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Adolescent Work Experience and Self-efficacy

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Abstract

Purpose of this paper—To assess the relationship between high school work experiences and self-efficacy.

Design/methodology/approach—OLS regressions are applied to longitudinal data from the Youth Development Study to examine work experiences and self-efficacy.

Findings—The analyses indicate that employment fosters self-efficacy in multiple realms. Occasional and sporadic workers exhibit less self-efficacy than steady workers. Supervisory support may be especially important in enhancing adolescents' confidence as they anticipate their future family lives, community participation, personal health, and economic achievements.

Research limitations/Implications—This research includes only a small set of the work dimensions that may be important for adolescents. Ethnography and in-depth interviews are recommended to further explore the subjective and emotional dimensions of youth work experiences.

Practical implications—In developing policies and guidance, educators, parents, and employers should be aware that steady employment and supervisory support enhance the development of adolescent self-efficacy.

Original value of paper—This paper finds evidence that adolescent work experiences spill over to influence youth's developing confidence in the realms of family life, community and personal health. It also suggests that sporadic and occasional work patterns can impair the development of self-efficacy in adolescence.

Keywords

self-efficacy; adolescence; employment; work quality

Introduction

According to Liebel (2004), the positive role that work can play in young people's lives has been largely ignored. In exploring child labor globally, he argues that the bourgeois notion of child labor sees it as a relic in modern societies, and a regrettable occurrence in impoverished countries where working minors have been criminalized - despite the necessity of their employment for the survival of themselves and their families. Many working children are exposed to physical danger and psychological trauma. The benefits of work for children occur when work does not pose such risks, when it is interesting and challenging, and when it constitutes a site of learning and democratic participation. Liebel contends that children - both in the global North and the global South - see working as something to take pride in because they can contribute to their families and learn new skills.

This study examines how work investment and the quality of work experiences during the high school years influence the development of adolescents' sense of confidence as they look forward to adulthood in the United States. Comparatively speaking, the Western conception of self is unique because it emphasizes independence and stresses the individual and his/her differences from others (Markus and Kitayama, 1991). In this context, personal self-efficacy becomes of paramount importance in achievement. Self-efficacy, referencing the belief in one's ability to reach a goal (Bandura, 1997), is a crucial element in success-related behavior (Betz and Hackett, 1981). How people perceive their personal efficacy influences when and how they will initiate coping behavior in stressful situations and the effort and persistence they apply when initial coping fails (Bandura, 1977).

Self-efficacy is quite malleable, subject to influence from multiple sources of information (Bandura, 1977): personal performances; vicarious experiences; verbal persuasion; and physiological responses. Personal performance, or demonstrated achievement, is of special importance to this study; successes and failures affect self-efficacy as well as other control orientations (Bandura, 1977; Deci and Ryan, 1987; Mainquist and Eichorn, 1989). We are particularly interested in experiences in the work sphere.

Adolescence is a highly formative time for the development of identity (Erikson, 1963) and aspirations for the future (Schneider and Stevenson, 1999). Adolescents begin to anticipate their future involvements in the various realms of adult life, including work, family, and community, and may think about their own future health, with varying degrees of confidence. When youth have a stronger sense of efficacy they are more likely to "select challenging tasks, set high and concrete goals, and form well-structured sequences" of plans and actions (Skinner, Conell, and Zimmer-Gembeck, 1998:11). Overall, adolescents' expectations of their own competence predict success in adulthood (Mainquist and Eichorn, 1989).

Some empirical findings support a conceptualization of self-efficacy as specific to particular arenas or domains of functioning (Bandura, 1997; Grabowski, Call, and Mortimer, 2001). Bandura (1981) argues that perceived self-efficacy is dependent on context, is domain-specific, and varies in strength. For example, academic self-efficacy is positively related to academic goal-setting and achievements (Bandura et al., 1996; Mboyo, 1989; Pintrich and Degroot, 1990; Zimmerman, Bandura, and Martinez-Pons, 1992). Economic self-efficacy predicts high school students' behaviors pertinent to the educational and occupational realms, whereas general control orientation does not predict educational and occupational attainment (Grabowski, Call, and Mortimer, 2001). Occupational and career self-efficacy are essential elements in making career choices (Betz and Hackett, 1986; Lent and Hackett, 1987; Taylor and Popma, 1990).

Whereas Bandura (1997) argues that domain-specific self-efficacy is most strongly related to activities and observations in parallel domains, we invoke the idea of spillover. Spillover (or "learning generalization") is a general concept that affirms that experiences in one domain of life can directly affect outcomes in other domains (Kohn and Schooler, 1983). The goal of this project is to extend the understanding of how features of work experience spill over into other domains of adolescents' lives. We hypothesize that working affects economic self-efficacy as well as efficacy in other domains, including family life, community participation, and personal health.

We examine two broad categories of work experience. The first is the pattern of investment in employment, characterized by duration and intensity. In view of prior findings linking work experiences to early adult attainments (Staff and Mortimer, 2007), we hypothesize that steady work will have positive self-efficacy outcomes. Steady employment is compatible with other adolescent roles, such as school and extracurricular activities (Shanahan and Flaherty, 2001).

Such work is likely to generate confidence not only in the capacity to maintain the kinds of jobs that adolescents typically hold, but also in the capacity to be successful in higher education and adult life.

Secondly, we consider the quality of the worker's experiences in the work setting, including on-the-job learning opportunities, supervisory support, job security, and stress. These qualities have the potential to influence anticipations about future involvements across various domains of adult life.

Working teens have greater opportunities, in comparison to their non-employed peers, to develop relationships with adults that are distinct from those in the family and school. One relationship with special meaning is that between the employee and supervisor. The supervisor has considerable power in this relationship; the supervisor can hire, fire, extend or cut work hours. The supervisor may also influence pay rates and important conditions of work. Supervisors may constitute an important source of social capital, providing recommendations to future employers and the capacity to obtain employment. If adolescents experience positive relationships with their supervisors, these relationships are likely to increase confidence and promote a conception of adult work, and perhaps adulthood in general, as a realm of opportunity. Adult employment provides the economic resources to form and to sustain economically viable families; work confers social status in the community.

On-the-job learning opportunities constitute another mechanism through which work may influence adolescents' efficacy outcomes. Such opportunities, and the actual learning that results, could reinforce a sense of accomplishment and the young person's confidence in the ability to perform the required tasks of future employment. Learning opportunities at work promote the development of human capital, the capacity to be a productive adult worker. What is learned at work may also enhance skills necessary for effective participation in neighborhood civic and community organizations, increasing individuals' influence in those settings.

We expect that job security during adolescence will support feelings of stability in the workplace and this positive orientation will likewise foster a sense of control. Anticipations of success in the occupational realm, linked to good supervisory relationships, learning opportunities, and security, could also promote expectations of good health; an extensive literature documents the socioeconomic gradient in health (Frytak, Harley, and Finch, 2003).

Finally, we hypothesize that on-the-job stress will negatively impact self-efficacy (especially in the short-term), just as it fosters depressed mood (Shanahan, et al., 1991; Mortimer, et al., 2002) and reduces global self-efficacy (Mortimer and Staff, 2004). Stress in the workplace may threaten the image of the self as a successful worker. It might also diminish expectations of success in other arenas.

In this article we explore whether gender moderates the effects of work investment patterns and experiences in influencing self-efficacy outcomes. Male participants report higher economic self-efficacy than female participants in the 10th and 11th grades (Dennehy and Mortimer, 1993) but not in the 12th (Johnson and Mortimer, 2000). However, 12th grade girls are more likely than boys to anticipate work-family conflicts (Johnson, Oesterle, and Mortimer, 2001). Although young women's labor force participation has approached the male rate in recent years, the role of worker continues to be more salient and obligatory for men than for women. We therefore expect that work experiences will be more important determinants of future efficacy orientations for adolescent males than females.

Methods

Data source

Data from the first four waves of the Youth Development Study (YDS), a prospective longitudinal study of youth from Saint Paul, Minnesota, were used to examine the relationship between adolescent work experiences and self-efficacy at the time of high school graduation. The study began in 1988 with a sample of 9th graders randomly selected from a list of all enrolled 9th graders in Saint Paul Public Schools. From this sample, 1,010 consented and received parental permission to participate.

Questionnaires were completed annually in school by the participants; those youth who were not in school on the day of survey administration were mailed the survey. Nearly 93 percent of the youth who completed the survey in wave 1 (9th grade) also completed the wave 4 (12th grade) survey. (Table 1 describes the study design.) Of the participants in the wave 1 survey, 52 percent are female; 74 percent are white; and 92 percent were born in the U.S. Two-thirds (68%) were living in two-parent families in the 9th grade. Although these youths are not representative of all youths in the U.S., they do represent youths attending Saint Paul Public Schools at the time of the study.

Measures

The YDS survey addresses multiple domains of life including family, education, work, community, and psychological orientations, including self-efficacy. Because family socioeconomic level influences adolescents' employment patterns and the quality of their work (Mortimer, 2003), and is also an important determinant of their aspirations for the future, we control family income, parents' education (in two-parent households the higher of the two), family composition (two-parent family vs. all other family types), nativity (born in the United States vs. elsewhere), race (white vs. non-white), gender, and grade point average (GPA). (We would have liked to make finer breakdowns, e.g., by specific racial/ethnic status, but the size and homogeneity of the sample precluded such differentiation.) Background variables were measured in wave 1. Based on a complete work history from waves 2 through 4 (10th to 12th grades), work investment patterns were categorized as follows. High duration workers were employed, on average, 22 of 24 months of observation; low duration workers were employed only about 11 months. High intensity workers were employed, on average, more than 20 hours per week; low intensity workers were employed 20 or fewer hours. The cross-classification of these dimensions yielded five work investment patterns: "most invested" (high duration/high intensity), "steady" (high duration/low intensity), "sporadic" (low duration/high intensity), "occasional" (low duration/low intensity), and "no work." All work investment patterns refer to periods when school was in session during the 10th through 12th grades (summer work is not considered). "Steady," "most invested," and "occasional" workers each constitute about one-quarter of the total and "sporadic" workers constitute 18 percent. Seven percent of the youth had no paid employment during high school. In our analyses, work investment patterns are represented by dummy variables with the "steady" group as the reference; this pattern is most strongly associated with positive socioeconomic outcomes in young adulthood (Staff and Mortimer, 2007; Mortimer 2003). Respondents who did not work during high school were excluded from the analyses presented here. We do not know to what extent patterns of work investment are attributable to the character of jobs (e.g., short-term or seasonal work) or to youth's preferences, though the work investment patterns are consistent with youth's goals, interests, and resources upon entry to high school (Mortimer, 2003).

Work quality variables, based on jobs held at the time of each annual survey, are also included (see Appendix). To create an index of learning opportunities, responses to five items asking respondents how much their jobs helped them develop generic job skills were summed. These

items were positively skewed. For example, 42 percent of youth in wave 4 reported that their jobs developed their ability to follow directions “a great deal.” Reports about the supervisor were also quite positive; for example, 40 percent said that their supervisor was “almost always” willing to listen and 30 percent said their supervisor was “often” willing to listen to their problems and help find solutions. An index of work demands is based on six stressors. Only a minority of wave 4 respondents indicated high levels of “work demands and stress;” for example, 13 percent said their jobs “always” or “often” held them responsible for things that are outside their control, and 35 percent experienced time pressures to this degree. Finally, the job security measure asked respondents if they thought they could keep their job as long as they wanted it; in wave 4, 73 percent of participants said “yes.” The measures of work quality are based on average scores for current jobs, that is, jobs held at the time of the survey, in the 10th, 11th, and 12th grades. Thus, the work quality variables can be based on one, two, or three occasions of employment experience.

Two constructs reference adolescents’ sense of efficacy in the 10th and 12th grades: the first refers to the economic domain; the second references multiple non-economic realms. We call the latter construct “generalized self-efficacy.” The economic self-efficacy index included participants’ evaluations of the chances of having a job that pays well, owning a home, and having a job they enjoy doing. Generalized efficacy is represented by five items asking participants to rate their chances of: having a happy family life, being in good health most of the time, being able to live wherever they want in the country, being respected in their community, and having good friends they can count on. Table 2 presents additional information about participants’ work investment patterns, their work quality experiences, and their self-efficacy scores.¹

Regression models

Two Ordinary Least Squares (OLS) regression models were estimated using SPSS 15.0 predicting each dependent variable. The independent variables are indicators of social background, work investment, work quality, and the lagged dependent efficacy variables. Because the lagged dependent variables are included (measured in the 10th grade), significant effects of the work variables may be interpreted as indicating change over time.

To ascertain whether the work investment and quality variables have different effects on boys’ and girls’ self-efficacy, interaction terms consisting of the product of gender and each work variable were examined in preliminary analyses. Because none of these interactions were significant, they were excluded from the final models.

Findings

As might be expected given the motivation to maintain consistency in beliefs about the self over time (Gecas, 1982), we find significant stability for the two self-efficacy variables from grades 10 to 12 (see Table 3). Youth from families with higher income, and those who have higher grades, have greater economic efficacy. There is also evidence that steady work is beneficial for self-efficacy development. Even with social background, 10th grade self-efficacy, and work quality controlled, occasional workers feel significantly less efficacious in the economic realm than the steady workers, who are employed for a much longer period (approximately twice as long, while also limiting their hours of work on average to 20 or fewer per week). Thus, the occasional workers do not think they will be as well-off economically in the future as those youth who pursue near-continuous low intensity work. Sporadic workers

¹Exploratory factor analysis of items representing economic efficacy, generalized self-efficacy, Pearlin Mastery Scale items, and the total Pearlin Mastery Scale score, indicated that these three constructs are empirically distinct (i.e., Pearlin mastery, economic self-efficacy, and generalized self-efficacy).

also feel significantly less efficacious than steady workers with respect to generalized self-efficacy. Occasional and sporadic workers' relative lack of work experience, in comparison to steady workers, apparently gives them little basis for confidence as they anticipate their adult roles. Interestingly, the most invested workers, who worked during high school at high duration and high intensity, feel no different from the steady workers with respect to both dimensions of self-efficacy. The general pattern points to the importance of investment in employment during high school. There appears to be some psychological payoff that accrues to early attachment to the labor force, as manifest by the steady and the most invested workers, with regard to self-efficacy in the 12th grade.

Among the work quality variables, supervisory support stands out as significantly influencing both economic and generalized efficacy. Supervisors appear to influence teenagers' confidence in domains related to future work and career planning (economic) as well as more generalized self-efficacy. Contrary to our expectations, we find that specific learning opportunities at work, work demands/stress, and job security are not related to either economic or generalized self-efficacy.² Interestingly, social background also has relatively little impact on 12th grade self-efficacy when 10th grade efficacy and the work-related variables are controlled.

Conclusion

Whereas it is clearly understood that adult self-efficacy is responsive to occupational successes and failures, this project indicates occupational experiences are also formative influences on adolescents' self-efficacy. The opportunity to test a key adult role, through part-time work, is an important part of the process of growing up in the U.S. (Mortimer, 2003). Our results suggest that teenage employment affects self-efficacy, not only in the economic domain, but also with respect to anticipations about family life, the community domain, and personal health. With regard to the processes underlying self-efficacy development, we find evidence for "attribution," as economic self-efficacy grows with practice in the work role. In comparison to the "occasional" workers, the "steady" and "most invested" workers have had more opportunity to observe and learn from their own successes (as well as failures) in the workplace. For youth who have spent little time at work, the capacity to meet the challenges of the work environment may be much less clear.

The negative impact of occasional work is especially noteworthy. The implicit model underlying much of the critique of adolescent work is premised on the assumption of a zero-sum game: the less work the better. According to this perspective, most teenage work is so menial that whatever skills or knowledge that can be gained from employment are obtained rather quickly. As a result, the optimal strategy would be to work only a small amount of time so as to enable investment in other, more developmentally beneficial spheres. This line of reasoning is faulty because, to our knowledge, there is no evidence that youth substitute non-working hours with involvements in school, extracurricular activities, volunteering, or other beneficial pursuits. It is also not supported by the data at hand. According to the zero-sum model, one would expect to find the most beneficial outcomes for employed youth who work just a little, the occasional workers. We find, to the contrary, that youth who work for much longer periods of time, the steady workers, have higher self-efficacy in the economic realm than occasional workers. Even greater investment in employment, as exhibited by the "most invested" workers, does not appear to diminish confidence as youth anticipate their economic futures: there was no significant difference in economic self-efficacy between the most highly invested and the steady workers. Finally, sporadic workers, who were employed only about

²Earlier analysis showed work demands, or stressors, diminished teenagers' global sense of confidence as indicated by the Pearlin Mastery Scale (Mortimer and Staff, 2004).

half the time, manifested lower efficacy across multiple spheres than the steady workers who were employed 22 of the 24 months of observation.

We also hypothesized that high quality work experiences would play an important role in the development of adolescent self-efficacy. Consistently, support from the supervisor has positive impacts on economic efficacy, as well as on generalized efficacy. This study thus indicates support for processes of “verbal persuasion” or “reflected appraisals” that are inherent in supervisory support. This person surely becomes a “significant other” for most employed teenagers, given the supervisor’s control over valued outcomes.

Supervisors who are close, communicative, and helpful to their supervisees likely project on to those inexperienced workers confidence that they can, in fact, successfully execute their job tasks. Supervisors may also become important role models to their teenage charges, supporting Bandura’s notions about vicarious experiences—adolescents likely make inferences about their capacities based on their observations of their supervisors’ competent achievements.

Contrary to our hypothesis, demands or stressors experienced in work settings had no significant impacts on self-efficacy. These stressors may act on adolescents in countervailing ways, in effect cancelling one another out. Stressors might induce psychological strain or “distress,” reducing the sense of control over workplace outcomes and diminishing the anticipation of future efficacy in this (or other) spheres. But stressors may also challenge the worker, inducing effective coping responses and “steeling” the adolescent (Rutter, 1985) when confronted with future stressors. This process of “eustress” (Shanahan and Mortimer, 1996) would enhance resilience and self-efficacy. Prior work indicates short-term “distress” but longer-term “eustress” with respect to the effects of adolescent work stressors on global efficacy outcomes (Mortimer and Staff, 2004).

Like stressors, learning opportunities at work and job security exhibited no independent effects on these efficacy-related outcomes. It is possible that these measures do not reflect the quality of work dimensions that are particularly important for adolescents. For example, we do not know how successful the adolescents were (or perceived themselves to be) in accomplishing their particular job assignment or workplace goals. It is also possible that our work quality variables have limited impacts because they represent only a limited portion of many adolescents’ work experiences during high school. Whereas our measures of work investment (duration and intensity) are continuous, based on retrospective reports of jobs held between surveys, the measurement of work quality only refers to jobs held at the time of each survey. Limited variance in the work stressors may have also contributed to their lack of explanatory power. It would be useful to know more about youths’ subjective and emotional reactions to their jobs, the more nuanced ideas and orientations that are not conducive to measurement in survey research. More qualitative methodologies, including in-depth interviews and ethnographic observations, could reveal more about the distinctive work experiences that are particularly important to teenagers, and their impacts on psychological development.

Our results, though consistent in some respects with Bandura’s theory of self-efficacy, are somewhat contrary to Bandura’s (1997) notions regarding the “domain-specificity” of achievements and efficacy. We find that support from the supervisor “spills over” to foster confidence in both economic and non-economic realms.

Finally, while we hypothesized that work experiences would play a more important role in the development of domain-specific self-efficacy for adolescent boys than for girls, neither the work investment patterns nor the work quality variables had significantly different effects for boys and girls

These findings underscore the value of employment during adolescence, and can inform youth-oriented policies and programs. Youth who accrue more experience in the labor force by the time of their senior year in high school are found to look toward the future more confidently than those who limit their employment. Supervisors of teenage workers have special responsibility to be supportive to their teenage employees, given the pervasive impacts such support can have. Teachers, guidance counselors, and parents should help youth balance school and work so they can maintain their employment while participating in academic and extracurricular life. By developing smart policies that induce positive youth work experiences, parents, employers, and policy-makers can play an important positive role in young peoples' self-efficacy development.

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References

- Bandura A. Self-Efficacy: Toward a Unifying Theory of Behavior Change. *Psychological Review* 1977;84(2):191–25. [PubMed: 847061]
- Bandura, A. Self-referent Thought: A Developmental Analysis of Self-Efficacy. In: Flavell, JH.; Ross, L., editors. *Social Cognitive Developmental: Frontiers and Possible Futures*. Cambridge University of Press; New York: 1981. p. 200-239.
- Bandura, A. *Self-Efficacy: the Exercise of Control*. W.H. Freeman and Company; New York: 1997.
- Bandura A, Barbaranelli C, Caprara GV, Pastorelli C. Multifaceted Impact of Self-Efficacy Beliefs on Academic Functioning. *Child Development* 1996;67(3):1206–1222. [PubMed: 8706518]
- Betz NE, Hackett G. The Relationship of Career-Related Self-Efficacy Expectations to Perceived Career Options in College Women and Men. *Journal of Counseling Psychology* 1981;28(5):399–410.
- Betz NE. Applications for Self-Efficacy Theory to Understanding Career Choice Behavior. *Journal of Social and Clinical Psychology* 1986;4:279–289.
- Deci EL, Ryan RM. The Support of Autonomy and Control of Behavior. *Journal of Personality and Social Psychology* 1987;53(6):1024–37. [PubMed: 3320334]
- Dennehy, K.; Mortimer, JT. Work and Family Orientations of Contemporary Adolescent Boys and Girls. In: Hood, JC., editor. *Men, Work, and Family*. Sage; Newbury Park, CA: 1993. p. 87-107.
- Erikson, E. *Childhood and Society*. Norton; New York: 1963.
- Frytak, JR.; Harley, CR.; Finch, MD. Socioeconomic Status and Health over the Life Course: Capital as a Unifying Concept. In: Mortimer, JT.; Shanahan, MJ., editors. *Handbook of the Life Course*. Kluwer Academic/Plenum Publishers; New York: 2003. p. 263-246.
- Gecas V. The Self-Concept. *Annual Review of Sociology* 1982;8:1–33.

- Grabowski LJS, Call KT, Mortimer JT. Global and Economic Self-Efficacy in the Educational Attainment Process. *Social Psychology Quarterly* 2001;64(2):164–179.
- Johnson, MK.; Mortimer, JT. Work-Family Orientations and Attainments in the Early Life Course. In: Parcel, TL.; Cornfield, DB., editors. *Work and Family: Research Informing Policy*. Sage Publications; Thousand Oaks, CA: 2000. p. 215-248.
- Johnson, MK.; Oesterle, S.; Mortimer, JT. Adolescents' Anticipations of Work-Family Conflict in a Changing Societal Context. In: Owens, TJ.; Sandra Hofferth, S., editors. *Children of the Millennium: Where Have We Come From, Where Are We Going?*, *Advances in Life Course Research*. Vol. 6. JAI, Elsevier Science Ltd; Greenwich, CT: 2001. p. 233-261.
- Kohn, ML.; Schooler, C. *Work and Personality: an Inquiry into the Impact of Social Stratification*. Ablex Publishing Corp; Norwood, NJ: 1983.
- Lent RW, Hackett G. Career Self-Efficacy: Empirical Status and Future Directions. *Journal of Vocational Behavior* 1987;30(3):347–382.
- Liebel, M. *A Will of Their Own: Cross-Cultural Perspectives on Working Children*. Zed Books; London, UK: 2004.
- Mainquist, S.; Eichorn, D. Competence in Work Settings. In: Stern, D.; Eichorn, D., editors. *Adolescence and Work: Influences of Social Structure, Labor Markets, and Culture*. Lawrence Erlbaum; Hillsdale, NJ: 1989. p. 327-367.
- Markus HR, Kitayama S. Culture and the Self: Implications for Cognition, Emotion, and Motivation. *Psychological Review* 1991;98(2):224–253.
- Mortimer, Jeylan T. *Working and Growing Up in America*. Harvard University Press; Cambridge, MA: 2003.
- Mortimer JT, Harley C, Staff J. The Quality of Work and Youth Mental Health. *Work and Occupations* 2002;29(2):166–197.
- Mortimer JT, Staff J. Early Work as a Source of Developmental Discontinuity During the Transition to Adulthood. *Development and Psychopathology* 2004;16(4):1047–1070. [PubMed: 15704827]
- Pintrich PR, De Groot EV. Motivational and Self-Regulated Learning Components of Classroom Academic Performance. *Journal of Educational Psychology* 1990;8(1):33–40.
- Rutter M. Resilience in the Face of Adversity: Protective Factors and Resistance to Psychiatric Disorder. *British Journal of Psychiatry* 1985;147(6):598–611. [PubMed: 3830321]
- Schneider, B.; Stevenson, D. *The Ambitious Generation: America's Teenagers, Motivated but Directionless*. Yale University Press; New Haven: 1999.
- Shanahan MJ, Flaherty BP. Dynamic Patterns of Time Use in Adolescence. *Child Development* 2001;72(2):385–401. [PubMed: 11333073]
- Shanahan MJ, Finch M, Mortimer JT, Ryu S. Adolescent Work Experience and Depressive Affect. *Social Psychology Quarterly* 1991;54(4):299–317.
- Shanahan, MJ.; Mortimer, JT. Understanding the Positive Consequences of Psychosocial Stress. In: Markovsky, B.; Lovaglia, MJ.; Simon, R., editors. *Advances in Group Processes*. Vol. 13. JAI Press; Greenwich, CT: 1996. p. 189-209.
- Skinner EA, Connell JP, Zimmer-Gembeck MJ. Individual Differences and the Development of Perceived Control. *Monographs of the Society for Research in Child Development* 1998;63(2–3):1–220.
- Staff J, Mortimer JT. Educational and Work Strategies from Adolescence to Early Adulthood: Consequences for Educational Attainment. *Social Forces* 2007;85(3):1169–1194.
- Taylor KM, Popma J. An Examination of the Relationships among Career Decision-Making Self-Efficacy, Career Salience, Locus of Control, and Vocational Indecision. *Journal of Vocational Behavior* 1990;37(1):17–31.
- Zimmerman BJ, Bandura A, Martinez-Pons M. Self-Motivation for Academic Attainment: The Role of Self-Efficacy Beliefs and Personal Goal Setting. *American Educational Research Journal* 1992;29(3):663–676.

Appendix

Appendix

Work quality measures

Three of the four work quality variables are indices derived from the sum of individual item responses (when constituent questions had different numbers of response options, they were recoded to yield the same response metric). For the specific learning index, the lead question was “how much has your job helped you to develop the following abilities?” Five “abilities” followed: to follow directions, to get along with people, to be on time, to take responsibility for your work, to manage your money. (Response options: 1=not at all to 4=a great deal). For the supervisory support index, the items are: “how often is your supervisor willing to listen to your problems and help find solutions?” (1=never to 5=almost always) and “how close do you feel to your supervisor?” (1=not close at all to 4=extremely close). The work demands index is based on the questions, “how often is there time pressure on your job?”; “how often are you exposed to excessive heat, cold, or noise at work?”; “how often are you held responsible for things that are really outside your control?” (1=never to 5=almost always); “my job requires that I work very hard”; “I feel drained of my energy when I get off work”; “I have too much work to do everything well”; “To satisfy some people on my job I have to upset others”; and “Sometimes I am unclear about what I have to do on my job” (1=not at all true to 4=very true). There is one indicator of job security: “do you think you can stay on your present job as long as you like?” (1=no, I could be laid off at any time, 2=I probably can keep this job as long as I want, 3=yes, I can definitely keep this job as long as I want.) These work quality indicators were averaged over wave 2 through wave 4 (10th–12th grades). The youth responded to these questions only if they were currently employed. As a result, some participants who were employed during high school lacked responses to the work quality questions because they were not working at the time of each annual survey. In these cases (approximately 15 percent), mean values for the missing indices were assigned.

Self-efficacy measures

Three items (“What are the chances that: you will have a job that pays well, you will be able to own your own home, you will have a job that you enjoy doing?”) were collated to create an economic self-efficacy index. The items “What are the chances that you will have a happy family life?” “What are the chances that you will be in good health most of the time?” “What are the chances that you will be able to live wherever you want in the country?” “What are the chances that you will be respected in your community?” and “What are the chances that you will have good friends you can count on?” were used to assess participants’ generalized self-efficacy, respectively, in the 10th and 12th grades, (1=very low, 2=low, 3=about fifty-fifty, 4=high, 5=very high).

Table 1

Youth Development Study Research Design

	Administration in School			
Wave	1	2	3	4
Year	1988	1989	1990	1991
Grade Level	9	10	11	12
Age	14–15	15–16	16–17	17–18
Retention Rate	*	96.2%	95.4%	92.8%

* 1,010 youth consented to participate in Fall 1987, and 1,000 of these completed wave 1 surveys.

Table 2
Work Investment and Quality Variables for Workers*

Variables	N	Mean	Standard deviation	Range
Most invested (high duration/high intensity)	825	0.280	0.449	0–1.0
Steady (high duration/low intensity)	825	0.198	0.398	0–1.0
Sporadic (low duration/high intensity)	825	0.268	0.443	0–1.0
Occasional (low duration/low intensity)	825	0.255	0.436	0–1.0
Specific learning opportunities	702	15.210	3.000	5.0–20.0
Supervisory support	551	6.461	1.768	1.3–10.0
Work demands and stress	679	19.686	4.786	8.7–34.8
Job security	705	2.673	0.425	1.0–3.0
Economic self-efficacy	824	11.915	2.185	3.0–15.0
Generalized self-efficacy	816	31.757	4.703	9.0–40.0

* Note. Non-workers are excluded from this analysis.

Table 3
The Effects of Work Investment and Quality on Self-efficacy Domains (OLS Regressions)

		Economic Efficacy	Generalized Efficacy
Constant		5.156 ***	8.356 ***
Background variables	w1 family income	0.081 *	0.072
	w1 parents' highest education	0.047	-0.016
	w1 family composition (dummy 2-parent family)	-0.224	0.228
	dummy born in US	-0.307	-0.668
	dummy white vs. nonwhite	0.067	0.003
	gender	-0.015	-0.086
	w1 GPA	0.070 *	-0.026
Lagged self-efficacy variables from w1		0.406 ***	0.429 ***
Work investment pattern variables (reference variable: steady)	most invested	0.128	-0.261
	sporadic	-0.078	-0.611 *
	occasional	-0.495 *	-0.366
Work quality variables	specific learning	0.009	0.063
	supervisory support	0.140 **	0.229 ***
	work demands	-0.011	0.011
	job security	0.223	0.365
Model fit statistics	adjusted R ²	0.233	0.237
	F	15.968 ***	16.126 ***
	d.f.	741	731

*
p≤0.05

**
p≤0.01

p≤0.001