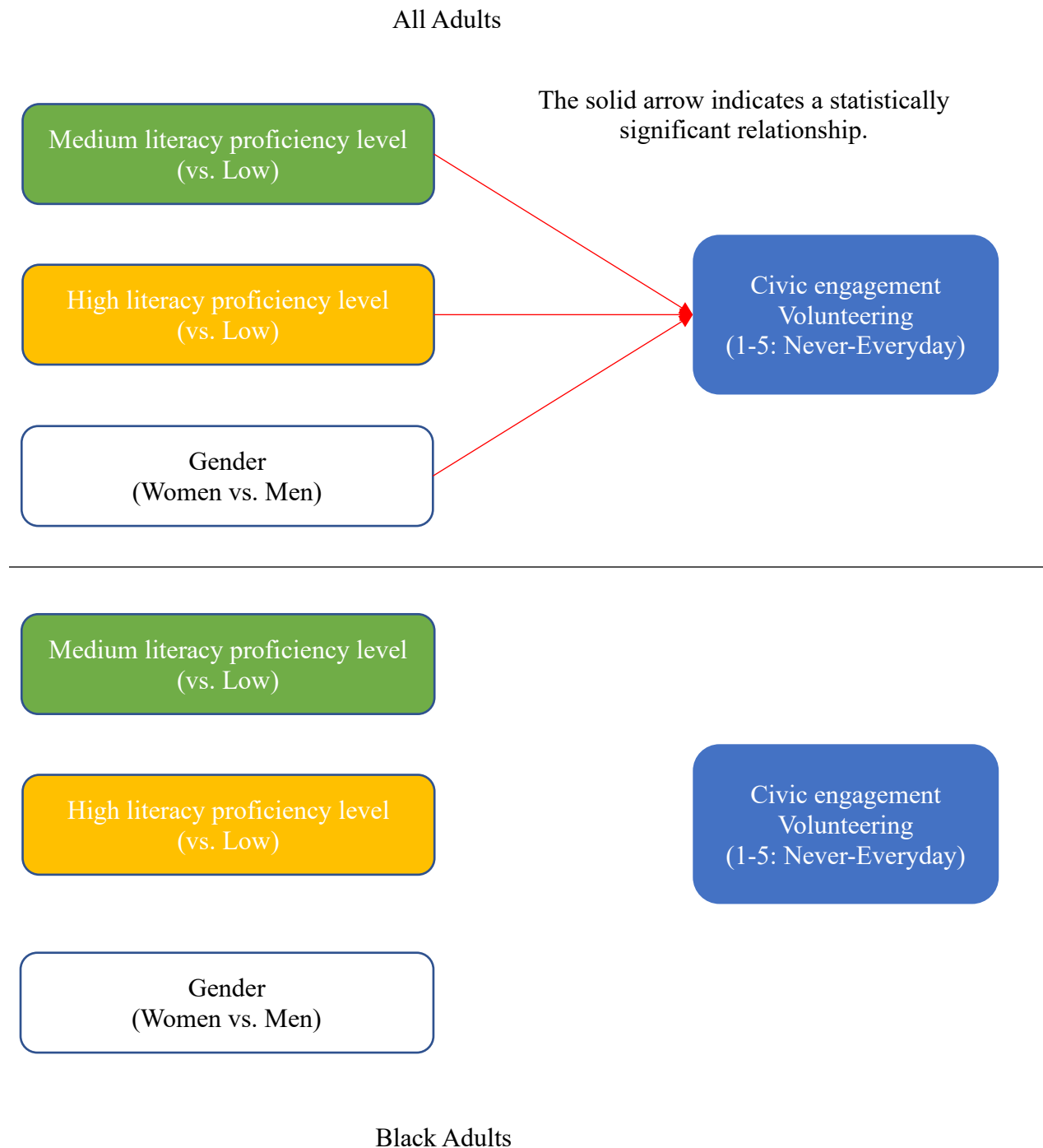
### **Civic engagement**

Literacy proficiency and gender were not associated with volunteering among Black adults (see Figure 3). However, there are significant differences in volunteering between adults with high and middle literacy proficiency levels, and those with low levels in the general adult population. Also, women tended to have greater volunteer participation than men, in general. The statistically significant predictors of civic engagement, such as age, gender, nativity, socioeconomic status and family composition, were consistent with previous studies (Barrett & Brunton-Smith, 2014).

### **Political efficacy**

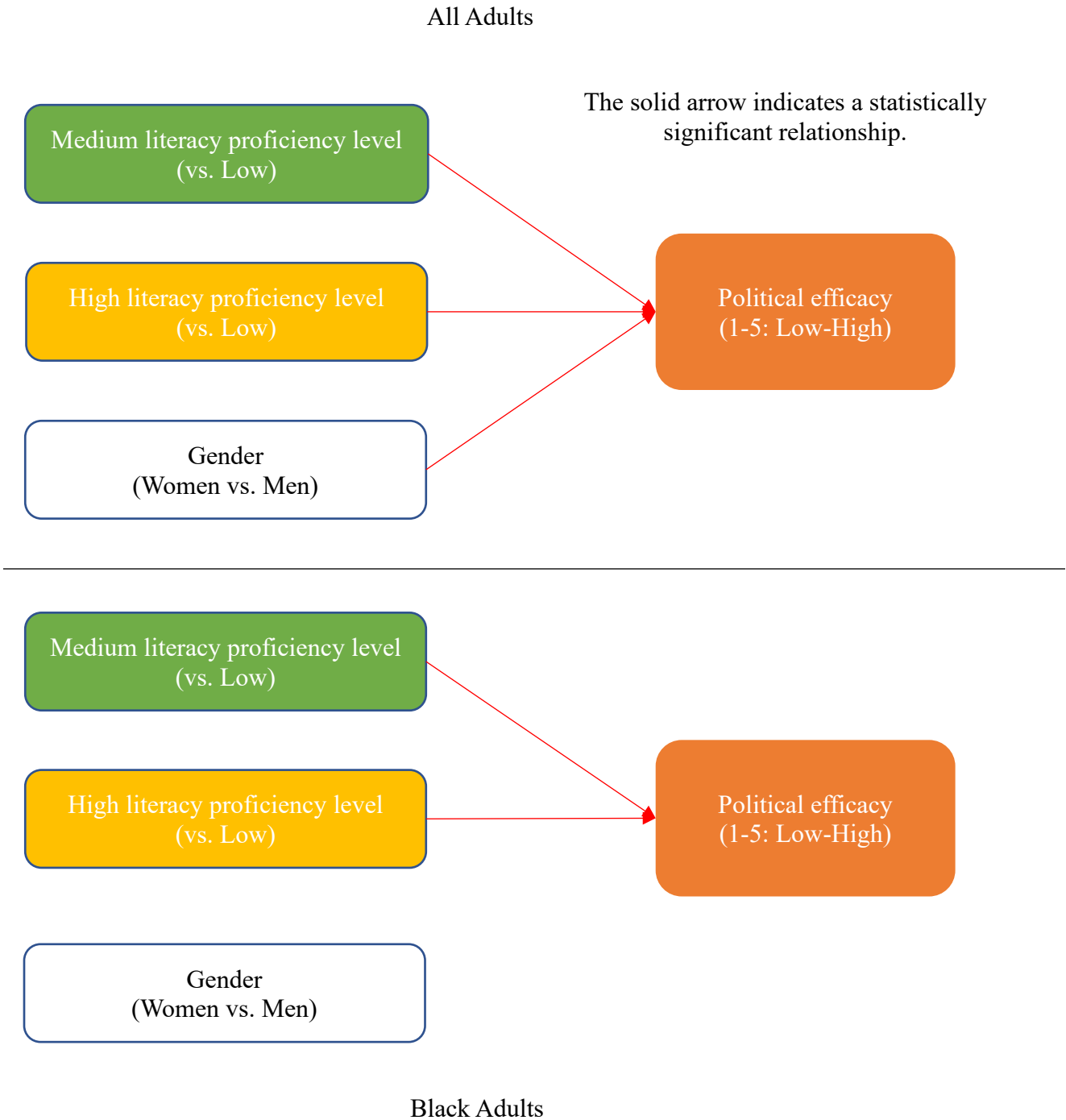
There were significant differences in political efficacy between adults with high and middle literacy proficiency levels, and those with low levels both among Black adults and general adult populations (see Figure 4). At the same time, the gender difference, where women have higher political efficacy than men, is only observed in the general population not between Black men and women.

Figure 3: Visual Summary of the Findings on Civic Engagement



Note: See Appendix-Table 2 for more details

Figure 4: Visual Summary of the Findings on Political Efficacy



Note: See Appendix-Table 2 for more details

Black adults with college or higher educational attainment have significantly greater volunteer participation and political efficacy, compared to their counterparts with less than college education. Additionally, younger Black adults are more likely to have lower political efficacy than older Black adults (i.e., the political efficacy is higher as age increases).

### **Black women and Black men**

#### **Civic engagement**

Both among Black women and men, literacy proficiency was not associated with volunteering. Among Black women, higher educational attainment was statistically significantly associated with greater volunteer participation (see Figure 5). Among Black men, living with a spouse was statistically significantly associated with greater volunteer participation.

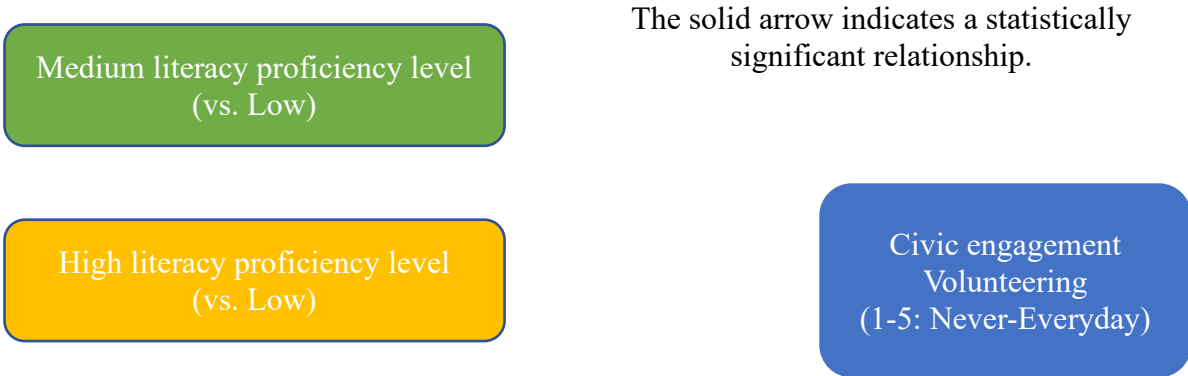
#### **Political efficacy**

Black women with high literacy proficiency levels had statistically significantly greater political efficacy than their counterparts with low literacy proficiency levels (see Figure 6). Among Black women, age was statistically significantly associated with greater political efficacy. Literacy proficiency was not associated with political efficacy among Black men. However, Black men with higher educational attainment had significantly greater political efficacy.

**Note:** The description of the methodology is reported in Appendix 1. All descriptive summaries of individual characteristics and results of statistical analyses are reported in Tables 1 and 2.

Figure 5: Visual Summary of the Findings on Civic Engagement

Black women

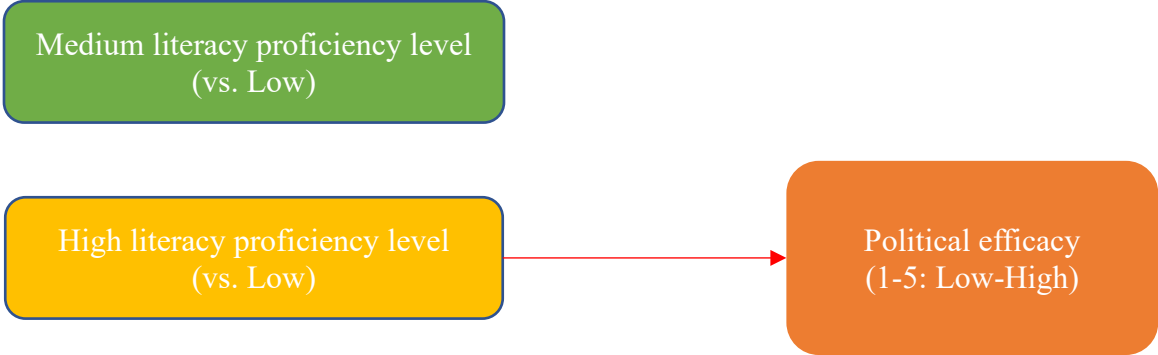


Black men

Note: See Appendix-Table 3 for more details

Figure 6: Visual Summary of the Findings on Political Efficacy

Black women



Black men

Note: See Appendix-Table 3 for more details



## The Implications

While previous research has suggested differences between Black women and men in terms of their political efficacy, our findings suggest there is not a statistical significance difference between Black men and women. Our findings reiterate the importance of the relationship that educational attainment has with political efficacy and civic engagement. Importantly, our findings shed some light on the gender differences in the association between political efficacy and information processing skills among Black adults in the U.S. There are several takeaways from our findings to consider:

- Determinants of volunteering and political efficacy seem to have complex pathways across literacy skills and relevant individual characteristics and vary by the intersections of race and gender.
- Promoting and sustaining the political efficacy of Black adults with low literacy skills should be on a policy agenda. Targeted programs that support Black women with lower literacy skills are especially critical given that our data shows that as Black women's literacy levels increase so does their political efficacy.
- Civic and political education should be provided throughout adult life stages, and be considerate of sociocultural (e.g., race, gender) differences. Furthermore, this may have an indirect impact on Black men, given our study suggested that Black men who live with their spouses were more civically engaged. Because our data suggests that younger Black adults, and Black women in particular, have lower political efficacy these programs must target a younger demographic to underscore the value engaging in the political process can have on changing society. Anyiwo and Diemer (2020) suggested that one way to develop the political efficacy and engagement of younger Black adults is to expose them to opportunities to engage in critical reflection “which includes the awareness of structural causes of societal disparities (e.g., racism, sexism, and classism) along with beliefs in egalitarian principles” (p. 177). While programs aimed at increasing the Black voter base underscore the benefits of voting, it is not often taught within the context of structural inequities such as racism, sexism, and classism.

With consideration of information-processing skills, the sociopolitical intricacies of Black adults, and in particular Black women, is of importance. As Alfred (2007) cautions us, “We will continue to perpetuate a society in which citizens continue to be blamed for the economic conditions of the nation without regard for other sociopolitical structures that influence their decisions, actions, and behaviors” (p. 310). If we continue to disregard the role of information-processing skills, political efficacy, and civic engagement, and their known influence relative to economic, social, and cultural consequences in the lives of Black women (see Saal et al., 2020, p. 178), we continue to disregard a significant portion of the U.S. population and their future generations. Adult education and social justice policies and practices play an essential role in transforming the lives of and breaking the cycles of living conditions for Black women and men.

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## Appendix 1: Descriptions of the Methodology

### Methods

#### Data

Data were obtained from the 2012/2014/2017 Program for the International Assessment of Adult Competencies (PIAAC), U.S. restricted-use file (RUF), through the U.S. Department of Education, National Center for Education Statistics (NCES; license# 17080026). Data analysis and presentation of this study were approved by the Institute of Education Sciences (IES) Data Security Review. The PIAAC U.S. RUF data allow examining the information-processing skills such as literacy skills in relation to a series of demographic and socioeconomic characteristics, as well as social/civic participation outcomes at the population level. PIAAC employed a sophisticated large-scale assessment strategy to quantify information-processing skills among adults aged between 16 years and older (age range 16 – 74 in the U.S. PIAAC). More detailed descriptions of the PIAAC methodology have been published elsewhere (Hogan, et al. 2016). After excluding the cases with any missing values, the final sample sizes were 11,290 for the general U.S. population, and 1,720 for the Black population [n (Black women) = 950; n (Black men) = 770]. The rate of missing values was approximately 5% and no systematic patterns of missing were observed in this study.

#### Measures (see Appendix Table 1)

**Dependent variables:** civic engagement and political efficacy. Civic engagement was measured using the PIAAC questionnaire items --- formal volunteering --- “In the last 12 months, how often, if at all, did you do voluntary work including unpaid work for a charity, political party, trade union or other non-profit organization? The response was recorded in 1-5 (Never, less than once a month, less than once a week but at least once a month; at least once a week but not every day; every day). Political efficacy was measured using the PIAAC questionnaire item --- “People like me don’t have any say about what the government does.” The response was recorded in 1-5 Strongly agree to strongly disagree. The political efficacy measure was reverse-coded for interpretation purposes. Therefore, the higher value indicates higher civic engagement and greater political efficacy in this study.

**Independent variable:** Information-processing skills. The information processing skills were measured using the PIAAC adult literacy proficiency, which is defined as “understanding, evaluating, using and engaging with written texts to participate in society, to achieve one’s goals, and to develop one’s knowledge and potential” (OCED, 2012, p 20). The information-processing skills were recorded in scores ranging from 0 to 500. In order to contextualize the information, the information-processing skills were classified into low (Below Level 1 & Level 1 --- reference group), medium (Level 2), and high (Level 3, 4 & 5) PIAAC proficiency levels, per the previous studies (NCES, 2022).

**Covariates:** Age is in years. Gender [ (women = 1; men = 0 (reference group))], race/ethnicity [White, Black (reference group), Hispanic, and Other], U.S. born [vs. non-U.S. born (reference group)], educational attainment [(college or higher vs. less than college (reference group))], parent’s educational attainment [(college or higher vs. less than college (reference group))], employment [employed vs. not employed(reference group)], living with a spouse [vs. not living with a spouse (reference group)], and self-rated health [excellent, very good, good vs. fair, poor(reference group)] are recorded in a series of dichotomous measures. Also, the income

quintiles, number of household members (capped at 7), and number of children are included as the covariates.

*Note:* For the original variable names in PIAAC, see Saal, L. K., Yamashita, T., and Goings, R. B. (2023). Examining Information Processing Skill Proficiencies Among Black Adults in the U.S. Retrieved [July 14, 2023] from PIAAC Gateway website:

[https://www.piaacgateway.com/s/Saal\\_Yamashita\\_Goings\\_Information-Processing\\_BlackAdults.pdf](https://www.piaacgateway.com/s/Saal_Yamashita_Goings_Information-Processing_BlackAdults.pdf). Washington, DC.

### **Analytic Approach**

The weighted descriptive statistics are computed using the PIAAC sampling weights and replicate weights (SPFWT0-SPFWT80) for the general adult population, Black adults, Black women, and Black men. The weighted bivariate significance test was conducted for Black adults vs. non-Black adults<sup>5</sup>, as well as Black women vs. Black men. A simple weighted logistic regression function was used for the bivariate significance tests. This approach essentially is equivalent to weighted chi-square or t-test. Given the distributions of the dependent variables, the ordinary least square (OLS) regression is used to model the dependent variables as the function of the information-processing skills and the selected covariates. The OLS regression was fit for all adult population, Black adults, Black women and Black men, separately. The model quality was assessed using the R-squared and the model assumptions (e.g., normal distribution, zero expectation, homoscedasticity) are assessed by examining the residual distributions (DeMaris, 2005). In order to incorporate the PIAAC sampling design and sampling weights, the *repest* package of STATA version 17 (StataCorp, 2017) is used. Per the NCES RUF data guideline, all figures are rounded to the nearest 10.

### **Limitations and Suggestions for Future Research**

The current study does not fully address within-group differences of the Black populations. Although several characteristics, such as age, gender, and U.S. born are incorporated into statistical analysis, information about geographic location, and subcultures is not available. The measurements of civic engagement and political efficacy are limited to the available information in the PIAAC data. Other forms of civic engagement, such as voting and participating in political activities are not captured in the current study. In addition, the type of civic engagement considered is formal volunteering through non-profit organizations. Therefore, other forms of volunteering such as informal volunteering (e.g., helping family members, and neighbors; and addressing community needs) are not included. Political efficacy measure is also somewhat general --- perception toward the government. Political efficacy toward more specific policy topics (e.g., economic, human rights, public health issues) should be considered in future research. PIAAC is an ongoing study and future studies should examine a new set of PIAAC data to verify the results from this report and to further examine more detailed aspects of the Black adult population when data become available. The classification of proficiency levels reflects general population distributions in the current study. Moreover, the statistical analysis conducted in the current study is designed to describe baseline associations and is not to explicitly compare the impact of literacy skills on civic engagement and political efficacy between the general population, the Black population, and gender. The statistical significance and non-significance may be influenced by a variety of factors such as sample sizes and model

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<sup>5</sup> The authors assume that Black population can only be different from the general population if non-Black population is different from Black population.

specifications. Finally, the statistical model needs improvement as the model quality indicated by the R-squared is not optimal. However, given how few empirical studies of information-processing skills, civic engagement and political efficacy are available for Black adults, findings from this study can be helpful for discussion and future research. Overall, the current study should be interpreted as the baseline work and future research needs to investigate within-group differences as well as to refine methodological approaches when more data become available.

Appendix Table 1. Variables Included in Analysis

Variable name	Description	Value Range
I_Q05F	Civic engagement – volunteering	1-5: Never – Everyday
I_Q06A	Political efficacy – no influence on the government	1-5: Strongly agree – Strongly disagree
PVLIT1-10	Literacy plausible values (The numbers represent the plausible value scores)	Below 1 (0 - 175) 1 (176 – 225) 2 (226 – 275) 3 (276 – 325) 4 (326 – 375) 5 (376 – 500) * Low (below level 1 and level 1), mid (level 2), and high (level 3, 4 and 5)
AGE R	Age	Age in years
GENDER R	Gender	1=Male; 2= Female
J_Q04A	Nativity – born in the United States	1 = Yes; 2 = No
B_Q01AUS C	Educational attainment	College or higher v. Less than College
PARED	Parents' educational attainment	1=Less than high school; 2=High school diploma; 3=College degree or higher
C_D05	Employment status	1=Employed; 2=Unemployed; 3=Not in Labor Force
EARNMTHALLDCL <sup>b</sup>	Income quintile	0=No income (not employed); 1 = first quintile; 2 = second quintile; 3 = third quintile; 4 = fourth quintile; 5 = fifth quintile
J_Q01	Number of household members	Count
J_Q03A & J_Q03B	Number of children	1 = Yes; 2 = No *& Count *The number of children variable [range from 0 to 7 (top-coded)] that is analyzed in this study are derived from the two variables -- J_Q03A & J_Q03B.
J_Q02A	Living with spouse or partner	1 = Yes; 2 = No
I_Q08	Self-rated health	1=Excellent, Very Good, Good 2=Fair, Poor
<p>Notes: *a Converted to levels *b Only reflects income from employment</p>		

Appendix 2 - Table 1: Weighted Descriptive Summary

	All (n = 11,290)	Non-Black <sup>6</sup> (n = 9,570)	Black (n = 1,720)	Black women (n = 950)	Black men (n = 770)
	Mean or percentage (standard error)	Mean or percentage (standard error)	Mean or percentage (standard error)	Mean or percentage (standard error)	Mean or percentage (standard error)
Civic engagement (Volunteering, 1-5: never to every day)	2.03 (0.01)	2.02 (0.01)	1.99 (0.04)	2.00 (0.06)	1.98 (0.06)
Political efficacy (1-5: low – high)	3.03 (0.02)	3.02 (0.02)	3.07 (0.04)	3.13 (0.06)	2.99 (0.05)
Information-processing skills (literacy) proficiency levels					
Low	18.87% (0.54)	16.57% (0.52)	34.97% (2.07)*	34.32% (2.21)	35.73% (3.19)
Medium	33.78% (0.64)	32.60% (0.72)	41.69% (1.84)*	40.73% (2.21)	42.82% (3.11)
High	47.35% (0.68)	50.83% (0.76)	23.34% (1.33)*	24.95% (1.83)	21.45% (2.33)
Age (years)	43.02 (0.03)	43.22 (0.06)	41.03 (0.10)*	41.61 (0.34)	40.34 (0.42)
Gender (women)	51.03% (0.01)	50.77% (0.16)	53.95% (0.25)*	-	
U.S. born	85.92 (0.31)	85.65% (0.41)	88.38% (1.73)*	89.89% (2.04)	86.35% (1.96)
Educational attainment (college or higher)	38.01% (0.37)	39.66% (0.40)	26.58% (0.81)*	30.74% (1.08)*	21.69% (1.45)
Parents' educational attainment (college or higher)	40.02% (0.71)	41.06% (0.76)	33.53% (1.34)*	31.73% (0.18)*	35.64% (2.50)
Employment (employed)	70.70% (0.52)	71.29% (0.57)	66.26% (1.23)*	65.10% (1.75)	67.61% (1.92)
Income quintile			*		
0	39.82% (0.59)	36.25% (0.57)	41.29% (1.42)	41.45% (2.21)	41.11% (1.92)
1	12.30% (0.37)	12.82% (0.44)	13.24% (0.91)	13.42% (1.17)	13.03% (1.45)
2	11.99% (0.32)	12.02% (0.37)	16.76% (0.87)	14.58% (1.10)	15.81% (1.20)
3	12.00 (0.45)	12.65% (0.54)	12.26% (0.97)	13.01% (1.35)	11.39% (1.57)
4	11.90 (0.39)	12.76% (0.41)	10.46% (0.78)	9.91% (0.96)	11.11% (1.41)
5	11.99 (0.37)	13.49% (0.40)	5.97% (0.74)	4.62% (0.82)	7.56% (1.22)
Number of household members (capped at 7)	3.13 (0.02)	3.14 (0.02)	3.13 (0.07)	3.09 (0.09)	3.17 (0.08)
Number of children	1.58 (0.02)	1.57 (0.02)	1.69 (0.04)*	1.78 (0.05)	1.59 (0.08)
Living with spouse	58.06% (0.01)	60.64% (0.56)	39.71% (1.59)*	35.13% (1.91)*	45.07% (2.43)
Self-rated health (excellent, very good, good)	83.60% (0.01)	84.02% (0.50)	80.43% (1.31)*	79.65% (1.73)	81.35% (1.76)
<p>*p &lt; 0.05, (Black vs. non-Black) &amp; (Black women vs. Black men); Income quintile were tested for statistical significance as an ordinal variable.            Note: The PIAAC sampling weights and replicate weights (SPFWT0-SPFWT80) are applied; Significance tests with the non-Black group were not conducted due to the withing group heterogeneity; Observed differences between the general adult population and Black adult populations were assumed to be the meaningful difference.            n is the unweighted sample size; income quintile (0) indicates no income from employment; literacy proficiency levels are estimated based on a set of 10 plausible values            Data Source: 2012/2014/2017 PIAAC Restricted Use File Data (National Center for Education Statistics, 2017)</p>					

<sup>6</sup> The authors assume that Black population can only be different from the general population if non-Black population is different from Black population.



Appendix 2 - Table 2: Estimated Coefficients from the Weighted Ordinary Least Square Regression

	Civic engagement		Political efficacy	
	All	Black	All	Black
	Estimated coefficient (Standard error)	Estimated coefficient (Standard error)	Estimated coefficient (Standard error)	Estimated coefficient (Standard error)
Information-processing skills (literacy) proficiency levels				
Low	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
Medium	<b>0.18 (0.05)*</b>	0.12 (0.12)	<b>0.16 (0.06)*</b>	<b>0.26 (0.13)*</b>
High	<b>0.33 (0.05)*</b>	0.20 (0.15)	<b>0.44 (0.05)*</b>	<b>0.49 (0.15)*</b>
Age (years)	<b>0.005 (0.001)*</b>	-0.003 (0.003)	<b>0.006 (0.001)*</b>	<b>0.02 (0.01)*</b>
Gender (women)	<b>0.17 (0.05)*</b>	0.008 (0.086)	<b>0.11 (0.02)*</b>	0.13 (0.08)
U.S. born	<b>0.17 (0.05)*</b>	0.18 (0.16)	<b>0.10 (0.05)*</b>	-0.03 (0.13)
Race & ethnicity				
Black	<i>Reference</i>	<i>NA</i>	<i>Reference</i>	<i>NA</i>
White	-0.07 (0.05)	<i>NA</i>	<b>-0.30 (0.06)*</b>	<i>NA</i>
Hispanic	-0.10 (0.06)	<i>NA</i>	0.04 (0.07)	<i>NA</i>
Other	<b>-0.14 (0.07)*</b>	<i>NA</i>	<b>-0.25 (0.08)*</b>	<i>NA</i>
Educational attainment (college or higher)	<b>0.29 (0.03)*</b>	<b>0.28 (0.09)*</b>	<b>0.29 (0.04)*</b>	<b>0.38 (0.12)*</b>
Parents' educational attainment (college or higher)	<b>0.16 (0.03)*</b>	0.06 (0.08)	<b>0.15 (0.03)*</b>	0.09 (0.08)
Employment (employed)	<b>0.13 (0.03)*</b>	0.15 (0.11)	-0.02 (0.03)	0.03 (0.11)
Income quintile (0-6)	<b>-0.04 (0.01)*</b>	-0.009 (0.032)	0.001 (0.009)	-0.03 (0.03)
Number of household members (capped at 7)	<b>0.04 (0.01)*</b>	0.009 (0.030)	0.01 (0.01)	0.04 (0.03)
Number of children	0.02 (0.01)	0.005 (0.027)	<b>-0.03 (0.01)*</b>	-0.06 (0.04)
Living with spouse	-0.04 (0.03)	0.06 (0.08)	0.03 (0.03)	-0.01 (0.08)
Self-rated health (excellent, very good, good)	<b>0.18 (0.04)*</b>	0.04 (0.10)	<b>0.25 (0.05)*</b>	0.20 (0.11)
R-squared	<i>0.06</i>	<i>0.04</i>	<i>0.06</i>	<i>0.06</i>
* $p < 0.05$ Note: The PIAAC sampling weights and replicate weights (SPFWT0-SPFWT80) are applied Data Source: 2012/2014/2017 PIAAC Restricted Use File Data (National Center for Education Statistics, 2017)				

Appendix 2 - Table 3: Estimated Coefficients from the Weighted Ordinary Least Square Regression

	Civic engagement (1-5)		Political efficacy (1-5)	
	Black women	Black men	Black women	Black men
	Estimated coefficient (Standard error)	Estimated coefficient (Standard error)	Estimated coefficient (Standard error)	Estimated coefficient (Standard error)
Information-processing skills (literacy) proficiency levels				
Low	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
Medium	0.13 (0.16)	0.07 (0.16)	0.26 (0.22)	0.24 (0.17)
High	0.20 (0.18)	0.17 (0.20)	<b>0.61 (0.21)*</b>	0.33 (0.22)
Age (years)	-0.004 (0.04)	-0.003 (0.004)	<b>0.015 (0.004)*</b>	0.018 (0.005)
U.S. born	0.09 (0.20)	0.20 (0.17)	-0.11 (0.20)	0.09 (0.18)
Educational attainment (college or higher)	<b>0.37 (0.13)*</b>	0.18 (0.13)	0.28 (0.15)	<b>0.51 (0.14)*</b>
Parents' educational attainment (college or higher)	-0.01 (0.11)	0.16 (0.11)	0.14 (0.11)	0.03 (0.14)
Employment (employed)	0.28 (0.17)	0.05 (0.13)	0.02 (0.15)	0.03 (0.14)
Income quintile (0-6)	-0.05 (0.04)	-0.003 (0.04)	-0.03 (0.05)	-0.018 (0.044)
Number of household members (capped at 7)	0.01 (0.04)	-0.006 (0.036)	0.07 (0.04)	0.005 (0.034)
Number of children	-0.03 (0.11)	0.04 (0.04)	-0.07 (0.06)	-0.06 (0.06)
Living with spouse	-0.15 (0.11)	<b>0.29 (0.12)*</b>	0.05 (0.14)	-0.08 (0.12)
Self-rated health (excellent, very good, good)	0.01 (0.13)	0.12 (0.16)	0.13 (0.15)	0.31 (0.17)
R-squared	<i>0.04</i>	<i>0.05</i>	<i>0.06</i>	<i>0.07</i>
<p>*<math>p &lt; 0.05</math>            Note: The PIAAC sampling weights and replicate weights (SPFWT0-SPFWT80) are applied            Data Source: 2012/2014/2017 PIAAC Restricted Use File Data (National Center for Education Statistics, 2017)</p>				