

Subgroup Differences in Work Values: Two Longitudinal Studies During the School to Work
Transition

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ABSTRACT

Work values influence important work outcomes such as career choice, job performance, job satisfaction, and organizational citizenship behaviors. Despite their important implications, little research has examined how work values differ across genders, ethnicities, age groups, and socioeconomic statuses. The present study used two longitudinal samples of recent graduates from community colleges (sample 1) and universities (sample 2) during their transition from school to work. This paper primarily draws on Eagly's (1987) Social Role Theory and Gottfredson's (1981) Circumscription and Compromise Model to explain how work values can develop differently for people from different backgrounds. Results indicate differences in work values primarily based on gender and socioeconomic status as well as some differences across ethnicity. Women placed greater importance on communal work values (e.g., altruism) while men placed greater importance on agentic work values (e.g., prestige). Participants from lower socioeconomic backgrounds placed greater emphasis on compensatory and outdoors-related work values. Whites scored lower on most work values compared to all other ethnic groups, which may have been a result of higher socioeconomic status (parental education). Altogether, these findings reveal new information about the work values of understudied populations (i.e., community college graduates) and offer a close examination of work values during the important school-to-work transition period.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	1
ABSTRACT	2
TABLE OF CONTENTS	3
LIST OF TABLES	5
LIST OF FIGURES	6
INTRODUCTION	7
WORK VALUES: CONCEPTUALIZATION AND THEORETICAL FRAMEWORKS	10
Conceptualization of Work Values	10
Theoretical Frameworks of Work Values	11
Differences in Work Values: Theoretical Explanations.....	14
EMPIRICAL FINDINGS ON SUBGROUP DIFFERENCES IN WORK VALUES	16
Socioeconomic Status	16
Ethnicity Subgroup Differences.....	17
Gender.....	18
Age and The Role of Time.....	19
Community College vs. University Samples	21
PRESENT STUDY	24
METHODS	29
Sample and Procedure.....	29
Measures	30
<i>Work Values</i>	30
<i>Gender, Age, and Ethnicity</i>	31
<i>Socioeconomic Status</i>	31
ANALYSIS	32
Descriptive Statistics and Confirmatory Factor Analysis	32
Missing Data	32
Mean-level Differences.....	33
Mean-level Changes and Rank-Order Stability	34
RESULTS	35
Mean Differences Across Subgroups.....	35
Rank-Order Stability and Mean-Level Changes.....	38
DISCUSSION	40

Demographic Differences in Work Values	41
Community College vs. University.....	43
Work Value Stability and Change During the School-to-Work Period	44
Contributions, Limitations, and Future Research	45
CONCLUSION	48
REFERENCES.....	64
APPENDICES	
A. APPENDIX A	74
B. APPENDIX B.....	76
C. APPENDIX C	78
D. APPENDIX D.....	79
E. APPENDIX E.....	80

LIST OF TABLES

1	Confirmatory Factor Loadings for Community College Graduates	20
2	Confirmatory Factor Loadings for University Graduates	21
3	Means, Standard Deviations, and Alpha Reliabilities of Work Values	23
4	All Variables Correlation Matrix of Community College Graduates	29
5	All Variables Correlation Matrix of University Graduate	35
6	Effect Sizes of Work Values Based on Ethnicity, Reflecting Differences from the Overall Mean	35
7	Effect Sizes of Work Values Based on Parental Educational Attainment	35
8	Effect Sizes of Work Values Based on Age Groups	35
9	Effect Sizes of Work Values Based on Gender	35
10	Work Value Correlations Across Waves (Rank-Order Stability)	35
11	Linear Growth Curve Models	35
12	Linear Growth Curve Models with Gender as Predictor	35
13	Linear Growth Curve Models with Parental Education as Predictor	35
14	Comparison of Community College Graduates vs University Graduates Work Value Means	34

LIST OF FIGURES

1	Linear Growth Curve Model for Community College Graduates	50
2	Linear Growth Curve Model for University Graduates	51

Subgroup Differences in Work Values: Two Longitudinal Studies During the School to Work Transition

Values are stable motivational constructs (i.e., preferences) that guide the selection of individuals' behaviors (Schwartz, 1992). More specifically, these preferences represent broad goals and life traits of individuals across different contexts and time (Rounds & Leuty, 2020). Values specifically in the context of work (i.e., work values) are related to important work outcomes such as job performance, job satisfaction, organizational citizenship behaviors, and person-environment-fit (Rounds & Leuty, 2020), making them a worthwhile topic of research for the field of industrial-organizational psychology. People's work values can determine how well they fit in with their job, organization, and in turn, predict their career choices across the lifespan (Kristoff, 1996). Moreover, how well individuals' work values match their environments (i.e., value fit) has been specifically linked to career satisfaction as well as occupational commitment, organizational citizenship behaviors, and career success (Ballout, 2007; Bretz & Judge, 1994; Cable & DeRue, 2002; Judge & Bretz, 1992; Kristof-Brown, Li, & Schneider, 2018; Young & Hurlic, 2007).

Though work values have a long history of research, there are several important issues on the topic that have yet to be researched. Firstly, most of the research on work values utilizes a limited sample demographic (i.e., predominately, White, upper-middle class university students), which is not very generalizable to the U.S. working population. Rounds & Leuty (2020) points to the scarce research on career values which includes certain important but overlooked populations in their samples, including Latino or Hispanics, Native Americans, Asians, and "non-traditional" college students (i.e., people from lower socio-economic statuses and people beyond their early 20s). Indeed, most of the research examining racial and ethnic differences in work values primarily focuses on Black vs. White Americans while ignoring other racial or ethnic groups

(Lyons, 2014). It is possible that there are differences in work values among other racial and ethnic groups, as general life values have been shown to differ across various races and ethnicities (Hofstede, 2001, 2007). It is important to understand these differences, now more than ever, as the U.S. population is becoming increasingly ethnically diverse. Over a third of the population (34%) of the United States now identifies as something other than just White (European) or just Black (African) American¹ (Jones, Ramirez, & Ríos-Vargas, 2021). Additionally, the U.S. workforce is becoming older than ever due to an aging population and an increase in people pro-longing retirement or returning to work after retirement (Toosi, 2009). An increasing percentage of people from lower socioeconomic statuses are also obtaining higher education (i.e., college degrees) in a job market that is becoming more competitive (Fry & Cillufo, 2019). Therefore, to understand the current (and future) workforce of the U.S. more accurately, it is imperative for research on work values to expand to a view that includes the perspectives of diverse races and ethnicities, socioeconomic statuses, as well as ages.

Another area for improvement within the work values literature is the use of longitudinal study designs. Empirical evidence suggests that work values can change throughout an individual's lifespan (Jin & Rounds, 2012; Sheldon, 2005). Much of this change in work values happens in the initial years of early adulthood (18-25 years), while entering the professional workforce for the first time (Rounds & Leuty, 2020). Hence, the transition from college to the workforce is a critical period for work value development, and changes during this time can contribute to important work outcomes such as work and life satisfaction (Busque-Carrier et al.,

¹ Note that race and ethnicity (though often confused) are different constructs. Race is based on phenotypic characteristics such as skin color whereas ethnicity is mostly comprised of cultural factors such as nationality, tribal affiliation, religion, language, and traditions of a particular group. In this paper I focus on ethnic differences since race is purely a phenotypic description (i.e., different races can create one ethnicity).

2021). It is therefore important for studies on work values to take these changes into consideration by implementing longitudinal designs and utilizing samples that include those who are transitioning from college to the workforce.

To address these key issues in the work values literature, I therefore propose the present study. To account for understudied demographics, my study examines similarities and differences in work values across a range of sociodemographic variables, including ethnicities, socioeconomic statuses, and ages. This study uses two types of samples comprised of graduates from community colleges (sample 1) and universities (sample 2) within the U.S. To track potential changes in work values, this study implements a longitudinal design across multiple waves within an 8-month (community college) and 6-month (university) time frame during graduates transition into the professional workforce.

As work values play an important role in guiding career choices (Rounds & Leuty, 2020), differences found among demographics in this study could potentially reveal pathways to improving the representation of women and minorities in certain careers that are less demographically diverse (e.g., via using values associated with those groups in recruitment messages; Jones, Newman, & Rounds, 2021). Moreover, the longitudinal design of this study can account for changes which individuals might experience with their work values before and after either entering the workforce or secondary levels of higher education (as well as during the job search process). This could help vocational psychologists and guidance counselors better design career pathways for students throughout their college years and beyond based on their changing values.

Work Values: Conceptualization and Theoretical Frameworks

Conceptualization of Work Values

To better understand the scope of this study, it is imperative to first define and discuss the construct of work values (and values in general). Though there is still much debate as to how values are defined, one of the more commonly accepted conceptualizations of values defines them as prioritized, trans-situational, and guiding beliefs that individuals have about desired end states or behaviors (Schwartz, 1992). Schwartz (1994) further suggests that we can define values as motivational constructs which represent broad goals across various contexts and time.

Values that pertain specifically to work (work values) have been noted as a construct not entirely distinct from other similar concepts (Rounds & Leuty, 2020). This is primarily the case between the distinction and overlap of work-specific values and life values, needs, as well as vocational interests. Though values have historically been merged with needs by some researchers (Maslow, 1954), others have emphasized a distinction between the two concepts. For example, Rokeach (1973) and Super (1995) conceptualized needs as primal necessities for survival and values as the cognitive objectives to fulfill these necessities. Further, Elizur & Sagie (1999) point out that research on life values adopts a more general perspective and thus does not distinguish work-specific values, whereas the work-values literature often proposes life values as its foundation.

Another concept closely tied and sometimes interchanged with work values is vocational interests (Dawis, 1991). Vocational interests refer to traits that reflect preferences for certain types of work activities and environments. Although the two are similar, Hansen & Weirnik (2018) point out the major differences. While interests refer to preferences for activities and can be traits (cognitive evaluations) or states (emotional functioning) that are connected to each other

(Hansen, Sullivan, & Luciana, 2011), work values refer to the preference for particular outcomes (i.e., their importance) and reflect the standards by which individuals evaluate activities and goals (i.e., what outcomes need to be provided by an activity for it to be worthwhile; Hansen et al., 2011). Thus, work values can be thought of as preferences for activities in which individuals expect to attain or satisfy their needs and values (thus, an interest can be conceptualized as one of the many manifestations of a value; Hansen & Weirnik, 2018).

Theoretical Frameworks of Work Values

The different conceptualizations of work values have led to different approaches of their measurement (Rounds & Leuty, 2020). While many frameworks have been proposed to capture the construct of work values, in this section I will focus on two of the most popular and highly regarded frameworks of work values. The first of these is the Theory of Work Adjustment (TWA; Dawis and Lofquist's, 1984). According to the TWA, how well a person fits with their work environment determines their satisfaction with their work environment (such that the more congruent the fit, the higher the satisfaction). The TWA explains that aspects of a person which determine this fit include their vocational needs and these needs are, in essence, based on the person's values. The TWA therefore suggests that individuals' values serve as reference dimensions for their vocational needs and serve as work reinforcers for that individual within their work environment (i.e., what is important to that individual in their work environment). The TWA thus categorizes work values as needs which can be grouped into six broad reference dimensions (latent variables) including: Achievement (an environment that encourages accomplishment), Comfort (an environment that is comfortable and non-stressful), Status (an environment that provides recognition and prestige), Altruism (an environment that fosters harmony with and service to others), Safety (an environment that is predictable), and lastly,

Autonomy (an environment that stimulates initiative). Moreover, this framework suggests that these six groups can be conceptualized as three bipolar dimensions of values: achievement versus comfort, altruism versus status, and safety versus autonomy (Dawis & Lofquist, 1984).

This conceptualization has laid a theoretical framework for many measures and further theories of work values with its most notable contribution being the Minnesota Importance Questionnaire (MIQ; Gay et al., 1971; Rounds et al., 1981). The MIQ is a robust, 21-item scale, highly regarded and used for its strong psychometric properties in measuring work values (Rounds et al., 1981; Rounds & Leuty, 2020). Moreover, the MIQ has been used as the foundation for the Occupational Information Network (O*NET; Peterson et al., 2001), the U.S. Department of Labor's online database used to provide general, categorized information (e.g., interests, skills, values) on various aspects of over 900 jobs present in the United States.

In addition to the Theory of Work Adjustment, another highly regarded and widely used theory of work values is Super's (1980) Theory of Career Development. Super's (1980) Theory of Career Development focuses on the stages individuals go through as they create a career and integrate work roles with other life roles. Super (1980) posits five stages of career development: Growth (birth to 14 years) which focuses on the development of self-concept, attitudes, needs and general world of work, Exploration (15-24 years) which focuses on "trying out" through classes, work, or hobbies (in other words, tentative choice and skill development), Establishment (25-44 years) which focuses on entry-level skill building and stabilization through work experience, Maintenance (45-64 years) which focuses on continuous adjustment to improve one's position, and finally Decline (65+ years) which focuses on reduced output and preparation for retirement. Based on this theory, individuals' interests, values, and abilities contribute to the formation of vocational identity or preferences which is important in the early stages of Growth

and Exploration (Super, 1980). The inventory used to test this theory is Super's Work Values Inventory – Revised (SWVI-R) which consists of the following twelve values: achievement, coworkers, creativity, income, independence, lifestyle, mental challenge, prestige, job security, supervision, work environment, and (task) variety. The importance of this framework is that it takes a developmental approach towards work values, taking into account their changing nature (Jin & Rounds, 2012, Sheldon, 2005). Moreover, the items used for this taxonomy include both work and nonwork-related concepts which have also proven stable across different national cultures, highlighting both the framework's multi-dimensionality and cross-cultural utility.

Though the MIQ and SWVI-R are highly regarded scales of work values, the present study opts for a more up to date measure that is both consistent with ONE*T variables like the MIQ, while also expanding to a wider range of values like the SWVI-R. The reasoning for this is to continue using the primary framework of the highly referenced O*Net (which serves as a go-to source of work values for practitioners and researchers alike), while still addressing its issue of having a limited scope of relevant work values (Rounds et al., 2008). Thus, to account for this, my study uses Heimpel et al., (2022) Occupational Values Inventory (OVI). The OVI utilizes the values framework of O*NET (and MIQ) as the basis of its structure while expanding with other relevant values such as income, interest in work, outdoor work, and leadership that the O*NET (i.e., MIQ) currently lacks. The OVI consists of the following nine value categories: Altruism (selfless concern for the well-being of others or wanting to make the world a better place), Management (wanting a leadership role or to manage others), Independence (ownership or flexibility over one's own time, schedule, and work), Work-Life Balance (healthy balance between personal matters and work or career matters), Outdoors or Physical (work that involves a high amount of physical labor or working outside or in a natural environment), Salary and

Prestige (high income, status, or how other people respect or admire a career), Variety (wanting different or diverse work tasks that are not repetitive), Specialization (becoming an expert or skillful in a particular subject, skill, or career field) and finally, Interest in Work (stimulating, satisfying, interesting work that the person enjoys doing for any reason).

Differences in Work Values: Theoretical Explanations

Based on the discussed conceptualizations and taxonomies, we can thus establish that work values are constructs that evolve, in large part, because of individuals' experiences.

Therefore, when measuring work values, it is important to take into consideration factors that can contribute to individuals' different backgrounds or experiences (leading to differences in values).

In this section I discuss empirically supported theories that further explain the link between differences in work values and individuals' measurable backgrounds (i.e., their demographics).

Two of the oldest and most common frameworks for broadly understanding how work values shape and develop are the occupational-selection and occupational-socialization frameworks (Rounds & Leuty, 2020). The occupational selection perspective posits that individuals choose their occupations based on motives rooted in pre-existing psychological traits, values, and interests that are formed mainly in an individual's childhood and adolescence (Davis, 1965; Holland, 1976; Rosenberg, 1957). The occupational-socialization model on the other hand, emphasizes the importance of ongoing socialization in shaping values which can significantly alter work values during adulthood (i.e., during the transition into the workforce), as an individual gains work experience (Mortimer & Lorence, 1979). Empirical research supports both perspectives in the development process of work values. Research by Mortimer and Lorence (1979) as well as Lindsay and Knox (1984) both found that individuals not only self-select into occupations that match their values, but they can also undergo a significant change in these

values through rewarding occupational experiences. Hence, both individuals select and are socialized towards what they value.

A deeper explanation of how these values are shaped is further explained by Eagly's (1987) Social Role Theory and Gottfredson's (1981) Circumscription Compromise Model. Social Role Theory posits that individuals form values based on what is expected of them. According to Social Role Theory (1987), the gender division of labor gives rise to shared beliefs about men and women (gender stereotypes). In western society, men's historically larger presence in occupations with higher power and status have given rise to the stereotype that men are associated more with agency while women's larger presence in nurturing occupations have contributed to a stereotype that women are associated with communion. This division of labor also provides men and women with different skills, which further contributes to the stereotypes (Ridgeway, 2001).

Moreover, Gottfredson's (1981) Circumscription Compromise Model provides a more specific developmental explanation for these social role differences in work values. Based on this theory, individuals build cognitive schemas (mental maps) of occupations at an early age by picking up occupational stereotypes (i.e., beliefs, norms, values) from the people around them (i.e., family, teachers, media). Occupations (and their associated traits or values) are placed on these schemas via the sex-type of the occupation, its prestige level, as well as the field of work. As young people begin to subscribe to their own sense of values, they draw on this mental map to determine which occupations are acceptable or unacceptable for them based on what fits their developing self-concept (Gottfredson, 1981). Thus, the norms and social examples surrounding the individual throughout their life play an important role in determining their work values.

While both of these theories are primarily used for gender differences, they are also applicable to shared beliefs or values regarding the self and identity based on other aspects that can determine a person's cultural experiences such as their ethnicity, socioeconomic status, or age (Rounds & Leuty, 2020). The development of an individual's values is closely linked to the social identification of that individual with their close others (peers, family, or role-models) who are typically in the same social or societal standing as that individual in terms of their culture (i.e., ethnicity, socioeconomic status, age, or gender; Helson & Moane, 1987; Parry & Urwin, 2011). The normative values of an individual thus develop as that person gains more information about their world from their surroundings and expands their self-concept. While these conclusions offer theoretical explanations for the link between people's demographics and their work values, it is also important to discuss empirical findings that support such claims. In the following section, I offer a review of empirical findings among various demographics and their relation to work values (namely individuals' socioeconomic status, ethnic background, gender, and age).

Empirical Findings on Subgroup Differences in Work Values

Socioeconomic Status

Socioeconomic status plays an important role in explaining differences in work values. Two studies that specifically focused on the role of socio-economic status on work values both found that students from lower socio-economic backgrounds attached greater importance to accomplishment and achievement-related values compared to individuals from higher socioeconomic backgrounds (Johnson & Elder, 2002; Lindsay & Knox, 1984). Other studies found that those with lower socioeconomic status valued extrinsic rewards such as pay or job security while those with higher socioeconomic status placed more importance on intrinsic values such as growth and autonomy (Halaby, 2003; Johnson, 2002; Warr, 2008). One possible reasoning for

these differences in work values among socioeconomic status has to do with the relation between values and needs. It is possible that those from lower socio-economic backgrounds have experienced less financial support than those from higher socio-economic backgrounds. This in turn could create a stronger motivation to fulfill these financial needs and hence cause those individuals to place more importance on the corresponding values of those needs such as pay and job security. Regardless, research focusing on the role of SES in influencing work values is scarce and confounded with mixed findings, necessitating a closer, more focused examination of how socioeconomic status plays a role in people's work values.

Ethnicity Subgroup Differences

From an ethnic standpoint, much of the focus of work values research in the U.S. has examined Black vs. White Americans. Overall, this body of research has found that Black Americans value extrinsic rewards such as income and job security more and value intrinsic rewards (such as job accomplishments) less than White Americans (Lyons, 2014). However, these differences are smaller when socioeconomic status is accounted for (Lyons, 2014; Martin & Tuch, 1993; Shapiro, 1977). Moreover, as Rounds & Leuty (2020) point out, much of the studies on this topic were not rooted in theory that specifically help explain Black vs White differences, rather, they examined race as one possible factor in work values differences. In response to this, Kashefi (2011) conducted a study specifically focusing on White vs. Black American differences in work values using the Occupational Socialization Theory as their framework. Similarly, Kashefi (2011) found that almost all racial differences in work values were diminished after controlling for socioeconomic status (apart from relational and enhancement reward values such as status and prestige, which were valued more strongly by Blacks than Whites).

Even fewer theory-backed studies in the U.S. have focused on differences among races beyond Black and White (or ethnicities in general). The bulk of research examining values of other races and ethnicities are typically from an individualist-collectivist perspective (Triandis, McCusker, & Hui, 1990). This perspective suggests that individualistic cultures value personal needs and goals over a groups', hence why typically, work values such as autonomy, independence and personal growth are a higher priority for those within this culture. Collectivist cultures, by contrast, tend to value the needs and goals of the group over the individual and are thus more likely to prioritize communal values such as relational values (relationships with others) and conformity to norms and traditions (Hofstede, 2004). Though this perspective has empirical support regarding general life values, the findings are mixed and unclear when the same perspective is applied to work values (Hartung, Fouad, Leong, & Hardin, 2010; Robinson & Betz, 2008). Oyserman et al. (2002) suggest that this could be due to small sample sizes or a lack of robust theoretical frameworks used to test and link this perspective to work values. It is thus recommended that future research not only implement larger and more racially and ethnically diverse sample sizes but also frameworks that explain the psychological mechanisms through which these differences emerge (Albarracin & Shavitt, 2018; Oyserman et al., 2002).

Gender

While plenty of research has examined differences among men and women, many of the findings have been mixed and inconclusive (Rounds & Leuty, 2020). More recently, several national surveys and meta-analyses have re-examined gender differences in work values to clarify these findings. Taken together, these results found marginal differences in almost all types of values between women and men (Konrad, Ritchie, Lieb, & Corrigan, 2000; Rowe & Snizek, 1995). The one exception to this were values related to communalism (i.e., a concern

with or relating to the welfare of other people). Most results indicated medium effect sizes or mean differences (ranging from $d = -.36$ to $-.45$) in communal values between men and women, such that women reported stronger values for helping others and working with people than did men (Konrad et al., 2000; Rowe & Snizek, 1995).

Despite a fair amount of research examining gender differences, it is important to note that much of these findings are from studies conducted well over 20 years ago. Since then, many changes have occurred in the work force. For example, over the past two decades, there has been over a 43% increase in women in STEM fields (science, technology, engineering, and math) which are not as relational or people-focused as other careers in caregiving or service-oriented professions (National Center for Education Statistics, 2013). Thus, it could be worthwhile to examine gender differences in work values given the circumstances of the current workforce.

Age and The Role of Time

As work values can change across time, studies examining the role of age (and generational differences) within work values typically take on a stability and change perspective. This is done either through examining rank-order stability or mean-level change. Rank-order stability refers to the standing of individuals within a group over time and how they compare to each other - usually represented via a test-retest correlation (De Fruyt et al., 2006). Thus, rank-order stability on a work value is high if people in the same group maintain their position on the value relative to each other over time (regardless of whether the group increases or decreases on that value over time). On the other hand, mean-level change refers to how a group changes on a trait (in this case a work value). Mean-level change would thus measure the change or increases or decreases on certain work value dimensions over time and is measured by the differences in the group average over that time (Caspi & Roberts, 1999). Rank-order stability and mean-level

change are not mutually exclusive (meaning there can be both a mean level change and rank-order stability in an age group) and, when taken together (rather than by themselves), can reveal more information about the role of age and its changing nature in respect to work values (Rounds & Leuty, 2020).

Jin & Rounds (2012) meta-analysis on the rank-order stability of work values across people's life span revealed that the rank-order stability of values remains relatively high ($\rho = .62$) across four age periods: adolescence (13–17.9 years), college (18–21.9 years), emerging adulthood (22–25.9 years), and adulthood (26–30+ years). The results of this research also indicated that between the ages of 18 and 22 (when many individuals are in college or engaged in postsecondary training and exploring various career directions), work values exhibit the least stability (Twenge, Campbell, Hoffman, & Lance, 2010) while gradually becoming more stable (and eventually plateau) after the age of 22, when most have entered the workplace.

The college and emerging adulthood stages (18-25 years) together, are known as the school-to-work transition (STWT) period (i.e., when individuals are typically making the big leap between high school to higher education or the workforce). Most individuals experience the most profound changes in their work values during this period as it is a period of great variability among individuals especially regarding their educational, marital, and residential status (Arnett, 2000). Moreover, Wendlandt and Rochlen (2008) explain that this is the period when individuals realize that the workplace (or even college or university) is much different than school (either high school or college and university), which could explain their changing perceptions and priorities (values). Further, in examining mean-level change, Jin and Rounds (2012) found that during the typical college years (18-22), intrinsic (specifically communal) values increase while extrinsic (agency) values decrease. Super's (1980) developmental model suggests this could be

due to the exploratory and transitional nature of this period as individuals are seeking out different educational and personal activities. However, as individuals move beyond this stage in their later adulthood (26 years and beyond), the opposite happens - agentic values experience a significant growth while communal values decrease (Jin & Rounds, 2012). Kuron, Lyons, Schweitzer, and Ng (2015) explain that this change can be due to the sociological, cultural, and structural differences between school and the workplace. Moreover, some research suggests that individuals tend to be under-informed about the realities of work life during early adulthood (Perrone & Vickers, 2003; Saks & Ashforth, 1997; Wendlandt & Rochlen, 2008), and new graduates often have unrealistic expectations of the workplace (Gardner & Lambert, 1993; Perrone & Vickers, 2003; Ng, Schweitzer, & Lyons, 2010). Thus, the school-to-work transition period, is one that is particularly important in the development of career values within individual's lifespans as it is the period in which the most profound changes occur.

Community College vs. University Samples

Since the present study includes both community college and university samples, it is important to note some differences between the two groups. While most four-year university graduates transition into the job market or graduate and professional school upon graduating, a large part of community college graduates' transition into four-year universities (American Association of Community Colleges, 2022). Moreover, more likely than not, community college graduates are already in the workforce. It is not uncommon for community college students to work full-time while in college or have returned to college to pursue higher education or certifications from the workplace for the careers they are pursuing or may already have. According to the American Association of Community College's (2022), over two thirds of all community college students are part of the workforce. While such cases are possible amongst

university students, they are not nearly as common compared to community college students. Further, community college students are much more likely to have more financial responsibilities such as families or dependents who rely on their financial support. For example, the American Association of Community Colleges reported that over 15% of community college students were single parents in 2021 (American Association of Community College, 2022). It's possible that individuals who have these additional financial responsibilities may not have the opportunity to explore their values to the same extent as traditional university students who are not likely to have this additional responsibility. Thus, given these additional responsibilities, it is also plausible that community college students may have different trajectories in their work values (i.e., valuing external values more in general or at an earlier age) in comparison to university students.

Additionally, the training, nature and structure of community colleges is different than universities which may lead to different experiences between the two throughout that time. Most community colleges are designed as much shorter-term (usually 6 months to 2 years), transitional institutions, wherein students enter to receive practical, vocational training for a career they are already pursuing or involved in, or to simply take a small number of supplementary or preliminary courses required for a higher degree (Community College Research Center, 2022). Traditional universities on the other hand are designed for more long-term experiences (usually a minimum of four years), in which students start in with more openness to exploring their likes, and dislikes as well as careers suit them. Universities may offer a different overall experience such that many require students to live on or near campus (as opposed to commuting from where they are already living in community colleges) as well as a plethora of clubs, organizations and activities not directly related to academics or courses (i.e.,

more clubs, Greek life, interest groups), all of which may contribute to a more immersive and exploratorily encouraging environment than a community college. Of course, this is not to say that the community college experience cannot serve as an exploratory environment for students (especially given that the majority are still young adults), however, due to these general differences in the purpose and structure of community colleges, it is possible that the development of work values may be different for community college students than the traditional university student samples used in most work values research. As most research on work values in the school-to-work-transition period has been conducted using university students, research focusing specifically on community college students could provide a more diverse and well-rounded perspective of work values during this stage of individuals' lives.

Finally, when discussing the influence of age in work values, it is also important to take into consideration age group differences. While a fair amount of research has examined age group differences in work values in the past decade (Zemke, Raines, & Filipczak, 2013), most of this research does not clearly distinguish between generational differences (i.e., measurement at the same age for different generations) vs. age differences (i.e., measurement at the same point in time among those of different ages; Parry & Urwin, 2011). Hansen and Leuty (2012) was one study that examined work values in different generations separately from age differences by measuring work values across different birth cohorts at the same age points. In this study, the researchers found that mean-level differences were more likely to be a factor of generation rather than age (Hansen & Leuty, 2012). More specifically, the findings suggested that more recent generations placed more value on their work environment and who they worked with (i.e., friendly coworkers) than older generations (Hansen & Leuty, 2012). However, despite their statistical significance, these results were marginal and the rank order stability of the top values

remained consistent across different generations (Hansen & Leuty, 2012). Therefore, more research is needed to clarify and examine potential differences in work values among different age groups or generations. Community colleges are typically comprised of students with a wider range of ages than university students, making them a more ideal sample to use when studying generational or age group differences.

Taken together, these empirical findings show potential support for subgroup differences in work values across ethnicity, socioeconomic status, age, and gender. However, more research is needed to understand differences beyond a Black vs. White perspective as well as to clear mixed findings in differences across various socioeconomic statuses, ages, and genders. The inclusion of a community college sample may be better able to capture these differences (as opposed to just a traditional university sample) as community colleges generally include a wider range of these demographics in their student population.

Present Study

Taken together, these findings point to many gaps in research examining demographic differences in work values. More broadly, these gaps can be attributed to a lack of research examining understudied populations in addition to not utilizing longitudinal designs to capture the changing nature of work values. The aim of the present study was to address these gaps by incorporating an ethnically and socioeconomically diverse sample with a broad range of ages and genders while also using a longitudinal design to track changes in work values throughout the transition out of college and university.

It is important to note that intent of this study was not to generalize (stereotype) work values based on broad demographics, but rather to better understand the underlying factors that contribute to differences in work values. Additionally, the intent of this study was to expand

beyond the limited samples that most work values utilize to incorporate more demographically inclusive samples as a means of eliminating potential demographic biases. Additionally, while many aspects of an individual can contribute to a person's values beyond what is discussed in this study (e.g., sexual orientation, nationality, geographical location), the required sample size to detect any statistically significant differences among such characteristics is much larger than the scope of this study. For this reason, the current study focused on the most measured demographics of individuals that contribute to the shared beliefs and values of their cultures which make-up a person's self-concept. Based on the call to examine differences in work values beyond Black vs. White, those of different socioeconomic statuses (beyond upper-middle class university students), changes in the gender composition of the workforce, as well as a lack of research examining the changing nature of work values within-individuals and across generations (Rounds & Leuty, 2020), the present study aimed to answer the series of research questions and test the hypothesis presented below.

Overall, research has found some differences between Black versus White Americans in work values. For example, Kashefi's (2011) analysis found that Black Americans value relational and enhancement reward values more than White Americans, even after controlling for socioeconomic status. However, hardly any research has focused specifically on the work values of other ethnic groups in the U.S. Most research examining differences in values across different ethnicities has focused on general life values from a broad individualist-collectivist perspective (Triandis, McCusker, & Hui, 1990). Generally, those from countries with individualist cultures (i.e., Europeans) tend to value autonomy, independence, and personal growth while those in collectivistic cultures tend to place more emphasis on relationships and communal values (Rounds & Leuty, 2020). Though most of this research has been cross-national, I proposed that

given the diverse range of ethnicities from around the world who now reside in the U.S. (most commonly: Asian, Hispanic, Black, and White Americans), it is possible that such differences can be observed within a national population and be applied to work values as well (Rounds & Leuty, 2020). Hence, the present study asked the following research question:

Research Question 1: How do work values vary across different ethnicities among recent university and community college graduates?

Some studies have also found differences in work values across different socioeconomic statuses (Halaby, 2003; Johnson, 2002; Johnson & Elder, 2002; Lindsay & Knox, 1984; Warr, 2008). This study specifically uses parental education (positively and highly correlated with parental income; Arro et al., 2009; Boshara et al., 2015) as a measure of socioeconomic status. Parental education level (and subsequently, parental income) can largely influence the formative experiences of individuals as it can lay the grounds for the social class that an individual is brought up in (and thus the set of norms enforced in that social class or environment), which can lead to the formation of that person's values (Gottfredson, 1981; Mortimer & Lorence, 1979). Overall, the findings on differences in work values across socioeconomic status has been mixed and unclear (Rounds & Leuty, 2020), making it a necessary demographic to further explore in this study. To help clarify some of these mixed findings, this study presented the following research question:

Research Question 2: How do work values vary across parental educational attainment of community college and university graduates?

A large body of research and theory has suggested that women tend to value communal or nurturing values more than men, while men tend to value agency or power in their work more than women (Eagly, 1987; Gottfredson, 1981; Konrad et al., 2000; Rowe & Snizek, 1995).

Despite these findings, it is possible that with changing workforce and gender norms, work values among men and women may no longer be consistent with much of this research that was conducted over two decades ago (Pessin, 2018). Nonetheless, on a larger scale, such changes may not be large enough to make much of a change in work values among women and men. Therefore, consistent with the existing literature on gender differences in work values, I proposed the following hypotheses:

Hypothesis 1: Females are more likely to prioritize values related to helping others (i.e., altruism) than males.

Hypothesis 2: Males are more likely to prioritize values related to agency and power (i.e., independence and prestige) than females.

Some research has found that younger (or more recent) age groups place more value on their work environment and who they work with (i.e., friendly coworkers) than older age groups (Hansen & Leuty, 2012). However, these findings are marginal and not robust (Hansen & Leuty, 2012), thus more research is needed to clarify and examine potential differences in work values among these different age groups. Based in part on Jin and Rounds' (2012) age group categorizations as well as the given samples (mostly comprising of individuals in early adulthood), I categorized ages in the following groups: (18-21 years), (22-25 years), (26+ years) and presented the following research question:

Research Question 3: What are the differences in work values across different age groups in community college and university?

In addition to these subgroup differences, theory and research support the notion that work values change throughout individuals' lifetimes such that when individuals are younger, they tend to place more value on communal values and as they get older (typically at around age 26

and beyond), they start to shift towards more agentic values (Jin & Rounds, 2012). To test these findings, I proposed the following two research question examining the rank-order stability (i.e., consistency of individuals rank-order of work values within a group) and mean-level changes of graduates' work values across time:

Research Question 4: How stable are work values across time during transition out of community college and university?

Research Question 5: How do mean-levels of work values change during the transition out of community college and university?

As this is a longitudinal study aimed at tracking changes in work values, it is also important to examine changes in any subgroup differences. Some research shows that differences in work interests among genders decreases with age (Hoff et al., 2018, Morris, 2016). One study on the stability of work values among age and gender found that gender differences in conservation-related values (security, conformity, and tradition) decreases because women's initially higher levels of conservation values decrease after the age of fifty (Milfont, Milojev, & Sibley, 2016). Though these studies examine work interests and general life values, it is possible that some subgroup differences among work values can also decrease over time (specifically during the school-to-work transition when work values tend to undergo significant changes). I therefore asked this sixth and final research question:

Research Question 6: Does the size of subgroup differences in work values change during the transition out of community college and university?

Methods

Sample and Procedure

This study utilized two longitudinal samples. The first sample consisted of community college graduates. Participants who had just graduated from their programs across three community colleges in the United States were recruited via email as participants in this sample. Participants were administered three surveys across the eight-month span of the study (with each survey administered four months apart). The second sample consists of graduates across three universities in the U.S. who had just graduated with a bachelor's degree. Participants in this sample were recruited via email and were asked to complete four surveys across a 6-month period (with each survey administered two months apart). Participants in both samples completed the surveys via a Qualtrics link sent to their email and were compensated with a \$10 gift card upon completion of each survey. In both samples, the first survey included measures of participants' demographics (age, gender, ethnicity, socioeconomic status) and all surveys included measures of participants' work values, work-value fit, life satisfaction and career satisfaction.

The community college sample ($N=588$) consisted of mostly female graduates (75%) in Wave 1 (20% male, and less than 5% something else) with a roughly even distribution among the following age groups: 18-21 years (48%), 22–25 years (19%), 26+ years (34%). The mean age for this sample was 24.75 years with a standard deviation of 7.67 years. This sample was also mostly Latino or Hispanic (40%) and White (31%), followed by Asian or Pacific Islander (13%), Black or African American (10%) and the remaining 4% Native American or Other. Moreover, the highest educational level of parents for the community college sample were as follows: Less than high school (14%), High school or GED (24%), Some College (16%),

Associate degree or one- to two-year program (9%), Four-year college or undergraduate degree (20%), Graduate degree (12%).

The university sample ($N=816$) was also overwhelmingly female (65%), with only 28% male (7% something else) in wave 1 and the majority between 22 and 25 years old (65%), then 21 years and younger (27%). Only 9% of the sample was 26 years or older. The mean age for this sample was slightly younger at 22.78 and less varied with a standard deviation of 2.97 years. Ethnicity was more equally divided in this sample compared to the community college sample. The university sample consisted of over a third White (35%), over a third Asian or Pacific Islander (34%), and almost a quarter Latino or Hispanic (23%) but with only 5% Black or African American and the remaining 4% comprising of some other ethnicity (i.e., Native American). The highest parental educational attainment for the university sample were as follows: 33% Graduate degree, 28% Four-year college or undergraduate degree, 25% Associate degree or one- to two-year program, 11% some college, 12% High school or GED, and 10% less than high school.

Measures

The measures for this study include work values, gender, age, ethnicity, and socioeconomic status (measured by parental educational attainment).

Work Values

I assessed participant's work values with the Occupational Value Inventory (OVI). The OVI is a comprehensive assessment of work values based on occupational domains found on the Occupational Information Network (or O*NET; the U.S. Department of Labor's database of occupational information). The OVI consists of nine work value subscales derived from multiple job domains on O*NET (including Work Context, Generalized Work Activities and Work

Values) as well as other work values frameworks. The initial subscales of the OVI include Altruism, Management, Independence, Work-Life Balance, Outdoors/Physical, Salary/Prestige, Variety, and Specialization. An additional subscale, Interest in Work, is also included in the OVI though it was not linked with any variables in O*NET. The inventory consists of 30 items, with three or four items per subscale. Participants were asked to answer how important each item would be for them in an ideal career on a five-point Likert scale (1 = “Not Important”, 2 = “A Little Important”, 3 = “Important”, 4 = “Very Important”, 5 = “Most Important”). Items included elements that would be valuable or expected within their career, such as “Build and maintain personal relationships”, “Coordinate or lead others”, “Set my own schedule”, and “Work outside”. A full list of items of the OVI can be found in Appendix A. The OVI presents high factor loadings of items on their subscales ($>.42$) demonstrating high construct validity as well as a reliability with Cronbach’s Alpha (α) $>.67$ for all subscales for both samples as shown in Table 3.

Gender, Age, and Ethnicity

I assessed gender by asking participants to choose their gender from the following options: “Female”, “Male” Non-Binary”, “Other”, or “Prefer to not say”. Participants were asked to type their age as a numerical input. Participants were asked to indicate their ethnicity with the following response options: “Asian/Pacific Islander Heritage” “Black/African American Heritage”, “Latino/Hispanic Heritage”, “Native American/First Nations Heritage”, “White/European Heritage”, or “Other”.

Socioeconomic Status

I assessed socioeconomic status by measuring the highest educational attainment of participants’ parents. Parental education level is often used as a measure of socioeconomic

status, especially for young adults, and is positively correlated with parental income (Arro et al., 2009; Boshara et al., 2015). To assess this measure, participants were asked to indicate the highest level of education that any of their parents had completed given the following options: “Less than High School”, “High school or GED”, “Some college”, “Associate degree (1-to 2 – year program)”, “College or undergraduate degree (4-year program)”, or “Graduate degree (e.g. MA, M.D., PhD). Questions and items used to assess all demographic variables can be found in Appendix B.

Analysis

Descriptive Statistics and Confirmatory Factor Analysis

I ran a preliminary descriptive statistics analysis in R to obtain the percentages of ethnic, parental educational attainment, gender, and age groups as well as the average and standard deviation of ages at Wave 1 for each sample. The 9 factors (subscales) in the OVI scale are based on an exploratory factor analysis by (Heimpel et al., 2022). In their preliminary analysis, Heimpel et al. (2022) extracted these nine factors (subscales) using Horn's parallel analysis and a promax (oblique) rotation in R (using the R psych package). Based on this nine-factor model, I ran a confirmatory factor analysis in R using the R lavaan package. Based on these analyses, the model produced an RMSEA = .07 and SRMR = .06 in both samples, indicating an acceptable fit (RMSEA < .08 and SRMR < .05). Tables 1 and 2 show the factor loadings of all items in addition to the fit indices for the community college and university samples, respectively.

Missing Data

I conducted attrition analyses on both samples to examine differences between participants who dropped out of the study before the final wave of the study and those who did not. To do this I conducted a Chi-square test on SPSS based on those who answered only at wave

1 vs. those who answered in any of the waves beyond wave 1. Results of this test can be found in Appendix C. In sample 1 (community college graduates), I found a significant difference in attrition rates based on ethnicity ($p < 0.01$, $df = 3$) and altruism scores at wave 1 ($p = 0.01$, $df = 582$). In sample 2 (university graduates) I found differences in attrition rates based on gender and parental education ($p < 0.01$, $df = 1$; $p = 0.05$, $df = 5$, respectively) as well as significant differences in scores on management and salary values ($p < 0.01$, $df = 814$; $p = 0.01$, $df = 514$, respectively).

Mean-level Differences

To test subgroup differences across ethnicity, age, parental educational attainment, and gender (i.e., Research Questions 1, 2, & 3; Hypotheses 1 & 2), I first ran a correlation matrix of work values in SPSS with each demographic variable collected at the first wave of each sample. Ethnicities were dummy-coded so that each group was compared against all. Next, I obtained and compared the standardized mean differences (Cohen's d) in work values for each subgroup comparison using independent T-Tests in SPSS. I used the lowest groups as the reference groups for age and parental educational attainment when comparing Cohen's d (i.e., youngest group was used as the reference for age and lowest education level was used as the reference group for parental educational attainment). As ethnicity was a non-ordinal, categorical variable, I obtained its Cohen's d for each work value using the "effectsize" package in R. This function computes Cohen's d for many subgroups of a variable via weighted effect sizes (i.e., comparing one subgroup against the overall mean of that value for all groups within the given variable). For all my analyses, I either excluded all response groups that had too few responses to indicate any statistically significant (i.e., generalizable) results or combined them to have an $N > 50$, as recommended by Cohen (2013).

Mean-level Changes and Rank-Order Stability

To analyze the rank-order stability of work values (Research Question 4), I ran and compared correlation matrices of work value rankings in R for each timepoint and compared the ranking of each work value at adjacent time points in SPSS (i.e., wave 1 v. wave 2, wave 2 v. wave 3). Next, to formalize the description of mean-level changes and answer Research Question 5 (whether differences in mean-levels of work values changed over time), I ran linear growth-curve models using Mplus (see Figures 1 & 2 for diagram of models in each sample). In these models, work values were modeled as a function of time (i.e., Wave 1 to 3 for sample 1 and Wave 1 to Wave 4 for sample 2) with three latent variables including their intercept, slope, and residuals. The intercept reflects the level of the value at the first wave, while the slope reflects the average rate of change per month (apart from random error or residuals). Therefore, the path loadings from the slope at each wave reflect the number of months since the first wave (0 months to wave 1, 4 months to wave 2, and 8 months to wave 3 for sample 1; 0 months to wave 1, 2 months to wave 2, 4 months wave 3, and 6 months to wave 4 for sample 2).

To test Research Question 6, I introduced gender and parental educational attainment as predictor variables with a regression path to the work value intercept and slope (demographic variable boxes displayed in model). A significant regression coefficient pointing to the work value intercept reflects significant subgroup differences in work values for that variable in the first wave, while a significant coefficient in the path to the slope indicates significantly different changes (after wave 1) for that work value. I ran each model separately for each work value for each sample. For all linear growth curve models, I used ethnicity as an auxiliary variable in sample 1 and gender as well as parental education as auxiliary variables in sample 2 based on the findings of my attrition analyses. To compare means of samples across time, I ran T-tests on

SPSS to obtain Cohen's d and their confidence intervals with group 1 as sample 1 and group 2 as sample 2.

Results

Mean Differences Across Subgroups

To test for any mean-level differences in work values between ethnicities, parental education, ages, and genders (Research Questions 1-3 and Hypotheses 1&2), I first ran a correlation matrix of demographics and values in SPSS. Table 4 and 5 display the correlation matrices for samples 1 and 2, respectively. Among both samples there were mean-level differences among at least a few groups within each demographic variable. The analysis for sample 1 (community college) showed small but significant correlations among gender with salary and management values ($r = -0.09, p < .05$; $r = -0.13, p < .01$), age with interesting work values ($r = -0.10, p < .05$), parental education with salary values ($r = -0.13, p < .01$), as well as some significant correlations across ethnicity groups for all values (apart from specialization). Sample 2 (university sample) had similar results with gender being significantly correlated with management and salary values ($r = -0.11, p < .01$; $r = -0.09, p < .05$), age with independence and interesting values ($r = .08, p < .05$; $r = -.08, p < .05$), parental education with independence values ($r = -.08, p < .05$), and some significant correlations across every ethnicity subgroup and all values except for values related to specialization, work life balance, and interesting work.

For more in-depth analysis of subgroup differences, I also obtained Cohen's d values for each work value across all subgroups. My first research question asked if there were differences in work values among different ethnic groups. Results of the Cohen's d analysis showed some significant and moderate effect sizes among ethnic groups for both samples (Table 6). In sample 1 (community college), Asians had the largest significant effect sizes (compared to all other

ethnic groups) in management values ($d = .42$, CI = [.18, .66]), salary values ($d = .38$, CI = [.14, .62]), independence values ($d = .36$, CI = [.13, .60]), and outdoors values ($d = .28$, CI = [.05, .52]). Blacks had the largest effect sizes for altruism ($d = .28$, CI = [.02, .55]), work-life balance ($d = .30$, CI = [.04, .57]), and variety values ($d = .28$, CI = [.01, .55]). Interestingly, Whites had negative effect sizes for all values (meaning they valued everything less than the overall average of all ethnic groups) with significant effect sizes in salary ($d = -.35$, CI = [-.50, -.20]), independence ($d = -0.28$, CI = [-0.42, -0.13]), management ($d = -0.27$, CI = [-0.41, -0.12]), outdoors ($d = -0.26$, CI = [-0.41, -0.11]), and variety related values ($d = 0.22$, CI = [-0.37, -0.07]). Latino and Other ethnic groups had no significant effect sizes in sample 1. Sample 2 (university sample) had fewer significant effect sizes among ethnic groups with the exception of Whites who had negative and significant effect sizes for the same values as sample 1; salary ($d = -0.25$, CI = [-0.36, -0.13]), independence ($d = -0.19$, CI = [-0.31, -0.07]), outdoors ($d = -0.16$, CI = [-0.27, -0.04]), management ($d = -0.14$, CI = [-0.26, -0.02]), and variety ($d = -0.13$, CI = [-0.25, -0.01]). Asians only had a significant Cohen's d for salary ($d = 0.21$, CI = [0.09, 0.33]) as they also did in sample 1. All other ethnicity groups had no significant Cohen's d . Taken together, this evidence indicates some differences in work values across ethnicity subgroups, though in most cases the differences were relatively small.

Research Question 2 asked how work values vary across parental educational attainment. Table 7 displays all effect sizes and confidence intervals for value means based on parental education for both samples. There was strong evidence suggesting differences in means among different levels of parental educational attainment across both samples (i.e., significant Cohen's d 's ranging from .28 - .62). These differences indicated that the lowest parental education group (less than high school) generally scored higher in outdoors values across both samples.

Moreover, in sample 1 (community college), the lowest parental education group also tended to score higher on salary-related values than higher parental education groups ($d = .41$, CI = [0.10, 0.71] for the High School Diploma comparison, $d = .62$, CI = [0.33, 0.91] for the Bachelor's Degree group, and $d = .46$ CI = [0.13, 0.79] for the Graduate Degree group). While, in sample 2 (university), the lowest parental education group scored higher in altruism values ($d = .34$, CI = [0.04, 0.64] compared to High School Diploma group, $d = .42$, CI = [0.10, 0.73] compared to Some College group, and $d = .31$, CI = [0.05, 0.57] compared to Bachelor's Degree group). Overall, these findings indicate participants with lower parental education tended to score higher on several work values, especially those related to outdoors and salary.

Research question 3 asked whether there were any age group differences in work values. To test this question, the lowest age group (18-21) was compared with two other age groups: 22-25 and 26+. Table 8 displays all Cohen's d and their confidence intervals for these comparisons. Results suggested little evidence for mean-level differences among these age groups in both samples. The only significant Cohen's d in sample 1 was among the 18-21 vs 26+ group comparison for means of specialization-related values ($d = -.26$, CI = [-0.45, -0.07]), indicating that the older group scored higher on this value. In sample 2, the only significant effect size was among the same age group comparison (18-21 vs 26+), but for independence values ($d = 0.34$, CI = [0.07, 0.62]), indicating that the younger group scored higher on this value.

Hypothesis 1 proposed that females would prioritize communal work values more than men. Results provided support for this hypothesis across both samples. Table 9 displays all Cohen's d values based on gender. In both samples, Cohen's d were negative and statistically significant for altruism-related work values (indicating that females scored higher). In the community college sample, altruism values had a $d = -.37$, CI = [-0.58, -0.17], and in the

university sample, altruism values had a $d = -.30$, $CI = [-0.45, -0.14]$. Hypothesis 2 proposed that males would prioritize agentic values more than women. Though results found support for this hypothesis in both samples, they were not as robust in the university sample (sample 2) as they were in the community college sample (sample 1). In the community college sample, both management and salary-related values had positive, and statistically significant Cohen's d , indicating that men scored higher on these values ($d = .40$, $CI = [0.20, 0.61]$; $d = 0.40$, $CI = [0.19, 0.60]$, respectively). However, in the university sample (sample 2), males only scored higher in management values (and not in salary-related values) with a much lower effect size ($d = .15$, $CI = [0.00, 0.31]$). Overall, there was support for both hypotheses 1 and 2 across both samples.

Rank-Order Stability and Mean-Level Changes

My fourth research question asked, "How stable are work values across time?". To test this, I examined correlations among work value rankings for each timepoint. Table 10 displays results for these analyses. On average in both samples, correlations were moderately stable among adjacent waves ranging with an average of $r = .65$ for sample 1 (community college) and $r = .67$ for sample 2 (university). Correlations ranged from the lowest being in the community college sample (sample 1) from wave 2 to 3 with an $r = .51$ in specialization values to the highest being in the university sample (sample 2) from wave 2 to 3 in salary-related values with an $r = .79$. Taken together, these results indicate relative stability of work value rankings across waves.

Research question 5 asked "How do mean-levels of work values change across the transition out of college?". To test this question, I ran a general linear growth curve model. Table 11 shows findings of this analysis. In this table, the mean slope values represent the average rate of change per 4 months in the metrics of the work value scales for sample 1 and per 2 months for

sample 2. In general, the fit statistics indicated acceptable or good fit ($RMSEA < .08$; $CI > .97$) for all models. The σ^2 values represent the variance of the intercepts and slopes. Some variances had to be fixed to 0 for a model to be estimated (as indicated by asterisks in Table 11). Across both samples, there were significant (negative) slopes for altruism, management, specialization, and interesting work-related values, but there was little slope variance in each sample ($\sigma^2 < .008$). This indicates that there was little variability in how work values changed across individuals.

Research question 6 asked if the sizes of subgroup differences in work values change across this time. To test this, I ran two separate linear growth curve models; one with gender and one with parental education as the predictor. I did not run a model with ethnicity as a predictor due to the relatively small sample sizes of many ethnicity subgroups which would result in statistical power too low for any valid conclusions about slopes differences. Tables 12 and 13 show results for the gender and parental education models, respectively (standardized with respect to work value scales). Overall, there were no major changes in work values from the initial subgroup differences. In Table 12, positive values indicate that males scored higher while negative values indicate that females scored higher. Most intercept coefficients (β) in this model were negative, indicating that females generally scored higher on most values. In Table 13, positive values indicate that higher levels of parental education scored higher on a value, while negatives indicate that lower levels of parental education scored higher. Intercept coefficients (β) were mostly negative for this model, indicating that lower levels of parental education scored higher on most values, coinciding with the results in Table 7. Apart from variety values in sample 2 of the gender model, there were no other significant associations between slopes and gender or parental education across samples. Taken together, these findings suggest that initial

differences in work values across gender and parental educational attainment were stable across time.

Finally, as some of the general differences in work values differed across the two samples, I decided to conduct an exploratory analysis to compare the value means of the two samples. I compared the value means of the corresponding waves (each 4 months) of each sample (Table 14). Generally, the community college sample (sample 1) scored higher on most values across most timepoints. Altruism, specialization, and variety-related values were significantly higher for sample 1 at each timepoint, though these differences decreased at each subsequent timepoint. Overall, this pattern of results is consistent with the findings for parental education, as participants from sample 1 (community college) generally had lower parental education than sample 2 (university).

Discussion

This study examined differences in work values among various demographics including gender, ethnicity, age, and socioeconomic background (parental educational attainment) during the important transitory period between college and the professional workforce. Moreover, this study examined the general changing nature of values throughout this period and used two different samples: community college and university graduates (the former being an understudied population in work values research). The results of this study suggest mean differences in work values among different gender, ethnicity, and parental education groups across both community college and university graduates. Further, these findings suggest that work values do not change significantly during the school-to-work transition period for neither community college nor university graduates. A more detailed discussion of these findings is included in the following paragraphs.

Demographic Differences in Work Values

The findings of this study indicated some general trends in differences in work values based on ethnicity, parental education, and gender. Though most patterns of differences based on ethnicity were not consistent across samples, one interesting trend did stand out in both samples. Among both community college and university graduates, Whites scored lower on all values at the first wave. One possible explanation for these findings could be the participants' socioeconomic status. My results indicated that those from higher socioeconomic status (parental education) generally scored lower on work values. Moreover, Whites had the highest percentages of advanced degrees (associate's degrees and higher) in both samples (see Appendix E). It is thus possible that Whites scoring lower on values was directly linked to having the highest levels of parental education on average. It is also worth mentioning that most of the work values in which Whites scored lower on were extrinsic values which had to do with salary, prestige, and agency (i.e., management, salary, independence). These results pose an interesting contrast to Kashefi's (2011) findings which suggested that enhancement reward values such as status and prestige, were valued more strongly by Black than White Americans. It is important to note however, that my findings are only the results two samples, thus more multi-ethnic studies on work values beyond the Black vs White comparisons would be required to draw further conclusions about ethnicity differences.

A closer look at differences among different levels of parental education (i.e., socioeconomic status) indicate that those with lower parental education levels (specifically in the community college sample) prioritized status or compensatory-related values such as management, work-life balance, and salary, more than those with higher parental education levels. These findings are consistent with previous research which has found that those who grew

up in high SES households (who likely already have jobs highly consist with these values) are not as motivated to achieve or prioritize those values as much those who grew up in low SES households (Halaby, 2003; Johnson, 2002; Warr, 2008). Additionally, the results of the current study suggest that across both samples, those with the lowest parental education levels (less than college), prioritized outdoors-related work values more than those with higher parental education. This is an important and interesting finding as outdoors-related values are typically not included in work value measures, yet in this study they were prioritized by individuals from low SES backgrounds (i.e., one of the most understudied populations who make up a sizeable portion of the workforce). According to Gottfredson's (1981) Circumscription Compromise Model, it is possible that these values were formed because of environmental cues that created a stronger association with outdoor work. For example, it is possible that individuals from lower parental educational backgrounds had more exposure to and modeling of outdoors jobs via their caretakers, thus creating a self-concept which that includes an outdoors-related occupation.

No major differences were found among age groups in this study. Previous research suggests that most changes in work values occur between the ages of 18-22 and become stable after the age of 22 (Jin & Rounds, 2012; Twenge et al., 2010). Based on these findings, it is not surprising that there were not many differences among the three age groupings as most of these changes would have happened among the initial age group of these analysis (18-21). Further, the only two significant differences in this analysis were in comparison with the oldest group (26+). This could potentially signify that the middle group (22-25) was too close in range with the younger reference group for any meaningful differences (i.e., not much difference between 21 and 22 year-olds). Indeed, the majority of the 22-25 age group consisted of 22 and 23 year-olds

in both samples (51% in sample 1; 85% in sample 2), which could further explain the lack of differences.

Regarding gender, findings from this study converged with the consensus on gender in work value literature. Consistent with the findings of Konrad et al. (2000) as well as Rowe and Snizek (1995), this study found differences in communal values among men and women such that women tended to place more importance on communal values. In addition to this, the current study found support for men prioritizing agentic values more than women. These findings support Eagly's (1987) Social Role Theory which posits that women value more communal values while men value more agentic values due to reinforced stereotypes about occupations throughout individuals' upbringings. These findings suggest that traditional gender stereotypes regarding work could still be playing a large role in what men and women value in their careers.

Community College vs. University

Overall, the community college sample had higher means of work values than the university sample, especially with values pertaining to salary and compensation. These between-sample differences generally converged with within-sample ethnic and parental educational breakdowns. It is likely that these differences were due to socioeconomic status as the community college sample had lower levels of parental educational attainment, hence the higher scores on values.

It is also worth noting that university graduates with higher parental educational attainment (associate's degree and higher) scored higher on intrinsic values (e.g., altruism and variety), while their community college sample counterparts scored higher on extrinsic values (salary and management). One possible reason for this difference could be that regardless of parental education, the average household incomes were different among the two samples. As

affordability is one of the primary reasons that students report attending community college (National Center for Science and Engineering Statistics, 2020), it is possible that despite having the same parental education level, those in the community college sample had lower household incomes than those in the university sample. This would support previous studies on socioeconomic status which found that those from lower income households placed a higher priority on compensatory values (Halaby, 2003; Johnson, 2002; Warr, 2008). Moreover, according to the American Association of Community College (2022) report, many community college students are financially independent from their parents or have dependents themselves. This could also make compensatory values a higher priority among these individuals.

Work Value Stability and Change During the School-to-Work Period

Across both samples, altruism, management, specialization, and interesting work values showed slight, but statistically significant decreases across time. This is consistent with past work values research suggesting that intrinsic values (values related to the nature of the work itself such as altruism, specialization, and interesting work) tend to decrease with age (Jin & Rounds, 2012). Despite these findings, the overall changes in work values were small and largely nonsignificant. This could be due to the short span of this study (less than 1 year), which may not have allowed adequate time for changes in participants' values to accrue. Though the frequent measurement of values in this study (every 2 or 4 months) offers a close view of any potential changes, a longer timespan would be more likely to result in larger changes. Future studies should encompass a longer longitudinal design with frequent measurement for optimal monitoring of changes in work values.

Contributions, Limitations, and Future Research

The findings of this study have several theoretical and practical contributions. First, to my knowledge, this is one of the first studies rooted in theory that examines differences in values across ethnicity, gender, age, and socioeconomic status (parental education) as well as one of the first to include and compare a community college sample with the traditional university sample. Most other studies have included demographics as control variables without much focus on their outcomes or theoretical explanations, and almost all studies on college student work values utilize participants in universities (Rounds & Leuty, 2020). Thus, not only does this study offer a first and important look at subgroup differences in values rooted in theory while also utilizing an understudied population of community college graduates, but it draws a comparison of this population with the traditional one (i.e., university graduates). The significant differences between the two samples found in this study highlight how work values can differ across samples. Additionally, the longitudinal design and the timing of the data collection are key strengths that serve as important contributions of this study. The longitudinal nature of this study is an essential part of measuring work values as it captures their changing nature, while the frequent timepoints of data collection capture a closer view of these changes. This is specifically important in the crucial school-to-work transition period when many recent graduates' expectations of work meet the realistic professional world of work and are thus subject to potential changes (Jin & Rounds, 2012).

This study's findings also have important empirical and practical implications. The findings in relation to different ethnicities prioritizing different work values suggest the importance of using ethnically diverse samples in research to represent an ethnically diverse workforce (Jones, Ramirez, & Ríos-Vargas, 2021). Moreover, one of the most significant differences in work

values found in this study was among people from different socioeconomic backgrounds. As more people from lower socioeconomic status are obtaining higher education, past research utilizing people from middle to upper socioeconomic backgrounds may not be as generalizable to the workforce (Rounds & Leuty, 2020). Thus, this study provides an opportunity for practitioners and researchers to re-examine the conventional literature on work values. Finally, another important contribution of this study is its re-examination of gender differences in work values after a general decrease of research on this topic. The gender composition of the workforce in certain career fields have changed quite a bit over the past two decades (National Center for Education Statistics, 2013), indicating the importance of this re-examination. Although this study did not find much difference in work value prioritization from past research, it is nonetheless an important demographic variable to include in future research as gender norms and the workforce undergo rapid, significant changes.

Though this study has many contributions, it is not without its limitations. While also being its strength, the sample of this study posed several limitations. First, the overall sizes of the samples (i.e., ethnic breakdowns for the linear model) were relatively small for some of the subgroup comparisons ($N < 20$). Moreover, both samples could have been more demographically diverse as they consisted of participants who were mostly female, primarily in their early 20s, and included small numbers of Native American and Black American participants. To avoid this issue, future studies examining demographic differences in work values should aim for larger samples that would encompass larger and more equally representative demographic groups for subgroup comparisons. Moreover, studies examining differences among two different samples (i.e., community college vs. university) should ensure that each sample has a roughly equal N for more accurate cross-sample comparisons.

Another limitation of this study was its short time span. Indeed, most changes across work values occur within the span of at least several years (Jin & Rounds, 2012), while the present study only measured participants' work values for less than a year. The lack of changes in work values in this study may be due to its short time span. Future longitudinal studies on work values should ensure data collection across a longer time span, ideally starting earlier in the developmental process and throughout later in the lifespan to capture significant changes (Jin & Rounds, 2012).

Additionally, this study only measured socioeconomic status via parental educational attainment. Though parental educational attainment is commonly used as a measure of graduates' socioeconomic background (Arro et al., 2009) and correlates strongly with parental income (Boshara et al., 2015), SES can also reflect personal income, household income, already attained wealth, and class (especially as it is likely that many college students are financially independent; American Association of Community College, 2022). Measuring parental income in addition to parental education would provide a more accurate assessment of the participants' socioeconomic background, while their own income would be useful as it could determine their own immediate needs and priorities (and subsequent work-related values). Future research should ensure the inclusion of all these components when measuring socioeconomic status.

Finally, it is important to note that some subgroup differences found in my study may not have any theoretical or empirical explanations. For example, there were some work values that were significant only for a specific subgroup but followed no general trend across the two samples or were not consistent with other similar values. Such findings could be unique to the samples used in this specific study. More long-term, longitudinal studies with diverse and

representative samples are needed to determine if these specific differences are consistent throughout different samples and studies or just unique to this study.

Conclusion

This study provided an important and useful examination of work values across different ethnicities, ages, genders, and socioeconomic statuses. A key strength was the inclusion of understudied community college graduates in addition to more commonly studied university graduates. Additionally, this study utilized a longitudinal design to capture the changing nature of work values during the important school-to-work transition period. The results of this study suggest some differences in work values among ethnicities in the U.S. beyond the typical Black vs. White comparison in work values research (Rounds & Leuty, 2020). Additionally, this study found differences in values based on socioeconomic status, another important, yet often overlooked factor in work values literature. Moreover, this study found that gender differences still prevail in work values, despite the rapidly changing social norms and gender composition of the workforce. Empirically, these findings suggest important areas for investigation that are often overlooked in work values research while practically, these findings could help career counselors and employers better understand students or employees' work values in relation to their multi-faceted backgrounds.

Table 1
Confirmatory Factor Loadings for Community College Graduates (Sample 1)

	Altruism	Management	Specialization	Independence	Work-Life Balance	Variance	Outdoor Physical	Interesting Work	Salary Prestige
Provide personal care to others	.65								
Build and maintain personal relationships	.59								
Provide service to others	.77								
Help others develop and grow	.77								
Supervise other people's work		.74							
Coordinate or lead others		.82							
Be responsible for others' work		.62							
Build on relevant work knowledge			.66						
Use the knowledge that I have learned			.69						
Use my strongest skills			.77						
Set my own schedule				.68					
Plan my own work				.83					
Work independently				.57					
Work a reasonable number of hours per week					.64				
Keep work and the rest of my life balanced					.68				
Work for a company that respects that I have a life outside of work					.62				
Have a wide variety of work activities						.60			
Have a work environment that is always new or unpredictable						.73			
Do something different every day						.87			
Work outside							.73		
Perform physical work tasks							.70		
Be out in nature while I work							.75		
Get exercise while I work							.74		
Find my work tasks fascinating								.71	
Be interested in my work tasks								.78	
Pursue my interests through my career								.73	
Have a high salary									.67
Have a prestigious career									.85
Make enough money to buy expensive things									.70
Have a high-status career									.86

Note: N = 588. CFI = .86, TLI = .84, RMSEA = .07, SRMR = .06.

Table 2*Confirmatory Factor Loadings for University Graduates (Sample 2)*

	Altruism	Management	Specialization	Independence	Work-Life Balance	Variance	Outdoor	Interesting	Salary
Provide personal care to others	.64								
Build and maintain personal relationships	.65								
Provide service to others	.74								
Help others develop and grow	.78								
Supervise other people's work		.76							
Coordinate or lead others		.85							
Be responsible for others' work		.67							
Build on relevant work knowledge			.70						
Use the knowledge that I have learned			.71						
Use my strongest skills			.64						
Set my own schedule				.69					
Plan my own work				.80					
Work independently				.51					
Work a reasonable number of hours per week					.65				
Keep work and the rest of my life balanced					.72				
Work for a company that respects that I have a life outside of work					.69				
Have a wide variety of work activities						.70			
Have a work environment that is always new or unpredictable						.77			
Do something different every day						.80			
Work outside							.80		
Perform physical work tasks							.57		
Be out in nature while I work							.87		
Get exercise while I work							.62		
Find my work tasks fascinating								.78	
Be interested in my work tasks								.81	
Pursue my interests through my career								.71	
Have a high salary									.65
Have a prestigious career									.85
Make enough money to buy expensive things									.66
Have a high-status career									.88

Note. N= 816. CFI = .86, TLI =.84, RMSEA= .07, SRMR=.06.

Table 3*Means, Standard Deviations, and Alpha Reliabilities of Work Values*

	Wave 1			Wave 2			Wave 3			Wave 4		
	Mean	Std. Deviation	<i>a</i>	Mean	Std. Deviation	<i>a</i>	Mean	Std. Deviation	<i>a</i>	Mean	Std. Deviation	<i>a</i>
<i>Community college graduates (Sample 1)</i>												
Altruism	3.70	0.90	0.79	3.46	0.94	0.80	3.40	0.98	0.82			
Management	2.66	0.99	0.76	2.45	1.00	0.81	2.41	1.00	0.79			
Specialization	3.96	0.77	0.74	3.76	0.79	0.73	3.74	0.81	0.77			
Independence	3.34	0.96	0.73	3.23	0.87	0.68	3.27	0.94	0.75			
Work- life Balance	4.25	0.69	0.67	4.19	0.72	0.72	4.20	0.74	0.74			
Variety	2.96	0.98	0.77	2.80	0.93	0.78	2.87	1.03	0.82			
Interesting	4.14	0.81	0.78	3.98	0.81	0.77	3.99	0.80	0.75			
Salary	3.08	1.09	0.86	2.97	1.02	0.83	2.95	1.07	0.86			
Outdoors	2.26	0.99	0.82	2.15	0.96	0.83	2.14	0.91	0.80			
<i>University graduates (Sample 2)</i>												
Altruism	3.49	0.94	0.80	3.28	0.94	0.79	3.26	0.93	0.80	3.21	0.94	0.79
Management	2.60	1.00	0.80	2.42	0.96	0.80	2.36	0.97	0.84	2.34	0.99	0.83
Specialization	3.70	0.81	0.72	3.61	0.81	0.74	3.54	0.80	0.75	3.60	0.80	0.75
Independence	3.15	0.88	0.69	3.16	0.87	0.70	3.17	0.80	0.64	3.17	0.82	0.69
Work-life Balance	4.26	0.68	0.73	4.21	0.75	0.79	4.23	0.71	0.80	4.24	0.69	0.76
Variety	2.76	0.92	0.77	2.73	0.93	0.80	2.67	0.86	0.77	2.74	0.89	0.79
Interesting	4.05	0.80	0.81	3.94	0.82	0.79	3.86	0.84	0.80	3.93	0.81	0.78
Salary	3.10	1.01	0.85	3.04	0.97	0.85	3.07	0.99	0.86	3.06	0.97	0.86
Outdoors	2.01	0.92	0.81	2.00	0.92	0.85	2.04	0.90	0.83	1.96	0.89	0.84

Note: Sample 1 $N = 588$, Sample 2 $N = 814$.

d values within samples indicate effect size of mean difference of value from the first wave to final wave of corresponding sample.

Table 4*All Variables Correlation Matrix of Community College Graduates (Sample 1)*

	Gender	Age	Parental Education	Ethnicity (Asian)	Ethnicity (Black)	Ethnicity (Latino)	Ethnicity (White)	Ethnicity (Other)	Alt.	Manag.	Spec.	Ind.	WLB	Variety	Interesting	Salary	Outdoors
Age	.25**																
Parental Education	.27**	.13**															
Ethnicity (Asian)	.05	-.05	.09*														
Ethnicity (Black)	.05	.10*	.00	-.12**													
Ethnicity (Latino)	.05	-.06	-.24**	-.31**	-.27**												
Ethnicity (White)	.11**	.16**	.26**	-.26**	-.22**	-.56**											
Ethnicity (Other)	.00	.02	.13**	-.07	-.06	-.16**	-.13**										
Altruism	.08	.04	.04	.01	.08	.01	-.06	.04									
Management	-.09*	.04	-.06	.16**	.07	.03	-.17**	.00	.42**								
Specialization	.04	.05	.02	-.04	.04	.07	-.07	.04	.55**	.34**							
Independence	-.05	.03	-.06	.12**	.06	.06	-.18**	.01	.24**	.51**	.41**						
Work-life Balance	.02	.01	.05	-.01	.08*	.02	-.06	.05	.31**	.14**	.40**	.41**					
Variety	-.05	-.06	-.04	.01	.09*	.06	-.14**	.05	.40**	.37**	.53**	.47**	.26**				
Interesting	.04	-.10*	.02	-.01	.03	.09*	-.09*	.01	.47**	.20**	.60**	.33**	.40**	.45**			
Salary	-.13**	-.06	-.13**	.13**	.07	.07	-.23**	.03	.20**	.50**	.34**	.50**	.26**	.46**	.28**		
Outdoors	-.01	-.01	-.04	.12**	.02	.06	-.16**	.05	.31**	.41**	.32**	.42**	.19**	.57**	.26**	.40**	-

Note: $N = 588$, * $p < .05$, ** $p < .01$. Alt. = Altruism; Manag. = Management; Ind. = Independence, WLB = Work-life Balance.

Table 5*All Variables Correlation Matrix of University Graduates (Sample 2)*

	Gender	Age	Parental Education	Ethnicity (Asian)	Ethnicity (Black)	Ethnicity (Latino)	Ethnicity (White)	Ethnicity (Other)	Alt.	Manag.	Spec.	Ind.	WLB	Variety	Interesting	Salary	Outdoors
Age		-.03															
Parental Education	.07	-.05															
Ethnicity (Asian)	-.01	-.09**	.04														
Ethnicity (Black)	.01	.05	.04	-.16**													
Ethnicity (Latino)	.02	.07	-.38**	-.39**	-.18**												
Ethnicity (White)	-.01	.04	.29**	-.52**	-.16**	-.39**											
Ethnicity (Other)	-.01	-.01	.00	-.15**	-.04	-.11**	-.15**										
Altruism	.04	-.07	-.02	.02	-.03	.04	-.06	.05									
Management Specialization	-.11**	.02	-.02	.07*	.02	.02	-.10**	.03	.50**								
Independence	-.04	.09*	-.08*	.07*	.00	.07*	-.14**	.02	.24**	.42**	.38**						
Work-life Balance	-.02	.02	-.06	.04	-.02	.04	-.05	-.04	.20**	.11**	.25**	.40**					
Variety	.02	-.01	-.04	.00	.04	.06	-.09**	.04	.38**	.45**	.45**	.39**	.13**				
Interesting	-.04	.04	-.08*	.06	.01	.05	-.11**	.00	.27**	.38**	.27**	.41**	.16**	.52**			
Salary	.06	-.09*	.01	-.03	.02	.05	-.03	.02	.42**	.25**	.58**	.32**	.30**	.44**	.29**		
Outdoors	-.08*	-.02	-.04	.15**	.00	.02	-.17**	.02	.11**	.42**	.28**	.38**	.19**	.30**	.22**	.24**	-

Note: N = 814. * p < .05, ** p < .01. Alt. = Altruism; Manag. = Management; Ind. = Independence, WLB = Work-life Balance.

Table 6*Effect Sizes of Work Values Based on Ethnicity, Reflecting Differences from the Overall Mean*

<i>Community college graduates (Sample 1)</i>	95% Confidence Interval			95% Confidence Interval			95% Confidence Interval			95% Confidence Interval			95% Confidence Interval			
	Asian <i>d</i>	Lower	Upper	Black <i>d</i>	Lower	Upper	Latino <i>d</i>	Lower	Upper	White <i>d</i>	Lower	Upper	Other <i>d</i>	Lower	Upper	
Altruism	.02	-.21	.26	.28	.02	.55	.00	-.13	.13	-.10	-.24	.05	.20	-.26	.65	
Management	.42	.18	.66	.20	-.06	.47	.03	-.10	.16	-.27	-.41	-.12	-.03	-.48	.42	
Specialization	-.11	-.34	.12	.10	-.16	.37	.08	-.05	.21	-.12	-.27	.02	.19	-.26	.65	
Independence	.36	.13	.60	.18	-.08	.45	.07	-.06	.19	-.28	-.42	-.13	.05	-.40	.50	
Work-life Balance	-.04	-.27	.19	.30	.04	.57	.01	-.12	.14	-.09	-.24	.05	.26	-.20	.72	
Variety	.01	-.22	.25	.28	.01	.55	.07	-.06	.20	-.22	-.37	-.07	.25	-.21	.71	
Interesting	-.05	-.28	.18	.08	-.18	.34	.11	-.02	.23	-.14	-.28	.01	.05	-.40	.50	
Salary	.38	.14	.62	.22	-.04	.49	.10	-.03	.23	-.35	-.50	-.20	.13	-.32	.58	
Outdoors	.28	.05	.52	.04	-.22	.31	.06	-.07	.19	-.26	-.41	-.11	.25	-.21	.71	
<i>University graduates (Sample 2)</i>																
Altruism	.02	-.09	.14	-.17	-.50	.16	.08	-.06	.23	-.08	-.20	.04	.28	-.07	.64	
Management	.09	-.03	.21	.12	-.20	.45	.03	-.12	.17	-.14	-.26	-.02	.21	-.14	.57	
Specialization	-.01	-.12	.11	.11	-.21	.44	.10	-.05	.24	-.10	-.22	.02	.25	-.11	.60	
Independence	.09	-.02	.21	.00	-.33	.32	.14	-.01	.28	-.19	-.31	-.07	.07	-.28	.43	
Work-life Balance	.06	-.06	.18	-.08	-.41	.25	.08	-.07	.22	-.07	-.19	.05	-.18	-.53	.18	
Variety	.00	-.11	.12	.18	-.15	.51	.11	-.03	.26	-.13	-.25	-.01	.25	-.11	.61	
Interesting	-.04	-.15	.08	.09	-.23	.42	.10	-.05	.24	-.05	-.17	.07	.09	-.26	.44	
Salary	.21	.09	.33	-.02	-.34	.31	.03	-.12	.17	-.25	-.36	-.13	.08	-.27	.43	
Outdoors	.08	-.04	.20	.05	-.28	.38	.09	-.06	.23	-.16	-.27	-.04	.00	-.36	.35	

Note: Due to low sample sizes, "Native American" and "Other" responses were combined in both samples.

Sample 1, Asian N = 73, Black N = 57, Latino N = 236, White N = 183, Other N = 20.

Sample 2, Asian N = 283, Black N = 37, Latino N = 184, White N = 279, Other N = 32.

Negative *d* = ethnic group scored lower than overall mean, positive *d* = ethnic group scored higher than overall mean.

Bolded values indicate significant *d* values.

Table 7*Effect Sizes of Work Values Based on Parental Educational Attainment*

	< High School vs HS Diploma			< High School vs Some College			< High School vs Associate Degree			< High School vs Bachelor's Degree			< High School vs Graduate Degree		
	95% Confidence Interval			95% Confidence Interval			95% Confidence Interval			95% Confidence Interval			95% Confidence Interval		
	<i>d</i>	Lower	Upper	<i>d</i>	Lower	Upper	<i>d</i>	Lower	Upper	<i>d</i>	Lower	Upper	<i>d</i>	Lower	Upper
<i>Community college graduates (Sample 1)</i>															
Altruism	-.03	-.30	.25	.03	-.27	.33	.24	-.11	.59	-.03	-.32	.25	.11	-.21	.44
Management	.22	-.06	.49	.29	-.01	.59	.24	-.11	.59	.41	.12	.69	.54	.21	.87
Specialization	-.03	-.30	.25	.08	-.22	.38	.36	.01	.71	.02	-.26	.30	.11	-.22	.43
Independence	.17	-.11	.44	.29	-.01	.59	.19	-.16	.54	.43	.14	.71	.27	-.06	.60
Work-life Balance	-.10	-.38	.17	-.18	-.48	.12	-.01	-.35	.34	-.11	-.40	.17	-.08	-.41	.24
Variety	.16	-.11	.44	.29	-.01	.59	.18	-.17	.53	.28	-.01	.56	.16	-.17	.48
Interesting	.05	-.23	.32	.22	-.08	.52	.19	-.16	.54	.11	-.18	.39	-.09	-.41	.24
Salary	.21	-.06	.49	.41	.10	.71	.28	-.07	.63	.62	.33	.91	.46	.13	.79
Outdoors	.28	.00	.55	.34	.04	.64	.00	-.35	.35	.47	.18	.75	.25	-.08	.57
<i>University graduates (Sample 2)</i>															
Altruism	.34	.04	.64	.42	.10	.73	.32	-.05	.69	.31	.05	.57	.21	-.05	.46
Management	.28	-.02	.58	.29	-.02	.60	.34	-.03	.71	.25	-.01	.51	.15	-.11	.40
Specialization	.29	-.02	.58	.15	-.16	.46	.32	-.05	.69	.35	.09	.61	.17	-.09	.42
Independence	.02	-.28	.32	.18	-.13	.49	.25	-.12	.62	.24	-.02	.50	.24	-.02	.49
Work-life Balance	.06	-.24	.36	.11	-.20	.42	.09	-.28	.45	.32	.06	.58	.14	-.11	.40
Variety	.33	.03	.63	.30	-.01	.61	.37	-.01	.74	.24	-.02	.50	.28	.02	.53
Interesting	.16	-.14	.46	.10	-.21	.41	.12	-.25	.48	.13	-.13	.39	.03	-.22	.29
Salary	.20	-.10	.50	.19	-.12	.50	.13	-.24	.50	.14	-.12	.40	.21	-.05	.46
Outdoors	.37	.06	.67	.42	.11	.73	.25	-.12	.62	.46	.19	.72	.35	.09	.61

Note: *d* = Cohen's *d*. Bolded = significant *d* values. Sample 1; < High School Diploma N = 80, High School Diploma N = 141, Some College N = 94, Associate's Degree N = 53, Bachelor's Degree N = 118, Graduate Degree N = 67. Sample 2; < High School Diploma N = 77, High School Diploma N = 98, Some College N = 85, Associate's Degree N = 45, Bachelor's Degree N = 227, Graduate Degree N = 258. Positive *d* = first group (< High School) scored higher, negative *d* = second group (comparison group) scored higher.

Table 8*Effect Sizes of Work Values Based on Age Groups*

	18-21 vs 22-25			18-21 vs 26+		
	Cohen's <i>d</i>	95% Confidence Interval		Cohen's <i>d</i>	95% Confidence Interval	
Lower		Upper	Lower		Upper	
<i>Community college graduates (Sample 1)</i>						
Altruism	-.04	-.26	.18	-.16	-.35	.03
Management	.00	-.22	.22	-.06	-.25	.13
Specialization	-.13	-.35	.09	-.26	-.45	-.07
Independence	-.04	-.26	.18	-.16	-.34	.03
Work-life Balance	-.08	-.30	.15	-.04	-.23	.15
Variety	.12	-.10	.34	.07	-.12	.26
Interesting	.04	-.18	.26	.13	-.06	.32
Salary	-.13	-.35	.09	.01	-.18	.20
Outdoors	-.08	-.30	.14	-.03	-.22	.16
<i>University graduates (Sample 2)</i>						
Altruism	.07	-.09	.23	.19	-.08	.47
Management	-.07	-.23	.09	-.18	-.45	.10
Specialization	.06	-.11	.22	-.01	-.29	.26
Independence	.15	-.02	.31	-.28	-.55	.00
Work-life Balance	.13	-.03	.29	-.03	-.31	.24
Variety	.03	-.13	.19	.12	-.16	.39
Interesting	.03	-.13	.20	.34	.07	.62
Salary	.00	-.16	.17	.01	-.27	.28
Outdoors	.01	-.15	.17	-.07	-.34	.21

*Note:*Sample 1: 18-21; *N* = 80, 22-25; *N* = 141, 26+; *N* = 94.Sample 2: 18-21; *N* = 206, 22-25; *N* = 521, 26+; *N* = 68.Positive *d* = first group (reference group) scored higher, negative *d* = second group (comparison group) scored higher. Bolded *d* value = statistically significant.

Table 9*Effect Sizes of Work Values Based on Gender*

	Cohen's <i>d</i>	95% Confidence Interval	
		Lower	Upper
<i>Community college graduates (Sample 1)</i>			
Altruism	-.37	-.58	-.17
Management	.40	.20	.61
Specialization	-.10	-.30	.11
Independence	.13	-.08	.33
Work-life Balance	.00	-.21	.20
Variety	.06	-.14	.27
Outdoors	.20	.00	.40
Interesting	-.13	-.34	.07
Salary	.40	.19	.60
<i>University graduates (Sample 2)</i>			
Altruism	-.30	-.45	-.14
Management	.15	.00	.31
Specialization	.08	-.08	.23
Independence	.08	-.08	.23
Work-life Balance	-.13	-.28	.03
Variety	-.07	-.23	.08
Outdoors	.09	-.06	.25
Interesting	-.19	-.34	-.03
Salary	.14	-.02	.29

Note:

Sample 1: Male *N* = 117, Female *N* = 438.

Sample 2: Male *N* = 225, Female *N* = 572.

Positive *d* = higher score on work value by males, Negative *d* = higher score on work value by females.

Table 10*Work Value Correlations Across Waves (Rank-Order Stability)*

	Wave 1 vs. Wave 2	Wave 2 vs. Wave 3	Wave 3 vs. Wave 4
<i>Community college graduates (Sample 1)</i>			
Altruism	.74	.73	
Management	.67	.66	
Specialization	.63	.51	
Independence	.61	.57	
Work-life Balance	.56	.61	
Variety	.65	.66	
Interesting	.61	.55	
Salary	.75	.75	
Outdoors	.71	.74	
<i>Average r</i>	.66	.64	
<i>University graduates (Sample 2)</i>			
Altruism	.72	.70	.71
Management	.68	.72	.72
Specialization	.56	.60	.59
Independence	.59	.63	.60
Work-life Balance	.59	.61	.53
Variety	.64	.65	.67
Outdoors	.71	.74	.75
Interesting	.65	.66	.65
Salary	.77	.79	.77
<i>Average r</i>	.66	.68	.67

*Note:*Sample 1: T1 $N = 816$, T2 $N = 470$, T3 $N = 406$, T4 $N = 421$.Sample 2: T1 $N = 816$, T2 $N = 470$, T3 $N = 406$, T4 $N = 421$.All correlations had $p < .01$.

Table 11*Linear Growth Curve Models*

	Intercept				Slope				Fit Indices				
	M	SE (M)	σ^2	SE (σ^2)	M	SE (M)	σ^2	SE(σ^2)	RMSEA	χ^2	CFI	TLI	SRMR
<i>Community college graduates (Sample 1)</i>													
Altruism	3.70	0.04	0.62	0.07	-0.029	0.005	0.003	0.002	0.03	1.59	1.00	1.00	0.01
Management	2.65	0.04	0.69	0.09	-0.021	0.006	0.003	0.003	0.05	2.48	1.00	0.99	0.01
Specialization	3.95	.031	0.37	0.03	-0.025	0.005	0.000*	0.000*	0.05	6.58	0.99	0.99	0.05
Independence	3.34	0.04	0.55	0.08	-0.006	0.006	0.000	0.002	0.00	0.22	1.00	1.01	0.00
Work-life Balance	4.25	0.03	0.25	0.05	-0.007	0.005	0.001	0.001	0.00	0.14	1.00	1.01	0.00
Variety	2.94	0.04	0.62	0.05	-0.003	0.006	0.000*	0.000*	0.06	8.58	0.99	0.96	0.03
Interesting	4.13	0.03	0.40	0.03	-0.018	0.005	0.000*	0.000*	0.05	6.73	0.99	0.99	0.04
Salary	3.08	0.04	0.86	0.06	-0.006	0.005	0.000*	0.000*	0.00	1.33	1.00	1.00	0.02
Outdoors	2.25	0.04	0.63	0.08	-0.008	0.005	0.000	0.002	0.25	0.00	1.00	1.01	0.00
<i>University graduates (Sample 2)</i>													
Altruism	3.48	0.03	0.63	0.05	-0.047	0.006	0.003	0.002	0.03	8.02	1.00	1.00	0.03
Management	2.59	0.03	0.69	0.05	-0.034	0.006	0.001	0.002	0.02	6.31	1.00	1.00	0.03
Specialization	3.69	0.03	0.36	0.04	-0.020	0.006	0.004	0.002	0.03	7.57	1.00	1.00	0.04
Independence	3.16	0.03	0.48	0.04	0.000	0.006	0.001	0.002	0.00	1.46	1.00	1.01	0.02
Work-life Balance	4.25	0.02	0.30	0.03	-0.009	0.005	0.004	0.001	0.06	17.80	0.98	0.97	0.11
Variety	2.77	0.03	0.59	0.05	-0.003	0.006	0.004	0.002	0.00	3.09	1.00	1.00	0.01
Interesting	4.04	0.03	0.43	0.04	-0.025	0.006	0.007	0.002	0.06	17.30	0.98	0.98	0.07
Salary	3.11	0.04	0.79	0.79	-0.005	0.005	0.003	0.001	0.00	2.51	1.00	1.00	0.02
Outdoors	2.02	0.03	0.61	0.04	-0.003	0.005	0.001	0.001	0.02	6.97	1.00	1.00	0.02

Note: Bolded values indicate statistical significance $p < .05$. * indicate variances had to be fixed to 0 for the model to be estimated. Sample 1 $N = 583$, Sample 2 $N = 814$. Negative slope M indicates decrease of value across time.

Table 12*Linear Growth Curve Models with Gender as Predictor*

	Intercept		Slope		Fit Indices				
	B	95% CI	B	95% CI	RMSEA	χ^2	CFI	TLI	SRMR
<i>Community college graduates (Sample 1)</i>									
Altruism	0.06	[0.15, -0.03]	-0.15	[-0.36, 0.06]	0.00	1.64	1.00	1.00	0.01
Management	-0.23	[-0.13,-0.32]	-0.20	[-0.39, -0.01]	0.02	2.32	1.00	1.00	0.01
Specialization	-0.03	[0.08, -0.13]	0.00	n.s.	0.06	6.55	0.98	0.95	0.02
Independence	-0.13	[-0.03,-0.24]	0.00	n.s.	0.00	1.34	1.00	1.00	0.01
Work-life Balance	-0.06	[0.05,-0.17]	0.08	[-0.28, 0.45]	0.00	0.25	1.00	1.02	0.01
Variety	-0.08	[0.03,-0.19]	0.00	n.s.	0.07	6.73	0.99	0.97	0.02
Interesting	0.01	[0.11,-0.09]	0.00	n.s.	0.06	6.16	0.99	0.96	0.02
Salary	-0.18	[-0.08,-0.27]	0.00	n.s.	1.35	0.00	1.00	1.00	0.01
Outdoors	-0.10	[-0.05, 0.15]	0.00	n.s.	0.02	2.49	1.00	0.98	0.01
<i>University graduates (Sample 2)</i>									
Altruism	0.16	[0.23, 0.08]	-0.16	[-0.37, 0.06]	0.01	7.65	1.00	1.00	0.03
Management	-0.07	[0.01,-0.15]	-0.07	[-0.42, 0.29]	0.01	8.10	1.00	1.00	0.03
Specialization	-0.03	[0.06,-0.12]	-0.10	[-0.31, 0.11]	0.02	8.63	1.00	1.00	0.04
Independence	-0.04	[0.05,-0.12]	0.02	[-0.31, 0.35]	0.00	1.57	1.00	1.01	0.02
Work-life Balance	0.09	[0.17,0.00]	0.07	[-0.10, 0.24]	0.04	17.14	0.98	0.97	0.10
Variety	0.04	[0.12,-0.05]	-0.19	[-0.39, 0.00]	0.00	4.09	1.00	1.01	0.01
Interesting	0.10	[0.19,0.02]	-0.15	[-0.31, 0.02]	0.04	14.90	0.99	0.99	0.05
Salary	-0.07	[0.01,-0.15]	0.17	[-0.04, 0.38]	0.00	3.01	1.00	1.01	0.01
Outdoors	-0.05	[-0.04, 0.12]	0.34	[-0.25, 0.78]	0.01	7.87	0.99	0.99	0.02

Note: The coefficients illustrate the magnitude and direction of gender differences in the intercepts and slopes, standardized with respect to the values scale but not with respect to gender. Negative coefficients indicate higher intercepts or more positive slopes among women compared with men, and positive coefficients indicate lower intercepts or less positive slopes among women compared with men. Boldface indicates statistically significant gender differences ($p < .05$). Slopes at 0 with CI = n.s. indicate no variance with gender as predictor for that value over time. At Wave 1, Sample 1 contained 568 participants, and Sample 2 contained 797 participants. CI = confidence interval; RMSEA = root-mean-square error of approximation; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root-mean-square residual.

Table 13*Linear Growth Curve Models with Parental Education as Predictor*

	Intercept		Slope		Fit Indices				
	B	95% CI	B	95% CI	RMSEA	χ^2	CFI	TLI	SRMR
<i>Community college graduates (Sample 1)</i>									
Altruism	-0.04	[-0.13, 0.06]	0.06	[0.26, -0.15]	0.01	2.20	1.00	1.00	0.01
Management	-0.08	[-0.13, -0.03]	0.00	[0.01, 0.00]	0.07	6.99	0.99	0.96	0.02
Specialization	-0.07	[-0.18, 0.03]	0.00	n.s.	0.08	9.66	0.97	0.92	0.04
Independence	-0.13	[-0.23, -0.02]	0.36	[3.23, -2.52]	0.00	0.49	1.00	1.00	0.01
Work-life Balance	0.02	[-0.09, 0.13]	-0.18	[0.57, -0.92]	0.00	0.17	1.00	1.02	0.00
Variety	-0.05	[-0.16, 0.06]	0.00	n.s.	0.07	6.98	0.99	0.96	0.02
Interesting	0.01	[-0.10, 0.11]	0.00	[0.01,-0.01]	0.05	4.58	0.99	0.97	0.02
Salary	-0.18	[-0.27, -0.08]	0.00	n.s.	0.04	4.10	1.00	0.99	0.02
Outdoors	-0.07	[-0.03, 0.18]	0.00	n.s.	0.05	5.26	0.99	0.98	0.02
<i>University graduates (Sample 2)</i>									
Altruism	-0.02	[-0.09, 0.06]	0.07	[-0.12, 0.26]	0.02	8.89	1.00	1.00	0.03
Management	-0.02	[-0.10, 0.06]	0.04	[-0.26, 0.33]	0.01	7.60	1.00	1.00	0.03
Specialization	-0.04	[-0.13, 0.05]	-0.01	[-0.19, 0.18]	0.03	12.86	0.99	0.99	0.04
Independence	-0.12	[-0.20, -0.03]	0.08	[-0.22, 0.39]	0.00	1.90	1.00	1.01	0.02
Work-life Balance	-0.08	[-0.16, 0.00]	-0.05	[-0.20, 0.10]	0.05	21.30	0.97	0.96	0.10
Variety	-0.05	[-0.13, 0.03]	0.01	[-0.16, 0.18]	0.00	3.58	1.00	1.00	0.01
Interesting	0.02	[-0.07, 0.10]	-0.01	[-0.15, 0.13]	0.05	19.11	0.98	0.98	0.06
Salary	-0.04	[-0.11, 0.04]	0.12	[-0.06, 0.30]	0.00	3.77	1.00	1.00	0.02
Outdoors	-0.08	[-0.04, 0.12]	0.11	[-0.16, 0.49]	0.01	7.79	1.00	1.00	0.02

Note: The coefficients illustrate the magnitude and direction of parental educational level differences in the intercepts and slopes, standardized with respect to the values scale but not with respect to parental education. Negative coefficients indicate higher intercepts or more positive slopes among those with lower parental educational attainment compared with those with higher parental education, and positive coefficients indicate lower intercepts or less positive slopes among those with higher parental education compared to lower levels of parental education. Boldface indicates statistically significant differences ($p < .05$). Slopes at 0 with CI = n.s. indicate no variance with parental education as predictor for that value over time. At Wave 1, Sample 1 contained 809 participants, and Sample 2 contained 553 participants. CI = confidence interval; RMSEA = root-mean-square error of approximation; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root-mean-square residual."

Table 14*Comparison of Community College Graduates (Sample 1) vs University Graduates (Sample 2) Work Value Means*

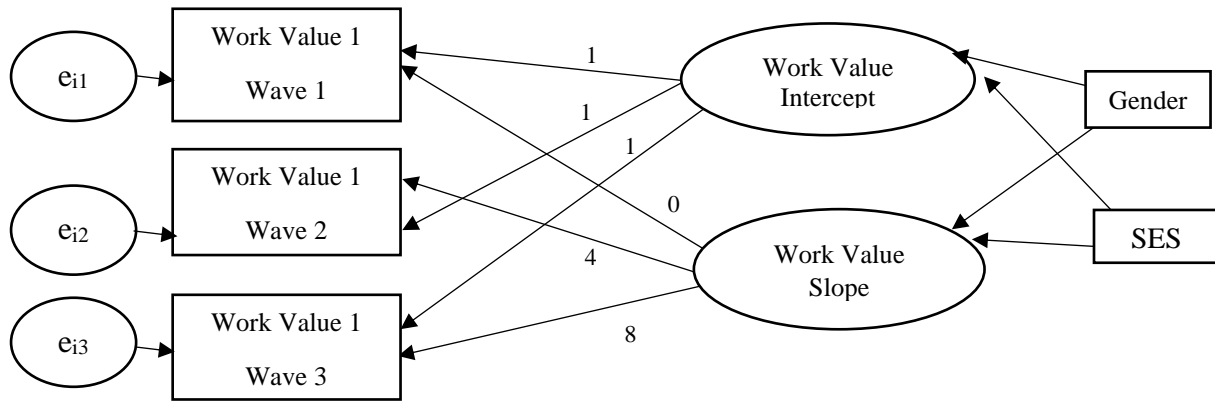
	0 months			4 months			6-8 months		
	<i>d</i>	95% Confidence Interval		<i>d</i>	95% Confidence Interval		<i>d</i>	95% Confidence Interval	
		Lower	Upper		Lower	Upper		Lower	Upper
Altruism	0.23	0.12	0.34	0.22	0.08	0.37	0.21	0.06	0.36
Management	0.06	-0.05	0.17	0.09	-0.06	0.23	0.06	-0.09	0.21
Specialization	0.32	0.21	0.43	0.27	0.13	0.42	0.18	0.03	0.33
Independence	0.20	0.10	0.31	0.07	-0.08	0.21	0.12	-0.03	0.27
Work-life balance	-0.01	-0.12	0.09	-0.05	-0.20	0.09	-0.05	-0.20	0.10
Variety	0.20	0.10	0.31	0.15	0.01	0.30	0.14	-0.01	0.29
Outdoors	0.26	0.15	0.37	0.11	-0.03	0.26	0.19	0.04	0.34
Interesting	0.11	0.00	0.21	0.14	0.00	0.29	0.08	-0.07	0.23
Salary	-0.02	-0.12	0.09	-0.10	-0.24	0.05	-0.11	-0.26	0.04

Note: Sample 1 $N = 588$, Sample 2 $N = 814$. Bolded d values = statistically significant.

Positive d indicates higher scores for sample 1, negative d indicates higher scores for sample 2.

Figure 1

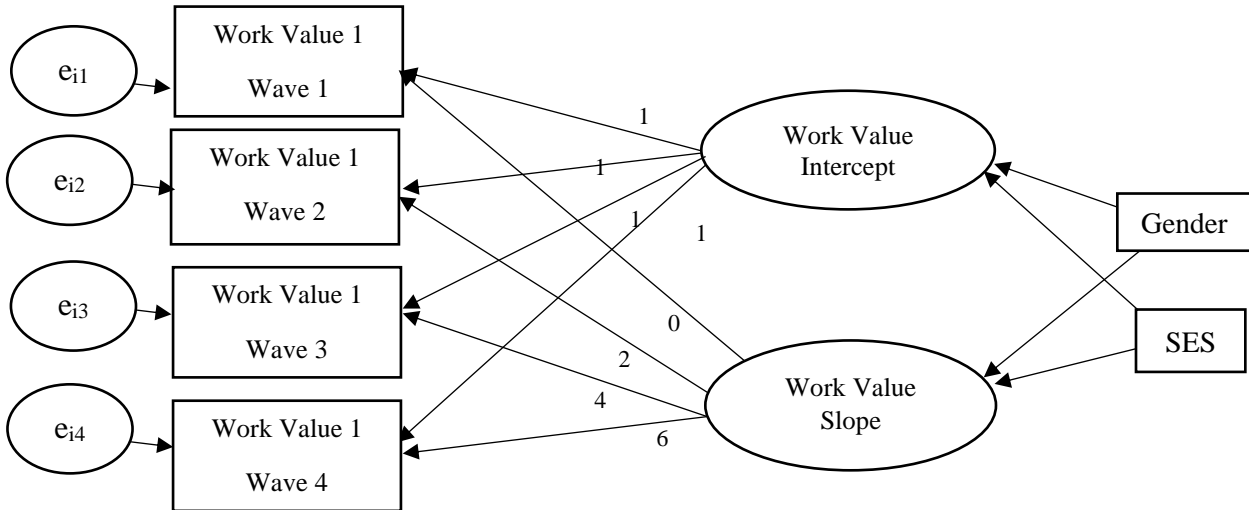
Linear Growth Curve Model for Community College Graduates (Sample 1)



Note: Linear growth curve model (Table 11) also showing gender and SES as predictor variables (Tables 12 and 13, respectively). A total of 18 separate models were ran for this sample (a separate model for each work value with each predictor). No models were used with age as a predictor as there were no subgroup differences among different age groups. Ethnicity was also not included as a predictor due to insufficient sample sizes for some ethnic groups. Path loadings from slope to values at each wave were fixed to their corresponding month (wave 1 at 0 months, wave 2 at 4 months, and wave 3 at 8 months).

Figure 2

Linear Growth Curve Model for University Graduates (Sample 2)



Note: Linear growth curve model (Table 11) also showing gender and SES as predictor variables (Tables 12 and 13, respectively). A total of 18 separate models were ran for this sample (a separate model for each work value with each predictor). No models were used with age as a predictor as there were no subgroup differences among different age groups. Ethnicity was also not included as a predictor due to insufficient sample sizes for some ethnic groups. Path loadings from slope to values at each wave were fixed to their corresponding month (wave 1 at 0 months, wave 2 at 2 months, wave 3 at 4 months, and wave 4 at 6 months).

References

- Albarracin, D., & Shavitt, S. (2018). Attitudes and attitude change. *Annual Review of Psychology*, 69(0), 299-327.
- American Association of Community Colleges. (2022). *AACC Fast Facts* [Fact Sheet].
<https://www.aacc.nche.edu/research-trends/fast-facts/>
- Aarø, L. E., Flisher, A. J., Kaaya, S., Onya, H., Namisi, F. S., & Wubs, A. (2009). Parental education as an indicator of socioeconomic status: improving quality of data by requiring consistency across measurement occasions. *Scandinavian Journal of Public Health*, 37(2), 16-27.
- Ballout, H. I. (2007). Career success: The effects of human capital, person environment fit and organizational support. *Journal of Managerial Psychology*, 22(8), 745–761.
- Boshara, R., Emmons, W. R., & Noeth, B. J. (2015). The Demographics of Wealth-How Age, Education and Race Separate Thrivers from Strugglers in Today's Economy. Essay No. 2: The Role of Education. *Demographics of Wealth*, (2), 1-28.
- Bretz, R. D., Jr., & Judge, T. A. (1994). Person-organization fit and the theory of work adjustment: Implications for satisfaction, tenure, and career success. *Journal of Vocational Behavior*, 44(1), 32–54.
- Busque-Carrier, M., Ratelle, CF, & Le Corff, Y. (2021). Work values and job satisfaction: The mediating role of basic psychological needs at work. *Journal of Career Development* 0 (0), pp. 1-16.
- Cable, D. M., & DeRue, D. S. (2002). The convergent and discriminant validity of subjective fit perceptions. *Journal of Applied Psychology*, 87(5), 875–884.

- Caspi, A., & Roberts, B. W. (1999). Personality continuity and change across the life course. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 300–326). Guilford Press.
- Centers for Disease Control and Prevention (2015). *Productive Aging and Work*. Centers for Disease Control and Prevention.
- <https://www.cdc.gov/niosh/topics/productiveaging/dataandstatistics.html>
- Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. Routledge.
- Collins, L. M., Schafer, J. L., & Kam, C. M. (2001). A comparison of inclusive and restrictive strategies in modern missing data procedures. *Psychological Methods*, 6(4), 330.
- Community College Research Center. (2022). *Community College FAQs* [Fact Sheet].
- <https://ccrc.tc.columbia.edu/Community-College-FAQs.html>
- Davis, J. A. (1965). *Undergraduate career decisions: Correlates of occupational choice* (No. 2). Aldine Publishing Company.
- Dawis, R. V. (1991). Vocational interests, values, and preferences. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of Industrial and Organizational Psychology* (2nd ed., Vol. 2, pp. 833–871). Palo Alto, CA: Consulting Psychologists Press.
- Dawis, R. V. (2001). Toward a psychology of values. *The Counseling Psychologist*, 29 (3), 458–465.
- Dawis, R. V., & Lofquist, L. H. (1984). *A psychological theory of work adjustment*. Minneapolis, MN: University of Minnesota Press.
- De Fruyt, F., Bartels, M., Van Leeuwen, K. G., De Clercq, B., Decuyper, M., & Mervielde, I. (2006). Five types of personality continuity in childhood and adolescence. *Journal of Personality and Social Psychology*, 91(3), 538.

- Eagly, A. H. (1987). Sex differences in sexual behavior: A social-role interpretation.
- Elizur, D., & Sagie, A. (1998). Facets of Personal Values: A Structural Analysis of. *Values and Work*, 48(1), 73-87.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41, 1149–1160. doi:10.3758/BRM.41.4.1149
- Fry, R., & Cilluffo, A. (2019). *A rising share of undergraduates are from poor families, especially at less selective colleges*. Pew Research Center.
<https://vtechworks.lib.vt.edu/bitstream/handle/10919/92670/LowIncomesUndergradStudents.pdf?sequence=1&isAllowed=y>
- Gardner, P. D., & Lambert, S. E. (1993). It's a Hard, Hard, Hard, Hard, Hard, Hard World. *Journal of Career Planning and Employment*, 53(2), 40-49.
- Gay, E. G., Weiss, D. J., Hendel, D. D., Dawis, R. V., & Lofquist, L. H. (1971). *Manual for the Minnesota Importance Questionnaire*. In *Minnesota studies in vocational rehabilitation* (Vol. 28, pp. 1–83). Minneapolis: University of Minnesota, Industrial Relations Center.
- Gottfredson, L. S. (1981). Circumscription and compromise: A developmental theory of occupational aspirations. *Journal of Counseling Psychology*, 28(6), 545.
- Halaby, C. N. (2003). Where job values come from: family and schooling background, cognitive ability and gender. *American Sociological Review*, 68(2), 251–278.
- Hansen, J. I. C., & Leuty, M. E. (2012). Work values across generations. *Journal of Career Assessment*, 20(1), 34-52.

- Hansen, J.-I. C., Sullivan, B. A., & Luciana, M. (2011). A social neuroscientific model of vocational behavior. *Journal of Career Assessment, 19*(3), 216–227.
<https://doi.org/10.1177/1069072710395529>
- Hansen, J. I. C., & Wiernik, B. M. (2018). Work preferences: Vocational interests and values.
- Hartung, P. J., Fouad, N. A., Leong, F. T., & Hardin, E. E. (2010). Individualism-collectivism: Links to occupational plans and work values. *Journal of Career Assessment, 18*(1), 34-45.
- Heimpel, N. F., Hoff, K., Liu, Z., Chu C., Oswald, F., & Rounds, J. (2022). *Development and Validation of the Occupational Values Inventory (OVI)*. Unpublished manuscript.
- Helson, R., & Moane, G. (1987). Personality change in women from college to midlife. *Journal of Personality and Social Psychology, 53*(1), 176.
- Hoff, K. A., Briley, D. A., Wee, C. J., & Rounds, J. (2018). Normative changes in interests from adolescence to adulthood: A meta-analysis of longitudinal studies. *Psychological Bulletin, 144*(4), 426.
- Hofstede, G. (2001). *Cultural consequences: Comparing values, behaviors, institutions and organizations across nations*. Thousand Oaks, CA: Sage.
- Hofstede, G. (2007). A European in Asia. *Asian Journal of Social Psychology, 10*(1), 16-21.
- Hofstede, G., & McCrae, R. R. (2004). Personality and culture revisited: Linking traits and dimensions of culture. *Cross-cultural research, 38*(1), 52-88.
- Holland, J. L. (1976). Vocational Preferences. Pp. 521-70 in *Handbook of Industrial and Organizational Psychology*, edited by MD Dunnette.
- Jin, J., & Rounds, J. (2012). Stability and change in work values: A meta-analysis of longitudinal studies. *Journal of Vocational Behavior, 80*(2), 326-339.

- Johnson, M. K. (2002). Social origins, adolescent experiences, and work value trajectories during the transition to adulthood. *Social Forces*, 80(4), 1307-1340.
- Johnson, M. K., & Elder Jr, G. H. (2002). Educational pathways and work value trajectories. *Sociological Perspectives*, 45(2), 113-138.
- Jones N., Marks R., Ramirez R., Ríos-Vargas M. (2021). 2020 Census Illuminates Racial and Ethnic Composition of the Country. The United States Census Bureau.
<https://www.census.gov/library/stories/2021/08/improved-race-ethnicity-measures-reveal-united-states-population-much-more-multiracial.html>
- Jones, K. S., Newman, D. A., Su, R., & Rounds, J. (2021). Vocational interests and adverse impact: How attraction and selection on vocational interests relate to adverse impact potential. *Journal of Applied Psychology*. Advance online publication.
<https://doi.org/10.1037/apl0000893>
- Judge, T. A., & Bretz, R. D. (1992). Effects of work values on job choice decisions. *Journal of Applied Psychology*, 77(3), 261–271.
- Kashefi, M. (2011). Structure and/or culture: Explaining racial differences in work values. *Journal of Black Studies*, 42(4), 638-664.
- Kristof, A. L. (1996). Person-organization fit: An integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, 49(1), 1-49.
- Kristof-Brown, A. L., Li, C. S., & Schneider, B. (2018). Fitting in and doing good: A review of person-environment fit and organizational citizenship behavior research. In P. M. Podsakoff, S. B. Mackenzie, & N. P. Podsakoff (Eds.), *The Oxford handbook of organizational citizenship behavior* (pp. 353–370). New York, NY: Oxford University Press.

- Konrad, A. M., Ritchie Jr, J. E., Lieb, P., & Corrigan, E. (2000). Sex differences and similarities in job attribute preferences: a meta-analysis. *Psychological Bulletin*, 126(4), 593.
- Kuron, L. K., Lyons, S. T., Schweitzer, L., & Ng, E. S. (2015). Millennials' work values: Differences across the school to work transition. *Personnel Review*, 44(6), 991-1009.
- Lyons, H. Z. (2014). Work values in the lives of diverse individuals: Examining race and socioeconomic status. In M. Pope, L. Y. Flores, & P. J. Rottinghaus (Eds.), *The role of values in careers* (pp. 117–126). Charlotte, NC: Information Age Publishing, Inc.
- Lindsay, P., & Knox, W. E. (1984). Continuity and change in work values among young adults: A longitudinal study. *American Journal of Sociology*, 89(4), 918-931.
- Martin, J. K., & Tuch, S. A. (1993). Black-white differences in the value of job rewards revisited. *Social Science Quarterly*, 74(4), 884-901.
- Maslow, A. H. (1954). *Motivation and Personality*. New York: Harper & Row.
- Milfont, T. L., Milojev, P., & Sibley, C. G. (2016). Values stability and change in adulthood: A 3-year longitudinal study of rank-order stability and mean-level differences. *Personality and Social Psychology Bulletin*, 42(5), 572-588.
- Morris, M. L. (2016). Vocational interests in the United States: Sex, age, ethnicity, and year effects. *Journal of Counseling Psychology*, 63(5), 604.
- Mortimer, J. T., & Lorence, J. (1979). Work experience and occupational value socialization: A longitudinal study. *American Journal of Sociology*, 84(6), 1361-1385.
- Muthén, L. K., & Muthén, B. O. (2017). *Mplus user's guide* (8th ed.). Los Angeles, CA: Author.

- National Center for Education Statistics. (2013). *STEM Attrition: College Students' Paths Into and Out of STEM Fields* [Statistical Analysis Report]. Retrieved from:
<https://nces.ed.gov/pubs2014/2014001rev.pdf>.
- National Center for Science and Engineering Statistics (NCSES). 2020. *The Increasing Role of Community Colleges among Bachelor's Degree Recipients: Findings from the 2019 National Survey of College Graduates*. NSF 21-309. Alexandria, VA: National Science Foundation. Available at <https://nces.nsf.gov/pubs/nsf21309/>.
- Ng, E.S.W., Schweitzer, L. and Lyons, S.T. (2010). New generation, great expectations: A field study of the millennial generation. *Journal of Business Psychology* (25)2, 281-292.
- Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analysis. *Psychological Bulletin*, 128(1), 3-72.
- Parry, E., & Urwin, P. (2011). Generational differences in work values: A review of theory and evidence. *International Journal of Management Reviews*, 13(1), 79-96.
- Perrone, L., & Vickers, M. H. (2003). Life after graduation as a "very uncomfortable world": An Australian case study. *Education+ Training*, 45(2), 69-78.
- Pessin, L. (2018). Changing gender norms and marriage dynamics in the United States. *Journal of Marriage and Family*, 80(1), 25-41.
- Peterson, N. G., Mumford, M. D., Borman, W. C., Jeanneret, P. R., Fleishman, E. A., Levin, K. Y., ... & Dye, D. M. (2001). Understanding work using the Occupational Information Network (O* NET): Implications for practice and research. *Personnel Psychology*, 54(2), 451-492.

- Ridgeway C. (2001). Gender, status, and leadership. *Journal of Social Issues*, 57(4), 637–655.
doi: 10.1111/0022-4537.00233.
- Robinson, C. H., & Betz, N. E. (2008). A psychometric evaluation of super's work values inventory—Revised. *Journal of Career Assessment*, 16(4), 456-473.
- Rokeach, M. (1973). *The nature of human values*. Free press.
- Rosenberg, M. (1957). *Occupations and Values*. Glencoe, Ill: Free Press.
- Rounds, J. B., Jr., Henly, G. A., Dawis, R. V., Lofquist, L. H., & Weiss, D. J. (1981). *Manual for the Minnesota Importance Questionnaire: A measure of Needs and Values*. Vocational Psychology Research, Department of Psychology, University of Minnesota.
- Rounds, J., Armstrong, P. I., Liao, H. Y., Lewis, P., & Rivkin, D. (2008). Second generation occupational interest profiles for the O* NET system: Summary. *The National Center for O* NET Development*.
- Rounds, J., & Leuty M. E. (2020). Nature, Importance, and Assessment of Needs and Values. In S. D. Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (3rd ed., pp. 509 - 543). Wiley.
- Rowe, R., & Snizek, W. E. (1995). Gender differences in work values: Perpetuating the myth. *Work and Occupations*, 22(2), 215-229.
- Sagie, A., & Elizur, D. (1999). Achievement motive and entrepreneurial orientation: a structural analysis. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 20(3), 375-387.
- Saks, A. M., & Ashforth, B. E. (1997). Organizational socialization: Making sense of the past and present as a prologue for the future. *Journal of Vocational Behavior*, 51(2), 234-279.

- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 24, pp. 1–65). San Diego: Academic Press.
- Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, 50(4), 19-45.
- Shapiro, E. G. (1977). Racial differences in the value of job rewards. *Social Forces*, 56(1), 21-30.
- Sheldon, K. M. (2005). Positive value change during college: Normative trends and individual differences. *Journal of Research in Personality*, 39(2), 209-223.
- Super, D. E. (1980). A life-span, life-space approach to career development. *Journal of Vocational Behavior*, 16(3), 282–298.
- Super, D. E. (1995). Values: Their nature, assessment, and practical use. In D. E. Super & B. Sverko (Eds.), *Life roles, values, and careers: International findings of the work importance study* (pp. 54–61). San Francisco: Jossey-Bass.
- Toosi, M. (2009). Labor force projections to 2018: older workers staying more active. US Department of Labor, Bureau of Labor Statistics. *Monthly Labor Review*, 30-51.
- Triandis, H. C., McCusker, C., & Hui, C. H. (1990). Multimethod probes of individualism and collectivism. *Journal of Personality and Social Psychology*, 59(5), 1006.
- Twenge, J. M., Campbell, S. M., Hoffman, B. J., & Lance, C. E. (2010). Generational differences in work values: Leisure and extrinsic values increasing, social and intrinsic values decreasing. *Journal of Management*, 36(5), 1117-1142.
- Warr, P. (2008). Work values: Some demographic and cultural correlates. *Journal of Occupational and Organizational Psychology*, 81(4), 751-775.

- Wendlandt, N. M., & Rochlen, A. B. (2008). Addressing the college-to-work transition: Implications for university career counselors. *Journal of Career Development, 35*(2), 151-165.
- Widaman, K. F., Ferrer, E., & Conger, R. D. (2010). Factorial invariance within longitudinal structural equation models: Measuring the same construct across time. *Child Development Perspectives, 4*, 10–18. doi:10.1111/j.1750-8606.2009.00110.x
- Young, A. M., & Hurlic, D. (2007). Gender enactment at work: The importance of gender and gender-related behavior to person-organizational fit and career decisions. *Journal of Managerial Psychology, 22*(2), 168–187.
- Zemke, R., Raines, C., & Filipczak, B. (2013). Generations at work: Managing the clash of Boomers, Gen Xers, and Gen Yers in the workplace. Amacom.

Appendix A

Work Value Items

For each of the items below, please rate to what extent it would serve as a value that would motivate you to pursue a career (1 = not important, 3 = somewhat important, 5 = very important, 7 = most important).

Altruism

1. Provide personal care to others
2. Build and maintain personal relationships
3. Provide service to others
4. Help others develop and grow

Management

5. Supervise other people's work
6. Coordinate or lead others
7. Be responsible for others' work

Specialization

8. Build on relevant work knowledge
9. Use the knowledge that I have learned
10. Use my strongest skills

Independence

11. Set my own schedule
12. Plan my own work
13. Work independently

Work-Life Balance

14. Work a reasonable number of hours per week
15. Keep work and the rest of my life balanced
16. Work for a company that respects that I have a life outside of work

Variety

17. Have a wide variety of work activities
18. Have a work environment that is always new or unpredictable
19. Do something different every day

Outdoors/Physical

20. Work outside
21. Perform physical work tasks
22. Be out in nature while I work
23. Get exercise while I work

Interest in Work

24. Find my work tasks fascinating
25. Be interested in my work tasks
26. Pursue my interests through my career

Salary and Prestige

27. Have a high salary
28. Have a prestigious career
29. Make enough money to buy expensive things
30. Have a high-status career

Appendix B

Gender Question

What is your gender?

1 = male

2 = female

3 = non-binary

4 = other

5 = prefer not to say

Age Question

What is your age?

[Numeric input]

Ethnicity Question

What is your ethnicity?

1 = Asian/Pacific Islander Heritage

2 = Black/African American Heritage

3 = Latino/Hispanic Heritage

4 = Native American/First Nations Heritage

5 = White/European Heritage

6 = Other

Parental Educational Attainment Question

What is the highest level of education of your parents? (Please respond for the parent that has completed the most education).

1 = Less than High school

2 = High school or GED

3 = Some college

4 = Associate degree (1- to 2-year program)

5 = College or undergraduate degree (4-year program)

6 = Graduate degree (e.g. MA, M.D., PhD)

Appendix C

Table 1S

Sample Breakdowns by Demographics

	Community College Sample 1 (N=588)	University Sample 2 (N=816)
<i>Gender</i>		
Female	75%	65%
Male	20%	28%
Other	5%	7%
<i>Age</i>		
18-21	48%	27%
22-25	19%	65%
26+	34%	9%
<i>Ethnicity</i>		
Latino or Hispanic	40%	23%
White	31%	35%
Asian or Pacific Islander	13%	34%
Black or African American	10%	5%
Native American or Other	4%	4%
<i>Highest Parental Education</i>		
Less than High School	14%	10%
High School Diploma	24%	12%
Some College	16%	11%
Associate's Degree	9%	25%
Bachelor's Degree	20%	28%
Graduate Degree	12%	33%

Appendix D

Table 2S

Chi-Square Test of Demographics for Missing Data

	X ²	N	df	p
<i>Sample 1</i>				
Ethnicity	12.23	549	3	0.01
Age	3.51	569	2	0.17
Gender	0.36	555	1	0.55
Parental Education	2.86	553	5	0.72
<i>Sample 2</i>				
Ethnicity	3.04	566	4	0.55
Age	4.74	814	2	0.09
Gender	6.75	797	1	0.01
Parental Education	10.87	809	5	0.05

Note: Sample 1 N = 584; Sample 2 N = 814.

Table 3S

T-tests of Values for Missing Data

	Sample 1			Sample 2		
	Mean Difference	S.E. Difference	p	Mean Difference	S.E. Difference	p
Altruism	0.23	0.23	0.00	0.08	0.07	0.28
Management	0.14	0.14	0.12	0.28	0.08	0.00
Specialization	0.10	0.10	0.15	0.02	0.06	0.78
Independence	0.13	0.13	0.13	-0.01	0.07	0.91
Work-life Balance	-0.03	-0.03	0.61	-0.06	0.05	0.29
Variety	0.13	0.13	0.13	0.14	0.07	0.06
Interesting	0.04	0.04	0.56	0.56	0.07	0.61
Salary	0.17	0.17	0.09	-0.03	0.06	0.01
Outdoors	0.10	0.10	0.24	0.20	0.08	0.45

Note: Equal variances not assumed. Sample 1 N = 584, Sample 2 N = 814.

Appendix E

Table 4S

Sample 1 Parental Education Breakdown by Ethnicity (Community College Sample)

	Parental Education					
	< High School	High School	Some College	Associate's Degree	Bachelor's Degree	Graduate Degree
Asian	8%	11%	9%	21%	16%	15%
Black	4%	10%	16%	13%	6%	10%
Latino	83%	46%	38%	30%	26%	22%
Native	1%	1%	0%	2%	0%	0%
White	5%	31%	34%	34%	46%	43%
Other	0%	1%	3%	0%	6%	9%

Note: < High School $N = 80$; High School $N = 141$; Some College $N = 94$; Associate's Degree $N = 53$; Bachelor's Degree $N = 118$; Graduate Degree $N = 67$.

Table 5S

Sample 2 Parental Education Breakdown by Ethnicity (University Sample)

	Parental Education					
	< High School	High School	Some College	Associate's Degree	Bachelor's Degree	Graduate Degree
Asian	26%	40%	35%	33%	33%	37%
Black	0%	3%	8%	9%	5%	4%
Latino	71%	36%	26%	15%	18%	8%
Native	0%	1%	0%	0%	0%	0%
White	3%	18%	28%	39%	41%	45%
Other	1%	2%	2%	4%	3%	5%

Note: < High School $N = 8$; High School $N = 78$; Some College $N = 98$; Associate's Degree $N = 88$; Bachelor's Degree $N = 46$; Graduate Degree $N = 231$.