Income attraction: An online dating field experiment

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\textbf{A B S T R A C T}

We measured gender differences in preferences for mate income ex-ante to interaction (“income attraction”) in a field experiment on one of China’s largest online dating websites. To rule out unobserved factors correlated with income as the basis of attraction, we randomly assigned income levels to 360 artificial profiles and recorded the incomes of nearly 4000 “visits” to full versions of these profiles from search engine results, which displayed abbreviated versions. We found that men of all income levels visited our female profiles of different income levels at roughly equal rates. In contrast, women of all income levels visited our male profiles with higher incomes at higher rates. Surprisingly, these higher rates increased with the women’s own incomes and even jumped discontinuously when the male profiles’ incomes went above that of the women’s own. Our male profiles with the highest level of income received 10 times more visits than the lowest. This gender difference in ex-ante preferences for mate income could help explain marriage and spousal income patterns found in prior empirical studies.

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1. Introduction

Prior studies have found a robust negative correlation between rates of marriage and relative incomes between the genders in the US. Women made about 60 percent of men’s salaries in the 1960s. This increased to about 70 percent in 2003 (Blau and Kahn, 2007). At the same time, the rate of ever-married women aged 20–24 fell from 64 percent in 1970 to 34 percent in 1994 (Blau et al., 2000). A similar trend was found for women in their 30s and 40s. The pattern extends up to 2004 (Popenoe, 2005). In contrast, women’s relative wages have been decreasing in China (Gustafsson and Li, 2000; Mu and Xie, 2011). Female pay as a percent of male fell from 85 percent in 1985 to 63 percent in 2005 (Mu and Xie, 2011). Little noted is the fact that at the same time, marriage rates increased 56 percent from 1978 (6.2 per thousand) to 2011 (9.7 per thousand, China’s Civil Affairs Statistical Yearbook, 2012\textsuperscript{1}), despite the increasing scarcity of women in China (Ebenstein, 2010).

Such correlated changes in marriage rates and relative incomes are consistent with Becker’s (1973) theory of the family. He posits that the surplus from marriage is maximized by one partner (traditionally men) specializing in market production,

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\textsuperscript{1} http://tongji.cnki.net/kns55/Dig/dig.aspx. The marriage rate = number of marriages per thousand people = number of marriages/(population at the beginning of that year * population at the end of that year) / 10000.\textsuperscript{\star}

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while the other specialized in home production. In his theory, better labor market opportunities for women lower their gains from marriage and raise their opportunity costs – the opposite for men. However, due to institutional change and endogeneity issues, not to mention a myriad of unobserved factors which may influence a match, identification of the cause of the correlation between spousal incomes and marriage patterns has remained controversial. See for example, Schwartz (2010), for a review of the vast literature.

More recently, researchers have attempted to demonstrate an “identity preference” (Akerlof and Kranton, 2000) basis for the pattern of correlation between rates of marriage and spousal incomes. In this theory, people have an inherent cost for deviating from what social norms might dictate should be their roles, for example, that men provide the main financial support for their families. To test this, Fisman et al. (2006) conducted a speed dating study in which couples spoke for 4-min, then rated each other and indicated whether they wanted further contact. They found that the men’s decisions to share contact information with the women were increasing on the women’s intelligence (from theirs and the women’s self-reports and SAT scores) and ambition (from theirs and the women’s self-reports), until they reached their own level. In contrast, women’s ratings were always increasing on the men’s intelligence and ambition.

Supporting the evidence for identity preferences contributing to marriage and spousal income patterns, Bertrand et al. (2013) found with US data that marriages were less likely to form between a man and a woman who has higher potential earnings than he does. Indeed, they found a discontinuous drop in marriage rates as the wife’s income approaches that of the husband’s, as if couples were trying to avoid the situation where the husband was not the breadwinner. They also found lower reported happiness, greater strife, and greater likelihood of divorce for couples where the wife earned more. They argue that a substantial portion of the decrease in the rate of marriage in the US since 1970 can be explained by this aversion in the context of rising female wages. Their analysis makes a strong case for couples’ preferences driving results. However, they refrain from attempting to identify the source or the relative strength of the preference within the couples.

Prior studies with marriage and speed dating data are of outcomes, ex-post to interactions. Preferences would be very difficult to identify, even in the case of 4 min dates. Beyond the usual problem of ruling out other fixed characteristics like height, health, and beauty in the study of the effect of income on mate preferences, face-to-face interactions may also involve variable characteristics or “chemistry” that only show themselves with certain people in certain contexts. For example, if a woman always prefers men who are more intelligent and ambitious, one would expect that she would be more delighted (i.e., more “turned on”) in the company of men with more of those qualities. Her pupils may dilate (Tombs and Silverman, 2004). Her voice may soften or increase in pitch (Fraccaro et al., 2011). That may increase her attractiveness (Feinberg et al., 2008). Her hormonal reactions (López et al., 2009) may build upon his (Roney et al., 2007; van der Meij et al., 2010) and vice versa, and the feedback may lead to other changes to the quality of their meeting, which are palpable to them, but not necessarily measurable yet to social scientists. (See van Anders and Gray (2007) for an academic and Young and Alexander (2012) for a popular survey of this nascent literature.) In other words, women’s preferences could then become the basis of men’s choices, which would create both a simultaneity and an omitted variable problem in the identification of men’s preferences from men’s choices.

Endogeneity is even more of a problem for the identification of preferences using marriage data. Less ambitious women or women who anticipate a drop in labor market participation may invest more in being “charming” to men than in earning higher incomes themselves. Contrariwise, women on higher income paths can afford to be more bläé while dating and less obliging when married, especially if they make more than their husbands. Their incomes could make their marriages less likely and less stable.

We extend this literature by identifying gender differences in preferences for mate income ex-ante to any interactions in a field experiment on one of China’s largest online dating websites. We randomly assigned income and other attributes to artificial profiles and counted “visits” to those profiles from search engine results to measure income based attraction.

Visits are a credible measure of mate preferences, since they are necessary for any interactions. Though visits without other active follow-up, e.g., an email, need not involve the threat of rejection, since ex-ante preferences do not imply ex-post preferences, and therefore, an offer to be rejected – they are not free. They involve time and therefore opportunity costs. Thus, we expect people to make calculated tradeoffs between profiles to visit. Because visits are ex-ante to any interactions, they can only be based upon the information we reveal in the search engine results. Random assignment on these observables can then rule out unobserved factors confounded with income as causes. Simultaneity and omitted variable cease to be issues in our design.

We found that men of all income levels visited our female profiles of all income levels about equally. In contrast, we found that women of all income levels visited our higher income male profiles more. This is consistent with Becker’s theory and many prior results. Surprisingly, however, the rate of women’s visits to higher income male profiles were increasing on their own incomes, even jumping as the profiles’ income approached their own. Thus, not only do women prefer higher income men, they specifically prefer men who have higher incomes than themselves. The combined effect resulted in men with the highest levels of income getting 10 times more visits than men with the lowest.

This gender difference in the preference for mate income could provide a preference basis for a number of outcomes reported in the empirical literature on marriage. Since these possible implications are motivations rather than results, we

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2 Hitsch et al. (2010b) use “browse” for what we call visits.
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