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East Asian low marriage and birth rates: The role of life history strategy, culture, and social status affordance

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Abstract

Although economic development is broadly associated with low fertility, countries with a predominantly East Asian cultural population exhibit the lowest fertility rates in the developed world. This study ($N = 243$) examined social status affordance (SSA) as a novel factor underlying cultural variations in marriage and childbearing attitudes. Drawing from a life history perspective, we argue that SSA reflects the availability and ease of attaining social status from the environment, which then influences people's reproductive motivations. We found that strong competition for prestigious jobs in developed East Asian countries, which is hypothesized to be an outcome of their collectivistic nature and the importance they place on endowed social status, was associated with reduced SSA and, in turn, less favorable attitudes towards marriage and preference for less children. These effects were driven by men, primarily. We conclude with a discussion of the implications and suggestions for further research.

Keywords

Social status affordance, Mating, Social status, Fertility, Life history theory, Cultural differences, East Asia

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1. Introduction

Developed East Asian countries (e.g., Japan, Korea, Singapore) are experiencing severe declines in marriage and birth rates (Westley, Choe, & Retherford, 2010). These trends were initially assumed to reflect a convergence to the West (Jones, 2007), but developed East Asian countries have now overtaken the West and have the lowest fertility rates (1.16) compared to other developed regions such as Europe (1.80) and the US (1.87).¹ Considering the problems associated with falling birth rates (cf., McDonald, 2007), some urgency is needed in understanding what makes fertility especially low in East Asian contexts. One longstanding hypothesis is that modernization undermines people's mating motives, but this hypothesis has mostly

engendered economic-based explanations, such as the prioritization of education and career over family (Billari & Kohler, 2004), the perception of children as costly (Westley et al., 2010), and women's participation in the economy (Adserà, 2004). Albeit useful as a general account of decreasing fertility, economic-based explanations are not well-equipped to address fertility differences among countries that are similarly economically advanced. Building on life history theory, we advance a novel hypothesis based on people's perceptions of social status attainability to explain the low desire for marriage and childbearing in modern East Asian contexts.

Life history theory (e.g., Figueredo et al., 2006; Stearns, 1992) suggests that organisms—including people—calibrate their reproductive strategies according to environmental conditions. A resource competition view of life history (MacArthur & Wilson, 1967) specifies that when competition for available resources is low, a fast, quantity-driven strategy (i.e., having more offspring sooner) will facilitate quicker exploitation of resources. By contrast, in environments with fierce competition for scarce resources, people must delay reproduction and focus on accumulating competitive ability, such as building up one's competencies and social status, in order to compete more effectively (Sng, Neuberg, Varnum, & Kenrick, 2017). Indeed, social status is instrumental to critical life outcomes—compared to low status individuals, high status individuals are more formidable and capable of success across various life domains (Marmot, 2004). Thus, in highly competitive environments such as modern cities, endeavors such as earning money and achieving status may be excessively prioritized over reproductive effort.

As social status can underlie individual differences in formidability and reproductive motivation, the availability of opportunities to acquire social status can be termed an *affordance* (Cantor, 1994). Accordingly, the current study proposes that people's readiness for marriage and having children varies as a function of social status affordance (SSA), which we define as the perceived attainability of social status to facilitate the pursuit of life goals, including reproduction. SSA has an impact on attitudes because it reflects the conduciveness of one's circumstances—higher SSA signals higher social status attainability, thus leading to more positive attitudes towards marriage and children.

SSA may be especially low in developed East Asian countries due to a unique cultural feature that intensifies job competition. In collectivistic cultures that emphasize respect for authority and social harmony, direct confrontation is frowned upon (Markus & Kitayama, 1991). Therefore, endowed social status, or status conferred from one's official achievements or formal rank as opposed to other informal types of social status (e.g., popularity, dominance), are prized as unambiguous indicators of social standing and serve as one of the few legitimate means for upward social mobility and influence (Tu, 1996).² Studies indeed reveal East Asians' stronger preoccupation with social status through education and work, such as their higher expectations for academic performance (Sue & Okazaki, 1990) and greater emphasis on financial and achievement aspects in career and business pursuits (Begley & Tan, 2001; Kim, Li, & Ng, 2005) relative to individuals from other cultures. As the demand for endowed social status through work and career rises, people will increasingly flock to a limited number of prestigious jobs, causing these jobs to become harder to attain and succeed in while the desirability of and demand for lower prestige jobs decreases (see Fig. 1). The preference for endowed social status and the ensuing competition for prestigious jobs translate into a lower proportion of jobs being seen as acceptable, thereby narrowing the range of viable outlets to procure social status.³ Reflecting these dynamics, a study of job perceptions found strong cross-cultural agreement for high prestige jobs (e.g., judges, doctors) whereas jobs with ambiguous prestige (e.g., physiotherapists) were rated more poorly by Korean and Hong Kong participants relative to English and Australian participants (Turner & Whitfield, 2006). The net outcome is reduced SSA in developed East Asian countries.

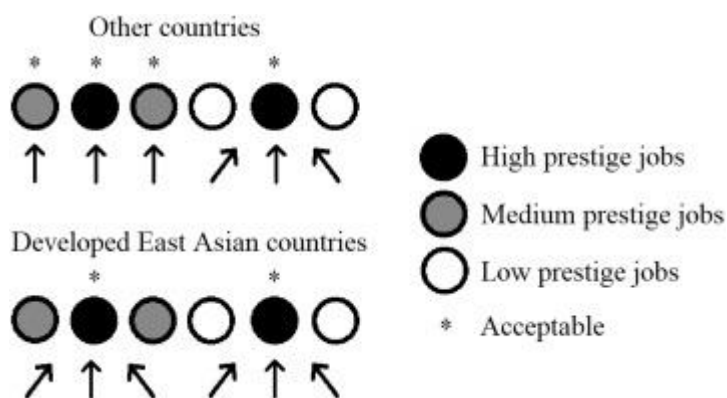


Fig. 1. A simple illustration of the dynamic produced by the strong preference for high prestige jobs in developed East Asian countries. Arrows denote people's preferences for particular jobs. As the high importance placed on endowed social status causes individuals from developed East Asian countries to prefer and gravitate towards high prestige jobs, the jobs that are relatively lower in prestige will be shunned and the overall availability of acceptable jobs in society will be perceived as fewer.

Sex differences may also influence SSA and mating attitudes beyond the effects of culture. Mate preference research has consistently shown that women prefer men with adequate social status (e.g., Jonason, Li, & Madson, 2011; Li, Bailey, Kenrick, & Linsenmeier, 2002). As women's social status and financial prospects increase, they place even greater weight on mates' social status and financial prospects (Townsend, 1998). This phenomenon of social status hypergamy can impede mating among educated, career-driven adults (Jones, 2007). When women achieve higher education and job positions, their mating pool necessarily shrinks as the number of eligible mates with compatible (i.e., adequate) social status decreases. Conversely, men are concerned about their own social status in response to female preferences and are keenly aware of the pressure to meet those expectations (Li, 2007). When unmarried Japanese men and women were asked why they had not married, both sexes tended to say they “felt no need,” but women also said they “can't meet an appropriate partner” whereas men said they “can't afford marriage” (Iwasawa, 2004, p. 83). East Asian men may, therefore, be compelled to work harder and longer to advance their careers and achieve sufficient status before actively seeking a wife. As the attainment of social status may be more pertinent to men's mating success than women's, the effects of SSA on attitudes towards marriage and childrearing may be driven more specifically by men.

To investigate our speculations, we employed participants from universities in Singapore, a modern East Asian country, to represent the East Asian sample and participants from urban universities in Australia to represent the comparison sample. We hypothesized that compared with Australians, (1) Singaporeans will have less positive attitudes towards marriage, (2) less desire for children, and (3) lower SSA, (4) these differences between Singaporeans and Australians will be mediated by SSA, and (5) these mediation effects will be driven more strongly by men relative to women.

2. Method

2.1. Participants

The minimum sample size (i.e., $N = 194$) was determined based on power analysis for the average effect size in social and personality psychology ($r \approx 0.20$; Richard, Bond Jr., & Stokes-Zoota, 2003). A total of 258 psychology undergraduates from two universities in Singapore and two universities in Australia (one from Sydney and one from Melbourne) participated for credit. Thus, our samples are equivalent in terms of their majors, grasp of English, and exposure to modernization and urbanicity (cf., Hu, Blakely, & Zhou, 2013). To ensure that the data reflected the target cultural groups of interest, the invitation for participation was directed at Chinese Singaporeans and non-Asian Australians who had lived in their respective countries all their lives. Of these participants, 15 indicated a romantic preference for the same sex and were omitted from the analyses. The final dataset comprised of 124 Chinese Singaporeans (67 males, $M_{age} = 22.6$; 57 females, $M_{age} = 21.0$) and 119 non-Asian Australians (57 males, $M_{age} = 21.1$; 58 females, $M_{age} = 21.0$).

2.2. Procedure and Materials

2.2.1. Attitudes towards marriage

The favorableness of attitudes towards marriage scale (Hill, 1951) as modified by Li, Patel, Balliet, Tov, and Scollon (2011) was used to measure marriage attitudes. Participants rated their positivity (1 = *not at all*; 5 = *very much*) towards seven items (e.g., “How happy do you think you will be if you marry?”) and answered yes/no for two further items (e.g., “Do you think it would be advisable for you always to remain single?”). All items were *z*-standardized and an average score was computed for each participant. The reliability of this measure was similar across both culture samples (Cronbach's $\alpha_{\text{Singapore}} = 0.75$, $\alpha_{\text{Australia}} = 0.77$, $\alpha_{\text{all}} = 0.77$).

2.2.2. Desire for children

Whereas some research assessing reproductive strategies have measured participants' subjective desire for children (e.g., Li et al., 2011), the number of children preferred has been used as such a measure by others (e.g., Griskevicius, Delton, Robertson, & Tybur, 2011). Thus, we assessed desire for children with two separate measures. The first measure is the face-valid statement used in Li et al. (2011), “Having children of my own (at some point) is important to me” (1 = *strongly disagree*, 7 = *strongly agree*). The second measure asked participants to indicate how many children they would like to have. The importance that participants placed on having children was only marginally correlated with the number of children they wanted to have, $r = 0.21$, $p = .08$, therefore, justifying our use of these measures separately.

2.2.3. Social Status Affordance

Following from earlier studies that used occupational status to measure socioeconomic status (e.g., Duncan, 1961), the current study indexed SSA through the social status value “provided” by a representative list of 36 jobs in terms of (1) Prestige (i.e., “How prestigious is this job—how esteemed and respected by others will you be if you had this job?” 1 = *not prestigious at all*, 10 = *very prestigious*) and (2) Pay (i.e., “How well does the job pay?” 1 = *pays very poorly*, 10 = *pays very well*). This list was derived through a pilot study from the first author's unpublished master's thesis (2014), where Singaporean and Australian undergraduates listed as many jobs as they could from where they lived and rated their status. Of the jobs listed and rated, 36 were carefully selected to establish a spread of low to high status jobs (rather than simply using the most popularly listed jobs, which were typically high status), thus ensuring that the list of jobs is diverse, current, and appropriate (see Appendix A). Job prestige was correlated with job pay, $r = 0.71$, $p < .001$, and this correlation did not significantly differ between Singaporean and Australian participants, $Z_{\text{observed}} = -0.38$, $p = .70$. Hence, we combined the two dimensions into an overall average score for SSA, with higher scores indicating higher SSA ($\alpha = 0.92$).

3. Results

We used General Linear Model (GLM) to analyze people's attitudes towards marriage and desire for children. For scores on the modified attitudes towards marriage instrument, there was an effect of country, $b = 0.16$, $F(1, 241) = 4.24$, $p = .04$, whereby Australians reported more favorable attitudes towards marriage ($M = 0.08$, $SD = 0.60$) than Singaporeans ($M = -0.08$, $SD = 0.58$), thus supporting our prediction that Singaporeans have less positive attitudes towards marriage than Australians.

Analyzing differences in desire for children, there was an effect of country on number of children desired, $b = 0.72$, $F(1, 241) = 29.85$, $p < .001$, whereby Australians reported wanting more children ($M = 3.03$, $SD = 1.13$) than Singaporeans ($M = 2.31$, $SD = 0.91$). Contrary to expectations, Singapore and Australia did not significantly differ on the importance placed on having children, $b = 0.10$, $F(1, 241) = 0.45$, $p = .50$. These results partially support our prediction that Singaporeans have less desire for children than Australians.

Next, the SSA of Singapore and Australia was contrasted using GLM. There was an effect of country on SSA, $b = 0.38$, $F(1, 241) = 14.26$, $p < .001$, whereby Australians reported perceiving more prestige and pay available from the jobs listed ($M = 6.29$, $SD = 0.75$) than did Singaporeans ($M = 5.91$, $SD = 0.80$). This supports our prediction that Singaporeans have lower SSA than Australians.

To probe our assertion that developed East Asian countries value low and high prestige jobs differently from other cultures, we first distinguished between jobs that were perceived as low or high in prestige across Singapore and Australia. The average prestige rating for all jobs across both countries was calculated

($M = 6.13$, $SD = 0.89$) and below average jobs were classified as low and above average jobs were classified as high. We then conducted a repeated-measures analysis of variance to examine the interaction between job prestige classification (low versus high) as a within-subjects variable and country (Singapore versus Australia) as a between-subjects variable on job prestige ratings. There was a significant interaction effect, $F(1,241) = 13.865$, $p < .001$, whereby low prestige jobs were perceived as lower in prestige by Singaporeans ($M = 4.57$, $SD = 1.29$) than by Australians ($M = 5.11$, $SD = 1.12$), $p = .001$, whereas high prestige jobs were esteemed similarly by both Singaporeans ($M = 7.14$, $SD = 0.83$) and Australians ($M = 7.18$, $SD = 0.88$), $p = .74$. This provides further support for our argument that East Asian cultural features drive job prestige perceptions downwards.

Using GLM, the effect of SSA on attitudes towards marriage and desire for children was examined. There was a positive effect of SSA on attitudes towards marriage, $b = 0.42$, $F(1, 241) = 111.65$, $p < .001$. Analyzing differences in desire for children, there was also a positive effect of SSA on number of children desired, $b = 0.91$, $F(1, 241) = 190.54$, $p < .001$. There was, however, no effect of SSA on importance of having children, $b = -0.04$, $F(1, 241) = 0.17$, $p = .68$.

The effect of country on marriage and childbearing attitudes as mediated by SSA was assessed with a non-parametric statistical significance test of the cross product of the “*a*” and “*b*” pathway coefficients using bootstrapping (Preacher & Hayes, 2008). With parameter estimates based on 5000 bootstrap samples, the bias-corrected and accelerated 95% confidence intervals were examined. These confidence intervals are similar to the 2.5 and 97.5 percentile scores of the obtained distribution of the cross product over the *k* samples, but with *z* score-based corrections for bias due to the underlying distribution (Preacher & Hayes, 2008). If the confidence intervals do not contain zero, the point estimate is significant at the level indicated.

Three mediation analyses were conducted with SSA on the effects of country on attitudes towards marriage, importance of children, and number of children desired. The point estimates of the $a \times b$ cross product (mean and standard error for the 5000 samples) and the relevant bootstrapped confidence intervals (for $p < .05$) are shown in Table 1. The bootstrap analyses revealed that the confidence intervals of the indirect effects contained zero for importance of children but not for marriage attitudes and number of children desired. This showed that SSA mediated the effects of country on marriage attitudes and number of children desired, but not the importance of children.

Table 1. Bootstrapped point estimates and BCa CI for the total and specific indirect effects of country on marriage attitudes, importance of children, and desired number of children.

Mediations tested	Product of $a \times b$ coefficients		BCa 95% CI		c' coefficient		BCa 95% CI	
	<i>b</i>	SE	Lower	Upper	<i>b</i>	SE	Lower	Upper
Social status affordance mediating marriage attitudes	0.16*	0.04	0.08	0.25	-0.01	0.07	-0.13	0.13
Social status affordance mediating number of children desired	0.32*	0.09	0.16	0.49	0.40*	0.10	0.20	0.61
Social status affordance mediating importance of children	-0.02	0.04	-0.12	0.05	0.12	0.16	-0.19	0.44

Note: BCa CI = bias-corrected and accelerated confidence intervals.

* $p < .05$.

More specifically, the confidence intervals of direct effects on marriage attitudes contained zero, which means that the effect of country on marriage attitudes became non-significant after controlling for the mediator; therefore, SSA fully mediated the relationship between country and marriage attitudes. The confidence intervals of the direct effects on number of children desired did not contain zero, which means that the effect of country on number of children desired was reduced but still significant after controlling for the mediator; therefore, SSA partially mediated the relationship between country and number of children desired. These results support our prediction that SSA mediates the relationship between country and attitudes towards marriage and having children.

Lastly, we tested the mediations for moderation by participant sex. The confidence intervals of the indirect effect on attitudes towards marriage and number of children desired included zero for women but not for men (see Table 2); thus, the mediating effect of SSA was driven specifically by men. In other words, while there was an indirect effect of country on attitudes towards marriage as mediated by SSA for men, there was no such indirect effect for women. These results support our prediction that the mediating effect of SSA on country and attitudes towards marriage and having children are driven by men.

Table 2. Bootstrapped point estimates and BCa CI for the total and specific indirect effects of country \times sex on marriage attitudes, importance of children, and desired number of children.

Mediations tested	Index of moderated mediation		BCa 95% CI		Conditional indirect effect for different sexes							
					Males				Females			
					Product of $a \times b$ coefficients		BCa 95% CI		Product of $a \times b$ coefficients		BCa 95% CI	
<i>b</i>	<i>SE</i>	Lower	Upper	<i>b</i>	<i>SE</i>	Lower	Upper	<i>b</i>	<i>SE</i>	Lower	Upper	
Social status affordance mediating marriage attitudes	-0.21*	0.09	-0.39	-0.05	0.26*	0.06	0.15	0.37	0.05	0.67	-0.83	0.18
Social status affordance mediating number of children desired	-0.43*	0.17	-0.75	-0.10	0.52*	0.10	0.33	0.73	0.09	0.14	-0.16	0.37
Social status affordance mediating importance of children	0.03	0.06	-0.08	0.17	-0.04	0.07	-0.18	0.10	-0.00	0.02	-0.09	0.02

Note: BCa CI = bias-corrected and accelerated confidence intervals.

* $p < .05$.

4. Discussion

Based on life history theory, we proposed that attitudes towards marriage and children are influenced by SSA, a novel construct reflecting the perceived attainability of social status. The results support our argument that the East Asian concern for endowed social status can reduce SSA and lead to less favorable attitudes towards marriage and a preference for fewer children. Specifically, our results showed that Singaporean participants had less positive attitudes towards marriage, wanted less children, and perceived lower SSA in terms of job prestige and pay compared to Australian participants. SSA significantly mediated the effects of country on marriage and childbearing attitudes, and these effects were primarily localized to men.

In more tangible terms, the importance of endowed social status in developed East Asian countries, coupled with the modern need to seek employment, prompts fierce competition for desirable, high status jobs. For modern East Asian men, the need for social status to achieve mating success coupled with the perception that job prospects are limited may cause them to view marriage and children less favorably. In contrast, women are unlikely to feel disheartened by low SSA as their mating success perhaps hinges less on their ability to procure high status jobs and more on finding mates with at least equal if not higher occupational status (Townsend, 1998). Our Singaporean participants also preferred fewer children despite regarding children just as importantly as their Australian counterparts did, thus suggesting that their preference for fewer children is more a function of realistic livelihood constraints rather than how much they valued having children.

Our findings are consistent with a life history perspective on mating behaviors (e.g., Figueredo et al., 2006). When job prospects are less than ideal (i.e., low SSA), people may perceive their circumstances as un conducive to mating and prioritize other goals instead. For instance, men may feel that their current desirability as a mate or capacity as a parent is inadequate under such poor job prospects and, thus, rather than

seek mates or raise children under such reproductively lean times, reallocate effort towards earning money and building status instead. Our results also corroborate other studies on the incompatibility between materialism and desire for children (e.g., Li et al., 2011), where it was documented that individuals who were especially concerned with the acquisition of material possessions had less interest in having children.

The current study has important implications for East Asian low fertility. As low fertility poses problems for the sustainability of nations (McDonald, 2007), identifying the antecedents of low marriage and birth rates can help to inform policy strategies addressing these issues. The obsession over endowed social status, which produces a myopic view on the acceptability of jobs, could be a starting place. For example, marketing campaigns can help to improve the perception of lower to middle status jobs by raising awareness about the value of the work or implementing salary increments, thereby reducing occupational inequality and benefiting society at large through an increase in SSA and, subsequently, childbearing outcomes.

Beyond developed East Asian countries, the current study also draws attention to other cultural contexts where rising costs and expectations of modern living can hinder marriage and fertility, especially when the need to demonstrate high status is intertwined with mating objectives. For example, Middle Eastern weddings have become so competitive and exorbitant that even well-established men cannot afford to get married, leading to a societal crisis and prompting government intervention (Rashad, Osman, & Roudi-Fahimi, 2005). The perspective of SSA can be extended to analyze other circumstances around the world where the need for social status, once complementary with mating, becomes a hindrance.

5. Limitations and conclusions

Although we found support for our hypotheses, our study is nevertheless limited. First, samples were drawn from undergraduate participants who typically represent the middle to upper classes of society and may not be representative of the general population. They also likely have limited insights into parenting and, thus, may be unable to accurately gauge their future family aspirations. Second, our data was cross-sectional and correlational despite our causal approach to the proposed effects of SSA. Third, better and more comprehensive measures of SSA should be developed as we only used simple measures of job prestige and pay in our initial attempt at operationalizing SSA.

We also assumed that Australian and Singaporean sites would serve as good comparisons, but some factors may limit their representativeness. For instance, these samples differ in terms of population density (Singapore ≈ 7900 people/km²; Sydney ≈ 2800 people/km²; Melbourne ≈ 500 people/km²) and religious traditions (there is a greater prevalence of Buddhism/Taoism, Hinduism, and Islam in Singapore and Catholicism/Christianity in Australia, as well as a larger proportion of non-religious individuals in Australia), both of which may have an effect on mating attitudes and behaviors (e.g., Ellis, Hoskin, Dutton, & Nyborg, 2017; Sng et al., 2017). Singapore's individualistic, free market policies, which have facilitated her economy's rapid expansion, may arguably increase Singaporeans' individualistic tendencies over the generations and render them less representative of a collectivistic sample. Our results could also be attributable to cultural variations in survey response style (Harzing, 2006) whereby Singaporeans respond more modestly than Australians, rather than real differences in SSA perceptions.

Finally, although we attained a compelling sex difference that is consistent with mate preferences research, our relatively small sample for such a test of moderation by sex warrants cautious interpretation of the results as well as further tests of this sex difference with larger samples. While future research will need to improve on our sampling methods, engage in experimental manipulations, and consider alternative explanations for the findings, we have nonetheless provided a unique test of a novel hypothesis spanning two culturally distinct countries.

In summary, the current study adopts a life history perspective to link people's attitudes towards marriage and children to the SSA of the culture they belong to. Our results indicate that the lower SSA of developed East Asian countries vis-à-vis other countries may account for their especially low fertility. These preliminary findings importantly validate the construct of SSA and suggest steps towards further research that can translate these insights into workable strategies to combat low fertility. In particular, raising the value of jobs with low or ambiguous prestige may help increase SSA in society, thereby increasing the perception that circumstances are conducive to marry and have children.

Appendix A. Job prestige and job pay ratings by country

Jobs	Singapore		Australia	
	Prestige	Pay	Prestige	Pay
Actor	6.69	6.74	6.86	7.69
Administrative clerk	4.02	4.10	4.97	4.97
Airline pilot	8.63	8.94	8.34	8.56
Chef	6.36	6.10	5.95	6.02
Clinical doctor	8.57	8.99	8.71	8.76
Construction worker	2.92	2.10	4.49	4.82
Counselor	7.03	6.33	7.73	7.22
Dance instructor	5.43	5.27	4.66	4.76
Dentist	8.42	9.10	8.17	8.70
Financial trader	7.84	8.77	7.13	7.30
Firefighter	6.04	4.93	6.92	6.01
Gardener	3.45	2.88	3.83	3.86
Gas station attendant	2.81	2.33	3.17	2.97
Graphic designer	6.17	6.10	5.98	6.29
High school teacher	5.85	5.45	6.21	5.80
Human resources officer	6.00	5.98	6.28	6.02
Insurance agent	4.73	6.02	5.53	6.28
Investment banker	8.12	9.11	7.31	7.78
IT technician	5.01	5.02	6.17	6.46
Lawyer	9.04	9.34	8.88	9.27
Librarian	4.12	3.97	4.47	4.20
Magazine editor	6.85	6.57	6.19	6.50
Military soldier	5.08	4.62	6.50	6.45
News anchor	6.95	6.56	6.61	6.96
Newspaper journalist	6.45	5.92	6.27	6.23
Nurse	5.84	4.77	6.82	5.74
Photographer	5.94	6.01	5.74	6.09
Plumber	3.45	2.84	4.39	5.23
Policeman	6.03	5.24	7.20	6.50
Professor	8.19	8.31	8.08	7.75
Real estate agent	4.98	6.16	5.65	6.36
Restaurant waiter	3.60	2.88	3.91	3.62
Singer	6.56	6.49	6.39	7.25
Social worker	5.62	4.24	6.10	5.29
Sports athlete	6.77	6.53	7.24	8.07
Writer/novelist	6.38	5.25	6.42	5.92

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