Family Policy Awareness and Marital Intentions: A National Survey Experimental Study

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ABSTRACT Despite extensively examining the effects of family policies on marriage and fertility rates, previous research has paid little attention to the process of policy implementation and has implicitly assumed that individuals are fully aware of the policy information when making marital and fertility decisions. Challenging this assumption, we theorize policy awareness as an important mechanism for understanding the potential influence of family policies on individuals' marital intentions, an understudied yet crucial determinant of family formation behavior. In an experiment using a national survey of young unmarried individuals in Japan, respondents were randomly assigned to treatment and control groups. The treatment group was informed about 17 Japanese family policy benefits, but most of the respondents knew none or only a few of these benefits. After exposure to the policy information, the treatment group had significantly higher marital intentions than the control group, which had similar baseline characteristics but no information exposure. Crucially, such positive effects were particularly pronounced among high-educated women and high- and low-educated men, reflecting the differentiated effects of policy awareness under Japan's traditional gender role norms. Overall, these findings highlight the pivotal role of policy awareness during the family formation process and contribute to the debate over whether and how family policies may influence different subpopulations.

KEYWORDS Family policy awareness • Japan • Marital intentions • Gender norms • Survey experiment

Introduction

In Japan, the trend of later and less marriage has become a serious social problem. From 1970 to 2017, the average age at first marriage in Japan climbed from 27 to 31 for men and from 24 to 29 for women (National Institute of Population and Social Security 2017). Given the important role of marriage in fertility and family formation in Japanese society, delayed marriage is regarded as an important reason for low fertility rates, population aging, and labor shortages (Fukuda 2016; Raymo and Iwasawa 2005; Raymo et al. 2015). The government has responded by implementing active family policies, including a range of spousal and fertility benefits to promote marriage and fertility.

Substantial research has explored whether and how family policies affect individual- and country-level marital and fertility rates (Adjei and Billingsley 2017; Bitler et al. 2004; Gauthier 2007; Thévenon 2011; Yoon 2017). However, the effectiveness of family policies remains subject to debate both in and outside of Japan (Boling 2008; Brinton and Oh 2019; Schoppa 2006). Whereas some studies have shown that family policies can improve marriage or fertility rates by providing income support and facilitating work–life balance (Ahmed and Fielding 2019; Frimmel et al. 2014; Gassman-Pines and Yoshikawa 2006), others have not found such positive effects or have suggested that the policy effects may be confounded by other unobserved or selective characteristics, such as marriage-related social norms or demographic changes (Bitler et al. 2004; Klusener et al. 2013).

Despite ample study of the effectiveness of family policies, prior research has devoted little attention to the family policy implementation process. Further, previous studies have implicitly assumed that individuals have complete policy information after the policy announcement. We theorize that family policy awareness is an important mechanism for understanding how family policies actually work, and we integrate the discussion of policy awareness into family policy research. Drawing on the concept of information asymmetry, we argue that policy information is not always accurately and comprehensively transmitted to individuals (Baird and Reynolds 2004; Oreopoulos and Dunn 2013). In addition, previous research has paid little attention to pre-marriage experiences, such as marital intentions. Because intention precedes behavior, single individuals' marital intentions reflect not only their marriage demands but also structural constraints to marriage. Studying marital intentions allows for a more comprehensive understanding of the family formation process in East Asian societies (Raymo et al. 2020). Thus, our first objective in this study is to investigate the extent to which Japanese young unmarried individuals are aware of existing family policies and whether a higher level of exposure to the policy information can promote their marital intentions.

Moreover, we expect that the effects of family policy awareness on marital intentions may vary with gender and education levels in Japan, which is characterized by highly traditional gender norms of men as the primary breadwinners and women as caregivers (Brinton and Oh 2019). Specifically, we expect that family policy information disclosure is more likely to improve marriage intentions of high-educated women and low-educated men by reducing their high opportunity and marriage costs in a society of traditional gender norms (Bumpass et al. 2009; McDonald 2016). Thus, our second objective is to investigate the extent to which family policy awareness has heterogeneous effects on marital intentions, varying with gender and education levels.

We achieve these objectives by using an innovative survey experimental design in Japan, which is an appropriate research setting and holds significant implications for other East Asian countries. Japan, Korea, and China are facing common problems of late and less marriage, and they share traditional gender role and family norms that emphasize a clear gendered division of labor after marriage (Raymo et al. 2015). Thus, our analysis of family policy awareness in Japan could facilitate a better understanding of how and when family policies affect marital intentions in other East Asian societies as well.

Overall, this article makes three important contributions to the literature. First, we extend current debates about the effectiveness of family policies by demonstrating the important role of policy information awareness. Second, the article facilitates a deeper understanding of determinants of marital intentions across different social and demographic groups under Japanese traditional gender norms. Finally, the article illustrates a promising yet underutilized method—namely, the survey experiment, which provides a powerful tool for investigating individuals' intentions and attitudes in sociological research.

Family Policies in Japan

In response to the low total fertility rate (TFR) of 1.57 in 1989, the Japanese government began implementing a series of family policies in the 1990s. The first policy regarding child-rearing support in Japan was the 1992 Childcare Leave Legislation, which was reborn in 1999 as the Child Care and Family Leave Law. Subsequently, the Angel Plan was enacted in 1994 to assist couples with raising children. More recently, the New Childrearing Law in 2005 has been revolutionary in requiring employers to provide work–family reconciliation policy to women, for example, by reducing work hours and guaranteeing that overtime work is not required (Mun and Brinton 2017). However, as Esping-Andersen (1997) noted, the country's welfare state can be described as "Japanese style corporatism," in which the government and companies provide benefits to long-term employed men and encourage women to prioritize family care. Japanese family policies thereby aim to maintain traditional gender role division by reducing the costs of marriage and child-rearing (Mun and Brinton 2015; Nagase and Brinton 2017).

It should be noted that the primary goal of fertility policy benefits is not to boost marriage, as the family culture in Japan is such that marriage and fertility are widely considered to be jointly determined components of the family formation process: most marriage involves fertility (Raymo et al. 2020). However, whether these policies are effective is debatable. Some politicians believe that family policies can increase marriage and fertility rates by reducing the costs associated with marriage and fertility (National Institute of Population and Social Security 2017), but some scholars doubt the effectiveness of family policies (Boling 2008; Brinton and Oh 2019; Schoppa 2006).

The Effects of Family Policies: Theoretical Perspectives and Empirical Evidence

Two broad theoretical perspectives in the extant literature might explain whether family policies affect individuals' marital choices. From an economic perspective, Becker (1991) argued that marital decisions are based on a rational analysis of costs and benefits. Marriage could offer a range of benefits, such as more efficient household specialization and division of labor between spouses. However, it also entails increasingly high costs in contemporary societies: direct economic costs relating to

the growing costs of marriage, child-rearing, and living, and indirect opportunity costs incurred by the loss of potential benefits from opportunities forgone due to marriage, such as career development, promotion, or other life chances (Becker 1991; Diprete et al. 2003; McDonald 2016). When the costs anticipated from marriage exceed the benefits, individuals choose to remain single, especially in countries with traditional gender norms, such as Japan. In such countries, married men as breadwinners experience high economic costs of marriage, and married women as the homemakers sacrifice their careers and bear high opportunity costs (Brinton and Oh 2019; Wang and Coulter 2019). By providing a range of spousal and fertility benefits, family policies help reduce the direct economic costs and indirect opportunity costs associated with marriage and thereby promote individuals' intentions to marry.

Whereas the economic theory focuses more on the material costs of marriage, the ideational change perspective from the second demographic transition framework argues that the trends of low marriage rates, increased cohabitation, and "living apart together" relationships outside marriage in developed countries since the middle of last century are associated with the rise of individualism and a greater emphasis on personal freedom and self-actualization (Lesthaeghe 2010). However, this argument has been challenged in East Asian countries, where researchers have found rather limited evidence concerning attitudinal changes in marriage and family formation over the past several decades (Atoh 2001; Raymo et al. 2015).

Empirical research evaluating family policies has primarily focused on their effects on fertility patterns. For instance, using panel data, Luci-Greulich and Thévenon (2013) found that the generosity of family support policies—such as paid parental leave, childcare services, and financial transfers—is positively related to fertility in OECD countries. Although each of these family policies has a positive impact on fertility, childhood in-cash benefits and the provision of childcare services have a much larger impact than parental leave entitlements and childbirth benefits (Luci-Greulich and Thévenon 2013). Similarly, from an analysis of 18 countries over the period 1995–2016, Ahmed and Fielding (2019) found that a more generous maternity leave payment is associated with higher country-level fertility rates but saw no conclusive evidence regarding the effect of leave duration on fertility. Harknett et al. (2014) found that most family policies—including parental leave benefits, family and child allowances, and childcare services and subsidies—can promote fertility intentions and rates, especially for higher order births. In contrast, Castles (2003) found that only the provision of childcare services and flexible workplace arrangements increase fertility, whereas parental leave and public spending on families do not affect fertility.

However, a relatively small number of studies investigated how family or wider welfare policies influence marital behavior. For example, using natural experiments with longitudinal data, Frimmel et al. (2014) found that supportive marriage policies, in particular cash-on-hand marriage subsidies, led to a substantial marriage boom in Austria, and a marriage created by the policies was as stable as an ordinary marriage. Similarly, some researchers have found that broader welfare policies, such as anti-poverty programs or income tax policies, could also increase marriage rates (Chade and Ventura 2005; Gassman-Pines and Yoshikawa 2006). However, some studies have not found policy effects or have shown that family policies targeting certain subgroups (e.g., single mothers) might decrease marriage rates for other subgroups (Bitler et al. 2004; Grogger and Bronars 2001).

Overall, previous research has yielded mixed results about family policy effects, highlighting the complex relationships between policies and individual outcomes. Klusener et al. (2013) suggested that it is difficult to disentangle the causal effects of policies from the effects of other, related social norms on marriage and fertility trends: family policies may reflect prevailing social norms or may be implemented alongside other socioeconomic changes, which could confound the effects of family policies on marital or fertility behavior (Klusener et al. 2013).

Linking Family Policies and Marital Intentions: The Role of Policy Awareness

The ample research on the effects of family policies has paid little attention to how these policies are implemented and the extent to which individuals are knowledgeable about them. A growing body of evidence shows that information asymmetry and unequal structural opportunities are prevalent, and policy information is not always accurately and comprehensively transmitted to individuals (Baird and Reynolds 2004; Oreopoulos and Dunn 2013). For example, many people may not be aware of a policy simply because of inefficient advertising, costly access to the policy information in less developed areas, and the complexity of policies (Oreopoulos and Dunn 2013). In addition, people may not actively seek out family policy information if it is not currently relevant to them. For example, individuals who are young and unmarried may pay less attention to family leave policies than married individuals with children (Baird and Reynolds 2004). Moreover, workplace institutional factors may constrain individuals' family policy awareness. For example, employers facing labor shortages may be reluctant to inform their employees about their family leave rights, and many employees may not even consider the possibility of using family policy benefits for fear of employer discrimination or being passed over for promotion opportunities (Pedulla and Thébaud 2015).

In this study, we contribute to and extend the literature by incorporating policy awareness, defined as the extent to which a target population is aware of a policy and what the policy entails (Baird and Reynolds 2004). We contend that family policy awareness is a crucial mechanism for understanding how family policies affect individuals' marital intentions. The importance of information awareness in shaping individuals' attitudes, intentions, and behavior can be traced back to social psychological theories. For example, social cognition theory argues that external influences, such as information exposure, can shape individuals' intentions and behavior through a three-step cognitive process. First, individuals extract generic features of the information and store them in memory. Second, by linking this information to their current situation or personal experience, individuals then process and transform the stored information into cognitive models, which could help them understand potential outcomes of behaviors before they act. Third, individuals use these cognitive models as a guide to form their intentions and behaviors (Morgan and Schwalbe 1990).

For a certain policy, then, awareness of its benefits may be an incentive for individuals to abide by the policy, whereas observing negative outcomes for those who do not abide by the policy may prevent people from violating it (Bandura 2001). For unmarried individuals, family policy benefits are future events, and "by being represented cognitively in the present, conceived futures can operate anticipatorily as motivators

and regulators of current behavior" (Bandura 2001:268). Thus, information awareness is likely to be a key antecedent for individuals' intentions and behavior.

More recently, research in social science disciplines, such as demography, economics, sociology, education, criminology, and public health, has widely acknowledged the importance of information awareness. For example, Grigorieff and colleagues (2020) revealed that native residents' knowledge about immigration is often biased and that they would be more supportive of immigration if they had accurate information regarding the immigrant population's size and characteristics. Oreopoulos and Dunn (2013) informed high school students from socially disadvantaged areas about the benefits of postsecondary education and found that these students tended to express a higher likelihood of postsecondary educational attainment. Similarly, Pedulla and Thébaud (2015) provided information about supportive work–family policy interventions to young and unmarried men and women and found that the majority of them tended to opt for a relationship reflecting egalitarian gender roles. In addition, raising public awareness of health behavior and disease prevention has been successful in public health campaigns (Bandura 2004). A logical extension of previous research suggests that raising awareness of family policy information could promote marital intentions.

Therefore, given widespread information asymmetry and the importance of policy awareness, this study's first objective is to investigate the extent to which young unmarried individuals in Japan are aware of family policies and whether a higher level of exposure to the policy information will promote their marital intentions. On the basis of previous research on information awareness in other fields, we propose the following:

Hypothesis 1: Family policy information disclosure will significantly increase the marital intentions of young unmarried individuals in Japan.

Educational and Gender Differences

Individuals' attitudes and intentions do not form in a vacuum; they are subject to influences of individuals' positions in a social and cultural system. Although previous research has not yet yielded conclusive evidence about the relationship between socioeconomic status and marriage rates (Becker 1991; Oppenheimer 1997), findings generally support the notion that marriage and fertility costs vary by education levels and gender (Bumpass et al. 2009; Hochschild and Machung 2012; McDonald 2016). We argue that individuals with different education levels may have different responses to family policy information because of their distinct perceived marriage and fertility costs. The marital intentions of individuals with certain education levels may be more sensitive and malleable to variation in family policy information compared with those with other education levels. Moreover, Japan is characterized by highly traditional gender norms, with women expected to be primarily responsible for domestic duties and men expected to work in the labor market (Brinton and Oh 2019). Given these gender roles in Japan, the interaction effect between family policy information and education may also vary by gender.

For women, although their education levels and labor force participation have dramatically increased in the past several decades (Raymo et al. 2015), traditional gender

norms are still socially prevalent, and even highly educated wives are expected to have children and assume primary responsibility for childcare and household duties (Wang 2019). From an opportunity cost perspective, to conform to traditional gender norms, high-educated married women may need to bear a substantial loss of earnings, career development, leisure time, or other life chances (Bumpass et al. 2009; Hochschild and Machung 2012; Wang et al. 2021). Such losses are especially likely in Japan, where most companies expect their employees to have a strong work ethic and perform overtime work (Brinton and Oh 2019; Nagase and Brinton 2017). In addition, under Japan's lifetime employment system, it is difficult for married women with career interruptions to return to their previous jobs. As a result, most women experience downward mobility into low-quality jobs after marriage and maternity leave (Raymo et al. 2015; Shirahase 2014).

In contrast, low-educated women have less favorable labor market prospects than high-educated women and thus have lower opportunity costs in the form of, for example, forgone promotion opportunities and career development arising from marriage and fertility. Given the higher opportunity costs for high-educated women than for low-educated women, exposure to family policies that provide a range of material benefits is more likely to increase high-educated women's marital intentions. Accordingly, we predict the following:

Hypothesis 2: Family policy information disclosure will more significantly improve marital intentions for high-educated women than for low-educated women.

For men, traditional gender norms expecting them to be breadwinners (Becker 1991) could greatly increase their perceived economic costs and burdens of marriage. In particular, low-educated men often have low labor market status and are not likely to be able to afford the high costs of marriage, living expenses, and raising a child. Thus, low-educated men are thought to violate the expectations of traditional gender norms and are not considered to be qualified to marry (Raymo and Iwasawa 2005). Several empirical studies found that low socioeconomic status is an important reason for men's delayed marriage (e.g., Ahn and Mira 2001; Raymo and Iwasawa 2005). For example, high-educated and successful men are attractive marriage candidates and are likely to get married early (Ludwig and Brüderl 2018). Perhaps men with low socioeconomic status are involuntarily left out in the marriage market because they are unaware of relevant family policies that reduce marriage costs. In this case, even if men with low socioeconomic status are willing to marry, they cannot transfer their intention to actual behavior because of high perceived marriage costs and constraints on achieving the desired outcomes. As we argued in the previous section, a lack of relevant family policy information could be a structural constraint preventing or delaying marriage. As a result, exposure to family policy information is likely to increase low-educated men's marital intentions by reducing their perceived costs and economic burdens of marriage and child-rearing.

Although men with high socioeconomic status are usually thought to be consistent with traditional gender norms' expectation, they also have high potential marriage costs. Assortative mating theory suggests that high-educated men tend to marry high-educated women (Raymo and Iwasawa 2005). Thus, socioeconomically advantaged individuals have a much higher standard of living after marriage, indicating that high-educated

men's concerns about the costs of marriage and household expenses are not lower than the concerns of the low-educated men (Raymo et al. 2015). In addition, the relative risk aversion hypothesis (Breen and Goldthorpe 1997) suggests that high-educated men's child-rearing costs and investments are high, making their economic concerns regarding marriage as high as those of low-educated men. Thus, given the relatively high costs of marriage for both low- and high-educated men, we expect the following:

> *Hypothesis 3*: Family policy information disclosure will significantly improve marital intentions for low- and high-educated men to a similar extent.

Research Design and Method

Survey and Sample

To test our three hypotheses, we use a survey experimental research design to analyze the data from the fourth and fifth waves (2008 and 2009) of the Survey on Marriage and Childbirth. A leading survey company, Macromill Group, conducted the survey on behalf of the Meiji Yasuda Research Institute of Life and Wellness in Japan. Macromill maintains a national online panel of 2.3 million respondents of the Japanese population. Serving more than 4,000 brands and agencies in more than 90 countries, it is one of the industry-leading online panel and survey-technology providers in Japan. To maximize coverage of the diverse population, Macromill employs recruitment methods such as web banners, website referrals, pay-per-click advertising, natural search optimization, affiliate marketing, email, and online public relations activities.

The survey drew on a random stratified sample of individuals from Japan's 47 residential prefectures from the online panel to select unmarried individuals aged 20–39 who did not have children. This sample ensures that the respondents are not from any one particular region. Macromill sent emails to invite selected respondents to complete an online survey containing 45 questions, including questions asking about respondents' awareness of family policies, behaviors and attitudes regarding marriage and family, and social and demographic characteristics. The survey yielded a sample of 7,494 respondents, with a response rate of 79%—higher than many previous studies using online surveys.[1] After the exclusion of missing data on our analytic variables, the final sample contains 6,544 cases.

To ensure that young unmarried individuals in Japan are represented in the sample, we constructed a probability weight and applied it to all analyses. Further analyses show that the distributions of key variables in the sample—gender, age cohort, and education levels—are similar to the distributions in Japan census data in 2005 and pooled Japanese General Social Survey data in 2006 and 2008 (see Tables A1–A2 and Figures A1–A2 in the online appendix). Thus, our sample can be thought of as generally representative of the young unmarried population in Japan.

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[1] We do not have information about individuals who did not respond to the survey. Nevertheless, because we weighted the data according to the census, nonresponse and missing data will not significantly bias the representativeness and generalizability of this research.

Experimental Design

The national survey contains a between-subjects field experiment that used computer-generated random numbers to allocate the respondents into two experimental conditions: a treatment group ($n=3,291$) and a control group ($n=3,253$). The treatment group was first presented with a short introduction of the treatment: "In Japan, the government has provided various family policies to eligible citizens in order to lower the costs of marriage and fertility. How much do you know about these policies? Please look at each policy description and answer the questions one by one." Next, respondents were shown 17 existing family policy benefits, including five spousal benefits (e.g., tax incentives, pension, and health insurance benefits) and 12 fertility benefits (e.g., parental leave, maternity allowance, and child allowance). Respondents read each detailed policy description regarding eligibility and benefit amounts and were then asked about the extent to which they knew each policy on a five-point scale ranging from "not at all aware" (1) to "extremely aware" (5). (For more details on the policies, see Table A3 in the online appendix.) To simplify our descriptive analysis on policy awareness, we dichotomized the variable by recoding scores of 4–5 as 1 and recoding scores of 1–3 as 0. After rating their awareness of the policies, the treatment group was then asked about their intentions to marry. In contrast, the control group was not exposed to the policy information and was directly asked about their marital intentions.

Although fertility policies do not seem to be aimed at boosting marriage rates, previous research highlights the importance of understanding marriage and fertility as inseparable components of family formation in Japan (Raymo et al. 2020). For example, the tight link between marriage and childbearing in Japan implies that fertility is an important motivation for marriage and that most marriage also involves parenthood. Also, although some policy benefits, such as pensions, are not relevant until long after the start of marriage, exposure to information of future benefits may still significantly change individuals' current attitudes and behaviors (Oreopoulos and Dunn 2013). Considering Japan's unique family culture and previous studies' findings, we believe that each of these family policies is linked to individuals' marital intentions to a varying degree.

The survey we use presented all family policies to the treatment group at once, which has both strengths and limitations. On the one hand, it allows us to test the impact of family policy awareness in its entirety and provides a more direct and comprehensive understanding of their family policy awareness, such as the number of total policies they know. Given the absence of research on family policy awareness, our findings on this aspect represent an important contribution to the literature and may help policymakers better evaluate the policy's effectiveness. In addition, the treatment implementation (presenting all family policies at once) mimics policy implementation in the real world, thereby increasing the experiment's mundane realism[2] and generalizability (Mutz 2011). On the other hand, a crucial limitation is that we are unable to distinguish between the effects of different family policies. The treatment effect in this study reflects an average effect of being exposed to various types

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[2] *Mundane realism* refers to the extent to which procedures or materials that are involved in an experiment are similar to those in the real world.

Table 1 Weighted descriptive statistics for the treatment and control groups

	Treatment	Control	F/χ^2 Tests: p Values
Marital Intentions (%)			
Very low	9.09	10.73	.001
Low	17.88	20.58	
High	44.47	44.87	
Very high	28.56	23.82	
Gender (%)			
Women	48.05	48.43	.994
Men	51.95	51.57	
Age (mean)	27.54	27.36	.297
	(5.21)	(5.22)	
Education Level (%)			
Low	41.33	42.77	.226
Middle	17.94	18.73	
High	40.73	38.50	
Income (%)			
None (no work)	10.89	11.16	.256
Low income	13.73	12.79	
High income	75.37	76.05	
Have a Dating Partner (%)	41.44	41.24	.944
Number of Observations	3,291	3,253	

Note: Standard deviations are shown in parentheses.

of family policies, and awareness of different policies could have different impacts on individuals' marital intentions, depending on their sociodemographic characteristics. We address this limitation further in the Discussion and Conclusions section.

Key Variables, Descriptive Statistics, and Balance Check

The dependent variable in this study is a self-reported measure of marital intentions, measured on an ordinal scale consisting of four categories: very low (1), low (2), high (3), and very high (4). As a robustness check, we also analyze marital intentions as a binary variable. Our experimental variable is whether respondents were exposed to family policy information. We also have two moderating variables: gender and education. Education, measured as the highest educational qualification received, consists of three categories: low (high school degree or less), middle (junior college or vocational education degree), and high (undergraduate degree or more). As a robustness check, we also test respondents' economic status as a moderator, which is measured by three income categories: none (no work), low (below median income), and high (equal to or above median income). Results from this robustness check are similar to those presented here. In addition, we include age and partnership status (i.e., whether respondents currently have a dating partner) in the balance check.

Table 1 shows weighted descriptive statistics of variables for the treatment and control groups. First, individuals in the treatment group report significantly higher marital

intentions than those in the control group. For instance, 28.56% of individuals in the treatment group have very high intentions to marry, compared with 23.82% of those in the control group. Similarly, 9.09% and 17.88% of individuals in the treatment group have very low or low marital intentions, respectively, compared with 10.73% and 20.58% of those in the control group. Thus, our descriptive results show that exposure to family policy information has a positive effect on individuals' marital intentions.

Second, the treatment and control groups do not differ significantly on any other variables, confirming that the randomization procedure eliminated systematic differences between the two groups in both observed and unobserved characteristics other than policy information exposure. Thus, our research design enables us to estimate the causal effects of policy information exposure on marital intentions. Following experimental research convention, we do not include these control variables in the statistical models (Mutz 2011).

Analytic Strategy

To estimate the effects of policy information exposure on individuals' marital intentions, we use ordered logistic models because our dependent variable is ordinal. The ordered logistic model follows the following functional form:

$$\ln\left(\frac{\Pr(y \le j)}{\Pr(y > j)}\right) = \alpha_j + \beta X + \varepsilon,$$

where j is one of the four outcome categories $j = (1, 2, 3, 4)$, α are the intercepts, X and β are the treatment variable and its coefficient, and ε refers to the error term. First, we explore the extent to which individuals from the treatment group were aware of the existing family policies. Second, we investigate whether exposure to family policy information increases marital intentions for the whole sample and for the gender subsamples. Third, we investigate the extent to which the effects of policy information exposure vary by education levels for women and men separately. The ordered logistic model assumes that the odds ratio estimates of the independent variables are the same (the proportional odds assumption). In our case, the proportional odds assumption is met ($p = .156$), confirming the robustness of our analyses.

Results

Family Policy Awareness and Marital Intentions

Our first objective is to investigate young unmarried individuals' awareness of existing family policies and whether a higher level of exposure to the policy information promotes their marital intentions. Figure 1 shows the distribution of policy awareness among the treatment group before the treatment. Specifically, 61.17% of individuals were aware of none of 17 existing family policies, and only 1.58% were aware of all 17 policies (for more detailed distribution, see Table A2 in the online appendix). Because the treatment group is a random subsample of the population, these statistics
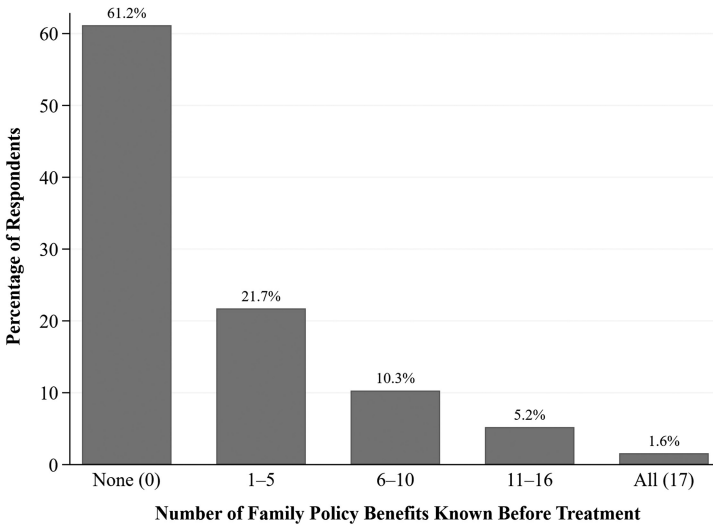
Fig. 1 Distribution of family policy awareness among the treatment group

can be generalized to the young unmarried population in Japan. Table A4 in the online appendix displays policy awareness separately for marriage and fertility policies; the pattern of results is similar. Further analyses presented in Table A5 (online appendix) show that respondents who are female, are older, have higher education levels and higher income, and have a dating partner are more likely to be aware of family policies; the pattern of results is similar for marriage and fertility policies.

Next, we conduct a number of ordered logistic models to formally test the effects of family policy information exposure on respondents' marital intentions. These results are shown in Table 2. Model 1 indicates that the individuals in the treatment group have 1.25 times higher odds of having strong marital intentions than the individuals in the control group, strongly supporting the positive effects of family policy awareness in increasing marital intentions (Hypothesis 1). Models 2 and 3 show that the effects of information exposure are significant and positive for women (odds ratio=1.14, $p<.05$) and men (odds ratio = 1.39, $p< .001$), respectively. Model 4 tests the interaction between treatment and gender and shows that the effect of family policy information does not significantly differ between women and men (odds ratio=0.85, $p>.05$).

Educational Differences

This study's second objective is to investigate the extent to which family policy awareness has heterogeneous effects on marital intentions, varying with gender and education level. To achieve this objective, we repeat models 2 and 3 from Table 2, this time adding interaction terms between policy information exposure and education levels for men and women separately. Because of problems interpreting interaction terms in nonlinear regression models (Mustillo et al. 2018), we calculate the marginal probabilities for each combination of the treatment effect and education level and conduct several significance tests to examine whether the treatment effects vary across education levels in Table 3.

Table 2 Odds ratios from weighted ordered logistic regression models predicting high marital intentions

	All	Women	Men	Gender Difference
Exposure to Family Policy Information (ref. = no)	1.25***	1.14*	1.39***	1.38***
	(0.06)	(0.07)	(0.09)	(0.09)
Gender (ref. = men)				1.61***
				(0.10)
Exposure to Family Policy Information × Gender				0.85
				(0.08)
Cut Point 1	0.11***	0.09***	0.13***	0.13***
	(0.01)	(0.01)	(0.01)	(0.01)
Cut Point 2	0.41***	0.34***	0.49***	0.50***
	(0.01)	(0.02)	(0.02)	(0.02)
Cut Point 3	2.91***	2.32***	3.73***	3.62***
	(0.11)	(0.12)	(0.20)	(0.18)
χ^2 Statistics	20.29	5.90	16.23	88.78
AIC	16,278.68	8,006.09	8,209.69	16,214.19
BIC	16,305.85	8,030.49	8,234.08	16,254.94
Number of Observations	6,544	3,271	3,273	6,544

Notes: Standard errors are shown in parentheses. AIC = Akaike information criterion. BIC = Bayesian information criterion.

*$p < .05$; ***$p < .001$ (two-tailed tests)

Table 3 Effects of family policy awareness, by gender and education level

	Women			Men		
	Low Education	Middle Education	High Education	Low Education	Middle Education	High Education
Experimental Conditions (probabilities)						
Treatment	.22	.34	.40	.22	.23	.28
Control	.21	.35	.32	.16	.21	.22
Average Marginal Effects (AME)						
Treatment–Control	0.01	−0.01	0.08**	0.06***	0.03	0.05**
	(0.02)	(0.03)	(0.02)	(0.01)	(0.04)	(0.02)
Cross–Education Level Comparisons						
Low (AME)–Middle (AME)		−0.01			0.03	
		(0.03)			(0.04)	
Low (AME)–High (AME)		−0.07*			0.01	
		(0.03)			(0.02)	
Middle (AME)–High (AME)		−0.09*			−0.03	
		(0.03)			(0.04)	

Notes: AME = average marginal effect. Standard errors are shown in parentheses.

*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests)
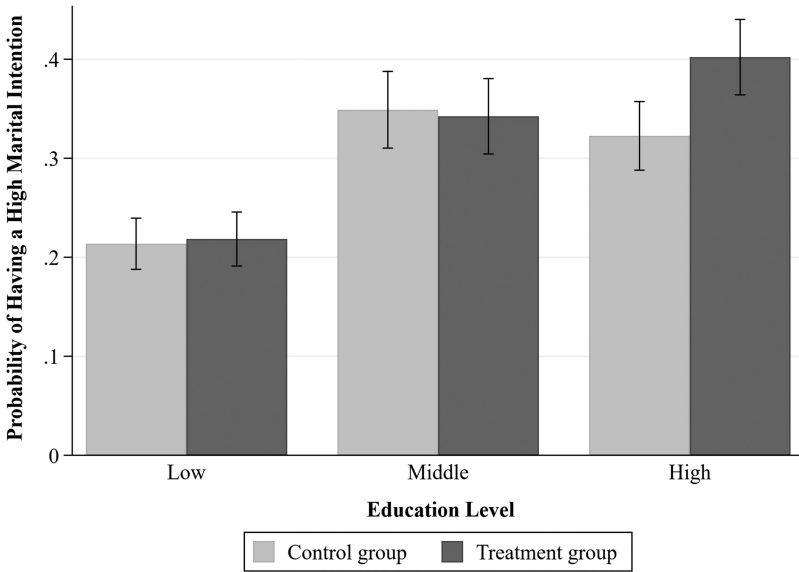
Fig. 2 Effects of policy information exposure on women's marital intentions, by education level
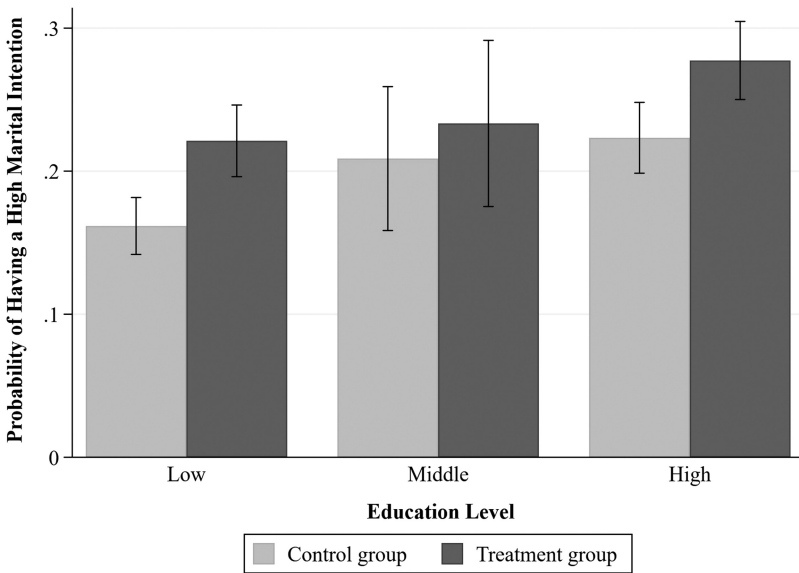

Fig. 3 Effects of policy information exposure on men's marital intentions, by education level

Figures 2 and 3 show the plotted probabilities of having high marital intentions for the
treatment and control groups among women and men, respectively, by education level.

The figures show that family policy information exposure has differential effects on
men's and women's marital intentions depending on their education levels. The effects
are particularly pronounced for high-educated women (statistically significant) but are
not significant for low- and middle-educated women. Additionally, the effects of family

policy exposure for low- and middle-educated women are significantly smaller than the effects for women with tertiary education, supporting Hypothesis 2. In contrast, the effects of family policy information exposure are significant for both low- and high-educated men but not for middle-educated men, and the effects are not significantly larger for low-educated men than for high-educated men. This result lends support to Hypothesis 3. The treatment effect documented here is generally comparable to the effect of race, education, and family structure on marital intentions found in previous research (Guzzo 2009), highlighting the role of policy information disclosure.

Robustness and Heterogeneity Analyses

To ensure the validity of the results, we conduct a number of robustness checks and heterogeneity analyses. First, we recode the dependent variable by combining the "very low" and "low" categories into "low" (0) and combining the "high" and "very high" categories into "high" (1). We then repeat the analyses shown in Tables 2 and 3 by using logistic regression models, presenting these new results in Tables A6 and A7 in the online appendix. Consistent with the previous results, we find that exposure to family policy information increases individuals' marital intentions and that the positive effects are particularly significant among high-educated women and among both low- and high-educated men. Second, we use income rather than education to measure socioeconomic status and test whether the treatment effect depends on income levels for men and women; the results are shown in Table A8 in the online appendix. Reassuringly, the results remain similar, and the treatment effect is particularly pronounced among high-income women and is significant among men regardless of their employment status and income level. Third, we examine whether the treatment effect depends on age cohort and partnership status; the results are shown in Tables A9–A10 in the online appendix. We find that the treatment effect is more pronounced among younger women (aged 20–29) but does not depend on age for men or partnership status for either men or women. Overall, these analyses reveal more nuanced patterns of the treatment effect and suggest that our findings are robust to alternative variable and model specifications.

Discussion and Conclusions

In Japan, the trend of late and less marriage has received extensive academic and policy attention. Despite extensively examining whether family policies affect individuals' family formation behaviors or intentions, previous research has paid little attention to how family policies are implemented and assumed that individuals have full policy information when making decisions. This article extends the literature by integrating the concept of policy awareness into family policy research. Using an innovative survey experimental design, we investigate the extent to which young unmarried individuals in Japan are aware of existing family policies and whether a higher level of exposure to policy information promotes marital intentions of men and women with different education levels. This article yields two important findings.

First, we find that rather than having full information of family policies, the young, unmarried Japanese individuals in our sample knew none or only a few of the policy

benefits before treatment. Moreover, consistent with Hypothesis 1, the results show that a higher level of policy information exposure leads to greater marital intentions for both men and women. These findings cast doubt on the implicit assumption in previous research that individuals have complete policy awareness and highlight the prevalence of information asymmetry that could arise from a number of sources, such as ineffective advertising, costly information access, or workplace structural factors (Baird and Reynolds 2004).

The important role of family policy awareness in marital intentions not only echoes previous research on the effects of information exposure on individuals' attitudes, intentions, and planned behavior (Bandura 2004; Oreopoulos and Dunn 2013) but also holds significant implications for family policy design. We argue that awareness and perceived accessibility of policy benefits are meaningful concepts that should be of crucial concern in family policy design and evaluation studies. The failure of a family policy may be due to the policy itself but could also be attributed to low policy awareness and perceived accessibility among the target population. Thus, in addition to focusing on policy availability, policymakers should also prioritize policy awareness in family policy.

Second, we find the effects of policy information exposure to be particularly pronounced among high-educated women and low- and high-educated men. These findings largely reflect the traditional gender role norms in Japan (Brinton and Oh 2019). Despite their relatively favorable labor market prospects, high-educated women are still expected to adhere to traditional gender norms dictating that they assume primary responsibility for household duties and childcare after marriage, leading to high opportunity costs (Bumpass et al. 2009). Therefore, family policies providing a range of material benefits are likely to compensate their perceived opportunity costs and increase their marital intentions. For men, traditional gender norms expect them to be the main breadwinners. However, low-educated men are unlikely to be able to afford the high costs of marriage given their low labor market prospects; they are thought to violate the social expectation of being breadwinners and thus are considered to be unqualified for marriage (Raymo and Iwasawa 2005). In addition, assertive mating and risk aversion hypotheses predict that high-educated men also have high costs of marriage and household expenses, which may delay their marriage (Raymo et al. 2015). Thus, family policies could increase both low- and high-educated men's marital intentions by reducing their economic burdens of marriage and child-rearing.

Overall, these gender and education differences suggest that the effects of family policy awareness are embedded within social and cultural norms. As such, individuals with different demographic and social backgrounds may have different perceived marriage and fertility costs (McDonald 2016), leading to different responses to family policy benefits. Therefore, policymakers should consider the nuanced effects of policy awareness and formulate family policies targeting specific population groups.

Understanding nuanced effects of family policy awareness is particularly important in East Asian countries, which are characterized by low marriage and fertility rates as well as traditional gender norms (Raymo et al. 2015). In these countries, certain population groups are especially vulnerable to high marriage costs. For example, high-educated women are subject to traditional gender norms dictating that they assume the majority of family responsibilities regardless of their financial contributions to the family. Particularly for these women, promoting a more egalitarian

gender ideology could help improve the effectiveness of family policies. Given that family policies intersect with various cultural and social forces to shape marriage and fertility in divergent ways, family policymakers should pay more attention to the institutional contexts of policy implementation to design more flexible policy benefits that satisfy individuals' diverse needs.

Despite these important findings, our study has several limitations, which could be the potential focus of future research. First, this research is based on a survey that presented respondents with all family policy information treatment at once, limiting our understanding of how different types of policies influence marital intentions of various subpopulations. For example, fertility policies may be more relevant for the marital intentions of high-educated individuals because of the trend of intense parenting among the upper-middle class. Future research using more comprehensive data could benefit from exploring the heterogeneous effects of family policy information disclosure. Second, the treatment effect of presenting a list of family policies actually captures two effects: (1) reminding respondents who knew about (some of) these policies before the treatment and (2) informing respondents about previously unknown policies. An ideal research design would ensure a similar baseline of knowledge about family policies across the treatment and control groups before presenting detailed family policy information to the treatment group to assess marital intention differences. However, because the data on policy awareness are available only for the treatment group, we cannot disentangle these two mechanisms. We call for future research in this area. Third, given our experimental design, we focus only on marriage *intentions* and recognize that there may be a gap between intentions and actual behavior. Future research should investigate the impacts of family policy disclosure on a wider range of behavioral outcomes, such as marriage, fertility, and well-being; policy disclosure effects beyond the family, such as work performance and civic participation, are also worthy of study (Wang and Hu 2019; Wang and Morav 2021).

However, these limitations do not overshadow our main finding that a higher level of family policy awareness promotes Japanese young individuals' marital intentions, with the effects varying significantly along the intersecting axes of gender and education levels. These results contribute to and extend research on family policies by highlighting the important role of policy awareness during the marital decision-making process across population subgroups and hold significant implications for family policy design. ∎

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