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**PROTOTYPICAL CAREER PATHS IN URBAN, SUBURBAN, AND RURAL
LOCATIONS IN THE UNITED STATES**

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PROTOTYPICAL CAREER PATHS IN URBAN, SUBURBAN, AND RURAL LOCATIONS IN THE UNITED STATES

Abstract

Career paths are formed over time from interactions between individuals, organizations, and labor markets within and across geographic locations. What are the prototypical career paths thus formed? Who are the likely incumbents of these career paths? What are the consequences of pursuing these career paths? This study combines microlevel perspectives on personal agency and macrolevel institutional factors to explain how careers unfold over time and space. The juxtaposition of micro- and macrolevel factors contributes to career research and practice, which have traditionally examined careers as movements across organizations and occupations over time, but almost exclusively within specific geographic locations. We make a significant contribution to theory and practice by analyzing sequences of jobs and residence locations for 2,836 individuals drawn from the National Longitudinal Survey of Youth 1979. The analyses reveal eight prototypical career paths, some commonly found across geographic locations and others idiosyncratic to specific geographic locations. The profiles of the career path incumbents vary regarding gender, ethnicity, and education attainment. We find that the objective career success associated with prototypical career paths is more a function of human capital accumulation and career choices than geographic locations. We close by discussing our findings' implications for career research and practice.

Keywords: archetypes, career paths, career patterns, urban, suburban, rural, entrepreneurship, professional, leadership, labor market segmentation, spatial, agglomeration, mismatch, optimal matching, cluster analysis

PROTOTYPICAL CAREER PATHS IN URBAN, SUBURBAN, AND RURAL LOCATIONS IN THE UNITED STATES

“Context, then, is crucial to an understanding of career.” (Gunz et al., 2011, p. 3)

Introduction

Careers are conceptualized as individuals’ mobility through work experiences over time (Tomlinson et al., 2018). There is also an increasing recognition that careers unfold within and across geographic locations as well as over time. Geographic locations—for example, California’s Silicon Valley and the UK’s Silicon Suburbs—attract talented people and innovative industries (Florida and Mellander, 2016). Indeed, a geographic location can be thought of as an ecosystem where individuals and organizations interact and are interdependent on one another (Baruch, 2015; Mitleton-Kelly, 2003). Forging a career within this ecosystem requires balancing individual needs and requirements with the demands of the labor market (Baruch and Altman, 2016).

The post-industrial labor market is characterized by a shift away from manufacturing and towards professional and technical job roles (Bell, 1976). At the same time, post-industrial improvements in transportation and communications have allowed individuals and organizations to move away from city centers in favor of diverse ecosystems in suburban locations (Frey and Zimmer, 2001). In 1970, about 32% of the U.S. population resided in urban locations, 37% in suburban locations, and the remaining 31% in rural locations (Nicolaidis and Wiese, 2017). In the 1990s, cities experienced a rejuvenation led by strong job growth in finance and technology startups coupled with downturns in agricultural prices (Champion, 2001). In 2017, the American Housing Survey reported that 27% of the population resided in urban locations, 52% in suburban locations, and 21% in rural locations (Housing and Urban Development, 2017).

Career scholars (Gunz et al., 2011; Tomlinson et al., 2018) recognize the importance of external systems in shaping careers. The dynamics of social polarization, capital mobility, and human capital availability across urban, suburban, and rural locations have the capacity to aid or hinder the development of individuals' careers. Yet we are not aware of any empirical research examining career differences across geographic locations. We believe that there are a variety of reasons for this, but chief among these is the added complexity of incorporating geographic location information, such as historical residential data, into the analysis of careers. The fact that individuals migrate from one location to another over time makes it challenging to track individuals and their careers in order to attribute observed differences in career paths and success to specific geographic locations.

Advances in data analytics have now made it possible to examine the role of geographic location with respect to careers. Hence, the goals of this research are to address these key questions: (1) What are the prototypical career paths within and across urban, suburban, and rural geographic locations? (2) Are there demographic differences in prototypical career paths within and across these locations? (3) Are there differences in career success associated with prototypical career paths within and across these locations?

Briefly, this study is based on the notion that the careers forged by individuals are boundaryless and multidimensional in nature (Chan et al., 2012). Boundaryless careers can be described along entrepreneurial, professional, and leadership dimensions. We posit that demographics and human capital variables are antecedent to such multidimensional career paths. These career paths, in turn, impact objective career success. We analyzed the residential history of individuals drawn from the National Longitudinal Survey of Youth 1979 (NLSY79) over an 18- to 26-year period to identify distinct residential patterns and then analyzed career paths

characterized by these residential patterns to answer our research questions. Figure 1 presents the heuristic model guiding this study.

Insert Figure 1 About Here

This study contributes to research by extending career theories with a theory of context (Bamberger, 2008). Specifically, we theorize how multidimensional careers unfold in the context of time and space by combining the microlevel perspective of personal agency and the macrolevel perspective of institutional factors that shape workers' career paths across geographic locations. The focal construct, the career path, is known to be susceptible to the influences of context (DeFillippi and Arthur, 1996; Lawrence, 2011), and geographic locations can act as facilitating or inhibiting contexts. Thus, we identify the boundary conditions for career-related theories and offer ways to enlarge their scope and facilitate their research application (Johns, 2001).

The empirical contributions of this study include insights about individuals' careers derived from the analyses of two different but interrelated mobility patterns over time. An optimal matching analysis (OMA) of respondents' residential histories provides nuanced classifications of spatial transitions within or between geographic locations that may influence career paths. An OMA of work histories provides nuanced classifications of career transitions within and between geographic locations. Together, the derived insights reveal career paths specific to or common across geographic locations. These insights have important implications for career theories and future empirical studies.

A career framework: entrepreneurship, professionalism, and leadership

Early career theories traditionally characterized careers as interactions between workers

and institutions, such as organizations (e.g., Whyte, 1956), or as progressions along career stages (e.g., Super, 1957) with interactions between work and nonwork spheres across an individual's life (e.g., Super, 1990). Contemporary career theorists embrace the notion that careers are no longer bounded by traditional institutions and employment arrangements (Arthur and Rousseau, 2001). In current conceptualizations of careers, individuals take responsibility for shaping their careers through proactive professional development, risk-taking, and job mobility (Hall, 2004; Inkson, 2006). Personal agency in the development of an individual's career opens a range of possible career paths that go beyond the boundaries of organizations and occupations (Joseph et al., 2012).

The commonality in these conceptualizations is that careers are unidimensional, with job roles or stages progressing along time. Challenging this unidimensionality of careers, Chan et al. (2012) proposed the Entrepreneurship, Professionalism and Leadership (EPL) career framework, which describes careers as multidimensional along entrepreneurial (E), professional (P), and leadership (L) dimensions. Individual career paths can be defined as vectors in a three-dimensional career space in which an individual's career may move along one or more career vectors. The career vectors may change direction and strength over time, allowing for life-long career development along a three-dimensional EPL career space. The logic underlying the entrepreneurial dimension is based on the creation of value and valued outputs through ownership of a business (Kanter, 1989). The logic of the professional dimension equates achievement with the continual development of knowledge, skills, and reputation in an occupation or profession. The logic of the leadership dimension is based on advancement or promotions in a formally defined organizational hierarchy. The EPL career framework makes a significant contribution over other career models (e.g., Kanter, 1989) through its

multidimensional conceptualization and description of careers, which contrasts with unidimensional conceptualizations of career paths as either entrepreneurial, professional, or leadership careers existing in isolation (Chan et al., 2012).

To illustrate the EPL framework, a medical doctor's career might be described by a long series of professional roles followed by a transition to a series of leadership roles as a medical administrator. The movement along the professional dimension in this example is later combined with movement along the leadership dimension. The professional (P) and leadership (L) dimensions thus coexist as the incumbent continues to forge a career as a medical administrator. Alternatively, a medical doctor might develop a private medical practice after years of working in a hospital, in which case the entrepreneurship (E) and professional (P) dimensions coexist. Finally, a medical doctor's career might be described by a sequence of professional job roles without any entrepreneurship or leadership aspects; this career path describes the archetypical career of achievement espoused by Zabusky and Barley (1996).

The EPL career framework is appropriate for understanding careers across different geographic locations for several reasons. First, careers may be forged within organizations or in labor markets with varied career paths. Second, the concurrent combinations of entrepreneurial, professional, and leadership roles over sustained periods in an individual's career resonates with contemporary notions of careers and is representative of how individuals have historically forged their careers.

Antecedents and consequences of career paths

The EPL career framework is silent about the antecedents and consequences of forging a career path along multiple dimensions. We therefore look to psychology-based (Holland, 1959, 1997; Super, 1957, 1990) and sociology-based (Hotchkiss and Borow, 1996; Musgrave, 1967;

Sewell et al., 1957) theories of career development to explain why and how individuals forge career paths.

The psychology-based theories take an agentic perspective by arguing that careers are forged when there is a congruence between an individual's characteristics and those of an occupation. Holland's (1959, 1997) theory of vocational choice posits that careers develop as a result of the congruence between an individual's personality and an occupational environment. Super (1957, 1990) refined Holland's theory by suggesting that careers develop when the cognitive aspects of one's self-concept fit with the attributes of an occupation.

The sociology-based theories offer a structural explanation regarding career paths. Socioeconomic inequality perpetuated by structural or institutional discrimination differentially shapes individual careers and determines the career paths forged by individuals (Hotchkiss and Borow, 1996; Musgrave, 1967). The central proposition in these theories is that socioeconomic inequalities influence access to educational and career opportunities and the social capital resources that facilitate career development (Musgrave, 1967; Reissman, 1953; Sewell et al., 1957).

The career paths forged by individuals have implications for objective career success (Joseph et al., 2012). The indicators of objective career success are tangible achievements such as promotions (Boudreau, et al., 2001) and pay (Judge et al., 1995). In our study, we examine pay as an indicator of objective career success because pay is believed to be the most essential and proximal outcome of career decisions (Judge et al., 1995). Career paths influence pay through the acquisition and development of human capital. The sequence of job roles that make up a career path shapes the individual's stock of human capital through a combination of entrepreneurial, occupational, and managerial knowledge, skills, and experiences (Volmer and

Spurk, 2011). There is a wealth of research indicating that relevant human capital, i.e., knowledge, skills, and experiences, leads to favorable pay (Ang, Slaughter, and Ng, 2002; Mithas and Krishnan, 2008; Ng et al., 2005).

Influence of geographic location on careers

In this study, we focus on the contextual influences of three broad types of geographic locations: urban, suburban, and rural. We adopt the U.S. Census Bureau's classification of urban locations as central cities located within Metropolitan Statistical Areas (MSAs). The general concept of an MSA is that it is a region with a relatively high-density population or a central city exerting economic and cultural influences beyond its boundaries (U.S. Census Bureau, 2013).

A suburban location is a location outside of a central city but within an MSA (U.S. Bureau of Labor Statistics, 2006). Suburban locations have replicated many of the core economic activities and functions of cities and may at times be in direct competition with them (Frey and Zimmer, 2001). Suburbs have achieved an agglomeration of core economic institutions such as high-technology firms, divisional offices, sales and wholesale centers, and corporation headquarters. Suburbs have also achieved an agglomeration of supporting institutions such as schools, medical centers, hotels, retail stores, and entertainment centers.

A rural geographic location is a location outside of an MSA (U.S. Bureau of Labor Statistics, 2006). Rural geographic locations tend to attract agricultural, manufacturing, and associated service organizations (Lichter and Brown, 2011). The career ecosystem in a rural geographic location is argued to be predominantly vocational or entrepreneurial, with individuals working for themselves or working in or owning small businesses (Dymitrow and Stenseke, 2016). Like inner cities, rural geographic locations tend to have mainly working-class residents.

Geographic locations are the contexts of and set boundaries for career ecosystems.

Indeed, Gunz et al. (2011) argued that careers are embedded in geographic locations, with the latter being instrumental for the development of distinct career paths. Within geographic locations, we utilize labor market segmentation theory to explain how structural determinants influence career opportunities (Doeringer and Piore, 1971; Piore, 1972).

Labor market segmentation theory distinguishes between primary and secondary labor markets. Primary labor markets are characterized by stable jobs located in larger, more productive, and more capital-intensive firms. Such firms are able to pay workers higher wages than smaller, more labor-intensive firms (Smith, 1983). The well-paying jobs in primary labor markets are typically held by middle-aged, white males (Tomaskovic-Devey et al., 2006).

Primary labor markets are further differentiated into an internal labor market and an external labor market (Kalleberg and Sorensen, 1979). Careers in an internal labor market are characterized by jobs for which there is advancement via promotions to managerial positions and higher pay within a firm (Zabusky and Barley, 1996). By contrast, careers in an external labor market are characterized by achievement (Li et al., 2013). Careers of achievement are not bound to organizations but are rather bound to an occupation or profession (Kirschenbaum and Mano-Negrin, 1999): Achievement and status are not linked to a position within a firm but rather attained through the development of expertise and a reputation as an expert by peers in a profession.

Secondary labor markets are characterized by unstable work arrangements (Althauser and Kalleberg, 1981). Jobs in a secondary labor market tend to require lower skill levels and are thus paid less than jobs in the primary labor market. Jobs in a secondary labor market tend to be located in smaller, labor-intensive firms. Such jobs offer few opportunities for advancement or achievement. Empirical research has reported that racial and gender minorities are concentrated

in secondary labor market careers (Tomaskovic-Devey et al., 2006).

A geographic location may constrain or facilitate labor market arrangements, and hence careers, in other locations through the spatial agglomeration (Moulaert and Djellal, 1995) and spatial mismatch (Gobillon et al., 2007) of labor. The thesis in our study is that the spatial agglomeration concentrates firms through urbanization economies (i.e., economies of scale; Rosenthal & Strange, 2001) in some locations and localization economies (i.e., specialization in types of firms; Niu et al., 2015; Serrano, 2019) in others. In both instances, spatial agglomeration is associated with a concentration of skilled workers who command higher wages, which in turn increases the costs of living in those locations. The higher costs of living in those areas, especially for housing, result in spatial mismatches as lower-skilled, low-wage workers are driven out of residential areas to concentrate in lower-cost areas (Glaeser and Mare, 2001; Moretti, 2010, 2012).

Spatial agglomeration

Spatial agglomeration occurs when firms collocate to form a business ecosystem in order to take advantage of economies of scale and specialization as well as links to multiple suppliers, contractors, and customers (Niu et al., 2015; Rosenthal and Strange, 2001; Serrano, 2019). The business ecosystem affords several benefits, including the use of collective resources such as shared infrastructures, access to a labor market with skills specialized for that agglomeration of firms, reduced inter-firm transaction costs, and ease of knowledge transfer and innovation (Murdoch, 2006). The agglomeration of firms allows workers to take a shot at entrepreneurship, given the labor market opportunities and demand for products and services, especially in urban and suburban locations (Faggio and Silva, 2014). Such entrepreneurship positively feeds back into the local labor market through job creation. Empirical evidence supports this by showing

that the agglomeration of firms within a location tends to be accompanied by entrepreneurial and professional jobs that require higher human capital, and thus higher salaries (Glaeser and Mare, 2001).

The spatial agglomeration of firms is typically matched by residential agglomeration (Saxenian, 1994). Firm and residential agglomeration increase access to resources and services, and vice versa. The agglomeration of firms and residents and the resulting density have a multiplier effect on local economies by raising overall wages (Moretti, 2012). The spatial agglomeration of firms and residents attracts supporting organizations in the professional (e.g., schools, healthcare) and entrepreneurial (e.g., clubs, food and beverage) domains, thereby expanding career options in that location (Champion, 2001). Spatial agglomeration may also facilitate localization economies (Niu et al., 2015; Serrano, 2019). Workers in geographic locations with higher concentrations of professional jobs tend to earn more due to higher levels of human capital by virtue of their interactions with similar others and the spillover of intellectual capital and innovations (Glaeser and Mare, 2001).

There is evidence that urban residents and migrants to cities fare better than those who reside in suburban or rural locations (Glaeser and Mare, 2001). In addition, the premium associated with urban residence remains even when urban residents migrate to suburban locations, presumably because such migrants are unlikely to move without a good job offer. This urban premium holds even when suburban residents commute to work in a city (Glaeser and Mare, 2001). For example, the success of Silicon Valley firms in Menlo Park has been attributed to the concentration of high-technology firms offering high wages (Moretti, 2012). These firms were able to access an increasing concentration of college-educated professional workers in the accompanying suburban locations (Champion, 2001). In contrast, the concentration of

technology firms on Boston's Route 128 has been less successful because the area lacks a concentration of residents with the requisite human capital.

At the opposite extreme, geographic locations with traditional industries and services that tend to require relatively less skilled workers are left with lower-paying jobs (Moretti, 2012). For example, consumer services (e.g., food service, entertainment, and craft production) account for over a quarter of all rural jobs (Low, 2017). Such jobs tend to be concentrated in small or single entrepreneur businesses (Bryden and Bollmann, 2000). Unlike urban and suburban locations, entrepreneurship in rural locations tends not to result in job creation, entailing a stagnant labor market (Faggio and Silva, 2014).

Moreover, rural locations experienced a disproportionate decline in agricultural and manufacturing employment between 2001 and 2015 (Low, 2017). The decline in agriculture led to a weakened demand for agricultural workers (Moretti, 2012). Agricultural productivity in rural locations increase the wages of professionals and managers more than other positions in the hierarchy. Manufacturing had once provided a higher share of the jobs (14% of non-farm jobs) and total earnings (21% of non-farm earnings) in rural locations compared to other rural economic sectors (Low, 2017). However, manufacturing firms' move to locations outside the United States softened the demand for manufacturing jobs during this period.

Spatial mismatch

Geographical locations may constrain careers in other locations by a spatial mismatch between the demand for and the supply of labor (Gobillon et al., 2007). The spatial mismatch hypothesis posits that a mismatch between the locations of employers and the residences of workers decreases access to jobs and job opportunities (Gordon et al., 1989). The access is typically diminished for lower-skilled workers and minorities (Li et al., 2013).

The concentration of professionals away from nonprofessional workers tends to magnify and exacerbate socioeconomic outcomes (Moretti, 2012). The concentration of professionals—and thus higher wages—in cities tends to attract an inflow of similarly skilled professionals, which increases the cost of living in those locations. As noted above, the concentration of higher-skilled professionals tends to increase the productivity and wages of both the professionals and nonprofessionals who service and support those professionals. In the case of other nonprofessionals, however, the high cost of living generally drives lower-skilled, lower-wage workers away from these cities and immediate suburban locations to outer regions where the living costs are lower (Moretti, 2012).

Some cities, however, experienced a concentration of minorities in city centers as well-paying jobs and nonminorities agglomerated in their suburbs (Frey and Zimmer, 2001). Racial concentrations in cities and surrounding areas impede careers of minorities because firms tend to hire minorities and nonminorities in the proportions that are observed in their applicant pools (Li et al., 2013). Minorities who reside in city centers have to commute to work in the suburbs, thereby potentially incurring higher costs associated with employment. Moreover, employers have been known to use information about applicants' residential locations as a signal of employability (Fernandez and Su, 2004). Applicants from housing projects are reported to be less likely to be hired compared to applicants from more affluent residential locations (Newman 1999).

In rural locations, a decline in the agriculture and manufacturing sectors led to rural unemployment rates peaking at 10.3% in 2010 (Cromartie, 2018). Since 2010, the rural economy has experienced in-migration and a population growth that has fueled demand for workers, mainly in consumer service and craft-oriented enterprises. However, these new jobs require a

relatively low level of skills or only basic education and therefore provide relatively low pay and limited job opportunities (Thiede et al., 2018). Consequently, the spatial mismatch between job opportunities and workers makes it necessary for new entrants and job seekers in rural labor markets to migrate out to urban or suburban locations in search of employment (Cromartie, 2018). Out-migration tends to slow employment growth by reducing the size of the potential rural labor force. In other rural locations, in-migration from urban and suburban locations may drive employment growth, but these in-migrants report a lack of job opportunities for higher skilled labor (Cromartie et al., 2015).

Methodology

Data

We use data from the NLSY79, which is commissioned by the U.S. Bureau of Labor Statistics (BLS) and conducted by the Center for Human Resource Research at The Ohio State University (U.S. Bureau of Labor Statistics, 2006). Researchers from the National Opinion Research Center at the University of Chicago administer survey questionnaires and collect information about respondents. The NLSY79 first surveyed a nationally representative sample of 12,686 respondents residing in the U.S. who were between 14 and 22 years old (as of January 1, 1979). The cohort was interviewed annually until 1994 and biennially thereafter. Thus, the NLSY79 consists of more than 26 waves of data. Due to cumulative attritions, the remaining sample as of 2014 was 7,071 respondents.

Two features of the NLSY79 make it particularly ideal for our analysis. First, the dataset contains rich career-related information on jobs held over a life course, allowing us to construct individual career sequences from the beginning of the respondents' careers. Second, the NLSY79 contains comprehensive geographic residence histories for each respondent. During each survey

round, interviewers collect information regarding whether respondents currently reside in an MSA, the central city of an MSA, or outside of an MSA. Hence, by tracking the respondents' place of residence for each survey round, we can identify the residence status of individuals not just as single points in time but across their work histories.

Sample construction

We selected a sample from the universe of 12,686 NLSY79 respondents based on the following criteria: the respondent (1) was at least 18 years old and had attained a high-school diploma; (2) held a full-time civilian job, and (3) had provided at least 18 years of residence and workforce data by the 26th wave of data collection.

Our reason for the first criterion was twofold. First, because the U.S. youth employment regulations in the Fair Labor Standards Act (FLSA) restrict certain types of employment for persons under the age of 18: (jobs that may be detrimental to the well-being of minors or constrain their educational prospects), we used this criterion to include only respondents who were not subject to the youth employment regulations and were therefore eligible to work in any job. Second, attainment of a high school diploma as the starting reference for respondents' careers reduced the possibility of including transient, high-school summer jobs as part of their careers.

Regarding the second criterion, in line with the BLS definition of a full-time, permanent job, we considered respondents who reported working "for more than 35 hours a week" in jobs that they held for the longest period during a calendar year (see Polivka, 1996). We considered only full-time, permanent job holders for our sample because temporary job holders do not have the same career attitudes as permanent job holders and do not undergo the same cognitive processes as full-time permanent job holders for career-related decisions (Hulin et al., 1985).

Our reason for the third criterion was that best-practice recommendations by sequence data analysts and results from Monte Carlo simulations of sequence data indicate that OMAs produce inconsistent estimates when sequences have more than 30% missing data elements (Dlouhy and Biemann, 2015); we therefore included only respondents who had provided at least 18 years' residence and work history data as 18 years is ~70% of the 26 years of data collection.

After applying the inclusion criteria (see Table 1), the final sample comprised 2,836 respondents, representing 22.36% of the 12,686 NLSY79 respondents. Among the 2,836 respondents, 62% were male, and 62% were Caucasian, 22% were African-American, and 16% were Hispanic. Regarding educational attainment, 53% had attained high school diplomas, 38% had attained bachelor's degrees, and 9 percent had attained postgraduate degrees.

Insert Table 1 About Here

Constructing sequences of geographic locations

We followed Abbott and Hryack's (1990) approach to construct both residence and career sequences for each respondent in our sample. We considered each wave of data collection as the basic time interval for the sequences (Joseph et al., 2012).

We used residence historical data created by the BLS in the NLSY79 to construct a sequence of geographic residence locations for each respondent. The BLS did not release standard MSA data in the NLSY79, but rather used the U.S. Office of Management and Budget's definition of MSAs to create a variable classifying residence of respondents as "urban", "suburban", or "rural" (U.S. Bureau of Labor Statistics, 2006). We coded these as *R*, *S*, and *U*, respectively, for each respondent's residential location in each wave beginning with the respondent's time of entry into the workforce. For example, the geographic sequence *U U U U U*

UUUUUUUUUUUUUUUUUUSSSSSS represents a respondent residing in an urban location for 20 years, followed by 6 years of residence in a suburb.

Constructing sequences of careers

The NLSY79 data contains detailed information about the jobs that respondents held each year. The jobs are coded, described, and classified according to the Occupational Classification System (OCS; U.S. Bureau of Labor Statistics, 2006). The 2018 version of the OCS categorizes civilian jobs into 22 broad occupations (e.g., management, legal, production), 96 occupational groups (e.g., top executives, computer occupations) within the broad occupations, 449 subgroups (e.g., food service managers, engineers) within the occupational groups, and 821 jobs (e.g., surveyors, chemical engineers). We drew on Chan et al.'s (2012) EPL career framework to code careers.

Entrepreneurial dimension. We used two variables to code the entrepreneurial dimension of respondents' careers. First, we use a "Class of Worker" variable to distinguish five different employment categories: government, private for-profit company, nonprofit organization, self-employed, or working in family business. Second, NLSY79 reports whether respondents currently owned a business. Consistent with prior research (Raffiee and Feng, 2014), we treated respondents who were self-employed and owned a business as entrepreneurs, and we considered the remaining respondents to be nonentrepreneurs. For each year, we coded the entrepreneurial dimension as *E* for entrepreneurs and 0 for nonentrepreneurs.

Professional dimension. To differentiate professional job roles from vocational job roles, we adopted Wilensky's (1964) concept of professional jobs as those jobs that require systematic knowledge acquired through extensive training or education, while vocational jobs require less education (Jeong and Leblebici, 2019). We coded the all jobs in our data that require an

associate's degree or higher as *P* (for “professional”) and all jobs that require a lower level of educational attainment than an associate's degree as *V* (for “vocational”). Our coding of job roles as either professional or vocational was informed by the O*NET database, developed under the auspices of the U.S. Department of Labor/Employment and Training Administration (O*NET, 2016). The database contains occupation-specific information, including the level of educational attainment customarily required to enter a specific occupation, for the OCS jobs.

Leadership dimension. The leadership dimension characterizes jobs that are assigned managerial roles and place incumbents in charge of others at the workplace. Managerial jobs are categorized under the “management occupations” major group of the OCS (U.S. Bureau of Labor Statistics 2018). Based on this information, we coded all managerial jobs as *L* (for “leader”) and nonmanagerial jobs as “0” for each year, using the OCS job codes.

Table 1A (Appendix A) describes the eight distinct job profiles (*V*, *VL*, *PL*, *EV*, *EVL*, *EP*, *EPL*) we identified with our coding. We constructed career sequences by a string of job profiles for each year. For example, the career sequence *P P P P P P P P P P P P P P P P P P P L P L P L P L P L* represents a 26-year-long career comprising the first 20 years as a professional and the remaining 6 years as a professional manager.

Data analytic approach

We aimed to achieve the goals of this research using four data analytic techniques. First, we used OMAs to measure the similarities between all pairs of residential sequences and all pairs of career sequences in the dataset. Second, we used a set of cluster analyses to group residential sequences into meaningful archetypes of geographic locations and career sequences into prototypical career paths. Third, we used chi-square tests to uncover demographic and human capital profiles across the archetypes of geographic locations and prototypical career paths.

Fourth, we used a hierarchical linear model to examine whether objective career success differed across career paths and geographic locations.

We employed the OMAs and cluster analyses in a two-stage approach. Use of an OMA and cluster analysis offers a means to empirically uncover distinct patterns of sequences (Abbott and Hrycak, 1990). First, we conducted an OMA and cluster analysis of the residential sequences to identify groups of similar residential patterns. In the second stage, we conducted an OMA and cluster analyses of respondents' career sequences within these groups of residential patterns.

Figure 2 presents the two-stage analysis that guided our data analytic approach.

Insert Figure 2 About Here

Optimal matching analysis. The aim of the OMAs was to identify similarities in the patterns of residential location sequences and in the career sequences. An OMA computes similarity scores or metric distances between pairs of sequences. A similarity score represents the least cost of transforming one sequence into the other. A sequence may be transformed to become similar to another by inserting, deleting (together known as *indel* operations), or substituting elements. We set the highest possible indel cost of 1 for inserting or deleting an element, or states in our case, in the sequence. Substitution costs were based on transition rates between the states (i.e., *R*, *U*, and *S* for residential sequences and *E*, *P*, *M*, and *V* for career sequences) in our sequence data. The more operations needed to transform one sequence into the other, the higher the indel costs and therefore the less similar the sequences are. The outcome of the OMAs are a matrix of similarity scores (2836 rows by 2836 columns) between the residential sequences and one between the career sequences for each respondent in the dataset.

Cluster analysis. The similarity matrices are the input data used to cluster the residential

sequences and career sequences into homogeneous groups. We used Ward's clustering method because of its relative computational efficiency. It is an iterative agglomerative hierarchical clustering algorithm that aggregates data points towards a single cluster containing all observations by producing a new cluster minimizing the total within-cluster variance in each iteration.

We used the Akaike Information Criterion (AIC) diagnostic approach to determine the optimal number of clusters (Akaike, 1974). Lower AIC values indicate a better fit with the data, and larger differences between the AIC values for solutions indicate a strong preference for one solution over the other. For example, we observed substantial drops in the AIC value from the cluster $N = 1$ solution to the $N = 5$ solution for the residential sequences, while the differences between AIC values after the $N = 5$ solution became nonsignificant, thereby indicating that a 5-cluster solution best fits the residential sequence data.

Results

In this section, we present the results from our analyses of geographic locations, career paths, and objective career success. Appendix A provides additional methodological details about the codes, roles, and definitions of the codes. Appendix B reports on the residential sequence distribution plots for each geographic location. Appendix C presents pictorial representations of career paths within geographic locations and descriptive statistics pertaining to the demographic and human capital attributes of those career paths. Appendix D describes the methodology employed, the descriptive statistics, the correlations, and results from the hierarchical linear model.

Geographic locations

The analysis revealed five meaningful location archetypes, which we label as "Urban",

“Suburban”, “Suburban–Urban Migration”, “Rural–Suburban Migration” and “Rural”. Table 2 presents the proportions of residential locations, demographic characteristics, and human capital attainments. We find 268 individuals (9.4% of the sample) residing in urban locations for a substantial portion of their career history. We label this pattern as residing in an *Urban* geographic location. Individuals in urban locations are predominantly male (62%). There are balanced proportions of Hispanics (25%), African-Americans (30%), and Caucasians (45%) in this archetype. One in two urban residents have attained a bachelor’s degree or higher (Table 2: 50%; $\chi^2 = 38.457$, $df = 8$, $p < 0.001$). As expected, we find that urban residents have attained greater than the sample average pay (Figure 3), but they show within-location variation due to differentiations with respect to human capital, demographics, and career paths.

 Insert Table 2 About Here

 Insert Figure 3 About Here

We find 1,343 individuals (47.4% of the sample) residing in suburban locations for a substantial period of their career history. We label this pattern as residing in a *Suburban* geographic location. The profile of residents in suburban locations is typically male (Table 2: 60%, $\chi^2 = 6.487$, $df = 2$, $p < 0.05$) and predominantly Caucasian (Table 2: 71%, $\chi^2 = 300.460$, $df = 8$, $p < 0.001$). Half (50%) of those residing in suburban locations have attained a bachelor’s degree or higher (Table 2: $\chi^2 = 38.457$, $df = 8$, $p < 0.001$). The real annual pay of suburban residents is higher than in other geographic locations (Figure 3).

We find 164 individuals (5.8% of the sample) residing in rural locations for a substantial period of their career history. We label this pattern as residing in a *Rural* geographic location. Individuals in this group are predominantly male (Table 2: 68%, $\chi^2 = 6.847$, $df = 2$, $p < 0.05$),

more likely than individuals in other locations to be Caucasian by ethnicity (80%; $\chi^2 = 300.460$, $df = 8$, $p < 0.001$), and likely to have attained a high school diploma as their highest level of education (Table 2: 66%, $\chi^2 = 38.457$, $df = 8$, $p < 0.001$). We found that the real annual pay of rural residents was lower than for other geographic locations (Figure 3), with variations due to within-location differences in human capital, demographics, and career paths.

About two out of five respondents in our sample (37.4%) exhibit some form of migration. We find 573 individuals (20.2% of the sample) initially residing in suburban locations and subsequently migrating to urban locations in the middle to later part of their career histories (Figure B1 in Appendix B). We label this pattern as *Suburban–Urban Migration*. Suburban-urban migrants are predominantly male (Table 2: 59%, $\chi^2 = 6.847$, $df = 2$, $p < 0.05$). The proportions of minorities (Hispanic: 27%; African American: 28%) and the majority (Caucasian: 45%) (Table 2: $\chi^2 = 300.460$, $df = 8$, $p < 0.001$) are balanced. One in two suburban–urban migrants (54%) have attained at least a bachelor’s degree (Table 2: $\chi^2 = 38.457$, $df = 8$, $p < 0.001$). The real annual pay of suburban-urban migrants is above the sample average (Figure 3).

Finally, we find 488 individuals (17.2% of the sample) initially residing in rural locations and subsequently migrating to suburban locations in the middle to later part of their career histories (Figure B1 in Appendix B). We label this pattern as *Rural–Suburban Migration*. The rural-suburban migrants are predominantly male (Table 2: 63%, $\chi^2 = 6.487$, $df = 2$, $p < 0.05$) and Caucasian (Table 2: 69%, $\chi^2 = 300.460$, $df = 8$, $p < 0.001$). Individuals in this group have attained at least a high school diploma (54%) or a bachelor’s degree or higher (46%) (Table 2: $\chi^2 = 38.457$, $df = 8$, $p < 0.001$). The real annual pay of rural–suburban migrants, while below the sample average, is higher than the pay received by rural residents (Figure 3).

Geographic locations and career paths

Career paths common to all residential locations. The following unidimensional career paths were found to be common across geographical locations: Persistent Vocational, Persistent Professional, and Late-Career Professional career paths (Table 3). These career paths, along either the vocational or the professional dimension, are the most recognizable across all geographic locations in our sample (Figures C1, C3, C5 C7, C9).

Insert Table 3 about Here

The Persistent Vocational career path predominantly comprises vocational job roles. The stereotypical profile of incumbents in a Persistent Vocational career path is that they are male, Caucasian, and have attained a high-school diploma. However, there are notable exceptions to this stereotype. The gender proportions in the rural Persistent Vocational career path are not statistically different (Table C8: $\chi^2 = 0.822$, $df = 2$, *n.s.*). There is no statistical difference in ethnicity in the Persistent Vocational careers of rural–suburban migrants (Table C14: $\chi^2 = 14.044$, $df = 8$, *n.s.*). The Persistent Vocational career path tends to pay as much as the Late-Career Professional, but the pay is significantly lower than that of the other career paths, regardless of geographic location (Table D2).

The Persistent Professional career path predominantly comprises professional job roles. The stereotypical profile of incumbents in a Persistent Professional career is that they are Caucasian and have at least a bachelor’s degree. Except for the male-dominated rural Persistent Professional career path (Table C8), there appears to be no difference in gender proportions across geographic locations. There are also no differences in the proportions of ethnicities in the urban Persistent Professional career path (Table C2). Significantly more individuals in the rural Persistent Professional career path have attained a high school diploma as their highest

educational qualification (Table C8: $\chi^2 = 25.851$, $df = 8$, $p < 0.05$) than in other geographical locations. The Persistent Professional career path tends to pay higher than other career paths, regardless of geographic location (Table D2).

The Late-Career Professional career path is predominantly characterized by vocational job roles in the early and middle parts of a career, followed by a transition into professional job roles in the later part. Individuals in the Late-Career Professional career path tend to be male, Caucasian, and have attained at most a high school diploma, with the exception of rural–suburban migrants, for whom there is no difference in gender proportions (Table C14). Incumbents in the Late-Career Professional career path earn as much as incumbents in the Persistent Vocational career path (Table D2).

Career paths that are less common across geographic locations. Multidimensional career paths along two or more dimensions (e.g., entrepreneur–vocational) are less common across geographical locations. These include the Mid-Career Entrepreneurial, Mid-Career Professional, Mid-Career Professional Manager and Professional, Stable Rural, and Disrupted career paths.

About half of the job roles in the Mid-Career Entrepreneurial path are vocational in nature (Table C1: $\chi^2 = 2755.400$, $df = 28$, $p < 0.001$). In urban locations, the vocational dimension is subsequently coupled with the entrepreneurial dimension in the middle portion of a career, suggesting a career such as skilled service workers operating their own business. In suburban and rural–suburban locations, we find that some incumbents in this career path begin their careers in entrepreneurial roles. The entrepreneurial dimension in both of these locations peak between the eighth and twelfth year of the work histories and dissipates in later stages of the work histories (Figures C3, C9). African American males appear to be concentrated in Mid-Career Entrepreneurial career paths in urban locations (Table C2: $\chi^2 = 21.094$, $df = 8$, $p < 0.01$).

In contrast, the stereotype of incumbents of the Mid-Career Entrepreneurial path in suburban and rural–suburban locations is that they are male Caucasian with a high school diploma (Table C5, C14). Here, too we see dissipation of the entrepreneurial dimension in the later stages of the career path.

The Mid-Career Professional Manager and Professional path appears to be unique to suburban locations in our sample (Figure C3). This career path comprises vocational, professional, and professional–leader job roles (Figure C3 and Table C4). The professional–leader job roles peak in the middle part of the career path, which returns to vocational or professional roles by the end of the work history. The stereotype for incumbents in this career path is a male Caucasian with at least a bachelor’s degree (Table C5); it is the second highest paying career path in suburban locations.

The Stable Rural career path appears to be idiosyncratic to rural locations (Figure C5). This career path is characterized by a steady mix of entrepreneurial, professional, and vocational job roles over the course of the work history (Figure C5). The mid-career stage sees an increase in professional–leader roles, and there is a rise in vocational–leader roles in the late career. There is also a decline in vocational roles in the later stages of this career path in favor of professional or entrepreneurial roles. The real annual pay is neither the lowest nor the highest but rather hovers around the average in this location.

The Disrupted career path appears to be idiosyncratic to suburban–urban migrants (Figure C7). This career path begins with job roles in the vocational and professional dimensions (Figure C7). By mid-career, the Disrupted career path is characterized by a mix of job roles along the entrepreneurial, professional, and professional–leader dimensions. These job roles tend not to be sustained but transition to vocational, vocational–leader, and professional job roles

closer to the end of incumbents' work histories. The stereotypical incumbent of the Disrupted career path is male and Caucasian (Table C11). Real annual pay for this career path tends to be the second highest in the suburban–urban migrant location.

Discussion

The goals of this study were to (1) uncover prototypical career paths within and across geographic locations, (2) examine demographic characteristics for prototypical career paths within and across these locations, and (3) examine whether career success associated with prototypical career paths was similar across these geographic locations. To achieve these goals, we first described the archetypes of the respondents' geographic locations, which form the context within which respondents have forged their career paths. Second, because the extant literature proposes that geographic locations facilitate or constrain the agglomeration of human capital and demographic profiles, which are in turn associated with career paths and subsequent objective career success, *ceteris paribus*, we examined whether the profiles for human capital demographics, career paths, and objective career success differed across geographic locations.

Geographic locations

The analysis produced results that are consistent with expectations derived from prior literature and also contributed new insights to the career literature. The findings regarding geographic locations are consistent with research on human capital and ethnic agglomerations. Caucasians are concentrated in the suburban and rural locations, leaving minorities to assimilate in the remaining geographical locations. In turn, rural locations appear to concentrate workers who have attained a high-school diploma as their highest educational level, presumably because the job roles in those locations are agricultural or involve manufacturing perishable products.

Of course, that does not mean that there are no workers with high levels of human capital

in rural locations. In fact, workers with higher levels of human capital are dispersed across geographic locations. The differences in economic returns for human capital across geographic locations are due to structural constraints (e.g., job opportunities, labor market conditions). The average real annual pay is highest in suburban locations and lowest in rural locations (Figure 3). Kusmin (2013) estimated that the largest gaps in earnings occurred among the top 5% and 10% of earners of suburban and rural locations, who are presumably the most skilled in both geographic locations.

The comparatively small variation in suburban pay suggests an agglomeration of workers with similar profiles in terms of human capital attainment, demographics, and career paths. However, the variation in real annual pay for residents in other geographic locations indicates within-location differences based on human capital, demographics, and career paths. The wide variation in these other locations indicates that some, but not all, individuals do relatively well. Many may have limited access to well-paying, high-status jobs.

Indeed, we find that 1.4% of the variation in real annual pay can be attributed to the geographic location (Table D2, ICC = 0.014). By contrast, within-individual factors (Table D2, ICC = 0.404) account for 40.4% of the variance in real annual pay, after controlling for demographic characteristics, human capital attainment, career path, and year fixed effects. This finding suggests that, as ecosystems where institutions and individuals interact to influence the formation of career paths, locations are less critical to career success than are within-individual factors such as human capital accumulation and career choices.

Geographic locations and career paths

Recall that the central thesis of this study is that career ecosystems exist within the contextual boundaries of geographic locations. Distinct career paths arise from the interactions

between institutions specific to a geographic location and workers in that location (Gunz et al., 2011). Hence, like natural ecosystems and consistent with the propositions of labor market segmentation theories (e.g., Kalleberg, 1983), some career paths are common across geographic locations while others may be specific to a particular location. The nature of these prototypical career paths across and within geographic location are consistent with the propositions of the EPL framework (e.g., Chan et al. 2012), which asserts that career paths tend to be forged along one or more EPL dimensions.

Career paths common to all locations. Career paths along a single EPL dimension are more common across geographical locations because vocational and professional labor markets may be found in all geographic locations. Yet our results suggest that mid-career and late-career career mobility from vocational roles into professional roles is a male phenomenon (Dreher and Cox, 2000). Incumbents who move from vocational roles into professional job roles later in their careers earn as much as incumbents in Persistent Vocational career paths. These findings conform to the human capital and labor market expectations discussed above (e.g., Joseph et al., 2012; Rosenbaum, 1979; Tolbert, 1996).

Career paths that are less common across locations. Multidimensional career paths along two or more dimensions (e.g., entrepreneur–vocational) are less common across geographical locations, and less common than proposed by the EPL career framework (for example, see Table C1 in Appendix C). Multidimensional career paths, when they occur, appear to be a mid-career phenomenon that is boundaryless in nature and one in which incumbents move along EPL dimensions throughout their work histories. The geographically bounded nature of these multidimensional career paths may be explained by spatial agglomeration and spatial mismatch arguments.

The agglomeration of human-capital-intensive firms and associated service firms in urban and suburban locations tends to generate demand for highly skilled vocational and professional workers. These firms create the labor market that supports vocational and professional careers. The agglomeration of firms seeking skilled labor affords an opportunity for workers to transition from vocational to professional job roles. There is less demand for professional–manager career paths where human-capital-intensive firms cluster, because such firms are typically characterized by flat hierarchies (Rosenthal and Strange, 2001).

In contrast, the agglomeration of industries in suburban locations affords the development and sustenance of hierarchical professional careers, which eventually lead to managerial careers. Managerial hierarchies are more likely to exist in physical-capital-intensive industries with traditional seniority-based promotion policies (Rajan and Zingales, 2001). However, the professional–leader job role peaks in the middle part of a career and returns to vocational or professional roles by the end of the work history. This finding corroborates Chan et al.’s (2012) observation that some professionals may experiment with managerial roles only to find that leading is not their calling, and they subsequently return to professional or vocational roles.

The entrepreneurial career path appears to be more an urban and suburban phenomenon than a rural one. This career path sees the entrepreneurial dimension peaking in mid-career, only to return to a vocational dimension in the later stages of incumbents’ career paths. This finding is contrary to conventional wisdom that alludes to entrepreneurship as a potentially life-long endeavor (e.g., Page et al., 1992; Uy et al., 2015). African American males appear to be concentrated in Mid-Career Entrepreneurial career paths in urban locations. The predominance of minority-owned firms in urban locations may reflect barriers to careers in the primary labor market, thereby concentrating minorities in careers in the secondary labor market (Bates and

Robb, 2014; Coleman, 2002). One reason for the dissipation of the entrepreneurial dimension in later stages of careers might be related to the closure of minority-owned firms. Businesses serving minority communities are strongly associated with firm closure due to low profitability and difficulties in accessing credit (Bates and Robb, 2014). Another reason could be that the weak integration between entrepreneurship and innovation may result in an unsustainable journey along the entrepreneurial dimension in these geographic locations (Faggio and Silva, 2014).

The stereotypical incumbent in the Mid-Career Entrepreneurial path in suburban and rural–suburban locations is a male Caucasian with a high school diploma. Here, too, we see the dissipation of the entrepreneurial dimension in the later stages of the career path. Entrepreneurial activities in suburban and rural–suburban locations are less likely to have difficulty in securing credit but may suffer from weak integration between entrepreneurship and innovation (Faggio and Silva, 2014). Yet the vocational basis of entrepreneurial roles combined with lower educational attainment results in real annual pay that is neither the highest nor the lowest compared to other career paths in the respective geographic locations.

The Stable Rural career path appears to be idiosyncratic to rural locations. Scholars tend to characterize rural locations as having stagnant labor markets (Dymitrow and Stenseke, 2016). Rural labor markets tend to support service jobs that are entrepreneurial in nature, presumably local craft production and consumption (Cromartie, 2018). So, it is not surprising that real annual pay is neither the lowest nor the highest but hovers around the average in this location.

In summary, the prototypical career paths in urban and suburban locations appear to be largely similar, further supported by the migration of workers from suburban to urban locations. Spatial agglomeration may account for similarities in career paths as firms congregate to form

and grow business ecosystems (Jeong and Leblebici, 2019). This study corroborates findings in the rural studies literature by identifying out-migration from rural locations to suburban locations (Cromartie et al., 2015). As businesses move away from rural locations to the suburbs (Champion, 2001), prototypical rural careers exhibit less mobility along the EPL dimensions, with the exemplar being the Stable Rural career path. However, compared to urban and suburban locations, rural locations tend to facilitate and sustain life-long entrepreneurial careers. Residents in urban and suburban locations tend to enter and exit entrepreneurship at the midpoint of their career.

Limitations

Three limitations of this study should be noted. First, NLSY79 includes the work histories of one cohort of individuals in the U.S. workforce. This cohort's work histories are a function of the environmental context unique to the cohort, e.g., declining rural agriculture and manufacturing. Presently, the rural environment appears to be changing (Hunt et al., Forthcoming). Information-intensive job roles appear to coexist with college-educated farmers who migrated in from urban locations. Improvements in transportation and telecommunications have led rural locations to be characterized as extensions of urban and suburban locations (Dymitrow and Stenseke, 2016). As the interdependence between these geographic locations increases, scholars expect the blurring of geographic boundaries to also increase (Lichter and Brown, 2011).

The rural cohort examined here experienced decreasing job opportunities for a substantial portion of their careers. But more recent rural cohorts may have different experiences and work histories. Hence, future research might examine the proposition that the changing rural economies are indeed changing the nature of careers, by using more recent cohort data such as

the National Longitudinal Survey of Youth 1997 (NLSY97). The NLSY97 cohort would have between 18 to 22 years of experience in the labor force and would be at mid-career at the time of reporting this study. The NLSY97 respondents are likely to be the change agents in rural economies and beneficiaries of improved transportation and telecommunication infrastructures.

A second limitation of our study is that we are unable to examine the reasons why individuals made decisions to progress along one or more dimensions in their careers. We are limited by the lack of qualitative data in the NLSY79 data set capturing information such as rationales or motivations for career decisions. Future research is encouraged to systematically uncover the reasons for undertaking multidimensional careers.

Finally, we acknowledge that geographic location may be operationalized as more than just a categorical variable, as we have done here. Geographic locations may be described by a variety of qualitative and quantitative factors. This study was constrained by the geographical descriptors available in the archival dataset. In other datasets where MSA data are published, the necessary data for assembling work histories are missing. Hence, we call for future research to undertake primary data collection to derive nuanced insights from inclusion of a richer set of geographic descriptors.

Implications for future research

The findings here have several implications for research. First, the evidence for the spatial mismatch hypothesis remains inconclusive. We do not find a geographic location that exhibits a concentration of minorities (e.g., Li et al., 2013). However, we do find a concentration of Caucasians in suburban, rural, and rural–suburban migration locations. Future research might explore whether this finding is an artifact of the cohort utilized in this study. The respondents were 14 to 22 years of age at the time of the first interview and thus post-baby boomers or early

Generation Xers. Generation X has been argued to have a stronger entrepreneurial orientation than preceding generations (Howe and Strauss, 2007). Hence, we find a larger proportion of male Caucasians along the entrepreneurial dimension migrating from rural to suburban residences, with a profile similar to those in suburban entrepreneurial careers. In contrast, urban entrepreneurial careers are predominately held by minority males. Recall that urban careers, including urban entrepreneurial careers, tend to be significantly less successful in terms of pay compared to suburban entrepreneurial careers (see Figure 3). Taken together, our findings suggest “reurbanization” (see Champion, 2001), rather than gentrification, where careers may be less racially segmented and where career success is not guaranteed.

Second, job roles in the vocational–leader and professional–leader dimensions were present for a brief period, typically in mid-career, for some individuals. This finding implies that contemporary careers are indeed boundaryless across occupations. The next logical step in this line of inquiry is to investigate the role played by geographic locations on careers in the internal labor market (e.g., Tavares et al., 2018). Little is known about the structural determinants influencing individuals to eschew advancement careers within an organization to return to a boundaryless career across organizations and occupations in a given labor market.

Third, we find that individual factors matter more than geographic location in objective career success. While spatial agglomeration may facilitate the grouping of demographic and human capital profiles, our finding suggests that individual efforts through human capital accumulation and career decision-making are proximate to career success. Human capital arguments suggest that the value of the human capital of incumbents in Persistent Vocational, Persistent Professional, and Late-Career Professional career paths should be similar regardless of geographic location (Gathmann and Schonberg, 2010; Lee et al., 2015). However, we find their

value to be significantly higher in suburban locations than in urban locations. In fact, residents of both urban and suburban locations have similar human capital endowment profiles. It is beyond the scope of this study to examine the influence of geographic locations on the value of human capital. Hence, we call for future research to examine this phenomenon.

Finally, an additional direction for future research would be to replicate and extend this study to examine the influence of shocks (e.g., recession or creation and destruction of industries) on the elements that comprise career paths in each geographic location, and subsequently on career success. Localized shocks would affect both job and residential transitions, as in the case of out-migration from rural locations as the demand for agricultural workers wanes and the demand for manufacturing workers surges in suburban and urban locations.

Implications for practice

Our research has two important practical implications. First, this study shows that the various common and idiosyncratic career paths across and within geographic locations are a function of the demographics and human capital attainments of individuals in the workforce. While there are homogeneous characteristics within and across geographic locations, there is also a level of heterogeneity in those characteristics. Therefore, it is important for policy makers not to regard workers within geographic locations as a homogeneous group, but to recognize this diversity in developing and managing institutions to support workers' career choices.

Second, our findings suggest that individuals have career alternatives and that some experiment with multidimensional careers. They also point to consequences associated with those career choices. Our findings provide insights that career counsellors can use to counsel

youths and those in early careers in specific contexts. Specifically, our study provides scenarios that can be used in career counselling sessions.

Conclusion

Prior research has typically examined careers as movements through employment experiences over organizations, occupations, and time, but almost always within specific geographic locations, and this has limited our understanding of careers because geographic locations influence people, businesses, and labor markets. This study of careers within and across geographic locations contributes to our collective understanding and subsequent theorizing about the societal and spatial contexts that shape and constitute careers. As such, this study combines the microlevel and macrolevel perspectives of personal agency and institutional factors to explain how careers unfold over time and space. In essence, this study extends prior research in the direction of understanding the joint effects of time and space on careers.

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Figures

Figure 1: Heuristic Model Guiding the Goals of the Research

Figure 2: The Two-Stage Pathway Guiding Our Analysis

Figure 3: Random Effects of Real Annual Pay Across Geographic Locations

Tables

Table 1: Number of Respondents Excluded by Criteria

Criteria	Sample excluded after each criterion
1. Respondents are at least 18 years and have attained a high school diploma	3641
2. Respondents who hold full-time (civilian) jobs	4613
3. Respondents provide at least 18 years' worth of residence and workforce data	1596
Sample excluded from analysis	9850

Table 2: Individual Profiles of Each Residence Cluster

		Sample	Urban	Suburban	Rural	Suburban-Urban Migration	Rural- Suburban	χ^2
<i>Demographics</i>	N	2836	268	1343	164	573	488	
Gender	Male	62%	62%	60%	68%	59%	63%	6.487* (df = 2)
	Female	38%	38%	40%	32%	41%	37%	
Ethnicity	Hispanic	16%	25%	14%	6%	27%	10%	300.460*** (df = 8)
	African-American	22%	30%	15%	14%	28%	21%	
	Caucasian	62%	45%	71%	80%	45%	69%	
<i>Human Capital</i>								
Education Level	High School	53%	50%	50%	66%	45%	54%	38.457*** (df = 8)
	Bachelor's Degree	38%	42%	40%	26%	43%	38%	
	Postgraduate	9%	8%	10%	8%	11%	8%	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table 3: Prototypical Career Paths in Residential Locations

Careers	Urban	Suburban	Rural	Suburban – Urban Migration	Rural – Suburban Migration
Persistent Vocational	X	X	X	X	X
Persistent Professional	X	X	X	X	X
Mid-career Professional	X				X
Late-career Professional	X	X	X	X	X
Mid-career Entrepreneur	X	X			X
Mid-career professional manager and professional		X			
Stable rural			X		
Disrupted				X	

Appendix A

Table A1: Job Profiles

Entrepreneurial	Professionalism	Leadership	Role	Definition
0	V	0	V	Paid-employment in vocational jobs (vocational) e.g. file clerk
E	V	0	EV	Self-employment in vocational jobs (self-employed vocational) e.g. Baker
0	P	0	P	Paid-employment in professional jobs (professionals) e.g. computer programmer
0	V	L	VL	Managers in paid vocational jobs (vocational managers) e.g. food service manager
E	V	L	EVL	Self-employed vocational managers e.g. freelance funeral home manager
0	P	L	PL	Managers in paid professional jobs (professional managers) e.g. computer information systems manager
E	P	0	EP	Self-employment in professional jobs (self-employed professionals) e.g. freelance computer programmer
E	P	L	EPL	Self-employed professional managers e.g. freelance financial manager

Appendix B: Residential Patterns

Figure B1: Residential Patterns in Each Geographical Location¹

¹ We observe missing values for some individuals in both migration clusters between the 16-20th year, yielding internal gaps for some sequences. We followed the approach of Gabadinho et al.(2009) and treated gaps in sequences as void elements.

Appendix C: Career paths within geographic locations

Figure C1: Distribution of Career Elements Across Work Histories in Urban Locations

Table C1: Elements of Career Paths in Urban Locations

	Persistent Vocational	Persistent Professional	Mid-Career Professionals	Late-Career Professionals	Mid-Career Entrepreneurial
EV	0.80%	0.20%	1.90%	1.80%	19.40%
EL	0.00%	0.00%	0.00%	0.20%	0.00%
EP	0.00%	1.20%	1.50%	0.70%	0.70%
EPL	0.20%	0.20%	0.80%	0.10%	3.30%
VL	0.00%	0.20%	1.60%	0.20%	0.90%
P	4.60%	90.30%	36.40%	19.70%	7.20%
PL	1.00%	4.70%	10.00%	2.80%	17.50%
V	93.50%	3.00%	47.90%	74.50%	51.10%

χ^2 (df) = 2755.4***(28)

Table C2: Individual Profiles for Career Paths in Urban Locations

		Sample	<i>Persistent Vocational</i>	<i>Persistent Professional</i>	<i>Mid-Career Professional</i>	<i>Late-Career Professional</i>	<i>Mid-Career Entrepreneurial</i>	χ^2 or <i>F</i>
URBAN								
Gender	N	268	75	17	58	98	20	6.420* (<i>df</i> = 2)
	Male	62%	53%	59%	64%	54%	80%	
	Female	38%	47%	41%	36%	46%	20%	
Ethnicity	Hispanic	25%	21%	29%	26%	24%	25%	21.094** (<i>df</i> = 8)
	African American	30%	27%	35%	33%	10%	45%	
	Caucasian	45%	52%	35%	41%	66%	30%	
Education Level	High School Diploma	50%	72%	29%	36%	58%	55%	27.930*** (<i>df</i> = 8)
	Bachelor's Degree	42%	28%	53%	52%	37%	40%	
	Postgraduate Degree	8%	0%	18%	12%	5%	5%	
Real Annual Pay	Mean		24,280	51,267	34,396	24,314	29,703	544.9*** (<i>df</i> = 4)
	SD		8,981	19,836	19,780	7,615	11,942	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Figure C2: Pay Dispersion in Urban Locations

Table C3: Pay Comparisons Across Career Paths in Urban Locations

	Difference	Lower	Upper
Persistent Professional Career-Persistent Vocational Career	26,987.196***	25138.450	28835.943
Mid-Career Professional-Persistent Vocational Career	10,115.408***	8901.978	11328.839
Late-Career Professional-Persistent Vocational Career	33.927	-1032.150	1100.003
Mid-Career Entrepreneurial-Persistent Vocational Career	5,422.764***	3690.128	7155.399
Mid-Career Professional-Persistent Professional Career	16,871.788***	-18768.914	-14974.662
Late-Career Professional-Persistent Professional Career	26,953.270***	-28759.700	25146.84
Mid-Career Entrepreneurial-Persistent Professional Career	21,564.433***	-23829.095	19299.77
Late-Career Professional-Mid-Career Professional	10,081.482***	-11229.410	8933.554
Mid-Career Entrepreneurial-Mid-Career Professional	-4,692.645***	-6476.810	-2908.48
Mid-Career Entrepreneurial-Late-Career Professional	5,388.837***	3701.428	7076.247

Figure C3: Distribution of Career Elements Across Work Histories in Suburban Locations

Table C4: Elements of Career Paths in Suburban Geographical Locations

	Persistent Vocational	Persistent Professional	Mid Professional Managers & Professionals	Late-Career Professionals	Mid-Career Entrepreneurial
EV	1.50%	0.40%	2.50%	2.70%	42.20%
EL	0.00%	0.00%	0.30%	0.00%	0.90%
EP	0.10%	1.20%	2.90%	0.70%	1.70%
EPL	0.00%	0.10%	0.90%	0.40%	1.90%
VL	0.00%	0.70%	1.40%	0.20%	1.10%
P	4.70%	86.00%	32.20%	15.90%	10.70%
PL	1.20%	3.60%	15.50%	3.60%	5.60%
V	92.40%	7.90%	44.30%	76.40%	36.00%

χ^2 (df) = 2049.0*** (28)

Table C5: Individual Profiles for Career Paths in Suburban Geographical Locations

		Sam ple	<i>Persistent Vocationa l</i>	<i>Persistent Professio nal</i>	<i>Mid-Career Professional Manager & Professional</i>	<i>Late-Career Professional</i>	<i>Mid-Career Entrepreneurial</i>	χ^2 or F
SUBURBAN								
Gender	N	1343	294	202	330	452	65	
	Male	60%	64%	57%	62%	55%	62%	8.241*
	Female	40%	36%	43%	38%	45%	39%	($df = 2$)
Ethnicity	Hispanic	14%	20%	11%	12%	22%	6%	
	African American	15%	22%	16%	14%	18%	3%	49.290*
	Caucasian	71%	58%	73%	74%	60%	91%	** ($df = 8$)
Education Level	High School Diploma	50%	75%	20%	33%	62%	62%	
	Bachelor's Degree	40%	25%	53%	53%	36%	34%	270.090
	Postgraduate Degree	10%	1%	27%	14%	3%	5%	*** ($df = 8$)
Real Annual Pay			26496	53746	38224	26771	34346	
	Mean							3598***
	SD		9598	17921	19308	11794	19133	($df = 4$)

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Figure C4: Pay Dispersion in Suburban Locations

Table C6: Pay Comparisons Across Career Paths in Suburban Locations

	Difference	Lower	Upper
Mid-Career Entrepreneurial-Late-Career Professional	5,388.837***	3,701.428	7,076.247
Mid-Career Professional Manager & Professional-Late-Career Professional	10,081.482***	8,933.554	12,036.688
Persistent Professional Career-Late-Career Professional	26,953.270***	25,146.840	27,656.511
Persistent Vocational Career-Late-Career Professional	-33.926	-1,100.003	330.068
Mid-Career Professional Manager & Professional-Mid-Career Entrepreneurial	4,692.645***	2,908.480	4,974.341
Persistent Professional Career-Mid-Career Entrepreneurial	21,564.432***	19,299.770	20,551.618
Persistent Vocational Career-Mid-Career Entrepreneurial	-5,422.764***	-7,155.399	-6,741.897
Persistent Professional Career-Mid-Career Professional Manager & Professional	16,871.788***	14,974.662	16,239.9493
Persistent Vocational Career-Mid-Career Professional Manager & Professional	-10,115.408***	-11,328.839	-11,082.184
Persistent Vocational Career-Persistent Professional Career	-26,987.196***	-28,835.943	-26,515.476

Table C7: Elements of Career Paths in Rural Geographical Locations

	<i>Persistent Vocational</i>	<i>Persistent Professional</i>	<i>Late-Career Professional</i>	<i>Diverse</i>
EV	0.70%	0.00%	3.00%	14.40%
EL	0.00%	0.00%	0.10%	0.50%
EP	0.30%	0.00%	1.40%	3.30%
EPL	0.00%	0.00%	0.30%	2.40%
VL	0.20%	0.00%	0.00%	2.30%
P	5.10%	91.60%	17.00%	26.20%
PL	0.90%	0.80%	2.60%	10.40%
V	92.90%	7.60%	75.60%	40.70%

χ^2 (df) = 1671.2*** (21)

Figure C5: Distribution of Career Elements Across Work Histories in Rural Locations

Table C8: Individual Profiles for Career Paths in Rural Geographical Locations

RURAL		Sample	<i>Persistent Vocational</i>	<i>Persistent Professional</i>	<i>Late-Career Professional</i>	<i>Stable Rural Career</i>	χ^2 or F
Gender	N	164	47	11	70	36	0.822 (df=2)
	Male	68%	68%	64%	67%	75%	
Ethnicity	Female	32%	32%	36%	33%	25%	13.710 * (df=8)
	Hispanic	6%	0%	18%	6%	0%	
	African American	14%	19%	9%	20%	8%	
Education Level	Caucasian	80%	81%	73%	74%	92%	25.851 * (df=8)
	High School Diploma	66%	81%	46%	79%	58%	
	Bachelor's Degree	26%	17%	27%	17%	42%	
	Postgraduate Degree	8%	2%	27%	4%	0%	
			22667	43753	21477	27743	494.9* ** (df=3)
Real Annual Pay		Mean					
		SD	9342	4536	8838	11793	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Figure C6: Pay Dispersion in Rural Locations

Table C9: Pay Comparisons Across Career Paths in Rural Locations

	Difference	Lower	Upper
Late-Career Professional-Stable Rural Career	-6,265.615***	7,273.464	-5257.767
Persistent Professional Career-Stable Rural Career	16,010.461***	14,353.355	17667.567
Persistent Vocational Career-Stable Rural Career	-5,075.528***	-6,155.982	-3,995.073
Persistent Professional Career-Late-Career Professional	22,276.076***	20,711.322	23,840.830
Persistent Vocational Career-Late-Career Professional	1,190.088	257.438	2,122.738
Persistent Vocational Career-Persistent Professional Career	21,085.988***	22,698.464	-19473.513

Table C10: Elements of Career Paths of Suburban-Urban Migrants

	Persistent Vocational	Persistent Professional	Late-Career Professionals	Disrupted Career
EV	1.80%	0.60%	1.30%	7.70%
EL	0.00%	0.00%	0.00%	0.20%
EP	0.30%	1.40%	0.20%	2.90%
EPL	0.10%	0.10%	0.10%	1.50%
VL	0.00%	0.30%	0.20%	2.20%
P	8.70%	85.50%	26.40%	28.40%
PL	2.10%	4.50%	3.10%	13.40%
V	87.10%	7.60%	68.70%	43.70%

χ^2 (df) = 6433.8*** (df = 21)

Figure C7: Distribution of Career Elements Across Work Histories of Suburban-Urban Migrants

Table C11: Individual Profiles for Career Paths of Suburban-Urban Migrants

SUBURBAN- URBAN MIGRANTS		Sample	Persistent Vocational	Persistent Professional	Late- Career Profession al	Disrupt ed Career	χ^2 or F
Gender	N	573	268	86	73	146	6.352* ($df = 2$)
	Male	59%	63%	54%	52%	66%	
Ethnicity	Female	41%	37%	47%	48%	34%	16.133* ($df = 6$)
	Hispanic	27%	29%	28%	29%	22%	
Education Level	African American	28%	35%	28%	25%	23%	85.444* ** ($df = 6$)
	Caucasian	45%	35%	44%	47%	55%	
	High School Diploma	45%	68%	20%	51%	43%	
Real Annual Pay	Bachelor's Degree	43%	28%	55%	45%	45%	2482*** ($df = 3$)
	Postgraduate Degree	11%	4%	26%	4%	12%	
	Mean		23,602	50,522	25,260	33,901	
SD			10,165	15,777	9,413	17,616	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Figure C8: Pay Dispersion of Suburban-Urban Migrants' Career Paths

Table C12: Pay Comparisons Across Career Paths in Suburban-Urban Migrants

	Difference	Lower	Upper
Late-Career Professional-Disrupted Career	8,641.05***	-9618.235	-7663.8649
Persistent Professional Career-Disrupted Career	16,621.54**	15,707.269	17,535.816
Persistent Vocational Career-Disrupted Career	10,298.14**	10,995.405	-9,600.875
Persistent Professional Career-Late-Career Professional	25,262.59**	24,185.467	26,339.718
Persistent Vocational Career-Late-Career Professional	1,657.09***	2,557.357	-756.823
Persistent Vocational Career-Persistent Professional Career	26,919.68**	27,751.239	-26,088.126

Table C13: Elements of Career Paths of Rural-Suburban Migrants

	<i>Persistent t Vocation al</i>	<i>Persistent Professional</i>	<i>Mid-Career Professional</i>	<i>Late-Career Professional</i>	<i>Mid-Career Entrepreneurial</i>
EV	0.80%	0.30%	2.10%	3.10%	33.10%
EL	0.00%	0.00%	0.10%	0.00%	0.30%
EP	0.20%	0.70%	0.90%	0.60%	5.40%
EPL	0.10%	0.20%	0.90%	0.20%	1.80%
VL	0.00%	1.50%	0.40%	0.10%	3.00%
P	5.70%	88.00%	35.60%	15.60%	8.60%
PL	1.40%	3.50%	14.10%	4.30%	8.10%
V	91.80%	5.80%	45.90%	76.10%	39.70%

χ^2 (df) = 6606*** (28)

Figure C9: Distribution of Career Elements Across Work Histories of Rural-Suburban Migrants

Table C14: Individual Profiles for Career Paths of Rural-Suburban Migrants

RURAL-SUBURBAN MIGRANTS		Sample	Persistent Vocational	Persistent Professional	Mid-Career Professional	Late-Career Professional	Mid-Career Entrepreneurial	χ^2 or F
	N	488	126	52	79	200	31	
Gender	Male	63%	64%	56%	56%	57%	82%	9.751* ($df=2$)
	Female	37%	36%	44%	44%	43%	18%	
Ethnicity	Hispanic	10%	13%	8%	10%	10%	9%	14.044 ($df=8$)
	African American	21%	33%	17%	20%	26%	9%	
Education Level	Caucasian	69%	54%	75%	70%	64%	82%	102.040*** ($df=8$)
	High School Diploma	54%	74%	15%	45%	67%	69%	
	Bachelor's Degree	38%	26%	58%	46%	31%	29%	
Real Annual Pay	Postgraduate Degree	8%	0%	27%	9%	2%	2%	1914*** ($df=4$)
	Mean		20,489	52,816	30,771	22,592	30,236	
	SD		8,989	20,518	14,343	8,944	17,832	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Figure C10: Pay Dispersion of Rural-Suburban Migrants' Career Paths

Table C15: Pay Comparisons Across Career Paths of Rural-Suburban Migrants

	Difference	Lower	Upper
Mid-Career Entrepreneurial-Late-Career Professional	7,643.759***	6,365.3702	8,922.148
Mid-Career Professional-Late-Career Professional	8,179.49***	7,298.741	9,060.240
Persistent Professional Career-Late-Career Professional	30,224.457***	2,913.135	31,255.780
Persistent Vocational Career-Late-Career Professional	-2,102.968***	2,866.678	1,339.257
Mid-Career Professional-Mid-Career Entrepreneurial	535.731	-866.956	1,938.418
Persistent Professional Career-Mid-Career Entrepreneurial	22,580.698***	21,078.887	24082.509
Persistent Vocational Career-Mid-Career Entrepreneurial	-9,746.727***	11,079.043	8,414.412
Persistent Professional Career-Mid-Career Professional	22,044.967***	20,863.071	23,226.863
Persistent Vocational Career-Mid-Career Professional	10,282.458***	11,239.801	9,325.115
Persistent Vocational Career-Persistent Professional Career	32,327.425***	33,424.882	31,229.968

Appendix D: Assessing Objective Career Success

We computed real annual pay by adjusting reported total annual pay for each year with the consumer price index (CPI) deflator, with 2018 as the baseline year. We then standardized real annual pay to facilitate the interpretation of our results.

The data assembled for this study may be considered hierarchical in nature. Yearly individual observations (Level 1) are nested within individuals (Level 2) career paths, which in turn, are nested within geographical locations (Level 3). The structure of the data required the use of a hierarchical linear modeling (HLM) technique as it offers several advantages. First, HLM accounts for and models nonindependence of observations and thereby reducing the possibility of making Type I and II errors (Bliese & Hanges, 2004). Second, the technique enables us to explore the extent to which individual and residence cluster levels contribute to the variation in objective career success. This is achieved by allowing individual and residence cluster effects on pay to vary randomly at the intercept. We included controls of gender, ethnicity, education level, career path membership and year fixed effects in our model.

Table D1: Descriptive Statistics and Correlations

	Mean	SD	1	2	3	4
1 Real Annual Pay	31291.85 0	24243.67 9				
2 Female	0.380		- 0.168**			
3 African-American	0.220		- 0.105**	0.060* *		
4 Caucasian	0.620		0.109* *	- 0.030**	- 0.665**	
5 Bachelor's Degree	0.380		0.127* *	0.123* *	0.025* *	- 0.021**
6 Postgraduate Degree	0.090		0.213* *	0.055* *	-0.004 *	0.061* *
7 Persistent Vocational	0.290		- 0.189**	- 0.031**	0.097* *	- 0.126**
8 Persistent Professional	0.130		0.348* *	0.029* *	- 0.041**	0.050* *
9 Mid-Career Professional	0.050		0.011* *	0.005 *	0.027* *	- 0.019**
1 Mid-Career Professional Manager & 0 Professional	0.120		0.112* *	- 0.017**	- 0.087**	0.114* *
1 Late-Career Professional	0.310		- 0.172**	0.060* *	0.025* *	- 0.034**
1 Mid-Career Entrepreneurial	0.040		0.016* *	- 0.045**	- 0.071**	0.092* *
2 Stable Rural Career	0.010		- 0.014**	- 0.034**	- 0.042**	0.077* *
3 Disrupted Career	0.050		0.026** *	- 0.027**	-0.005 *	- 0.016**
4						

Table D1: Descriptive Statistics and Correlations (continued)

		5	6	7	8	9	10	11	12	13
1	Real Annual Pay									
2	Female									
3	African-American									
4	Caucasian									
5	Bachelor's Degree									
6	Postgraduate Degree	-								
		0.225*								
		*								
7	Persistent Vocational	-	-							
		0.149*	0.139*							
		*	*							
8	Persistent Professional	0.119	0.259	-						
		**	**	0.244*						
				*						
9	Mid-Career Professional	0.048	0.022	-	-					
		**	**	0.138*	0.084*					
				*	*					
10	Mid-Career Professional Manager & Professional	0.114	0.082	-	-	-				
		**	**	0.221*	0.134*	0.082*				
				*	*	*				
11	Late-Career Professional	-	-	-	-	-	-			
		0.053*	0.121*	0.411*	0.252*	0.153*	0.246*			
		*	*	*	*	*	*			
12	Mid-Career Entrepreneurial	-	-	-	-	-	-	-		
		0.011*	0.026*	0.126*	0.077*	0.047*	0.075*	0.140*		
		*	*	*	*	*	*	*		
13	Stable Rural Career	0.009	-	-	-	-	-	-	-	
		*	0.033*	0.069*	0.042*	0.026*	0.041*	0.077*	0.023*	
			*	*	*	*	*	*	*	
14	Disrupted Career	0.035	0.041	-	-	-	-	-	-	-
		**	**	0.142*	0.085*	0.052*	0.085*	0.158*	0.048*	0.026*
				*	*	*	*	*	*	*

*** $p < 0.001$; ** $p < 0.01$; SD = Standard Deviation

We examined whether objective career success differed across residence clusters, *ceteris paribus*, using the real annual pay. We computed real annual pay by adjusting reported total annual pay for each year with the consumer price index (CPI) deflator, with 2018 as the baseline year. We standardized real annual pay to facilitate the interpretation of our results.

Given the hierarchical structure of our data, we used hierarchical linear modeling for our analysis of objective career success. Yearly observations (Level 1) are nested within individuals (Level 2), who are nested within residence clusters (Level 3). Using HLM for our analysis has several advantages. First, HLM accounts for and models nonindependence of observations and thereby reducing the possibility of making Type I and II errors (Bliese & Hanges, 2004). Second, the technique enables us to explore the extent to which individual and residence cluster levels contribute to the variation in objective career success. This is achieved by allowing individual and residence cluster effects on pay to vary randomly at the intercept. We included controls of gender, ethnicity, education level career path membership and year fixed effects in our model.

Table D2: Results of the Hierarchical Linear Modeling

Real Annual Pay				
<i>Fixed Effects</i>	Estimate	se	t-value	
Intercept	-1.059***	0.055	-19.447	
Female	-0.390***	0.020	-19.110	
African-American	-0.116**	0.031	-3.724	
Caucasian	0.073*	0.028	2.635	
Bachelor's Degree	0.257***	0.022	11.633	
Postgraduate Degree	0.543***	0.041	13.194	
Persistent Professional	0.963***	0.035	26.889	
Mid-Career Professional	0.296***	0.052	5.649	
Mid-Career Professional Manager & Professional	0.354***	0.038	9.223	
Late-Career Professional	0.021	0.027	0.773	
Mid-Career Entrepreneurial	0.240***	0.054	4.473	
Stable Rural Career	0.181	0.099	1.828	
Disrupted Career	0.299***	0.051	5.839	
Year Fixed Effects	Yes			
<i>Random Effects</i>				
	Variance	SD	ICC	% Proportion of variance explained
Between-geographic location variance	0.009	0.094	0.014	1.4
Within-individual variance	0.256	0.506	0.404	40.4
Residual	0.370	0.608		
Deviance (-2 log likelihood)	124072.500			
Number of observations	63020			
Number of individuals	2836			
Number of residence clusters	5			

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; se = standard errors; SD = standard deviation; ICC = intra-class correlation; reference category = persistent vocational

Additional References

Bliese PD and Hanges PJ (2004) Being Both Too Liberal and Too Conservative: The Perils of Treating Grouped Data as though They Were Independent. *Organizational Research Methods*, 7(4), 400–417.

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