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# Understanding the Influence of Family Background on Professional Achievements: The Career Performance of Academics

**Shannon Lin[a] and Zeng Lin[b]**
[a]Faculty of Management, Dalhousie University
[b]College of Education, Illinois State University

**Abstract:** This study explores various factors influencing the career performance of university professors in China and the United States, utilizing rank, income, and the number of published journal articles as performance measures. Despite the widely acknowledged role of family background in an individual's educational and professional pursuits, our findings reveal that it fails to statistically predict the career performance of university professors. In certain instances, it even negatively affects faculty career performance. This pattern is evident in both China and the United States. Thus, despite the social, economic, political, and ideological disparities between the two nations, their remarkable similarity in the absence of a correlation between family background and career performance among academics is noteworthy.

## Introduction

This study explores various factors influencing the career performance of American and Chinese professors, aiming to elucidate the relative roles of ascribed status versus personal achievements. Consequently, it aims to contribute to the ongoing debate on the role of education in fostering social mobility and promoting equality. Despite extensive research on the influence of parental education on the likelihood of pursuing higher education (Bourdieu, 2018; Coleman, 1988), the relative roles of ascribed characteristics versus academic accomplishments beyond the undergraduate level remain largely unknown. Indeed, to date, the two most important research frameworks on education and stratification (i.e., the status attainment model, first proposed by Peter Blau and Otis Duncan, and the social reproduction models, pioneered by Karl Marx and further developed by Pierre Bourdieu) predominantly focus on undergraduate education, largely ignoring graduate education. Previous studies suggest a diminishing influence of social origins on educational attainment as individuals advance through their academic journeys. Moreover, among the few studies focusing on graduate education, some older ones indicate that as individuals ascend higher within the educational system, they tend to distance themselves from their social roots and move closer to the meritocratic ideal (Mare, 1980; Stolzenberg, 1994). More recently, however, Mullen et al. (2003) observed that family background significantly influences an individual's pursuit of graduate education. Similarly, Wakeling and Laurison (2017) discovered the growing influence of social origins on occupational outcomes, even among individuals with postgraduate degrees.

Thus, in addition to influencing an individual's educational achievements, family background also impacts their occupational choices. Whiston and Keller (2004) conducted a comprehensive review on the influence of family factors on occupational attainment, revealing that family background is an important factor influencing career decisions and outcomes; however, a severe drawback of this research is the lack of a clear theoretical framework explaining how families can positively or negatively affect career development. Notably, the existing literature also lacks information on whether parental education impacts an individual's career performance. Generally, occupational attainment involves not only successfully entering an occupation but also outperforming one's peers. In this context, levels of control,

prestige, income, and authority form important aspects of an individual's occupation (Kerckhoff et al., 1982). In other words, if having well-educated parents positively affects educational attainment and if parental influence is pivotal in occupational selection, does parental education also contribute toward an individual's professional success? This is an important question because the parental investments made throughout a child's upbringing, as well as the benefits of good parenting, are intended to help position the child for success in life, which for many includes a prosperous career. Consequently, one's occupational attainment is arguably as important as one's educational attainment, if not more important.

While education holds significance in most occupations, academic institutions offer a prime vantage point to observe the relative significance of educational attainment versus social roots in shaping individuals' career outcomes. If education can truly empower individuals to achieve their desired careers and lifestyles regardless of their social origins, evidence for this should be apparent in the career performance of professors. We deliberately focus on professors in this study because the profession has stringent educational requirements but relatively low entry barriers for individuals lacking social capital[1]. We leverage the fact that nearly all professors[2] hold graduate degrees and spend considerable amounts of time in post-secondary institutions. In some ways, the academic profession can be viewed as an extension of a terminal degree, wherein one pursues lifelong learning. By investigating the experiences of professors, we not only shed light on their career performance but also contribute valuable insights to the literature focusing on the influence of family backgrounds on graduate education.

Using a large dataset, this study investigates various factors (including family background) that influence the career performance of faculty members in terms of research outputs, salaries, and professional ranks. In particular, we adopt a case study of quantitative survey data collected from a relatively traditional and closed society (China) and a modern or open society (the United States (U.S.)) to compare the two cases. We adopt this research strategy because "the distinguishing characteristic of the case study is that it suits the examination of a contemporary phenomenon in its real-life context when the boundaries of the phenomenon and context are not clearly evident" (Yin, 1981, p.59). Moreover, our choice of confining this study to China and the U.S. is primarily motivated by their respective positions as global leaders: the U.S. holds the status of the current world power, while China is often perceived as its potential challenger. Notably, the U.S. boasts the highest number of prestigious universities worldwide and has a reputable and well-established education system, whereas China is known for its recent economic growth and rapid development and investment in mass higher education. Hence, these key countries are expected to wield substantial influence in the international higher education sector.

This study makes the following contributions: To the best of our knowledge, this study is a pioneering attempt to examine the correlation between family background and career performance among professors using quantitative data collected from the U.S. and China. Enhancing our understanding of this profession is particularly important because it is an example of a broadening creative class. Given the requisite educational credentials for entry into academia, we also contribute to the debate on whether one's family background affects their likelihood of

[1] Some other prestigious occupations such as medicine and law also require terminal degrees. However, the financial costs of these professional degrees are considerably higher, while Ph.D. students are typically granted financial assistance through scholarships and part-time employment with the university.

[2] According to the Oxford Dictionary, the term professor refers to a teacher of the highest rank in a university.

pursuing graduate education. The overall aim of this study is to elucidate the factors contributing to the career success of professors, while also enriching the debate on whether education can mitigate the disparities rooted in social backgrounds, allowing individuals to attain career success. The remainder of this paper is structured as follows: Section 2 provides an overview of relevant literature. Section 3 describes the data and empirical methods employed. Section 4 presents the results and discussions, and Section 5 provides concluding remarks.

## Literature Review

### Importance of Family Background

The social cognitive theory (Bandura, 2001) posits that individuals learn by observing others, and personal development is influenced by behaviors, cognition, and the environment. Given that children's environments are largely shaped by their parents, their life outcomes can naturally be traced back to their parents. The impact of parental socioeconomic status on children is particularly evident in the dynamics between parents and their young offspring. For instance, previous research on family process models reveals that higher levels of parental education and earnings positively influence the academic performance and behavior of school-aged children. In reality, the strong association between maternal education and children's outcomes is among the most well-established findings of developmental psychology (Reardon, 2011; Sirin, 2005). [3] Sociologists and economists also analyze the intergenerational transfer of education from various perspectives. Parental expectations (Stull, 2013; Trusty, 1998), genetics, human capital, social capital (Blau & Duncan, 1967), and other factors are some examples of the channels and mechanisms explored by related studies.

Previous literature has firmly established the impact of family background and parental education on a child's educational attainment (Eccles, 2005; Sharif et al., 2016). Moreover, this literature presents consistent evidence supporting the link between parental education and children's long-term educational and occupational outcomes in adulthood[4] (Behtoui & Neergaard, 2012; Dubow et al., 2009; Erola et al., 2016; Haveman & Wolfe, 1995; Klebanov et al., 1994;). The proverbial saying "the apple doesn't fall far from the tree" certainly reflects the notion that a father's occupational status highly correlates with their children's occupations (Blau & Duncan, 1967; Raitano & Vona, 2018). According to the human capital theory, parental characteristics play a crucial role in the development of various skills valued in the labor market (Becker & Tomes, 1979). Even among children with the same level of education, higher parental income is linked with better occupational achievements (Shareef et al., 2017). While the link between parental characteristics and their children's eventual occupational attainment is already documented, the underlying mechanisms and theoretical foundation are still poorly understood (Whiston & Keller, 2004). However, recently, Liu et al. (2020) theorized how parents, through social influence, intervene in the careers of young adult children.

### Graduate Education and Social Transition

According to the Urban Institute, the proportion of adults in the U.S. aged over 24 years who have completed graduate degrees

[3] Similarly, Morales (2019) has documented an intergenerational transmission of unemployment outcomes, particularly from mothers to their children.

[4] From a resource perspective, students with parents who can offer financial support are better able to "further invest" in their human capital in graduate school. Next, students from well-educated families often have high levels of self and parental expectations about their educational attainment. Moreover, family background also influences children's academic performance or their choice of major in college. Finally, family background affects an individual's work values and can compel them to choose careers that conform to these preferred values.

increased from 8% in 1995 to 10% in 2005 and to 12% in 2015; moreover, the number of individuals with bachelor's degrees increased by 34–37% (Baum & Steele, 2017). This growth in graduate education attainment logically corresponds with higher occupational attainment, as higher education is widely deemed essential for career advancement and high achievements (Van de Werfhorst, 2002). With the expansion of the knowledge-based economy and the increasing saturation of undergraduate education, the demand for higher education and human capital is expected to increase.

Despite the increased accessibility of higher education, the modern education system has been criticized for its role in perpetuating existing social structures (Bourdieu, 1990). For instance, McGuigan et al. (2016) discovered that young individuals often struggle to recognize the benefits of education and that family background can help provide crucial insights in this regard. Similarly, Ordine and Rose (2009) observed that an individual's socioeconomic background can help them avoid overeducation and its related traps. Within occupational status attainment models (Blau and Duncan, 1967), ascribed status refers to the utilization of kinship for networking purposes. Compared to traditional society, modern society (as opposed to traditional society) places greater emphasis on achieved status,[5] consequently diminishing the influence of parental status.

In contrast to the extensive literature focusing on undergraduate education, the literature focusing on graduate education is significantly limited. In the latter type, an individual's educational "career" is typically characterized as a sequence of transitions from one level to the next, wherein individuals must decide whether to continue or halt their progression. In this framework, the differential social selection process posits that at each transition point, a smaller proportion of students from lower-class backgrounds will persist compared to those from higher-class backgrounds. After progressing through a series of transition points, the students from lower-class backgrounds will increasingly resemble their higher-class counterparts in terms of motivation and ability (for more information, see Shavit and Blossfeld,1993). Thus, as individuals advance through the educational system, they become further detached from their social roots and approach the meritocratic ideal (Mare, 1980). However, more recently, Mullen et al. (2003) discovered that family background positively affects an individual's pursuit of graduate education, particularly at the doctoral level. Additionally, Wakeling and Laurison (2017) reported that social origin is gaining importance in determining occupational outcomes for individuals with postgraduate degrees.

## Graduate Education and the Creative Class

Amid increasing inequalities, some scholars believe that the rise of a creative class is the foundation of sustainable societal development (Florida, 2012：p. vii). This creative class involves individuals who use creativity as the main element in their jobs. Initially associated with artists and writers, the scope of this term has now expanded to include programmers, data scientists, designers, and information workers. In an era where traditional skills can be outsourced or automated, creative skills are in high demand and carry significant value. If we think of universities as cradle institutions for this creative class, then as a profession, professors exert the strongest influence on the cultivation of this rising class. This is particularly true for students hailing from lower socioeconomic backgrounds. Moreover, professors play influential roles, as university students are typically young and can benefit from guidance on important decisions with life-long consequences. Finally, the professors themselves also belong to this creative class, adding to their influence and relevance.

[5] The boundary between ascribed and achieved statuses is often unclear. For instance, a daughter of an artist becoming an artist can be a mixed function of ascribed and achieved statuses.

### Careers of Professoriates

Because professors are experts in their fields and hold the highest teaching positions, the requisite educational credentials for their careers are terminal degrees, often PhDs. In academia, the quality and quantity of peer-reviewed journal publications are universally accepted standards for assessing career performance (Boyer et al., 1994). Generally, every research article must undergo a blind peer-review process, wherein the primary determinant of acceptance is merit. This objectivity and the high educational requirements are key features of this profession. Unfortunately, our dataset only provides information on the quantity of peer-reviewed articles. However, it is worth noting that the rank variable should reflect the quality of the publications, at least to some extent.

The increasing demand for post-secondary education has not only expanded the academic workforce but also its ability to influence society, thus fueling our curiosity about the career performance of professors. Interestingly, while academics are known to delve into a plethora of subjects, the literature focusing on academics is extremely limited. Some studies have linked the research performance of professors to industry funding as public funding declines, which is a trend that carries both advantageous and detrimental implications (Gulbrandsen et al., 2005). Dowd and Kaplan (2005) studied the impact of the tenure system on the careers of academics. Barney et al. (2022) examined the resources contributing the most to research productivity given a particular teaching load in the U.S.

Our study primarily enhances the existing literature focusing on professors by understanding the factors influencing their career performance. Consequently, we also contribute insights to the literature exploring the influence of family background on educational attainment and career outcomes. Finally, our findings enrich the literature focusing on the purpose and goal of graduate education in offering equal opportunities and allowing social mobility.

## Data and Empirics

This study used data from the "Changing Academic Profession: An International Research Project" (CAP, 2004–2009),[6] which is the second of two major international studies investigating the academic profession. The initial study, titled "The international academic profession: Portraits of 14 countries," involved a survey conducted between 1991 and 1993 (Altbach and Lewis, 1996). The primary purpose of this project was to examine the attitudes and values of academic professionals toward teaching, research, and service. The second survey was completed between 2004 and 2009 and included 19 participating countries.[7] Its main goal was to compare academic professionals internationally; however, special emphasis was placed on discerning the changes in the academic profession. Notably, the decade between these two investigations witnessed profound changes in global economic development. China, which had not been included in the first survey, participated in the second survey owing to its economic rise and rapid advancement in mass higher education. The survey provided a unique opportunity for international scholars to explore several challenging questions, including inequality and differences in the academic profession across different countries, research subjects, teaching areas, service areas, workloads, income levels, and extents of participation in decision-making processes.

[6] This is the most up-to-date survey dataset. While we acknowledge that a period of almost two decades (the age of the survey) does not imply a short duration in the world of work, considering the nature of our research questions (the lifespan of a professor and the duration of their upbringing and career), the findings still provide relevant insights. For more information, refer to Teichler et al. (2013).

[7] The 19 countries and areas are the United States, Canada, Mexico, Brazil, Argentina, Britain, Germany, Italy, Holland, Sweden, Finland, Portugal, Australia, South Africa, P.R. China, Korea, Japan, Malaysia, and Hong Kong.

The CAP project is among the few widely cited surveys offering a unique understanding of numerous issues encountered within the global academy. Examples of such issues include the evolving nature of academic work; inequalities and differences among countries, disciplines, and types of higher educational institutions; institutional development and its relationship with the attainment of national goals; research; workload; salary; and level of involvement in decision making. The questionnaire also covered the demographics of academics such as their gender, age, and parental education background. All participating countries used the same survey questions, and the data were collected from institutions granting degrees over four years or more. In total, each country contributed data from 800 or more institutions, and an international methodology team verified the coding and variables (for details, see Teichler et al., 2013). Our study focuses exclusively on full-time faculty members as part-time academics typically exhibit distinct patterns of academic engagement compared to their full-time counterparts (Kinman & Jones 2008). Our final sample consists of 968 American professors and 3,142 Chinese professors.

In exploring the factors driving the career performance of professors, we particularly focus on the role of family background, which is captured using the maternal and paternal education variables. We break down our primary question into the following four specific questions:

1. What percentage of faculty members come from middle or lower-class families? 2. How does family background influence professional rank? 3. How does family background influence income? 4. How does family background influence the number of academic publications? The rationale for these questions is that the significance of family background (or the lack thereof) would allow us to contribute to the existing literature focusing on the career performance of professors, graduate education, and occupational destination. The faculty members of higher educational institutions hold a special place in society owing to the profession's requirements of advanced educational qualifications and scholarly productivity. According to Stuart (2012), individuals who are the first in their families to pursue higher education often move away from their families, usually to poor communities, to study and then work in academia. Similarly, Nelson et al. (2006) examined the experiences of several academics with humble beginnings.

Our study focuses on the U.S. and China because they are both global powers with contrasting characteristics but similar higher-educational structures, particularly in terms of their four-year undergraduate programs. This shared framework facilitates more straightforward and meaningful comparisons of country-specific results, making it a desirable option for our research. The first dimension distinguishing these nations is their economic standing. While China stands as the largest developing country, the U.S. is the most economically developed country globally. Another significant disparity between the nations lies in their cultural attitudes, particularly those regarding education. While the Western culture tends to perceive higher education as a means to an end, the Chinese culture views it as being intrinsically valuable. For example, British–Chinese students and their parents highly value education, irrespective of social class and gender (Francis & Archer, 2005). Finally, owing to the immense economic standing of these nations, they are viewed as existing and aspiring superpowers with conflicting ideologies. Regardless of the future, both countries will continue to play pivotal roles in shaping global affairs. Moreover, including all 19 countries in the study would unnecessarily complicate matters when these two countries offer a large enough sample to adequately address our research questions.

The regressions include the following three dependent variables: rank, income, and the number of peer-reviewed publications. Conversely, the independent variables include the educational qualifications of the respondent's father and mother (Model 1); the respondent's gender and age (Model 2); and

the respondent's degree, discipline, and time allocated to teaching, research, service, administrative tasks, and other academic activities (Model 3). These models are replicated for each of the three performance measures, individually for each country. The regression equations are as follows:

Model 1:

$$Rank/\ Income/\ Publications = \beta_0 + \beta_1 FatherEduc + \beta_2 MotherEduc + \varepsilon$$

Model 2:

$$Rank/\ Income/\ Publications = \beta_0 + \beta_1 FatherEduc + \beta_2 MotherEduc + \beta_3\ Male + \beta_4 Age + \varepsilon$$

Model 3:

$$Rank/\ Income/\ Publications = \beta_0 + \beta_1 FatherEduc + \beta_2 MotherEduc + \beta_3\ Male + \beta_4 Age + \beta_5 Doctor + \beta_6 Sciences + \beta_7 Teaching + \beta_8 Research + \beta_9 Admin + \beta_{10} Other + \varepsilon$$

## Findings

Our findings regarding the four research questions are summarized below:

1. What percentage of faculty members come from middle or lower-class families?

Appendix 1 provides information on the parental educational qualifications of faculty members in China and the U.S. In China, 12.6% of the professors had fathers and 21.4% had mothers who did not receive any formal education, whereas 73.1% of fathers and 85.8% of mothers did not receive post-secondary education. In America, 3.2% of the professors had fathers and 3.3% had mothers who did not receive any form of formal education, and 46.0% of fathers and 51.2% of mothers did not receive post-secondary education. The data reveal that 71.6% of professors in China (total n = 3,379) have both parents with no post-secondary education, and the corresponding figure in the U.S. is 37.1% (total n = 1,088). The substantial difference of 34.5% points between the two countries underscores historical factors, including the lower educational qualifications of Chinese parents in the past. The parental educational backgrounds in both countries reveal that a significant proportion of faculty members come from middle- or lower-class families. This implies that despite the lack of parental education, these individuals earned high educational qualifications and successfully began a career in academia.

To address the remaining questions, we initially assessed the correlations between our parental education variables and career performance indicators (Appendix 2). A few notable results are highlighted here. First, as anticipated, the three performance metrics exhibit positive correlations with each other. Second, strong correlations are observed among the parental educational qualification variables (China r = .75 and the U.S. r = .63). Finally, in both countries, all three performance indicators display some level of correlation with either the maternal or paternal education variable; however, in each case, the correlation is negative. This indicates that higher parental educational qualifications translate to poor professional performance of the professors. This discovery of a negative or insignificant relationship between family background and faculty career performance is unexpected, considering the acknowledged significance of family background.

2. How does family background influence professional rank?

To answer this question, we developed four multiple linear regression models to further investigate the influence of family background on faculty career performance by focusing on their professional ranking. Table 1 regresses rank on family background. In Model 1, the coefficients of determination ($R^2$) for China and the U.S. are .016 and .007, respectively. Moreover, $F = 28.6$, $p < .01$ for China and $F = 3.48$, $p < .05$ for the U.S. Thus, the null hypothesis indicating that parental education has no impact on an individual's professional rank is rejected for both countries, and all significant variables have negative values. The regression coefficients of individual variables, that is, the maternal education in China ($\beta_2 = -.10$, $p < .01$) and the paternal education in

America ($\beta_1$ = -.12, p < .05), have significant negative impacts. This suggests that professors with better-educated mothers in China and better-educated fathers in the U.S. hold the lowest ranks. However, paternal education in China ( $\beta_1$ = -.04, p > .05) and maternal education in the U.S. ($\beta_2$= .00, p > .05) do not significantly influence rank. Unfortunately, the strength of the model is limited as it fails to adequately explain the differences between maternal and paternal educational qualifications. Nevertheless, the finding that family background has no significance or even a negative impact on faculty performance aligns with the fact that a considerable proportion of professors in both countries transcend social-class limitations. This observation is consistent with the findings of Stuart (2012) and Nelson et al. (2006), who reported that family background does not influence faculty career performance. While not all faculty members come from lower socioeconomic backgrounds, those with such origins often demonstrate superior performance.

Model 2 introduces gender and age as control variables. In this model, the values of $R^2$ for China and the U.S. are .506 and .105, respectively. Notably, Model 2 explains 49% (China) and 9.8% (U.S.) of variances, representing an improvement in explanatory power. However, in Model 2, the significance of our family background variables diminishes. Further, in Model 3, which is our comprehensive model, the values of $R^2$ for China and the U.S. are .592 and .212, respectively. Evidently, compared with Model 2, Model 3 increases the explanatory power by 8.6% points for China and 10.7% points for the U.S. Model 3 reveals that personal effort holds greater significance in the U.S. than in China. In Model 3, adding variables such as time allocated to teaching, service, and other academic affairs exerts no impact on rank and promotion in both countries. Only the variables “Doctoral degree,” “Sciences,” and “Research” have an impact on rank. Interestingly, dedicating time to administrative duties significantly influences the careers of Chinese professors, while it has no discernible effect on those of U.S. professors. One possible explanation for this is that the Chinese system rewards excellence in teaching and research by assigning administrative responsibilities to faculty members. This is in stark contrast to the selection criteria of administrators in the U.S., wherein established administrative track records and leadership skills are top considerations. In summary, even when personal agency variables are considered as controls in Model 3, family background still does not impact faculty career performance.

3. How does family background influence income?

To answer this question, we conduct a regression analysis of income against family background and report our findings in Table 2. Our regression results for Model 1 reveal $R^2$ values of 0.002 and 0.001 for China and the U.S., respectively. Moreover, in this model, F = 3.07, p < 0.05 for China and F = 0.41, p > 0.05 for the U.S., suggesting the model’s validity only for China. In the U.S., parental education has no influence, whereas in China, it exhibits a weak negative influence. Notably, every independent variable is insignificant, and family background has no impact on income. Model 2 introduces gender and age as control variables. In this model, we observe that the values of $R^2$ are 0.164 and 0.029 for China and the U.S., respectively. Compared with Model 1, Model 2 increases the explanatory power by 16.2% points for China and 2.8% points for the U.S. Note that the increase in explanatory power for China is much larger than that for the U.S. Model 2 reveals that F = 168.23, p < 0.01 for China and F = 7.23, p < 0.01 for the U.S. Our results reveal that the income levels of professors are significantly influenced by their personal background, gender, and age. Male professors earn more than their female counterparts in both countries. However, family background remains insignificant even with the inclusion of gender and age as controls in Model 2. Next, in Model 3, personal achievement variables are introduced as controls. Consequently, we observe $R^2$ values of 0.227 and 0.038 for China and the U.S., respectively. Compared to Model 2, Model 3 increases the explanatory power by

6.3% points for China and 0.9% points for the U.S., demonstrating that the influence of personal achievement variables is more important in China than in the U.S. In Model 3, $F = 91.12$, $p < 0.01$ for China and $F = 3.49$ $p < 0.01$ for America. Interestingly, while none of the included variables impact the incomes of U.S. professors, they significantly influence those of Chinese professors. The variables such as field of study and time allocated to service and other academic affairs have no impact on faculty income in both countries; however, variables such as possessing a doctoral degree and engaging in teaching tasks, research, and administrative duties significantly impact faculty income. Interestingly, the amount of time spent on teaching negatively affects income, suggesting that research is preferred over teaching in most institutions. Moreover, participating in administrative tasks has a positive impact on faculty income in China as the country has an academic system wherein academically excellent individuals are promoted to administrative roles; however, this is not true in the U.S. Even with the inclusion of additional controls for individual achievements in Model 3, family background continues to hold no explanatory power over faculty income.

Table 1

*Predictors of Professor Academic Rank*

| | Model 1 | | Model 2 | | Model 3 | | | |
|---|---|---|---|---|---|---|---|---|
| | β | | β | | β | | 95% CI | |
| Variable | China | USA | China | USA | China | USA | China | USA |
| Constant | 2.66** | 3.05** | -0.82** | 0.85** | -0.88** | 0.3 | [-1.02, -0.75] | [-0.25, 0.86] |
| Paternal education | -0.04 | -0.12* | -0.02 | -0.04 | -0.02 | -0.02 | [-0.05, 0.01] | [-0.13, 0.08] |
| Maternal education | -0.10** | 0 | -0.02 | 0.04 | -0.01 | 0.01 | [-0.05, 0.02] | [-0.10, 0.11] |
| Male dummy | | | 0.09** | 0.24** | -0.01 | 0.15* | [-0.06, 0.03] | [0.02, 0.28] |
| Age in 2008 | | | 0.09** | 0.03** | 0.08** | 0.03** | [0.08, 0.08] | [0.02, 0.03] |
| Doctoral degree | | | | | 0.60** | 0.80** | [0.55, 0.65] | [0.63, 0.96] |
| Field of sciences | | | | | 0.12** | 0.17* | [0.08, 0.16] | [0.04, 0.30] |
| Teaching hours | | | | | 0 | 0 | [0.00, 0.00] | [-0.01, 0.00] |
| Research hours | | | | | 0.00** | 0.01* | [0.00, 0.01] | [0.00, 0.01] |
| Service hours | | | | | 0 | 0.01 | [-0.01, 0.00] | [0.00, 0.02] |
| Admin hours | | | | | 0.00** | 0 | [0.00, 0.01] | [0.00, 0.01] |
| Other academic hours | | | | | 0 | 0 | [-0.01, 0.00] | [0.01,0.02] |
| $R^2$ | 0.016 | 0.007 | 0.506 | 0.105 | 0.592 | 0.212 | | |
| $F$ | 28.63** | 3.48* | 879.5** | 29.04** | 450.9** | 24.0** | | |
| N | 3,142 | 968 | 3,142 | 968 | 3,142 | 968 | | |

Table 2
*Predictors of Professor Income*

| | Model 1 | | Model 2 | | Model 3 | | | |
|---|---|---|---|---|---|---|---|---|
| | β | | β | | β | | 95% CI | |
| Variable | China | USA | China | USA | China | USA | China | USA |
| Constant | 6376.15** | 128,899** | -647.14* | -65.89 | -688.11* | -3135.93 | [-1329.69, -46.53] | [-74607.36, 68335.50] |
| Paternal education | 26.07 | -6022.97 | 91.16 | -1209 | 100.38 | -1474.67 | [-57.90, 258.66] | [-15011.41, 12062.08] |
| Maternal education | -174.5 | 2524.64 | 40.87 | 4925.02 | 33.37 | 4840.72 | [-128.65, 195.39] | [-8800.85, 18482.30] |
| Male dummy | | | 842.90** | 24651.4** | 532.00** | 21188.72* | [311.68, 752.32] | [3830.10, 38547.34] |
| Age in 2008 | | | 157.11** | 1701.67** | 147.98** | 1630.76** | [135.06, 160.90] | [828.16, 2433.36] |
| Doctoral degree | | | | | 1739.38** | 10704.66 | [1487.64, 991.13] | [-10502.33, 31911.66] |
| Field of sciences | | | | | -193.4 | 15663.03 | [-401.31, 14.52] | [-1407.44, 32733.50] |
| Teaching hours | | | | | -9.58* | -504.92 | [-17.84, -1.33] | [-1276.74, 266.89] |
| Research hours | | | | | 19.23** | 231.82 | [9.82, 28.63] | [-654.05, 1117.68] |
| Service hours | | | | | 17.36 | -132.72 | [-5.74, 40.46] | [-1765.34, 1499.90] |
| Admin hours | | | | | 15.74* | 191.19 | [2.83, 28.65] | [-921.21, 1303.58] |
| Other hours | | | | | 30.04 | 664.51 | [-0.45, 60.54] | [-1439.38, 2768.40] |
| $R^2$ | 0.002 | 0.001 | 0.164 | 0.029 | 0.227 | 0.038 | | |
| *F* | 3.07* | 0.41 | 168.23** | 7.23** | 91.12** | 3.49** | | |
| N | 3,142 | 968 | 3,142 | 968 | 3,142 | 968 | | |

4. How does family background influence the number of publications produced?

To address this question, we examined the relationship between family background and number of articles published. The corresponding results are summarized in Table 3. Model 1 obtained $R^2$ values of 0.007 and 0.000 for China and the U.S., respectively. Furthermore, $F = 10.78$, $p < 0.05$ for China and $F = 0.03$, $p > 0.05$ for the U.S. In the U.S., parental education exerted no significant influence on the number of publications; however, in China, it exhibited a weak negative influence on the same. Specifically, only maternal education demonstrates a negative correlation with the number of published articles in China, while none of the remaining variables appear to be significant in the U.S.

We observe that both gender and age significantly impact the number of publications. Model 2 obtained $R^2$ values of 0.027 and 0.005 for China and the U.S., respectively. Compared to Model 1, Model 2 increases the explanatory power by 2.0% points for China and 0.5% points for the U.S. Moreover, according to Model 2, $F = 23.91$, $p < 0.01$ for China and $F = 1.21$, $p > 0.05$ for the U.S., demonstrating its validity for China. Thus, in China, the genders and ages of professors significantly influence the number of publications; however, this is not true in the U.S. While male professors enjoy publication advantages over female professors in China,

such advantages are not evident in the U.S. Most importantly, even after the inclusion of gender and age as controls in Model 2, the insignificance of family background persists. Next, Model 3 includes personal achievement variables as controls. Accordingly, it obtains $R^2$ values of 0.088 and 0.113 for China and the U.S., respectively. Compared to Model 2, Model 3 increases the explanatory power by 6.1% points for China and 10.8% points for the U.S. Model 3 illustrates that the influence of personal achievement variables remains consistent, except "Other academic activities" in China. Moreover, Model 3 indicates that $F = 30.13$, $p < 0.01$ for China and $F = 11.30$ $p < 0.01$ for the U.S. Other variables maintain consistent significance levels across both countries, except the variable "Other academic activities," which is only significant in China. Thus, Model 3 demonstrates that the inclusion of additional controls for individual achievements does not alter the lack of significance of the family background variable.

However, here, we must acknowledge that the low variance in this analysis could be a potential reason for the lack of significance of the family background variable. Professors may not always come from diverse socioeconomic backgrounds, as individuals with alternative forms of capital, either social or economic, may not always find this lengthy academic career path appealing. Moreover, certain variables such as holding a PhD or other degree or income may exhibit low variance within this profession compared to other professions such as law or medicine.

## Discussion

In contrast to the commonly held belief that parental education positively impacts an individual's educational and career outcomes, we observed that the educational qualifications of the parents of most professors were lower than expected (Eccles, 2005; Behtoui & Neergaard, 2012; Whiston and Keller, 2004). This lack of parental education certainly did not prevent these professors from pursuing higher education or from entering academia. In fact, pursuing higher education allowed the professors to break free from their social roots, facilitating upward social mobility and enabling them to pursue their desired career paths. Thus, the concerns expressed by scholars regarding graduate education and career outcomes (Mullen et al., 2003; Wakeling and Laurison, 2017;) do not appear applicable to the field of academia. Additionally, having better educated parents does not necessarily confer a career advantage upon professors. In fact, according to some of our models, having better educated parents translates to poor career performance. Yet again, this contradicts the established notion of the positive influence of parental education on an individual's educational qualifications and career outcomes. These findings also align with those of Mastekaas (2006), who discovered that while social origins positively affect an individual's likelihood of enrolling in a PhD program, they do not improve their chances of post-graduation employment.

Table 3
*Predictors of the Number of Refereed Articles*

| | Model 1 | | Model 2 | | Model 3 | | | |
|---|---|---|---|---|---|---|---|---|
| | β | | β | | β | | 95% CI | |
| Variable | China | USA | China | USA | China | USA | China | USA |
| Constant | 10.63** | 5.08** | 5.81** | 2.68 | 4.98** | -0.62 | [3.57, 6.40] | [-4.47, 3.24] |
| Paternal education | -0.25 | 0.09 | -0.19 | 0.17 | -0.17 | 0.23 | [-0.52, 0.18] | [-0.50, 0.96] |
| Maternal education | -0.39* | -0.03 | -0.21 | 0.03 | -0.23 | -0.19 | [-0.58, 0.13] | [-0.92, 0.55] |
| Male dummy | | | 1.09** | 0.85 | 0.36 | 0.05 | [-0.12, 0.85] | [-0.89, 0.98] |
| Age in 2008 | | | 0.10** | 0.03 | 0.08** | 0.03 | [0.05, 0.10] | [-0.01, 0.08] |
| Doctoral degree | | | | | 2.84** | 1.77** | [2.29, 3.40] | [0.63, 2.92] |
| Field of sciences | | | | | 1.12** | 1.48** | [0.67, 1.58] | [0.56, 2.40] |
| Teaching hours | | | | | -0.01 | -0.04 | [-0.02, 0.01] | [-0.08, 0.01] |
| Research hours | | | | | 0.05** | 0.18** | [0.03, 0.07] | [0.13, 0.23] |
| Service hours | | | | | 0.01 | 0.05 | [-0.04, 0.06] | [-0.04, 0.14] |
| Admin hours | | | | | 0.02 | 0.02 | [-0.01, 0.05] | [-0.04, 0.08] |
| Other hours | | | | | 0.10** | 0.00 | [0.03, 0.16] | [-0.11, 0.11] |
| $R^2$ | .007 | .000 | .027 | .005 | .088 | .113 | | |
| *F* | 10.78** | .030 | 23.91** | 1.21 | 30.13** | 11.30** | | |
| *N* | *3,142* | *968* | *3,142* | *968* | *3,142* | *968* | | |

## Conclusion

The literature on socioeconomic status posits that family background typically exerts a positive influence on an individual. However, our study reveals that the majority of professors included in our analysis have parents whose educational qualifications are lower than doctoral degrees, which are typically required for a career in academia. This trend is particularly pronounced in China, where limited parents have educational qualifications beyond high school degrees. Importantly, our findings indicate that for professors, family background exerts no significant impact on career performance, whether quantified on the basis of income, rank, or the number of publications. Despite the fact that individuals entering any particular profession do not belong to a random group, their family backgrounds do not positively impact their career performance. The key insight here is that even if family background

increases the likelihood of pursuing a doctoral degree, this influence appears to cease at this point.

When comparing the two nations, we observe that social structure has significant impacts on Chinese professors, while personal agency variables affect U.S. professors. This distinction highlights that the American society emphasizes personal achievement, while China continues to value traditional structures. Despite being different in several aspects, both China and the U.S. present similar results regarding the absence of a correlation between family background and career performance among professors. This suggests that the perceived importance of family background may be weaker than previously assumed. Thus, an academic career represents a path through which individuals could transcend social-class constraints, as academic positions are predominantly merit-based rather than being ascriptive. These findings seem encouraging because they indicate that rather than family background, personal ability and effort form the pillars of an individual's success, thus improving the efficiency of human capital allocation.

Despite these encouraging results, we exercise caution in drawing inferences regarding educational qualifications as professors do not represent the typical PhD holder, as only a subset of successful PhD holders are able to secure professor positions. While we acknowledge our data limitations, our findings imply that perhaps for academics, the strength of parental influence on children is weaker than previously believed. Future studies could examine whether professors perceive the academic career path as sufficiently rewarding to encourage their own children to pursue it. Alternative research paths could include investigating the same factors in other professions, such as medicine or law.

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## Appendix A
## Paternal and Maternal Education

| | China | | | The United States | | | |
|---|---|---|---|---|---|---|---|
| | Father | Mother | Both Parents | Father | Mother | Both Parents | Difference |
| Education | % | % | % | % | % | % | % |
| No formal education | 12.6 | 21.4 | 11.5 | 3.2 | 3.3 | 2 | 9.5 |
| Entered and/or completed primary education | 26.3 | 30.8 | 25.4 | 11 | 10.3 | 6.7 | 18.7 |
| Entered and/or completed secondary education | 34.2 | 33.6 | 34.7 | 31.8 | 37.6 | 28.4 | 6.3 |
| Entered and/or completed tertiary education | 26.9 | 14.2 | 28.4 | 54 | 48.8 | 62.9 | -34.5 |
| Number of observations | 3,163 | 3,142 | 3,191 | 968 | 972 | 972 | |

## Appendix B
## Correlations of the Variables

| | 1 | 2 | 3 | 4 | 5 | M | SD |
|---|---|---|---|---|---|---|---|
| 1. Rank | | .47** | .34** | -.12** | -.13** | 2.3 | 0.98 |
| 2. Income | .15** | | .25** | -0.03 | -.05* | 6,028 | 3,557 |
| 3. Articles | .20** | .14** | | -.11** | -.11** | 9 | 10.3 |
| 4. Paternal education | -.09** | -0.03 | 0.01 | | .75** | 2.75 | 0.99 |
| 5. Maternal education | -0.05 | -0.01 | 0 | .63** | | 2.41 | 0.98 |
| M | 2.65 | 1,16,998 | 5.29 | 3.37 | 3.32 | | |
| SD | 1.14 | 1,56,925 | 7.96 | 0.8 | 0.79 | | |

Note: Correlations for Chinese participants (n = 3,420) are presented above the diagonal, and correlations for American participants (n = 991) are presented below the diagonal. Means and standard deviations for Chinese faculty are presented in the vertical columns, and means and standard deviations for American faculty are presented in the horizontal rows.
(*p < .05, **p < .01)