

CAREER LITERACY AND EMPLOYMENT SECURITY IN THE U.S.¹

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EXECUTIVE SUMMARY

Career literacy is the capability to make informed decisions about occupational pathways. This capability is increasingly important in a labor market where career choices are more fluid and transitions more common, the content of jobs change more frequently, and employment arrangements are more volatile than just a few decades earlier. A high degree of career literacy enables the individual to develop a clear vision of their employment journey, to explore different career pathways and opportunities, and to remain cognizant of key strengths and interests. Career literacy is to one's work life what financial literacy is to management of personal finance and investments. Analysis on a national sample of working age adults (N=36,000, years: 2020-2025), we find that career literacy is associated not only with higher incomes but more importantly with employment security, defined as one's degree of influence over work choices and conditions (including income), satisfaction with nonwage benefits and long term savings, and sense of capacity to manage employment disruptions and transitions. The benefits of career literacy for employment security are greater for individuals who cultivate stronger professional networks, though networks alone do not improve employment security. Findings also reveal major gender, racial, and educational gaps in career literacy—in favor of males, Whites, and those with college degrees. “Motherhood penalty” accounts for a substantial degree of the male/female difference, while the “college gap” explains racial differences. Individuals with higher career literacy also experience shorter unemployment spells and conduct job searches involving a more diverse set of options consistent with their strengths and interests.

WHAT IS CAREER LITERACY AND WHY IS IT IMPORTANT?

Career literacy is the capability to make informed decisions about occupational pathways. Job choices are often affected by social and economic background and personal traits as well as by varying degrees of serendipity manifested in the form of adaptation to emergent conditions and relationships (Krieshok, Black, and McCay 2009). Few people fully recognize and choose what they enjoy and are good at during the outset of their careers. Many others eventually grow to like and to get better at what they do for a living, irrespective of deeper passions and strengths. And, some strike a personal balance between these two modalities over time. Thus, limited structure in career decision-making and experience has typically been seen as a problem with manageable costs or even a good problem to have by some (Walker 2013).

But the cost is growing as the occupational system becomes structurally more dynamic and the labor market more economically volatile. Compared to patterns in the 1950-2010 period, the number and variety of major occupations are changing faster, and the labor market is subject to frequent disruptions and dislocations (Friedman 2016; Milanovic 2019). The conventional employment relationship is also changing as long-term mutual employer-employee commitment, stable compensation structures, and comprehensive employment benefits fade (Kalleberg 2000). Norms that prescribe frequent job transitions are gaining ground. Young generations are told to switch jobs every few years as an explicit career improvement strategy and to become more entrepreneurial about growing their skills, competencies, and opportunities (Auger-Dominguez 2025). These factors make it more important to develop the capability to identify one's interests and strengths, understand occupational pathways as early as possible, and to recognize new options and opportunities throughout one's career journey. Career literacy denotes this

capability. It is not about imposing linearity on one's career journey but about enabling a person to thrive in a new context of fluidity. It consists of three central components:

- (1) *future vision*—deliberate envisioning of career choices and periodically updating employment planning;
- (2) *work exploration*—continuously surveying the range of current and evolving job options in the economy and acquiring related knowledge of different occupational and employment requirements and opportunities;
- (3) *advancement orientation*—cognizance of one's interests and strengths, steady commitment to learning and growth, and effective skills in communicating personal and professional value to employers and others.

Together these components constitute career literacy (CL). Just as financial literacy enables one to make more effective decisions about economic investments and assets (by way of deliberate financial planning, knowledge of evolving options and monetary mechanics, and recognition of one's interests and goals), CL enables individuals to position themselves more effectively in relation to the broader employment system. The concept of CL has received limited attention in workforce development and is used in loosely defined terms within domains of education and public policy. The DeBruce Foundation has focused on this concept as part of its mission to expand pathways to economic growth and opportunity. The foundation's efforts have helped propose principal conceptual and practicable components of CL, provide a useful definition for the concept, and develop related high-quality measures that can guide interventions, evaluations, and policy development.²

² For an overview of the Foundation's resources on career literacy and readiness, see <https://debruce.org/initiatives/career-literacy-resources/>. Technical properties of the CL construct are provided below in this report.

EMPLOYMENT SECURITY IN RELATION TO CAREER LITERACY

What is CL good for? Greater income and wealth often bear heavily on conceptions of career success, but these alone can be limiting as individuals are motivated by many factors regarding work beyond material status, such as intrinsic appeal, employment conditions, and social value (Herzberg, Mausner, and Snyderman 2017). Moreover, career choices often compete with non-career choices, such as preferences regarding social or family life and time-intensive interests outside of work (Johnson and Mortimer 2002). These warrant a broader perspective in addressing what CL is good for, including the inherent relevancy of earnings. A useful concept in this regard is employment security. It highlights not just the adequacy of current economic returns to work, but also one's ability to influence their work life and choices and contribute to their future wellbeing and their sense of stability in the face of economic and work-related disruptions:³

- (1) *work quality*—the degree of influence over work conditions, choices, and income, as well as the adequacy of earnings;
- (2) *work care*—satisfaction with current benefits and perks and with the accumulation of resources for the future;
- (3) *work vulnerability*—degree of concern with employment disruptions and with the ability to manage basic needs and emergencies.

³ These dimensions are drawn in large part from contemporary research on employment precarity (e.g., Kalleberg 2009; Orafo, del Rey, and Malo 2009; Standing 2011; Gutiérrez-Barbarrusa 2016).

CL is likely to support employment security.⁴ We examine this potential relationship and implications for key demographic groups in the U.S. using a uniquely rich dataset from The DeBruce Foundation’s national survey of employment security.⁵

DATA AND MEASURES

As part of its mission to expand pathways to economic growth and opportunity, The DeBruce Foundation runs a bi-annual national survey addressing patterns of CL and employment security among 18-65 year-olds. The survey is administered to 4,000 new respondents each spring (February-April) and fall (October-December). Piloting was completed in fall 2020. This report draws on data from nine waves (Spring 2021-Spring 2025), with a total sample size of approximately 36,000 people. The sample for each wave is stratified to match racial/ethnic, gender, education, and income proportions in the broader U.S. population. Respondents in each stratum are recruited at random.

The survey includes questions on key demographics and location, household structure, children, earnings, employment status and history (unemployment spells), occupational sector (based on 23 categories specified by the U.S. Bureau of Labor Statistics), and job search patterns (number and variety of jobs looked at during searches). Most importantly, it assesses CL, employment security, and network strength (work-pertinent social ties which, as we discuss below, also are consequential in employment patterns). These measures are shown in Tables 1

⁴ The concept of employment security is discussed and defined in relation to Employment Empowerment by The DeBruce Foundation in studies found at <https://debruce.org/insights/employment-empowerment-report/>

⁵ Results from The DeBruce Foundation’s national survey of employment security (known as the National Employment Security and Career Literacy Survey) were first reported in *Working Smarter: Driving Employment Empowerment with Career Literacy + Networks* found at <https://debruce.org/insights/employment-empowerment-report/>

and 2. The three CL subscales and one network strength scale were tested together in a four-factor measurement model. Standardized loadings from the confirmatory factor analysis (CFA) ranged from 0.475 to 0.811 (all significant at $p \leq 0.010$) with no cross-loadings (CFI=0.932; RMSEA=0.050). For the three employment security subscales, the CFA resulted in standardized item loadings ranging from 0.548 to 0.834 (all significant at $p \leq 0.010$) with no cross-loadings (CFI=0.895; RMSEA=0.090). The Cronbach Alpha reliabilities for all constructs were well above 0.700. Below, we first address descriptive findings, followed by results from multivariate models focusing first on the predictors of CL and then on the effect of CL on employment security.

Table 1. Measurement properties of career literacy and network strength scales

	Future vision		Work exploration		Advancement orientation		Network strength	
	EFA loading	CFA loading	EFA loading	CFA loading	EFA loading	CFA loading	EFA loading	CFA loading
Career literacy and network strength								
Future vision								
I know what job I would like to have in the future [strongly disagree(1)-strongly agree(5)]	0.817	0.741 ^{***}						
I know what level of income I would like to achieve in the future [strongly disagree(1)-strongly agree(5)]	0.846	0.740 ^{***}						
When it comes to learning something new for work... [I stick to my own ways(1)-I embrace learning new ways(5)]	0.600	0.579 ^{***}						
Work exploration								
I have explored different types of occupations (beyond my current one) across the economy [strongly disagree(1)-strongly agree(5)]			0.880	0.742 ^{***}				
I have compared different occs in terms of typical job chrs (e.g., earnings, preparation, employer features) [strongly disagree(1)-strongly agree(5)]			0.820	0.834 ^{***}				
Advancement orientation								
I can determine how well my interests and strengths can be valuable in a variety of different career opportunities [strongly disagree(1)-strongly agree(5)]					0.459	0.548 ^{***}		
I am actively working on improving my work-related skills [strongly disagree(1)-strongly agree(5)]					0.453	0.626 ^{***}		
I know which technical skills (e.g., knowledge, training, credentials) could help me advance my career [strongly disagree(1)-strongly agree(5)]					0.789	0.785 ^{***}		
I know what other professional skills (e.g., interpersonal skills) could help me advance my career [strongly disagree(1)-strongly agree(5)]					0.790	0.777 ^{***}		
I can clearly communicate my work-related skills and interests to a colleague, prospective employer, or recruiter [strongly disagree(1)-strongly agree(5)]					0.824	0.755 ^{***}		
I can easily navigate the process of applying for a new job (e.g., look up postings, CV, fill out forms, connect, etc.) [strongly disagree(1)-strongly agree(5)]					0.719	0.695 ^{***}		
If you asked me how much a job pays locally and nationally... [I wouldn't know how to find out at all(1)-I know how to find out all relevant info(3)]					0.347	0.477 ^{***}		
know what resources to use to tackle obstacles when they arise [strongly disagree(1)-strongly agree(5)]					0.809	0.708 ^{***}		
I know how to recognize obstacles when they arise [strongly disagree(1)-strongly agree(5)]					0.807	0.735 ^{***}		
Network strength								
How often do you network with people who have a different occupation than you? [never(1)-always(5)]							0.838	0.687 ^{***}
How often do you network with people who work in a different industry than you? [never(1)-always(5)]							0.826	0.792 ^{***}
How often do you network with people who have a different social background than you? [never(1)-always(5)]							0.812	0.805 ^{***}
How often do you network with people who have a different education level than you? [never(1)-always(5)]							0.799	0.773 ^{***}
How often do you network with people who have a different race or ethnicity than you? [never(1)-always(5)]							0.738	0.778 ^{***}
How strongly can you rely on people in your network to help you with major challenges? [not strong at all(1)-extremely strong(5)]							0.702	0.721 ^{***}
How strong is your network of people to help you improve professionally? [not strong at all(1)-extremely strong(5)]							0.617	0.663 ^{***}
How many people in your network have little or no connection to one another, other than their common connection to you? [none(1)-all(5)]							0.461	0.450 ^{***}
Cronbach Alpha		0.763		0.718		0.884		0.891

Note: Exploratory factors analysis (EFA) loadings below 0.300 are suppressed. CFA loadings are based on standardized estimates.

*** p<0.010.

Table 2. Measurement properties of the employment security scale

Employment Security	Work quality		Work care		Insecurity	
	EFA loading	CFA loading	EFA loading	CFA loading	EFA loading	CFA loading
Work quality						
How much influence do you have on the quality of your current work conditions (e.g., physical or social environment)? [no influence(1)-complete control(5)]	0.835	0.804***				
How much influence do you have in determining your current work schedule? [no influence(1)-complete control(5)]	0.832	0.774***				
How much influence do you have on your current income (e.g., wage, salary, hourly rate, or self-employed earnings)? [no influence(1)-complete control(5)]	0.829	0.763***				
How fair or adequate is your current income relative to the effort you put in? [not at all(1)-totally(5)]	0.513	0.570***				
To what extent do you regularly contribute to your savings? [nothing(1)-I go overboard(5)]	0.521	0.475***				
Work care						
If you are a wage earner, how adequate are your benefits (e.g., paid time off, sick leave, paternity/maternity leave)? [no benefits(1)-entirely adequate(5)]			0.856	0.566***		
<i>If self-employed, how easy would it be for you to avoid significant income loss at times when you cannot work (e.g., time off for personal reasons, sick leave, paternity/maternity leave, etc.)? [not at all(1)-very easy(5)]</i>						
What is the quality of healthcare to which you have access by way of your current employment? [very low(1)-excellent(5)]			0.689	0.629***		
If you are a wage earner, how adequate is your severance pay (e.g., amount granted upon termination of employment)? [no severance pay(1)-entirely adequate(5)]			0.506	0.542***		
<i>As a self-employed person, my current work would provide me with enough capital to maintain my life style for a couple of months if I stopped working today? [strongly disagree(1)-strongly agree(5)]</i>						
To what extent does your current employment contribute to your retirement savings (e.g., your pension, 401K plan)? [not at all(1)-amply(4)]			0.616	0.552***		
Vulnerability						
Do you ever worry about your ability to pay your rent or mortgage, your utility bills, or for food? [never(1)-always(5)]					0.886	0.777***
How much of a challenge would it be for you to cover an unexpected \$500 expense? [no challenge(1)-extreme challenge(5)]					0.877	0.811***
How often are you reminded by others in your work environment that you are replaceable at work? [never(1)-always(5)]					0.582	0.489***
Cronbach Alpha		0.799		0.745		0.795

Note: Exploratory factors analysis (EFA) loadings below 0.300 are suppressed. CFA loadings are based on standardized estimates. Insecurity items are reverse-coded.

*** p<0.010.

FINDINGS

We organize our findings in terms of central insights presented in sequence. We start with univariate results that describe basic patterns in the national sample.

Descriptive results

Grand average CL in the U.S. 3.697 (range: 1-5) with a standard deviation of 0.685. It is well above the theoretical mean (i.e., 3 within a range of 1-5), plausibly because of the natural disposition to present oneself in a positive light. However, such desirability bias is, on average, not likely to differ dramatically across most groups (Dalton and Ortegren 2011) and therefore does not severely limit variation. The first notable variation is one that is observed over time:

➤ *Insight 1. Average CL improves from 18 to 35, steadily declining thereafter.*

This pattern, seen in Figure 1, is unsurprising since most individuals settle into their career tracks by their early 30s (Gianakos 1999). Relatedly, one's frame of reference in assessing CL may become more conservative in relative terms over time—for instance, the average 45-year-old may think more narrowly or specifically about CL given their life stage and past experience compared to the average 25-year-old who may perceive more possibilities (Zunker 2016).

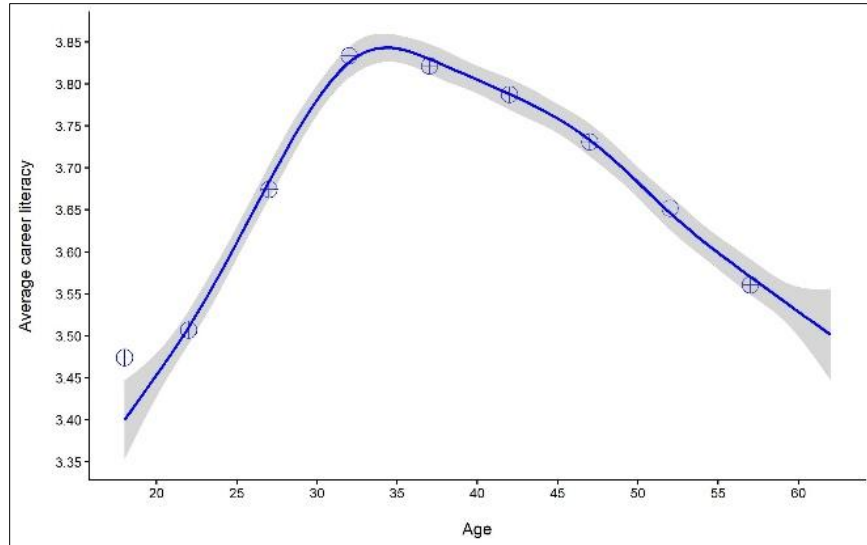
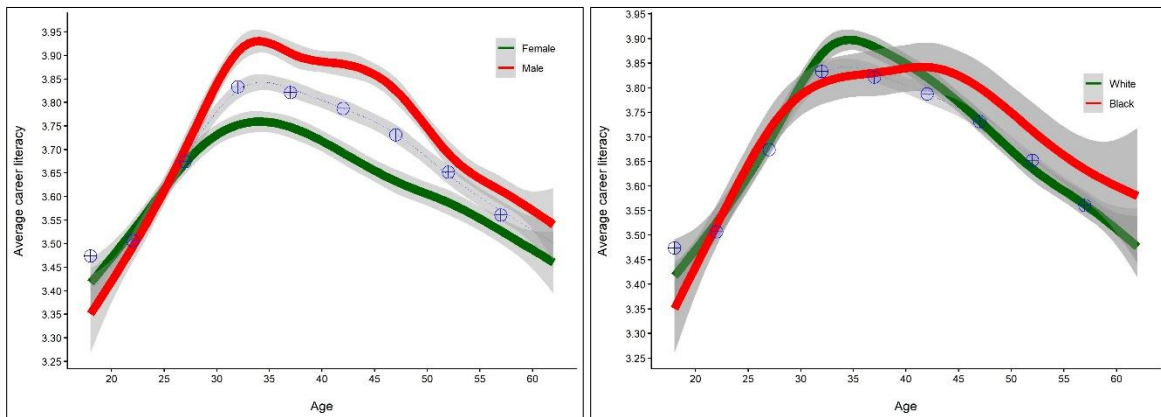


Figure 1. Career literacy across the life course.

Findings reveal systematic variation among key demographic groups as well. We concentrate on differences by gender, race/ethnicity, and college attainment which constitute dominant markers of status differentiation in contemporary U.S.⁶

- *Insight 2. CL differs in critical ways by gender, race/ethnicity, and education.*
 - 2a. *Male CL is persistently higher than female CL past age 25.*
 - 2b. *White CL is greater than Black and Hispanic CL from mid 20s to early 40s.*
 - 2c. *College education is related to substantially higher CL across the age span.*



⁶ With regard to racial/ethnic minorities, we focus on Black and Hispanic Americans, the two major historically underserved and marginalized groups in the U.S. Figures for Asian Americans do not differ significantly from nationally dominant patterns and we currently lack sufficient data on Native Americans.

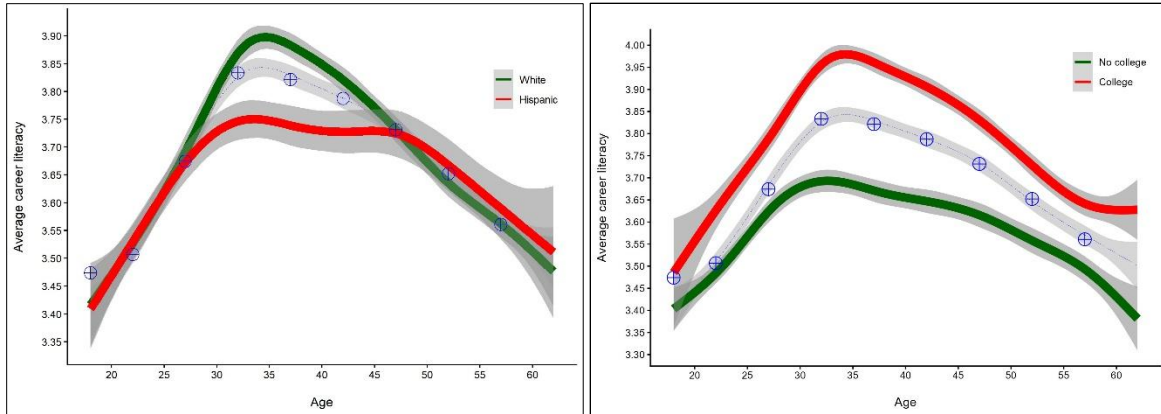


Figure 2. CL differences by gender, race/ethnicity and education.

Male advantage in CL emerges around age 25 (at the portal of the labor market for many) and persists then on. This is likely driven by three factors. First, the average male may enjoy more employment opportunities and experiences to develop CL given the enduring male advantage in the occupational system providing men with more options both within and across occupations (Reskin and Roos 1990; Ridgeway 2019). Second, conventional gender roles may dispose women to “hold back” in the extent to which they participate in the labor market and in which domains they enter within that market, limiting their opportunities to grow CL (England 2010). Confounded by these two factors, a third factor may be the average female tendency to modestly underrate skills in self-report measures (or for males to overrate) (Lopez-Zafra and Gartzia 2014). In all, the gendered social structure and occupational system appear to bear considerably on the male/female differences in CL in the U.S.

Racialization is also consequential, particularly between age 25 and 40, when much ground is gained in individual career trajectory (Zunker 2016). Both the White/Black and White/Hispanic CL differences are largest within that age range (see Table A1 in the appendix for statistical tests of differences). Persistent White advantage in the occupational system (Glenn 2015; Nelson and Vallas 2021) may limit the average minority chances to develop CL during a life stage when critical choices are made and opportunities pursued in ways that structure long-

term career and employment outcomes (Fouad and Kantamneni 2013). The gap is more pronounced for Hispanics. The racial/ethnic CL disadvantage is diminished past one's mid-40s. Greater equity in employment is an unlikely reason for this. More conceivably, frames of reference change such that individuals provide assessments in stronger reference to their own group's experiences rather than in reference to more generalized aspirations and sense of opportunities that may have been more operative in earlier ages within the labor market.

The CL gap by college attainment is by far the largest in Figure 2, across the entire life course (all differences are significant at $p \leq 0.050$). College education provides valuable skills and credentials and appears linked to individuals being better equipped with CL. A college degree builds a greater sense of capacity for career planning, exploration, and self-development and self-presentation (see Rose 2013). This is likely rooted in both the formal skills and knowledge obtained in college as well as the related growth in orientation toward higher-order thinking. College graduates also possess stronger non-cognitive skills that facilitate self-presentation, social interaction, and creative norm-following in ways that help advance careers (Oi 2019; Zamorro et al. 2025). These advantages can enable the average college graduate to perceive and pursue a broader range of opportunities in the labor market and to position themselves more effectively in relation to changes in the occupational system over time.

The contemporary economy is increasingly *skill-biased*, inherently favoring more postsecondary education rather than less (Goldin and Katz 2008; Autor, Goldin, and Katz 2020). Jobs that require less skills are in decline; those that require more skill are on the rise. A college degree is a critical asset for career literacy and an advantage in this context. This pattern defies an enduring discourse on the overrated value of college education, one that is rooted in the "overeducation" argument from the 1980s which suggested that the economy suffered from too

many college graduates who were likely to experience limited returns to their degrees due to “credential inflation” (e.g., Collins 1979; Rumberger 1981). This perspective was discredited in later decades (e.g., Halaby 1994; Grogger and Eide 1995; Hanushek and Woessmann 2008). Beyond its favorable effects on career choices and success, college attainment was found to improve social wellbeing, family stability, and personal health (Bernard 1996; Lawrence 2017). Our findings suggest that college attainment is also consequential (even more than gender and race/ethnicity) for career planning, exploration, and self-development and self-presentation in the 21st century. Currently, about 45 percent of jobs require a college degree (Azziz 2024), but this is projected to increase to nearly 75 percent by 2031 and nearly 80 percent by 2040 (Carnevale et al. 2023). Lacking a college degree in such an environment can impede formal skills, knowledge, and credentials, as well as the CL necessary for effective positioning in the labor market. In relation to this:

- *Insight 3. Though one can benefit from improved CL without a college degree, college attainment gives a natural boost to CL while providing access to more superior occupational roles that require higher postsecondary credentials.*
- *Insight 4. Given the postsecondary credential barrier in access to the higher end of the labor market, greater CL in itself is not a substitute for what a college degree can help achieve, but it can facilitate how the individual navigates non-college pathways towards a college degree itself and the related occupational opportunities. CL, in this regard, can be an asset in not just within-occupation but also cross-occupational career journeys vertically.*

Is the relationship of a college degree with CL the same for different occupational sectors? It is not. Inter-occupational comparisons of CL are not the same in college and non-college domains, as shown in Figure 3.

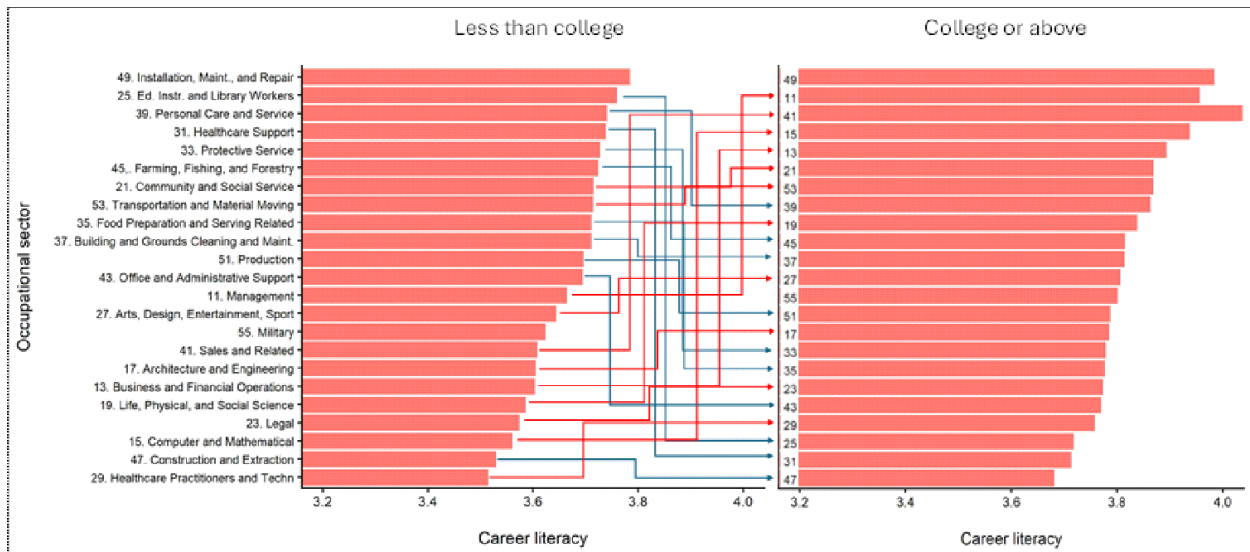


Figure 3. Career literacy by occupational sector and college attainment.

Note: Occupational categories are based on a taxonomy from the U.S. Bureau of Labor Statistics.

In many occupations, while a college degree helps improve CL on average across all occupations (bars on the right are longer than on the left), the degree may provide more CL in some occupations relative to others. This dynamic is depicted by blue and red lines in the figure. For instance, while average CL for occupation #25 (educational instruction and library workers) is near the top of the occupational ranking in the non-college-educated domain, it is near the bottom of the college-educated domain. This means getting a college degree in another occupational sector—such as #13, business and financial operations—may enable the person to grow their CL more than a college degree enables CL growth in #25. Most comparisons exhibit this pattern of reversal. In summary:

- *Insight 5. Though the college advantage in CL is prevalent across all occupational sectors, it is more pronounced in some than others.*
 - 5a. Looking at any sector, the group with a college degree has greater CL than those without one.*
 - 5b. College education reverses how occupational sectors are ranked in terms of CL. Were it not for their college degree, individuals in many occupational sectors may have had a level of CL far lower than the CL of non-college-educated individuals in other occupational sectors.*

CL’s relationship with income is shown in Figure 4. Since income grows over the life course, we display the CL/income relationship across different age brackets, approximating career stages (ages below 24 and above 55 omitted for parsimony). In any stage, higher income groups have more CL than lower income ones. A causal direction is difficult to establish given the lack of experimental data, but the relationship is consistent with our expectations. Another problem in establishing a causal direction is conceptual since income alone is a limited yardstick for understanding CL outcomes. As noted earlier, there may be other factors and conditions at play in determining how one grows and utilizes CL. Nonetheless:

➤ *Insight 6. CL is higher in higher income brackets.*

In examining CL outcomes, we cast employment security as a construct that is broader than income alone. Our multivariate estimation models, discussed in the next section, account for income level in estimating CL effects on employment security, allowing CL and income level to compete in predicting employment security.

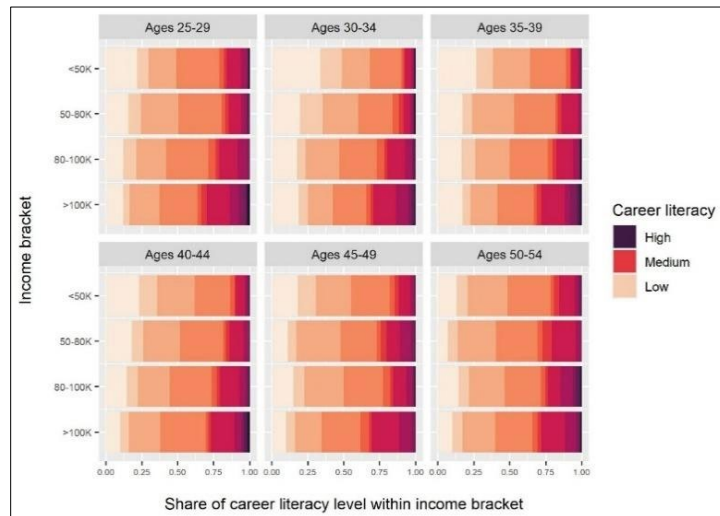


Figure 4. Career literacy and income.

➤ *Insight 7. CL is associated with greater likelihood of employment across the life course.*

CL also has a favorable connection with employment status, shown in Figure 5. An employed person has, on average and in any age bracket, considerably higher CL than an unemployed one (all differences are significant at $p \leq 0.050$). Individuals with higher CL are likely to be more successful in securing and maintaining employment. However, since employed individuals are also likely to develop and/or report greater CL as a result of their employment status, it is difficult to isolate the underlying causal dynamic.

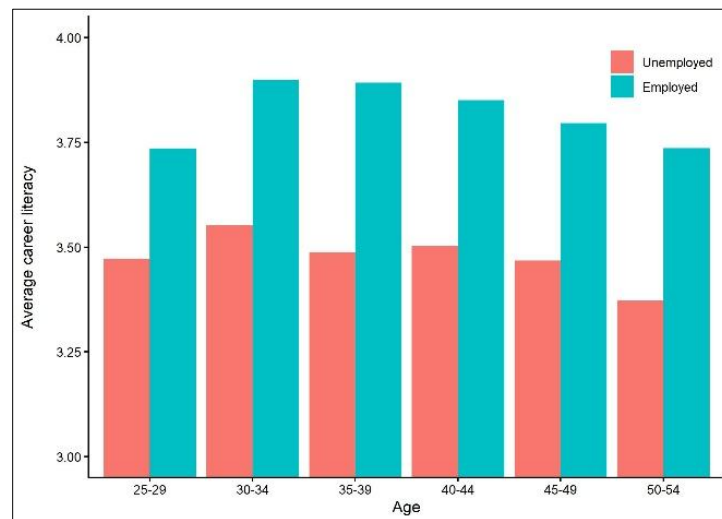


Figure 5. Career literacy and employment status.

Implications of CL for employment status are revealed with a lower degree of correlational bias by addressing unemployment spells. Individuals with greater capability to make informed decisions about occupational and employment pathways are likely to experience more limited durations of unemployment. Consistent with this expectation, we find that:

- *Insight 8. CL is related to lower risk of long-term unemployment irrespective of age.*

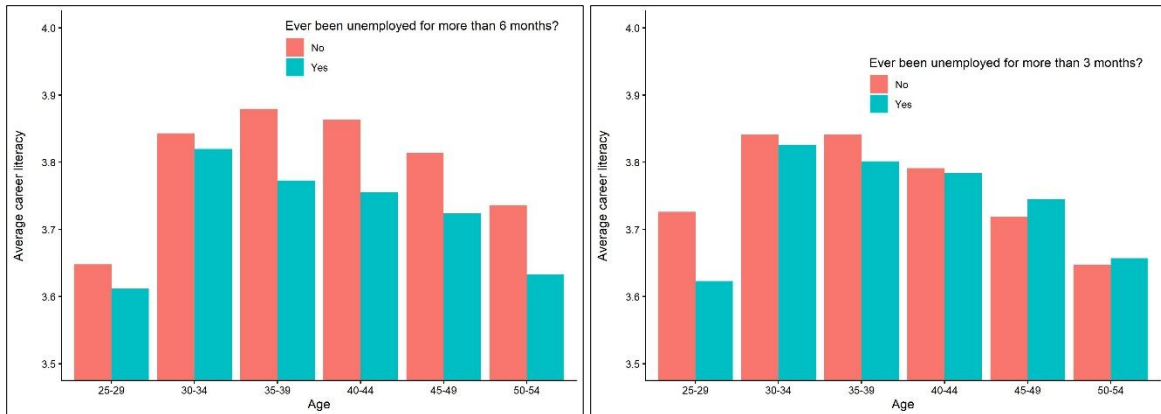


Figure 6. Career literacy by employment spell.

The pro-CL difference is significant across all age groups when it comes to the experience of unemployment for six months or longer (left). This is critical because more than five months of unemployment significantly reduces one’s chances of returning to the labor market (Arranz and García-Serrano 2014). Therefore, individuals with greater CL are less likely to experience long-term unemployment.

By contrast, there is little difference in CL between individuals who experienced three months of unemployment at least once and individuals who never did (right), with the exception of those in their late 20s (25-29). Within that group, more CL is related to lower likelihood of unemployment for three months or longer, which can be consequential in later stages of career development, especially for youth from disadvantaged economic and/or racial/ethnic backgrounds in the U.S. (Mroz and Savage 2006).

Patterns of job search reveal more insights about the CL/employment relationship. About 40 percent of the national sample report that they have “searched for jobs within the last six

months” (Figure 7). We address how CL is related to patterns within this group. Broadly, the findings indicate that:

➤ *Insight 9. CL is associated with a more extensive and more diverse job search.*

9a. *Greater CL is related to looking at more jobs during a job search regardless of how many total jobs one looks at.*

9b. *Prior to age 40, having very high CL plays a more substantial role in job-searching as one looks at more jobs that are outside of their current career path regardless of how many total jobs they look at.*

9c. *After age 40, having moderately high CL becomes more common among job-searchers who look at jobs outside of their current career path.*

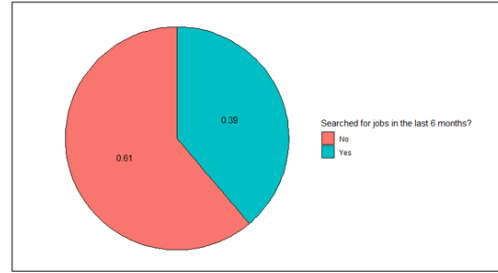


Figure 7. Job search in last 6 months.

Diligent job exploration draws on analytic intensity along with a productive evaluation of opportunities (Faberman and Kudlyak 2019). CL appears to offer value in this regard. Figure 8 shows the number of jobs one “looks at” during their most recent job search. In any age group, high-CL individuals explore more jobs than low-CL ones. This can be illustrated with visual simplicity in reference to the modal condition, 3-to-5 jobs (tallest bar) in each age cohort. For instance, for ages 30-34, the tallest bar indicates that nearly 500 people have looked at about four jobs. Within this group, the green segment indicates that nearly half the group has very high CL (above 4 on a scale of 5). The yellow segment (on top of the green) indicates that about 40 percent of the group has moderately high CL (between 3 and 4 on a scale of 5). The red segment (above yellow) indicates that about 10 percent within the group has moderately low CL (between 2 and 3 out of 5). The share of lowest CL (between 1 and 2 on a scale of 5, coded in purple) is too small to register visibly on the bar. This four-way color profile is replicated outside of the modal situation as well. While a declining number of people look at more than 3 to 5 jobs (to the left of the tallest bar), the green and yellow segments within nearly all bars are larger than the red

and purple segments. Briefly, higher CL is related to looking at more jobs during a job search regardless of how many total jobs the person looks at.

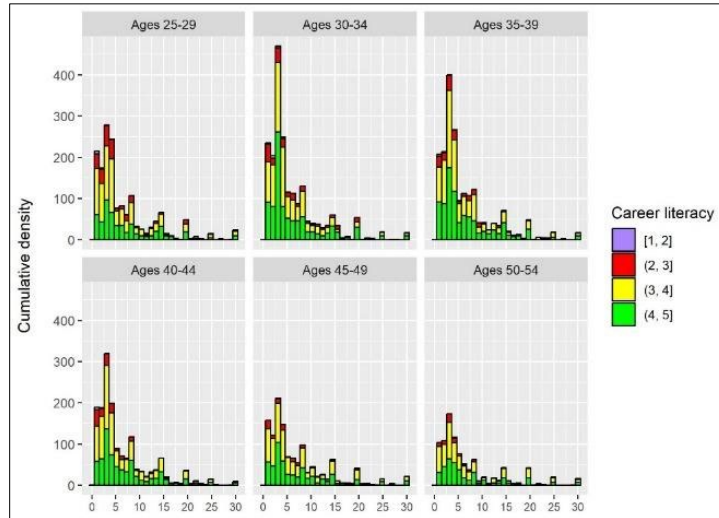


Figure 8. Career literacy by number of jobs “looked at.”

During a job search one may look at jobs that are largely within their existing career path (e.g., same occupational sector, similar roles and responsibilities, greater authority within the current line of work, etc.) as well as jobs that are outside of their existing career path. Figure 9 addresses this, revealing important patterns.

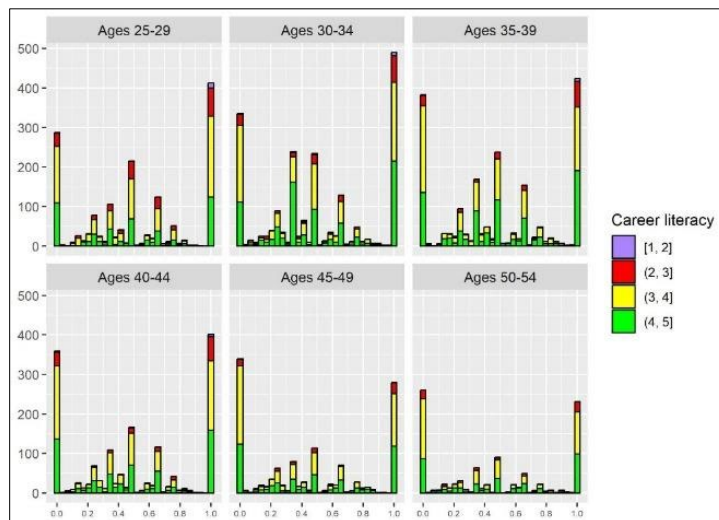


Figure 9. Percent of jobs “looked at” within and outside one’s current path.

First, within each age group, the yellow segment (moderately high CL) and green segment (very high CL) constitute the largest shares on any bar relative to lower CL (red and purple) segments. Second, prior to age 40 (first three panels), the yellow segment is typically larger than the green segment only within the first bar. That is, most job searchers who look at jobs that are *only* within their existing career path have moderately high CL, not very high CL. Prior to age 40, the size of the green segment (very high CL) relative to yellow (moderately high CL) grows as respondents look at more jobs outside of their current career path. A third notable pattern is that once a person is past age 40—when job search tends to slow down (last three panels)—the size of the yellow segments in each bar tends to become greater relative to that of the green segments. That is, having a very high degree of CL appears to pay off in terms of out-of-path job searching more before age 40 than after age 40. These findings illustrate the importance of cultivating high CL in earlier stages of career development and maintaining moderately high CL thereafter. The capacity to look at jobs outside of one’s current career path is an increasingly important asset in the changing occupational landscape.

Multivariate estimates of effects on career literacy

Which individual characteristics are stronger predictors of CL? How do these effects work together in predicting CL? Multivariate estimates of effects on CL are shown in Table 2, where findings from 10 ordinary least squares models are presented in stepwise fashion. Model 1 accounts for unadjusted age effects across the life course. These naturally are consistent with descriptive means reported in Figure 1. CL rises until about age 40, declining thereafter. Despite slight changes in CL magnitudes across different age groups, this pattern holds in subsequent models with covariates.

Table 2. Multivariate estimates of effects on career literacy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Age (25-29 baseline)										
30-34	0.167 *** (0.017)	0.162 *** (0.017)	0.147 *** (0.017)	0.121 *** (0.016)	0.082 *** (0.016)	0.085 *** (0.016)	0.084 *** (0.016)	0.084 *** (0.017)	0.081 *** (0.017)	0.083 *** (0.017)
35-39	0.155 *** (0.016)	0.147 *** (0.016)	0.128 *** (0.016)	0.097 *** (0.016)	0.042 ** (0.016)	0.044 *** (0.016)	0.045 *** (0.016)	0.043 ** (0.017)	0.040 ** (0.017)	0.042 ** (0.018)
40-44	0.128 *** (0.017)	0.118 *** (0.017)	0.100 *** (0.017)	0.069 *** (0.017)	0.009 (0.017)	0.012 (0.017)	0.013 (0.017)	0.001 (0.018)	-0.002 (0.018)	0.003 (0.018)
45-49	0.060 *** (0.017)	0.049 *** (0.017)	0.026 (0.017)	0.000 (0.017)	-0.056 *** (0.017)	-0.054 *** (0.017)	-0.052 *** (0.017)	-0.069 *** (0.018)	-0.072 *** (0.018)	-0.068 *** (0.018)
50+	-0.031 * (0.017)	-0.044 ** (0.018)	-0.063 *** (0.018)	-0.081 *** (0.017)	-0.132 *** (0.017)	-0.129 *** (0.017)	-0.126 *** (0.017)	-0.122 *** (0.019)	-0.124 *** (0.019)	-0.121 *** (0.019)
Race/ethnicity (White baseline)										
Black		-0.015 ** (0.007)	-0.019 ** (0.010)	0.089 *** (0.014)	0.106 *** (0.014)	0.107 *** (0.014)	0.107 *** (0.014)	0.104 *** (0.015)	0.104 *** (0.015)	0.094 *** (0.016)
Hispanic		-0.068 *** (0.012)	-0.045 *** (0.012)	0.015 (0.012)	0.022 * (0.012)	0.024 ** (0.012)	0.023 * (0.012)	0.037 *** (0.013)	0.034 *** (0.013)	0.032 ** (0.014)
Gender										
Female			-0.154 *** (0.009)	-0.119 *** (0.009)	-0.125 *** (0.009)	-0.059 *** (0.016)	-0.058 *** (0.016)	-0.003 (0.018)	-0.004 (0.018)	-0.006 (0.018)
Education										
College or above				0.241 *** (0.009)	0.203 *** (0.010)	0.198 *** (0.010)	0.197 *** (0.010)	0.083 *** (0.012)	0.142 *** (0.021)	0.133 *** (0.022)
Household structure										
Not single					0.061 *** (0.011)	0.055 *** (0.011)	0.053 *** (0.011)	0.024 ** (0.012)	0.022 * (0.012)	0.024 ** (0.012)
Any children					0.172 *** (0.011)	0.224 *** (0.015)	0.227 *** (0.015)	0.189 *** (0.015)	0.182 *** (0.015)	0.173 *** (0.016)
Female*Children						-0.099 *** (0.019)	-0.101 *** (0.019)	-0.080 *** (0.021)	-0.076 *** (0.021)	-0.069 *** (0.021)
Income (<50K baseline)										
50-80K							0.053 *** (0.016)	0.092 *** (0.015)	0.099 *** (0.015)	0.102 *** (0.016)
80-100K							0.041 ** (0.018)	0.122 *** (0.018)	0.130 *** (0.018)	0.138 *** (0.018)
100K+							0.011 (0.013)	0.211 *** (0.016)	0.214 *** (0.016)	0.219 *** (0.016)
Occupational sector										
Sector								⊖	⊖	⊖
Sector*College									⊖	⊖
Labor market										
Commuting zone										⊖
Intercept	3.680 *** (0.013)	3.701 *** (0.014)	3.788 *** (0.015)	3.652 *** (0.015)	3.561 *** (0.016)	3.529 *** (0.017)	3.510 *** (0.019)	3.567 *** (0.022)	3.534 *** (0.025)	3.538 *** (0.042)
Adjusted R ²	0.012	0.013	0.026	0.054	0.072	0.073	0.174	0.188	0.192	0.207

Note: Ages below 25 are excluded and those above are collapsed as “50+” for parsimony. Occupational categories are based on a taxonomy from the U.S. Bureau of Labor Statistics.

*** $p \leq 0.010$; ** $p \leq 0.050$; * $p \leq 0.100$.

In model 2, we estimate race/ethnicity effects net of age, indicating average minority disadvantage relative to Whites. Average Black disadvantage is -0.015 units; Hispanic disadvantage is about four times larger, -0.068 units. These are robust to the gender effect estimated in Model 3. The average female effect is -0.154, substantially below the average male CL (net of age and race/ethnicity effects). Critically, in model 4 where education is included as a

predictor, the race/ethnicity effects become positive (Black: 0.089, Hispanic 0.015), though only the Black effect is statistically significant. However, this overall effect reversal persists across subsequent models, where both the Black and Hispanic CL means are greater than the average White CL and are statistically significant. Broadly:

- *Insight 10. The “college gap” accounts for much of the Black/Hispanic disadvantage in CL relative to Whites.*

In addition, the positive racial/ethnic effects in model 4 indicate that Black and Hispanic individuals with a college degree are likely to outpace Whites in terms of CL. They may be far more strategic and cognizant of their positioning relative to jobs and opportunities in segments of the economy that require a college degree for employment. Using human capital markers and related opportunities more strategically is a common pattern among marginalized minorities (Harris 2011). Our findings suggest that:

- *Insight 11. When there is equity in college attainment, minority groups—particularly African Americans—tend to have far greater CL than the average White adult.*

As for the college effect itself in model 4, it indicates that the average CL for those with a college degree or above is 0.241 units greater than that for those without a college degree. Though this advantage is reduced in subsequent models—particularly when occupational sector effects are introduced in model 8—the college effect remains one of the strongest factors in CL advantage across the entire table (0.133 in model 10).

Model 5 accounts for household structure (marital status and children). Unsurprisingly, those who are not single and those who have children (on average implying age past 25) have greater CL. These effects do not alter other estimates and persist across subsequent models. However, the female/children interaction in model 6 not only cuts the female disadvantage by half (-0.125 in model 5 versus -0.059 in model 6) but also is highly negative in itself (-0.099).

The female main effect in this model (-0.059) represents the CL disadvantage for female respondents without children, while the interaction effect with children indicates the *additional* CL disadvantage for female respondents with children. Therefore, the total female disadvantage is -0.158 (-0.059+[-0.099]). This “motherhood penalty” persists across subsequent models and is consistent with the enduring literature on burdens of motherhood at work (Correll, Bernard, and Paik 2007; England et al. 2016). Thus:

- *Insight 12. Motherhood accounts for a substantial degree of the female disadvantage in CL net of age, race/ethnicity, education, and marital status.*

In model 7, we enter income level. Consistent with descriptive findings in Figure 4, rising income is related to greater CL, an effect that does *not* alter other findings from the previous model and persists in the next three models. Given how CL varies across occupational sectors and between college-educated and non-college-educated domains of the labor market (Figure 3), we account for the effects of the 23 major occupational sectors in the U.S. economy and for the interactions of these effects with college attainment in models 8 and 9. These 46 estimates themselves are not shown here, but they have two notable implications. First, they reduce the college main effect, since college attainment and occupational choices are intertwined. More importantly, they entirely eliminate the female main effect. That is:

- *Insight 13. Women without children do not have a CL disadvantage net of occupational sector.*

However:

- *Insight 14. Women with children report a CL disadvantage independent of occupational sector (the motherhood penalty is robust to the type of work women do).*

These last 2 insights ought to be considered in tandem with societal patterns that structure female occupational choices and potential discrimination, and the broader devaluation of

feminized work in the U.S., since neither CL disadvantage nor the motherhood penalty may exist to the extent they do in a system without gendered social roles and occupational trajectories.

In our last model, we account for the 740 commuting zones in the U.S., which are common proxies for local labor markets.⁷ Controlling for the fixed effects of these markets is necessary since markets may vary in terms of job and occupational mix and related CL levels (consider San Jose, CA v. Kansas City, MO). These 740 estimates are not shown here.

Importantly, they do not alter any of the effects from previous models. Therefore:

- *Insight 15. Age, race/ethnicity, gender, education, household structure, motherhood, income, and occupational sector effects on CL are robust to geographic location in the U.S.*

Contextualizing effects sizes for race/ethnicity, gender, and education

How big are the substantively critical effects on CL in Table 2, namely the effects of race/ethnicity, gender, education, and motherhood? We discuss these effects for practicable purposes. Since the estimates of these effects change across the models, it is important to pick specific models that help convey effect size patterns. Also, the size of each effect we focus on can be understood in reference to CL's overall standard deviation in the sample ($\sigma=0.685$).

To illustrate, in model 3, the average Black effect (relative to Whites) is -0.019. This represents about three percent of CL's standard deviation ($|-0.019|/0.685=0.029$). Therefore, applying standard normal distribution assumptions, if two individuals—one Black, one White—were both situated near the center of the national CL distribution, the White one would be about “one percent of the population” ahead of the Black one ($0.030*0.340$). There are about 200 million 18-65 year-olds in the U.S. (our sample's age range). Thus, the average Black/White

⁷ GIS shape files for CZs were obtained from the Economic Research Service of the U.S. Department of Agriculture (<https://www.ers.usda.gov/data-products/commuting-zones-and-labor-market-areas>). Each respondent was geocoded based on self-reported ZIP code and the latitude/longitude of their internet connection at the time they took the survey.

distance around the middle of the national CL distribution is about 2,000,000 people. Under a similar scenario, the White person would be about “two percent of the population” ahead of the Hispanic one ($[|-0.045|/0.685]*0.340 = 0.022$), a distance of about 4,000,000 people (about four times the size of the average commuting zone).

These racial/effects are robust to gender (model 3), but they flip signs when we account for college attainment (model 4). This flipped pattern holds across all subsequent models. In model 10, the Black effect is 0.094 and the Hispanic effect is 0.032, *above* Whites. Thus, net of education, gender, household structure, parental status, income, and occupational sector, Black/White distance around the middle of the national CL distribution is about 9,500,000 in favor of the Black individual, while the Hispanic/White distance is 1,500,000 people in favor of the Hispanic individual. To reiterate, closing the racial/ethnic gap in college attainment plays the dominant role in reversing this effect.

As for gender, the average female effect (relative to males) is -0.154 in model 3, which persists through model 5 (-0.125). This indicates that net of age, gender, college attainment, and household structure, the average male/female distance around the middle of the national CL distribution is about 5,800,000 people (18 percent of the population) in favor of males. The motherhood effect cuts this by half in model 6 (the female coefficient is reduced from -0.125 to -0.059). The effect is nullified from model 7 and on, controlling for occupational sector. The female CL disadvantage in itself (net of education and parental and marital/cohabitation status) is explained entirely by the gendered occupation system in the U.S.

The college degree effect is 0.241 in model 4 and, as noted earlier, has critical implications for race/ethnicity gaps in CL. As for the effect itself, it is influenced considerably by occupational sector, since it is reduced to 0.083 in model 8, accounting for occupations. The

estimated coefficient is 0.133 in model 10, accounting for labor market (commuting zone) effects. This indicates that, net of all covariates, the average college/no college distance around the middle of the national CL distribution is about 6,200,000 people in favor of the individual with a college degree compared to one without the degree.

Multivariate estimates of the effect of career literacy on employment security

Since income alone can be a limited criterion for understanding career success, we cast employment security as a relevant construct for examining CL's consequences. Employment security denotes work quality (including adequate earnings), work care (quality of benefits, perks, and savings), and work vulnerability (concern with employment disruptions and emergency expenses). Estimates of CL effects on employment security are reported in Table 3. The first model reports the unadjusted relationship. The CL measure here is also subject to a high degree of omission bias given the unobserved patterns of individual labor market experience, social context, and even the inclination toward positive self-presentation. Such omissions may result in upward bias in estimates of CL effects on employment security. To limit this problem, we rely on a two-stage least squares (2SLS) procedure starting in model 2.⁸

The 2SLS estimates represent the difference between two people where one is more disposed to develop CL and the other is less, irrespective of labor market experience, social context, and tendency for positive self-presentation. Since CL can be cultivated, the effects reveal how a person not disposed to develop CL can benefit from *developing it*. The

⁸ As seen in Table A2 in the appendix, we use three instrumental variables (IVs) measuring one's exogenous dispositions for CL's, one each for the three CL components. These measures are not explicitly related to careers or employment and therefore have little to do with individual labor market experience, social context, or inclination toward positive self-presentation in professional settings. We first regress CL on these instruments to generate predicted values of CL—that is, the values of CL *given* the individuals' exogenous dispositions to develop the components of CL (stage 1 in estimation). The predicted CL values are then used to estimate CL effects on employment security (stage 2) in each model starting with model 2. Critically, in the annual survey, the instrumental variable questions precede the purpose of the survey. The respondent is asked to answer these questions before any others.

instrumented CL effect in model 2 (0.188) is 25 percent smaller than the un-instrumented one in model 1 (0.251), revealing the upward bias in model 1. Based on model 2, each unit of CL increases employment security by 0.188 units, about 35 percent of a standard deviation (0.551).

Table 3. Estimating the career literacy effect on employment security

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Career literacy and network strength								
Literacy	0.251 ***							
	(0.007)							
Literacy, instrumented		0.188 ***	0.123 ***	0.075 ***	0.078 ***	0.063 ***	0.060 **	0.073 ***
		(0.009)	(0.010)	(0.028)	(0.024)	(0.024)	(0.024)	(0.024)
Network, instrumented			0.088 ***	0.031	0.020	0.004	0.001	0.007
			(0.005)	(0.027)	(0.026)	(0.027)	(0.026)	(0.026)
Literacy*Network, both instrumented				0.016 **	0.016 **	0.018 ***	0.015 **	0.013 **
				(0.008)	(0.007)	(0.001)	(0.007)	(0.006)
Age (25-29 baseline)								
30-34					0.0421 **	0.02	-0.019	-0.014
					(0.018)	(0.019)	(0.018)	(0.018)
35-39					0.0767 ***	0.05 ***	-0.004	-0.001
					(0.018)	(0.018)	(0.018)	(0.018)
40-44					0.0636 ***	0.035 **	-0.022	-0.017
					(0.018)	(0.017)	(0.018)	(0.019)
45-49					0.1537 **	0.123 ***	0.042 **	0.040 **
					(0.019)	(0.019)	(0.019)	(0.019)
50+					0.1635 ***	0.141 ***	0.056 ***	0.057 ***
					(0.020)	(0.020)	(0.020)	(0.020)
Race/ethnicity (White baseline)								
Black					-0.079 ***	-0.014	0.057 ***	0.051 ***
					(0.016)	(0.016)	(0.016)	(0.016)
Hispanic					-0.114 ***	-0.064 ***	-0.010	0.002
					(0.013)	(0.014)	(0.013)	(0.014)
Gender								
Female					-0.115 ***	-0.106 ***	-0.086 ***	-0.074 ***
					(0.018)	(0.010)	(0.018)	(0.019)
Education								
College or above						0.210 ***	0.068 ***	0.029
						(0.011)	(0.012)	(0.022)
Household structure								
Not single							0.038 ***	-0.038 ***
							(0.012)	(0.012)
Any children							-0.037 ***	0.038 ***
							(0.016)	(0.016)
Female*Children							0.032	0.031
							(0.022)	(0.022)
Income (<50K baseline)								
50-80K							0.149 ***	0.137 ***
							(0.017)	(0.018)
80-100K							0.287 ***	0.260 ***
							(0.019)	(0.020)
100K+							0.430 ***	0.404 ***
							(0.018)	(0.018)
Occupational sector								
Sector								∅
Sector*College								∅
Labor market								
Committing zone								∅
Intercept	2.281 ***	2.594 ***	2.534 ***	2.702 ***	2.714 ***	2.672 ***	2.533 ***	2.494 ***
	(0.029)	(0.033)	(0.032)	(0.088)	(0.088)	(0.087)	(0.085)	(0.094)
Adjusted R ²	0.080	0.039	0.074	0.074	0.095	0.124	0.179	0.211

Note: Ages below 25 are excluded and those above are collapsed as “50+” for parsimony. Occupational categories are based on a taxonomy from the U.S. Bureau of Labor Statistics. R² estimates of 2SLS models are less reliable than those from OLS.
*** p≤0.010; ** p≤0.050; * p≤0.100.

Model 3 includes network strength which reduces the CL effect (see Table 1 for survey items on networks). Networks are critical in career development and success. We account for both the diversity and intensity of professional ties, the two classical measures of social capital (Burt 2005; Granovetter 2018). We cast the network effect as a catalyst in CL’s effect on employment security, not a main effect. Like CL, the network strength effect is instrumented to reduce omission bias (see Table A2 in the appendix for instruments).

Given the centrality of network strength in career success, the network effect is likely to interact with the CL effect. We confirm this in model 4, where the CL/network interaction is strongly significant (0.016, p≤0.050). Together, the estimates in model 4 indicate that CL increases employment security but does so more strongly *in unison* with network strength. The main CL effect (0.075) represents the employment security advantage of each unit of CL for a person with zero network strength. Each unit of network strength adds to this main CL effect an additional 0.016 units of employment security. Critically, the main network effect is non-significant, indicating that network strength is a catalyst to the CL effect while CL effect is not a catalyst to the network effect. This pattern persists across subsequent models in the table, with largely the same magnitudes through the last model. As important as network strength is for career success, when it comes to increasing the employment security of the average person, it is ultimately an asset that makes the effect of CL on employment stronger rather than influence security by itself.⁹ Thus:

⁹ Additional analysis discussing and graphically depicting the relationship between Career Literacy and Network Strength can be found in *Start Early, Succeed Sooner: Insights from the 2023 Employment Empowerment Study* found at <https://debruce.org/insights/employment-empowerment-report/>

- *Insight 16. CL increases employment security net of age, race/ethnicity, gender, education, household structure, motherhood, income, occupational sector, and location.*
- *Insight 17: Net of the same covariates, CL increases employment security more as network strength increases.*

In model 10, for a person with no network strength, the CL effect is 0.073. Given the employment security standard deviation (0.551), each unit of CL would increase security by 0.040 standard deviation units. Applying standard normal distribution assumptions, if two individuals who are 0.073 apart in CL were both situated near the center of the national CL distribution, the one with greater CL would be about “1.5 percent of the population” ahead of the other (0.040×0.340). Since there are about 200 million 18-65 year-olds in the U.S. (our sample’s age range), this CL advantage around the middle of the national CL distribution would be about 3,000,000 people. Given the significant CL/network interaction in model 10 (0.013), the CL advantage would increase *for the same CL level* as the individual’s network strength grows. This dynamic is visualized in Figure 10. The chart on the left is based on the CL effect from model 2 (no CL/network interaction). The one on the right depicts how the CL effect on employment security interacts with network strength, based on estimates from model 8 in Table 3. The greater the network strength score, the more pronounced the CL effect on employment security (a similar interaction pattern is observed by age, gender, race/ethnicity, and education).

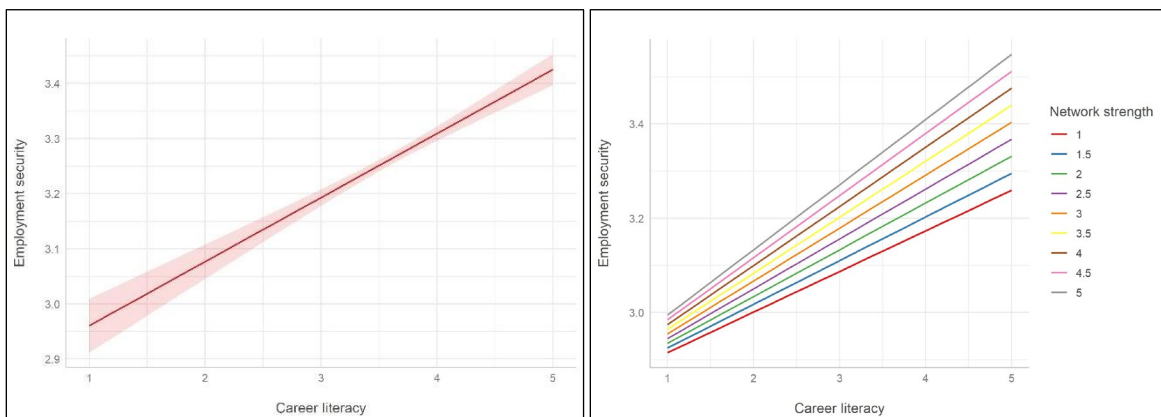


Figure 10. Career literacy effects on employment security.

The covariate effects in Table 3 are also relevant. Age effects are introduced in model 5. As expected, the older the individual, the greater the employment security. However, these effects diminish as other controls are included in subsequent models. In model 8, age effects are small and, except for two of them, are statistically weak. This indicates that:

- *Insight 18: Net of CL and network strength, employment security over the life course is inequitable along lines of race/ethnicity, gender, education, household structure, motherhood, income, and occupational sector.*

In model 5, race/ethnicity and gender effects are estimated. The average Black and Hispanic respondent is behind the average White one, and the average female is behind the average male. The gender effect persists across subsequent models, but the racial effect does not. Accounting for college attainment (in model 6) nullifies the Black disadvantage and reduces the Hispanic disadvantage. In model 7, accounting for household structure and income flips the race/ethnicity effects to positive and strongly reduces the education effect. The average Black respondent outcompetes the average White one in terms of employment security when the two have equity in marital/cohabitation status, children, motherhood, and income. This pattern holds in model 8, accounting for occupational sector and local labor market conditions, but the main effect of education is nullified, indicating how the role of college attainment on employment security is tied in part to occupational track and location.

CONCLUSION AND SUMMARY OF PRINCIPAL FINDINGS

Career literacy is an increasingly important asset in a rapidly changing landscape of occupations and employment. It denotes greater capacity for career planning and exploration, and for self-development and self-presentation. By enabling more informed decision-making about work and employment, career literacy helps the individual position themselves more effectively in relation to current and evolving economic conditions. We find that career literacy (CL) has a strong

relationship with employment security that is robust to effects of age, gender, race/ethnicity, education, income, household structure, parental status, occupational sector, and geographic location. Its effect is stronger for individuals with greater network strength. CL has received limited attention in workforce development and is used in loosely defined terms within education and public policy debates. Given its implications for employment security, cultivating CL is beneficial not only for individuals, but also for employers and the broader economy. The more “employment secure” the members of a workforce, the more stable and vibrant the labor market and the economy as a whole.

However, there are critical gaps within the U.S. population regarding CL. Marginalized racial/ethnic minorities, women, and individuals without a college degree suffer from lower CL. Thus, efforts to cultivate CL in equitable ways can contribute to bridging important demographic inequalities in employment security. Such efforts may also be important in disrupting enduring gendered and racialized patterns in American social structure and occupational system and to help foster increased college attainment. While college attainment itself contributes to higher CL along with professional credentials for high-skill work, cultivating CL in pre-college life stages can pivot more individuals toward higher education as well as additional CL and broadened occupational options and opportunities. Since CL improves by age, starting its cultivation early is consequential in relation to other demographic traits as well, such as gender and race/ethnicity. These inferences help set the stage for two final insights:

- *Insight 19: While efforts to cultivate CL are beneficial in any life stage, even better accumulated outcomes are likely to result from starting as early as possible before individuals reach college age.*
- *Insight 20: Higher CL in early ages can help increase one’s chances to plan educational and occupational pathways that can include college attainment. One can construct career plans that eventually include a college degree as a result of early CL development.*

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APPENDIX

Table A1. Gender and race/ethnicity differences in career literacy by age

Age	Male	Female	White	Black	White	Hispanic	Black	Hispanic	Difference	t
<20	3.481	3.448							0.032	0.557
20-24	3.517	3.496							0.021	0.957
25-29	3.668	3.689							-0.020	-0.804
30-34	3.755	3.920							-0.165	-7.838 ***
35-39	3.747	3.895							-0.148	-7.676 ***
40-44	3.690	3.882							-0.192	-9.755 ***
45-49	3.625	3.820							-0.195	-9.341 ***
50-54	3.600	3.698							-0.098	-4.400 ***
55+	3.515	3.605							-0.090	-4.360 ***
<20			3.479	3.445					0.034	0.462
20-24			3.528	3.506					0.022	0.731
25-29			3.663	3.727					-0.063	-1.781 *
30-34			3.892	3.826					0.066	1.998 **
35-39			3.869	3.784					0.084	2.366 **
40-44			3.823	3.868					-0.045	-1.234
45-49			3.734	3.776					-0.042	-1.081
50-54			3.636	3.731					-0.095	-2.215 **
55+			3.552	3.618					-0.066	-1.589
<20					3.479	3.501			-0.022	-0.326
20-24					3.528	3.517			0.011	0.414
25-29					3.663	3.673			-0.010	-0.345
30-34					3.892	3.747			0.144	5.352 ***
35-39					3.869	3.741			0.127	4.793 ***
40-44					3.823	3.702			0.121	4.360 ***
45-49					3.734	3.748			-0.014	-0.466
50-54					3.636	3.671			-0.034	-0.998
55+					3.552	3.563			-0.011	-0.301
<20							3.445	3.501	-0.056	-0.715
20-24							3.506	3.517	-0.011	-0.356
25-29							3.727	3.673	0.053	1.386
30-34							3.826	3.747	0.079	2.087 **
35-39							3.784	3.741	0.043	1.052
40-44							3.868	3.702	0.166	3.912 ***
45-49							3.776	3.748	0.028	0.597
50-54							3.731	3.671	0.061	1.170
55+							3.618	3.563	0.055	1.049

*** $p \leq 0.010$; ** $p \leq 0.050$; * $p \leq 0.100$:

Table A2. Items of instrumental variable composites

Career literacy instruments

Future vision

I take each day as it is rather than try to plan it out

does not describe me at all(1) ... totally describes me(5)

I often dream about what my life will be like in years ahead

does not describe me at all(1) ... totally describes me(5)

Work exploration

I like to thoroughly study the user's manual before I operate a new gadget

does not describe me at all(1) ... totally describes me(5)

Details matter to me in everything I do

does not describe me at all(1) ... totally describes me(5)

Advancement orientation

I can never learn enough about things that interest me

does not describe me at all(1) ... totally describes me(5)

I can manage to appear competent even when I am not an expert on something

does not describe me at all(1) ... totally describes me(5)

Network strength instrument

When at a social gathering, I deliberately seek people I have not before

does not describe me at all(1) ... totally describes me(5)

When meeting someone new, I can readily strike up a conversation

does not describe me at all(1) ... totally describes me(5)
