



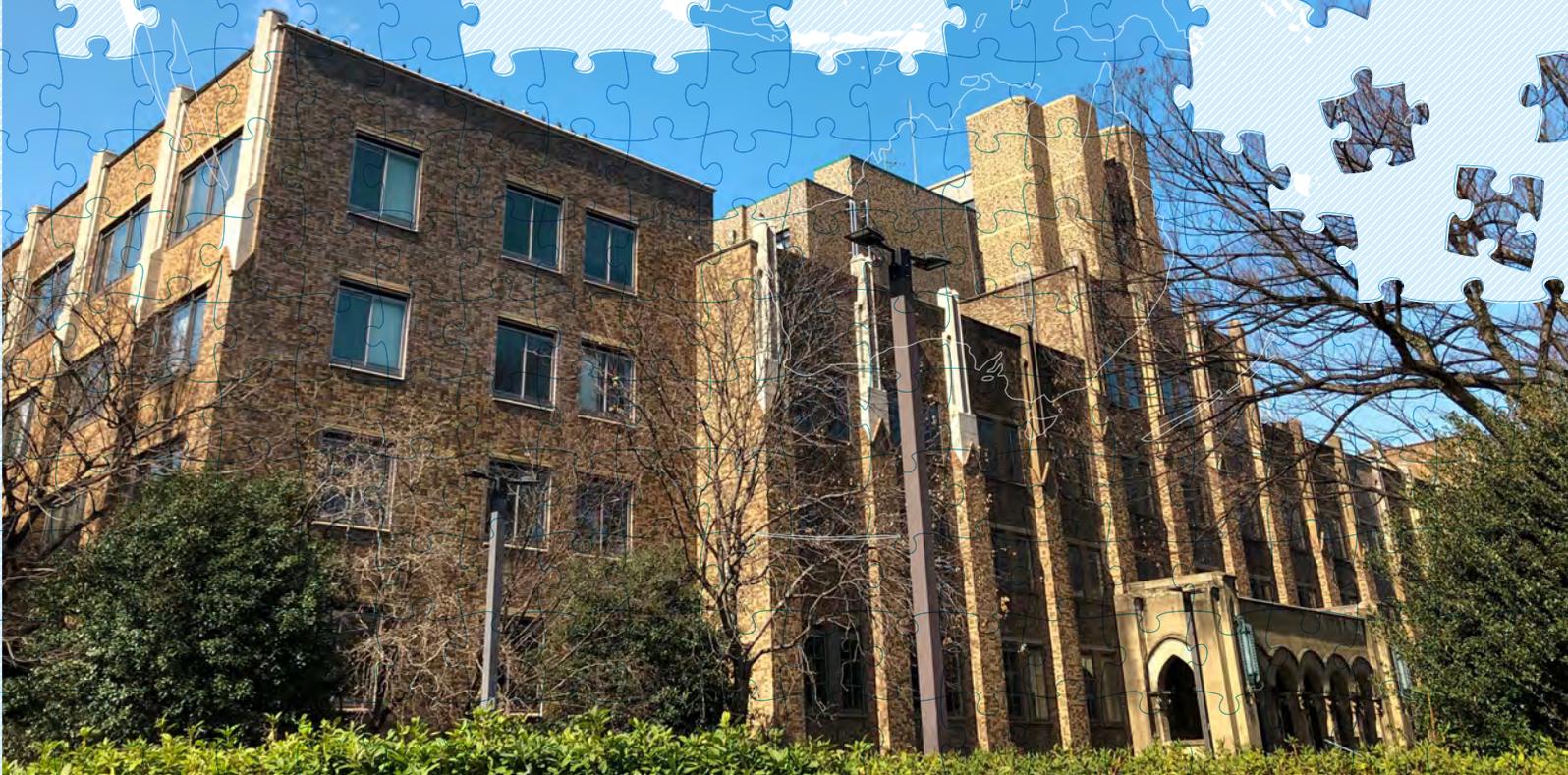
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Benefits, Costs, or Success?: Disentangling the Effects of Information Provision on Parental Educational Expectations in Japan



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Benefits, Costs, or Success?: Disentangling the Effects of Information Provision on Parental Educational Expectations in Japan

Kohei Toyonaga *

Ryota Mugiyama **

* Department of Applied Sociology, Kindai University. kohei.toyonaga@socio.kindai.ac.jp

** Department of Political Studies, Gakushuin University. ryota.mugiyama@gakushuin.ac.jp

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Abstract

While educational inequality is partly driven by information barriers—where individuals from lower socioeconomic backgrounds tend to underestimate the benefits and likelihood of success of higher education while overestimating its financial costs—relatively little attention has been given to addressing parental informational biases as a way to reduce educational inequality. Using a randomized survey experiment embedded in nationally representative longitudinal data from Japan, this study examines whether providing information about higher education to parents can reduce socioeconomic disparities in parental educational expectations, with a particular focus on which types of information matter most and for which parents. The results show that providing information about the benefits or costs of higher education does not significantly reduce socioeconomic disparities in parental educational expectations. By contrast, information about the likelihood of success significantly raises educational expectations among lower-educated parents, and this equalizing effect persists over time. These findings suggest that the impact of information provision is shaped by broader social structures and highlight the potential of early interventions targeting parental information barriers to promote educational equality.

Keywords: parental information barriers, educational expectations, information provision, social stratification, randomized survey experiment, Japan

1. Introduction

In many industrial societies, educational inequality by social origin has persisted for decades (Breen & Müller, 2020; Bukodi & Goldthorpe, 2024; Shavit & Blossfeld, 1993). Students from lower socioeconomic backgrounds are consistently less likely to enroll in higher education and, as a result, to attain higher levels of education. These inequalities cannot be fully explained by socioeconomic disparities in academic achievement (i.e., primary effects), as differences in educational choices (i.e., secondary effects) also play a crucial role (Boudon, 1974; Breen & Goldthorpe, 1997; Jackson, 2013). Families from lower socioeconomic backgrounds often underestimate both the potential benefits of higher education and the likelihood of success while overestimating its financial costs (Abbiati & Barone, 2017; Barone et al., 2018; Ehlert et al., 2017). Such limited or biased information among individuals from disadvantaged backgrounds contributes to the persistence of social inequalities in educational aspirations. Accordingly, recent research emphasizes that reducing information barriers is a key mechanism for mitigating educational inequality in educational decision-making (Barone & Herbaut, 2024).

Recent research has therefore focused on correcting information barriers among students, primarily through classroom-based randomized controlled trials conducted at the point of educational decision-making (Ehlert et al., 2017; Oreopoulos & Dunn, 2013; Peter & Zambre, 2017). However, far less is known about the potential benefits of directing such interventions toward parents, despite their central role in shaping children's educational choices and secondary effects (Lareau, 2015). This gap is striking, given that a focus on parents offers a distinct advantage: Whereas student-focused interventions may come "too late," targeting parents allows information to be delivered at an earlier stage of the educational trajectory (Barone et al., 2018; Dinkelman & Martínez, 2014). For instance, Barone et al. (2018) show that providing parents with

information on how different upper-secondary tracks affect future outcomes significantly shapes parental expectations. However, it remains unclear whether findings from studies on track choice generalize to parental aspirations for higher education. Against this backdrop, this study examines whether providing accurate information about higher education directly to parents can help reduce educational stratification in parental educational expectations.

Beyond the question of who is targeted, little is known about which types of information most effectively reduce educational inequality. While numerous studies have examined comprehensive information provision (Barone et al., 2018; Dinkelman & Martínez, 2014; Ehlert et al., 2017; Oreopoulos & Dunn, 2013; Peter & Zambre, 2017), such interventions typically bundle multiple aspects of higher education, including potential benefits, financial costs, and the likelihood of success. Emphasizing financial costs may dampen educational expectations, whereas highlighting potential benefits may raise them. These countervailing effects can offset one another, obscuring the net impact of information provision and making it difficult to identify the effects of specific components. A recent review further notes that the literature has tended to focus on costs and benefits while largely overlooking information about the likelihood of success (Herbaut & Geven, 2020). This imbalance may partly explain why the overall effects of information provision are often weak or difficult to detect, underscoring the importance of identifying which types of information are most influential. Addressing this gap, the present study disentangles these components to examine which types of information are most effective in reducing inequality in parental educational expectations.

In this study, we examine whether providing adults with information about the costs, benefits, and likelihood of success associated with higher education reduces socioeconomic gaps in educational expectations for their children, focusing on the context of Japan. In Japan,

aspirations for higher education are higher than in many Western societies (Fujihara, 2023), while the financial burden of pursuing higher education is substantial (Nakazawa, 2016), a pattern shared with other East Asian contexts (Hannum et al., 2019). This study extends a literature that has predominantly focused on Western societies, including Italy (Abbiati et al., 2018), Germany (Ehlert et al., 2017; Peter & Zambre, 2017), the United Kingdom (McGuigan et al., 2016), the United States (Bettinger et al., 2012), and Canada (Oreopoulos & Dunn, 2013). More importantly, because the effectiveness of information provision may be greater in contexts characterized by high returns to higher education and substantial financial barriers to enrollment (Ehlert et al., 2017; Peter & Zambre, 2017), Japan provides a valuable case for examining these effects. Using an experiment embedded in a nationally representative panel survey, we assess both the short- and medium-term effects of information provision on adults' educational expectations for their children in Japan.

2. Theoretical Background

2.1. Parental Educational Expectations and Social Stratification

Parental educational expectations have long been regarded as a key mechanism in the reproduction of educational inequality (Sewell et al., 1969). While such expectations strongly predict children's educational attainment (Pinguart & Ebeling, 2020), they are themselves deeply stratified by social class (Buchmann & Dalton, 2002; Haller & Portes, 1973). Parents from more advantaged backgrounds tend to form higher expectations early in their children's lives and sustain them over time (Davis-Kean, 2005; Yamamoto & Holloway, 2010), actively guiding their children through the educational system (Lareau, 2015).

One prominent explanation for the social stratification of parental expectations draws on rational choice theory (Becker, 1964; Boudon, 1974). From this perspective, parents form educational expectations by weighing the perceived benefits, costs, and risks of educational investments under conditions of uncertainty. A central mechanism in this framework is relative risk aversion, which suggests that families seek to avoid downward social mobility and therefore make educational choices aimed at preserving their social position across generations (Breen & Goldthorpe, 1997; Goldthorpe, 1996). Maintaining high and “sticky” educational expectations thus constitutes a rational strategy for families from more advantaged backgrounds to prevent downward mobility (Bernardi & Valdés, 2021). By contrast, families from less advantaged backgrounds are more likely to base their expectations on beliefs formed under greater uncertainty (Becker & Hecken, 2008), and limited socioeconomic resources may further contribute to the inaccuracy of these beliefs (Barone et al., 2018; Grodsky & Jones, 2007).

Beyond economic considerations, cultural knowledge of the educational system also varies by socioeconomic background and plays an important role in shaping parental expectations. Slack et al. (2014) show that access to “hot knowledge”—information acquired through personal contacts with direct experience of higher education—is unequally distributed across social classes. Advantaged parents have often attended higher education themselves and are embedded in social networks that provide detailed and reliable guidance about educational opportunities. In contrast, disadvantaged parents are less likely to possess the cultural resources and social connections that facilitate access to such experiential knowledge (Ball & Vincent, 1998; Lareau, 2015). This lack of access can lead them to hold inaccurate beliefs about the benefits and costs of higher education (Grodsky & Jones, 2007). Moreover, disadvantaged parents may fail to update their beliefs about the likelihood of success, continuing to view university as an option reserved for exceptionally

talented students, even as educational expansion has moved higher education toward a more universal stage and reduced overall selectivity (Raftery & Hout, 1993; Trow, 1972).

2.2. Information Provision and Educational Inequality

Recent studies have examined whether information provision or guidance related to higher education can reduce the informational barriers faced by students (Barone & Herbaut, 2024). Most of this research relies on classroom-based randomized controlled trials targeting students at the point of educational decision-making (Abbiati et al., 2018; Ballarino et al., 2022; Ehlert et al., 2017; Hastings et al., 2015; Peter et al., 2021; Peter & Zambre, 2017). Several studies show that providing information on benefits and costs significantly increases educational aspirations and enrollment, particularly among less advantaged students in Germany (Ehlert et al., 2017; Peter et al., 2021; Peter & Zambre, 2017). In contrast, evidence from Italy suggests that information provision alone may be insufficient to reduce educational inequalities (Abbiati et al., 2018; Ballarino et al., 2022). Evidence from Canada and the United States further indicates that information provision alone tends to have limited effects unless accompanied by assistance in navigating complex financial aid and application procedures (Bettinger et al., 2012; Oreopoulos & Dunn, 2013). A recent review concludes that classroom-based randomized controlled trials targeting students often yield very small or null effects, and that their effectiveness varies across national contexts (Barone & Herbaut, 2024; Herbaut & Geven, 2020).

In contrast, relatively little is known about how information provision targeted at parents or other adults shapes their educational expectations for their children. This gap is particularly important given that parental educational expectations are a key driver of educational inequality (Sewell et al., 1969). If parents remain misinformed, they may hold expectations that diverge from

their children's educational aspirations, potentially undermining or counteracting the effects of interventions directed solely at students. This dynamic may help explain the attenuated or null effects observed in some student-focused interventions (Abbiati et al., 2018; Ballarino et al., 2022; Hastings et al., 2015). One notable exception is Dinkelman and Martínez (2014), who encouraged children from low-income households to take home a DVD containing information about higher education and watch it with their parents, but found no significant effects. This null finding may reflect limitations in the intensity or directness of the treatment targeted at parents rather than a lack of parental responsiveness. Indeed, other evidence shows that offering parents information on the benefits of reading aloud increases the frequency of reading activities, suggesting that parents may be receptive to educational information (Barone et al., 2021).

Furthermore, the informational content of interventions varies substantially across studies, making it difficult to disentangle which types of information drive the observed effects. While a small number of studies have simultaneously provided information on the benefits, costs, and likelihood of success associated with higher education (Abbiati et al., 2018; Ballarino et al., 2022), most research has focused primarily on information about benefits and costs (Ehlert et al., 2017; Hastings et al., 2015; Peter et al., 2021; Peter & Zambre, 2017). Omitting information on the likelihood of success is particularly consequential, as perceived risks of alternative educational choices play a central role in shaping expectations, as suggested by relative risk aversion theory (Breen & Goldthorpe, 1997; Goldthorpe, 1996). Families from less advantaged backgrounds often hold pessimistic beliefs about their children's likelihood of success and overestimate the risk of failure, which in turn discourages university participation (Becker & Hecken, 2008). Accordingly, incorporating information about the likelihood of success—alongside information on costs and

benefits—is crucial for accurately assessing the overall impact of higher education information provision.

Disaggregating the effects of different types of information is also essential for understanding the relative role of information provision in shaping educational expectations. Several studies have examined interventions that include information related to the likelihood of success, such as dropout risks (Ballarino et al., 2022), evaluations based on educational readiness assessments (Larsen, 2023), or counseling on the probability of successfully completing higher education (Abbiati et al., 2018). However, these interventions typically compare a treatment group receiving a bundled package of information with a control group receiving no information. As a result, it remains difficult to assess the relative importance of specific information components: benefits, costs, and the likelihood of success. From a rational choice perspective, these components may operate in opposing directions. Upward revisions of perceived benefits and the likelihood of success are expected to raise educational expectations, whereas increases in perceived costs may lower them (Daniel & Watermann, 2018). Consequently, bundling these components may mask the underlying mechanisms, contributing to heterogeneous or null findings across studies.

2.3. Heterogeneity of Disadvantage and Information Effects

While classroom-based randomized controlled trials targeting students often yield very small or null effects, with some notable exceptions (Ehlert et al., 2017; Peter et al., 2021; Peter & Zambre, 2017), students' socioeconomic backgrounds are frequently measured broadly or inconsistently (Herbaut & Geven, 2020). These measures range from having parents with lower levels of education or working-class backgrounds (Abbiati et al., 2018) to living in low-educated districts (Kerr et al., 2020) or being high-performing students from low-income families (Hoxby & Turner,

2015). While such broad measures may be sufficient for student-targeted interventions, different dimensions of socioeconomic disadvantage may become particularly salient when parents are the direct target of information provision, as parents are more likely to have prior experience with higher education and to be directly responsible for managing household finances.

First, it is useful to distinguish the cultural dimension of socioeconomic disadvantage, which is primarily captured by parental educational attainment. Parental educational attainment reflects the accumulation of educational and cultural resources, including familiarity with the education system, institutional knowledge, and the ability to interpret educational information (Lareau, 2015; Lareau & Weininger, 2003). Parents with lower levels of education, by contrast, often lack this “hot knowledge.” From this perspective, such parents may particularly benefit from information provision, as it can help compensate for gaps in institutional knowledge and reduce uncertainty in educational decision-making. Thus, if information barriers are primarily cultural in nature, providing accurate information may help narrow these gaps.

Second, an economic dimension of socioeconomic disadvantage concerns parents’ income, net of their educational attainment. Unlike cultural constraints, it is less clear whether information provision can effectively reduce information barriers arising from economic disadvantage. Adults play a direct role in managing household financial resources, and for families facing tight budget constraints, financial barriers are often binding. In such cases, information provision alone may have limited effects: Even if it successfully updates inaccurate beliefs about the benefits of higher education or the likelihood of success, it cannot supply the material resources required to cover tuition costs (Dynarski & Scott-Clayton, 2013). Indeed, Ehlert et al. (2017) suggest that when financial burdens are high and support schemes are insufficient, information provision does not reduce inequalities in educational expectations.

Consequently, broad measures of socioeconomic characteristics may obscure these distinct mechanisms, masking the possibility that information provision can reduce inequalities rooted in cultural or educational knowledge gaps, while remaining ineffective in addressing those associated with economic constraints. Research on inequality of educational opportunity has similarly emphasized that cultural and economic dimensions of social origin exert distinct influences on educational outcomes (Bukodi & Goldthorpe, 2013; Byrne et al., 2018; Erikson & Jonsson, 1996; Thaning, 2021). Building on this literature, the present study examines whether and how the effects of information provision vary across cultural and economic dimensions of socioeconomic disadvantage.

3. Hypotheses

This study contributes to the literature by examining how different types of information about higher education may reduce socioeconomic disparities in parental educational expectations. Building on rational choice theory (Becker, 1964; Boudon, 1974) and theoretical discussions of relative risk aversion (Breen & Goldthorpe, 1997; Goldthorpe, 1996), parents are assumed to form educational expectations by weighing the perceived benefits, costs, and risks of educational investments. Because of limited economic and cultural resources, as well as constraints on access to information (Lareau, 2015; Slack et al., 2014), parents with lower socioeconomic status are more likely to hold uncertain or inaccurate beliefs. This implies that they may adjust their educational expectations more strongly when receiving information regarding benefits, costs, or the likelihood of success. Specifically, in line with recent work on information barriers in students' educational decision-making (Herbaut & Geven, 2020), we hypothesized the following.

Hypothesis 1: Providing information on the benefits of higher education increases educational expectations more strongly for adults with lower socioeconomic status than for those with higher socioeconomic status.

Hypothesis 2: Providing information on the costs of higher education decreases educational expectations more strongly for adults with lower socioeconomic status than for those with higher socioeconomic status.

Hypothesis 3: Providing information on the likelihood of success in higher education increases educational expectations more strongly for adults with lower socioeconomic status than for those with higher socioeconomic status.

We tested these hypotheses by operationalizing socioeconomic status using both education and income. Providing low-income parents with information about the benefits of higher education or the likelihood of success, for example, may be insufficient to overcome binding economic constraints. In contrast, parents with lower levels of education may benefit from such information insofar as it compensates for gaps in cultural knowledge. Relying on a single measure of socioeconomic status may therefore fail to capture the heterogeneous effects of information provision associated with different types of resources. Accordingly, we analyzed how the effects of information provision vary by parental education and income, both of which capture distinct cultural and economic dimensions of socioeconomic status.

4. Japanese Context

The Japanese education system is commonly characterized as comprehensive, with relatively little stratification and vocational specificity compared to many Western countries (Shavit & Müller,

1998). It comprises nine years of compulsory education, followed by three years of high school. After high school, students can enroll in two-year tertiary programs (junior colleges or vocational schools), which typically offer shorter and more vocationally oriented curricula, or in four-year university programs leading to a bachelor's degree.

Currently, the key educational divide in Japan lies in transitions beyond high school, specifically, whether students enroll in four-year universities. After completing compulsory education, the vast majority of students proceed to high school. The high school enrollment rate in 2025 was 98.6%, remaining largely stable over the past thirty years. Around 99% of students successfully graduate from high school; however, the university enrollment rate is substantially lower, at 58.6%, and access to university education outside the standard high school-to-university transition is limited (Ministry of Education, Culture, Sports, Science and Technology, 2025).

The socioeconomic returns to higher education are highly visible to individuals. Economic returns have consistently been higher for university graduates than for those with lower levels of education (Kawaguchi & Mori, 2016; Mugiya & Toyonaga, 2022). University education is widely recognized as economically and socially beneficial across all social classes in Japan (Kondo, 2002). Fujihara (2023) further shows that socioeconomic differences in Japanese high school students' and their parents' subjective perceptions of the benefits of university education are relatively small. This "visible" stratification between university education and lower-level educational institutions may contribute to a shared prior understanding of its advantages.

Economic and cultural barriers to university enrollment remain substantial in Japan. University tuition is high, reflecting the country's low level of public expenditure on education (Nakazawa, 2016). Existing scholarship programs are insufficient to fully offset these costs (Furuta, 2022), and parents with lower socioeconomic status tend to overestimate the financial burden of

university education (Furuta, 2021). Furthermore, university admission plays a particularly crucial role in shaping educational expectations, as dropout rates are low and students who gain admission are highly likely to graduate (Ministry of Education, Culture, Sports, Science and Technology, 2025). This strong emphasis on admission reflects the historical legacy of highly competitive university entrance examinations, often described as “examination hell” (Ono, 2007). Although admission routes have become more diverse and overall selectivity has declined in recent decades (Amano & Poole, 2005), this legacy may continue to influence parental perceptions of the likelihood of success.

5. Methods

5.1. Data and Experimental Design

We used data from the National Online Survey on Living and Work in Japan (SSJDA Panel), conducted by the Institute of Social Science at the University of Tokyo. The SSJDA Panel is a nationally representative survey that initially sampled individuals aged 20–39 (born between 1981 and 2000) in February 2021 and has been administered semiannually thereafter, in February and October. Respondents were selected using stratified two-stage random sampling, and data were collected through an online survey platform managed by the Institute. The baseline wave surveyed 1,482 respondents aged 20–39 in February 2021, achieving a response rate of 29.6%. In February 2022, an additional sample of 1,865 respondents from the same birth cohorts was added to replenish the panel, with a response rate of 28.3%.

In Wave 6 (October 2023), we embedded an information provision experiment in the survey questionnaire. Respondents were presented with informational texts regarding the benefits of university graduation, the financial costs of university enrollment, and the likelihood of success

in entering and completing university. Each type of information—benefits, costs, and success—was randomly assigned using a factorial design, resulting in a total of eight experimental conditions ($2 \times 2 \times 2$). This design allowed us to identify the independent effects of each type of information on respondents' educational attitudes. Table 1 summarizes the content of the information provided. The benefits information emphasized socioeconomic returns, such as lifetime earnings; the costs information detailed tuition fees and the availability of financial aid programs; and the success information highlighted the low dropout rate and the declining competitiveness of university entrance examinations in Japan.

[Table 1 about here]

After presenting the informational texts, we asked respondents about their educational expectations for their first child using the question: “Do you want your first child to attend university?” Responses were recorded on a 7-point Likert scale ranging from 1 (“Not at all”) to 7 (“Very much”). Respondents with children were instructed to report their expectations for their first child, while those without children were asked to imagine their expectations if they were to have a child.¹ To assess whether the effects of information provision persisted over time, we asked the same question again in Wave 7 (February 2024), approximately four months after the intervention, without providing any informational texts.

The procedure for constructing the analytical sample was as follows. The number of respondents who remained in the panel was 1,528 in Wave 6 (October 2023) and 1,602 in Wave 7 (February 2024). To ensure comparability across waves, we restricted the analytical sample to respondents who participated in both waves, yielding 1,397 respondents. After excluding cases

with missing values on key variables, the final analytical sample consisted of 1,246 respondents. To address potential sample selection bias due to panel attrition, we estimated probit models predicting the likelihood of remaining in the panel and included the resulting inverse Mills ratio as a control variable in all regression models (see details in Appendix A).

5.2. Variables

The dependent variable is respondents' educational expectations for their children, measured using the question, "Do you want your first child to attend university?" as described above, with responses ranging from 1 ("Not at all") to 7 ("Very much"). The key independent variables are indicators of information provision. Specifically, we created binary dummy variables for whether respondents received information on the benefits of university graduation, the costs of university enrollment, and the likelihood of success in entering and completing university.

We measured respondents' socioeconomic status using their educational attainment and household income. Educational attainment was initially recorded as the highest level of education completed and classified into middle school (ISCED 2), high school (ISCED 3), junior college or vocational training college (ISCED 4 or 5), university (ISCED 6), and graduate school (ISCED 7 or 8). Given the relatively small sample size, we operationalized educational attainment as years of education, assigning values of 9, 12, 14, 16, and 18 to each category. Household income was measured by a question asking respondents to report their annual household income for the previous year using 29 income intervals. We recoded this variable into a continuous measure by assigning the midpoint of each category and then transformed the resulting values using the natural logarithm.

We controlled for respondents' demographic characteristics, including age at the time of the survey (and its squared term), gender, marital status, and child status. Marital status was classified into three dummy variables: unmarried, married, and divorced or widowed. We did not include cohabitation due to its very low prevalence in Japan (Raymo et al., 2015). Child status was categorized into four groups: no children, eldest child aged 0–5 years, eldest child aged 6–15 years, and eldest child aged 16 years or older. Descriptive statistics are presented in Table 2.

[Table 2 about here]

5.3. Analytical Approach

We estimated linear regression models predicting respondents' educational expectations for their children, separately for the October 2023 wave (when educational information was provided) and the February 2024 wave (four months after the experiment). The models are specified as follows:

$$Y_i^{Oct23} = \alpha^{Oct23} + \beta_1^{Oct23} Benefit_i^{Oct23} + \beta_2^{Oct23} Cost_i^{Oct23} + \beta_3^{Oct23} Success_i^{Oct23} + \mathbf{X}_i^{Oct23} \boldsymbol{\gamma} + e_i^{Oct23}$$

and

$$Y_i^{Feb24} = \alpha^{Feb24} + \beta_1^{Feb24} Benefit_i^{Oct23} + \beta_2^{Feb24} Cost_i^{Oct23} + \beta_3^{Feb24} Success_i^{Oct23} + \mathbf{X}_i^{Feb24} \boldsymbol{\gamma} + e_i^{Feb24}$$

where $Benefit_i^{Oct23}$ is a dummy variable indicating whether respondents received information on the benefits of university graduation, $Cost_i^{Oct23}$ indicates provision of information on the costs of university enrollment, and $Success_i^{Oct23}$ indicates provision of information on the likelihood of success in entering and completing university. \mathbf{X}_i^{Oct23} and \mathbf{X}_i^{Feb24} denote vectors of control variables measured in each period, and e_i^{Oct23} and e_i^{Feb24} are the corresponding error terms.

By including interaction terms between individuals' educational attainment and household income (included in \mathbf{X}_i^{Oct23} and \mathbf{X}_i^{Feb24}) and the information provision dummy variables, we

examined how the effects of each type of information provision vary by socioeconomic characteristics. To interpret these interactions, we calculated average marginal effects to assess the extent to which the effects of information provision differ across socioeconomic groups (Mize, 2019).

6. Results

6.1. Effects of Three Types of Information

Table 3 presents the regression results predicting educational expectations for children. As shown in Model 1, individuals from higher socioeconomic backgrounds have higher educational expectations. Each additional year of parental education is associated with an increase of approximately 0.218 points in October 2023 (0.149 SD; see Table B1 in the Supplementary Material) and 0.274 points in February 2024 (0.187 SD; see Table B1). Similarly, a 100% increase in household income is associated with an increase of approximately 0.181 to 0.300 points in educational expectations.

[Table 3 about here]

To illustrate the magnitude of the socioeconomic gradient in educational expectations, Figure 1 shows the average levels of expectations by parental education and household income. In both periods, the most highly educated individuals (18 years of education, i.e., graduate school graduates) have educational expectations roughly two points higher than those of the least educated group (9 years of education, i.e., junior high school graduates). Individuals with higher household income also tend to report higher educational expectations, although the income gradient is smaller

than the educational gradient. These findings align with previous research showing that adults' educational expectations for their children are positively associated with their socioeconomic backgrounds (Kim et al., 2013; Sewell et al., 1969).

[Figure 1 about here]

Does information provision significantly affect educational expectations? Among the three types of information, only information about the likelihood of success is significantly associated with an immediate increase in educational expectations. Exposure to success information leads to a 0.165-point increase in expectations (0.112 SD; see Table B1). Although the coefficient is no longer statistically significant four months later ($p = .055$), its magnitude remains substantively similar, suggesting that the effect of success information persists for at least a moderate period. In contrast, information about benefits or costs does not significantly affect educational expectations. These results indicate that the effects of information provision are not uniform: Information about the likelihood of success meaningfully influences adults' educational expectations, whereas information about benefits and costs does not.

6.2. Who Benefits Most from Information Provision on Higher Education

We then examined interactions between information provision and respondents' socioeconomic status; the results are presented in Model 2 of Table 3. The findings indicate that less-educated individuals respond more positively to information about the likelihood of success. By contrast, no significant interactions are observed for information about benefits or costs. The effect of success information is significantly weaker among more highly educated individuals. Specifically,

individuals with one fewer year of education increase their educational expectations by approximately 0.1 points when exposed to success information. This effect remains statistically significant in the later period.

Figure 2 shows the average marginal effects of each type of information by respondents' socioeconomic status. The results for the educational gradient (panel (a)) indicate that information about the likelihood of success significantly increases educational expectations among less-educated individuals. Specifically, individuals with less than a bachelor's degree (i.e., 14 or fewer years of education) raise their educational expectations in response to success information, whereas no significant effects are observed for university or graduate school graduates (i.e., 16 or more years of education). Combined with the evidence that less-educated individuals are less likely to hold high educational expectations for their children (see Figure 1), these findings suggest that providing success information may help reduce the educational gradient in adults' expectations. Moreover, the magnitude of the effect remains largely stable immediately after exposure (October 2023) and four months later (February 2024).

[Figure 2 about here]

In contrast, the interaction between household income and success information is not statistically significant. Panel (b) of Figure 2 confirms this result, showing that responses to the information do not differ across income levels in either period. These findings suggest that parents facing tight economic constraints are not necessarily more responsive to information about tuition costs, financial aid programs, or the likelihood of success. This issue is discussed in greater detail in the Discussion and Conclusion section.

In sum, these results provide partial support for Hypothesis 3, which posits that providing information about the likelihood of success increases educational expectations more substantially among individuals with lower educational attainment. By contrast, neither Hypothesis 1 nor Hypothesis 2 is supported: Information on the benefits or costs of university education is not significantly associated with educational expectations, and these associations do not vary by respondents' education or household income.

7. Discussion and Conclusion

Recent research on educational stratification has increasingly highlighted the role of information barriers among students (Herbaut & Geven, 2020). However, relatively little attention has focused on addressing such barriers among parents. Furthermore, prior experimental interventions have rarely disentangled the effects of different types of information: benefits, costs, and the likelihood of success in higher education (e.g., Abbiati et al., 2018; Ballarino et al., 2022). Using a survey experiment that randomly assigned each type of information, this paper examines the heterogeneous effects of information provision on socioeconomic disparities in adults' educational expectations for their children.

We found that, among the three types of information, the likelihood of success in higher education plays a distinctive and equalizing role. While adults' educational expectations for their children are positively associated with their socioeconomic backgrounds, success-related information significantly increases expectations among individuals with lower levels of education. In contrast, the effect of such information does not vary across household income levels. This pattern suggests that information provision can alleviate uncertainty rooted in cultural disadvantages but is far less effective in addressing binding economic constraints. Because parents

with lower levels of education often lack “hot knowledge” about higher education (Slack et al., 2014), information provision can help compensate for these deficits and reduce uncertainty in educational decision-making; however, it remains insufficient to overcome material constraints associated with economic disadvantage.

The results show that providing information about the benefits or costs of higher education does not change parental educational expectations, regardless of parents’ education or income levels, which contrasts with findings from previous studies in Europe (Nakazawa, 2016). This suggests that the effectiveness of information provision is embedded in broader social and institutional contexts (Herbaut & Geven, 2020). In contexts such as Japan—where demand for higher education is high and its socioeconomic returns are widely recognized—information about benefits is unlikely to alter parental expectations. Moreover, the substantial financial burden of higher education (Nakazawa, 2016) is unlikely to shift expectations, even when parents’ beliefs about costs are updated.

Taken together, our findings indicate that the effectiveness of information provision depends on both the type of information and the dimension of socioeconomic background. Because perceived risk is central to relative risk aversion (Breen & Goldthorpe, 1997), information about the likelihood of success is particularly effective for parents without a university degree, who often lack cultural or institutional knowledge about higher education. In this sense, earlier studies focusing on information about benefits or costs (e.g., Ehlert et al., 2017; Peter & Zambre, 2017) may not fully capture the complexity of information barriers. Our results underscore that developing more effective interventions to reduce educational inequality requires understanding how specific forms of socioeconomic disadvantage operate and ensuring that the design and targeting of information provision align with these mechanisms.

Directing attention to parents reveals an additional avenue for intervention, as it enables information provision at an earlier stage of the educational decision-making process. Many studies have emphasized the importance of such early interventions (e.g., Dinkelman & Martínez, 2014) in allowing parents to form and revise long-term educational plans for their children. As our findings show, even brief textual explanations can have a significant equalizing effect on educational expectations, and this effect persists for at least four months. Building on this evidence, more intensive early-stage interventions—such as guidance, counseling, or lectures for parents—may contribute more substantially to reducing socioeconomic disparities in parental educational expectations and, ultimately, the intergenerational reproduction of educational inequality.

This study has several limitations. First, while we analyzed the effects of information provision on parents' (or potential parents') educational expectations, it remains unclear whether these effects translate into children's actual enrollment decisions or educational attainment. Future research should follow children over the long term to examine whether changes in parental expectations have downstream consequences for educational trajectories. Second, this study may underestimate the effects of information provision regarding benefits or costs. Because the intervention consisted of brief textual explanations, more intensive forms of information provision may yield more detectable effects, potentially generating stronger and more persistent impacts on educational expectations and, ultimately, on enrollment decisions.

Despite these limitations, this study advances research on educational inequality by showing that the effects of information provision depend critically on both the type of information provided and the dimension of social disadvantage considered. In doing so, it highlights the potential value of early, parent-focused interventions. Although the effectiveness of information provision varies depending on where, when, how, and to whom it is delivered, our findings

underscore the need for greater theoretical precision in identifying the mechanisms through which informational interventions can mitigate educational inequality.

Research Ethics Statement

The authors declare no conflicts of interest. This paper is based on findings from a collaborative research project approved in fiscal year 2023 by the Institute of Social Science at the University of Tokyo and was deemed exempt from ethics committee review. In conducting this research using the National Online Survey on Living and Work in Japan (SSJDA Panel), we adhered strictly to all relevant guidelines and agreements regarding the use of confidential data. Participants provided informed consent prior to completing the survey, and all data were anonymized before analysis. The SSJDA Panel is publicly available to researchers upon application and is subject to data use agreements.

Note

1. We note that not all respondents will ultimately have children, given the high prevalence of lifetime childlessness in Japan (Mogi et al., 2021). Nevertheless, this design allows us to assess the impact of an information intervention at an early stage—among current and prospective parents—on educational expectations for their children.

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Tables

Table 1. Explanation of Information Provision on Higher Education

Benefits of university graduation

The average lifetime earnings of individuals who remain employed as full-time regular workers after completing their education are approximately ¥210 million for male high school graduates and ¥150 million for female high school graduates. In contrast, male university graduates earn about ¥260 million, while female university graduates earn around ¥210 million. Compared with the past, employment opportunities for high school graduates have become increasingly limited. Recent studies further indicate that even graduates from universities with relatively low selectivity enjoy substantial advantages in both employment prospects and salary levels over high school graduates.

Costs of university enrollment

Annual tuition fees for university education vary by institutional type. Public universities charge approximately ¥550,000 per year, whereas private universities cost around ¥830,000 for non-STEM fields and ¥1,200,000 for STEM fields. Tuition fees have risen compared with the past. However, about half of all university students receive scholarships or student loans, and financial aid programs have expanded, including full tuition waivers for students from low-income families.

Likelihood of success of university enrollment and graduation

In the past, university entrance examinations were extremely competitive, often described as “examination hell.” In recent years, a variety of admission pathways beyond written exams have been introduced, allowing students to gain university entry even if they struggle academically. Moreover, an increasing number of universities now offer academic support services, and the proportion of students who drop out after enrollment is very low.

Note. The original texts are written in Japanese.

Table 2. Descriptive Statistics of Variables Used in the Analysis

	<i>N</i>	Mean	SD
Educational expectation (Oct 2023)	1,396	5.332	1.440
Educational expectation (Feb 2024)	1,395	5.350	1.457
Years of education	1,396	14.729	1.959
Household income (logged)	1,341	6.338	0.738
Provision of information on benefits			
Not provided	1,397	0.512	
Provided	1,397	0.488	
Provision of information on costs			
Not provided	1,397	0.502	
Provided	1,397	0.498	
Provision of information on success			
Not provided	1,397	0.507	
Provided	1,397	0.493	
Age	1,397	33.025	5.859
Gender			
Men	1,389	0.399	
Women	1,389	0.601	
Marital status			
Single	1,395	0.453	
Married	1,395	0.505	
Divorced or widowed	1,395	0.042	
Child status			
No children	1,384	0.574	
Children aged 0–5	1,384	0.173	
Children aged 6–15	1,384	0.212	
Children aged 16 and older	1,384	0.041	
Inverse Mills ratio	1,301	0.790	0.134

Note. The inverse Mills ratio was obtained from a probit model predicting participation in Waves 6 and 7 (see Appendix A for details).

Table 3. Impact of Information Provision on Educational Expectations

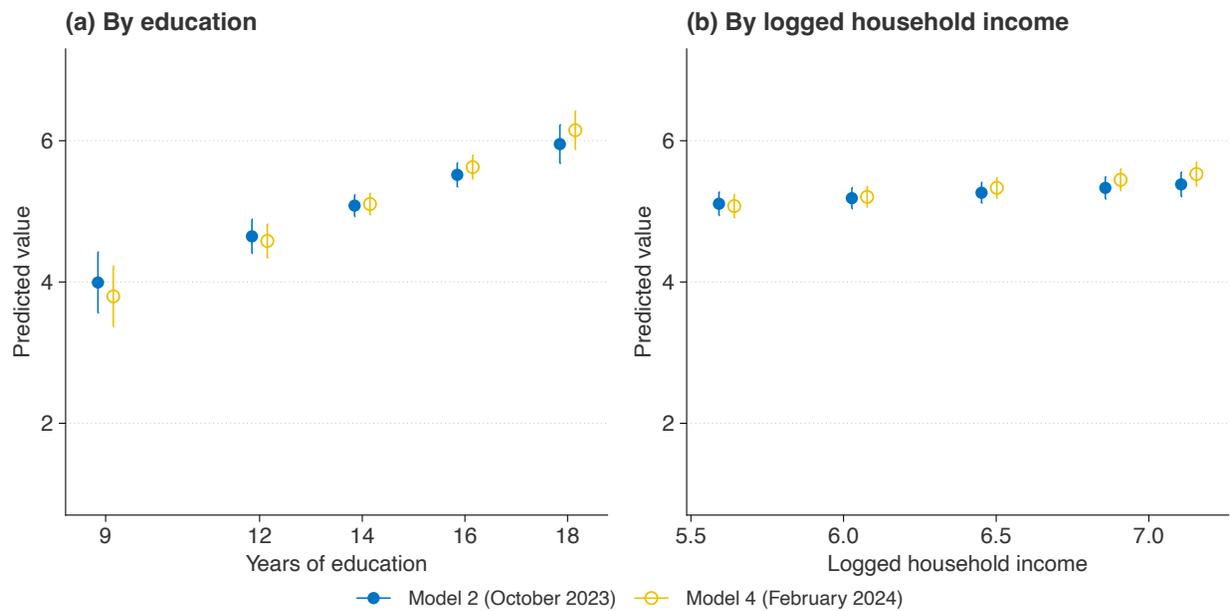
	Model 1		Model 2	
	Oct 2023	Feb 2024	Oct 2023	Feb 2024
Years of education	0.218*** (0.036)	0.261*** (0.036)	0.274*** (0.049)	0.312*** (0.049)
Household income (logged)	0.181** (0.058)	0.300*** (0.058)	0.199 (0.103)	0.287** (0.102)
Benefit information	-0.052 (0.077)	-0.039 (0.077)	0.352 (0.807)	-0.322 (0.798)
Cost information	0.088 (0.077)	0.027 (0.077)	0.064 (0.813)	-0.363 (0.805)
Success information	0.165* (0.078)	0.148 (0.077)	1.670* (0.812)	2.056* (0.803)
Interaction terms with years of education				
Education × Benefit information			-0.013 (0.040)	0.031 (0.040)
Education × Cost information			0.001 (0.041)	0.011 (0.040)
Education × Success information			-0.094* (0.041)	-0.131** (0.040)
Interaction terms with household income				
Household income × Benefit information			-0.033 (0.108)	-0.026 (0.107)
Household income × Cost information			0.001 (0.108)	0.035 (0.107)
Household income × Success information			-0.019 (0.108)	0.002 (0.107)
Age	-0.171 (0.111)	-0.124 (0.110)	-0.166 (0.111)	-0.122 (0.110)
Age squared	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)
Women (ref. Men)	0.064 (0.163)	0.484** (0.162)	0.066 (0.164)	0.493** (0.162)
Marital status (ref. Married)				
Single	0.016 (0.122)	-0.103 (0.121)	0.021 (0.122)	-0.098 (0.120)
Divorced or widowed	0.314 (0.204)	0.228 (0.202)	0.329 (0.204)	0.245 (0.202)
Child status (ref. No children)				
Children aged 0–5	0.241	0.180	0.249	0.189

	(0.136)	(0.135)	(0.137)	(0.135)
Children aged 6–15	0.182	0.127	0.193	0.136
	(0.139)	(0.138)	(0.139)	(0.138)
Children aged 16 and older	−0.710**	−0.444	−0.677**	−0.405
	(0.244)	(0.242)	(0.244)	(0.242)
Inverse Mills ratio	−0.346	1.282	−0.329	1.336
	(0.922)	(0.915)	(0.925)	(0.915)
Intercept	4.099	0.178	3.027	−0.611
	(3.004)	(2.980)	(3.066)	(3.036)
<hr/>				
<i>N</i>	1246	1246	1246	1246
<i>R</i> ²	0.144	0.153	0.148	0.161
<hr/>				

Notes. *** $p < .001$, ** $p < .01$, * $p < .05$ (two-tailed tests). Standard errors are in parentheses.

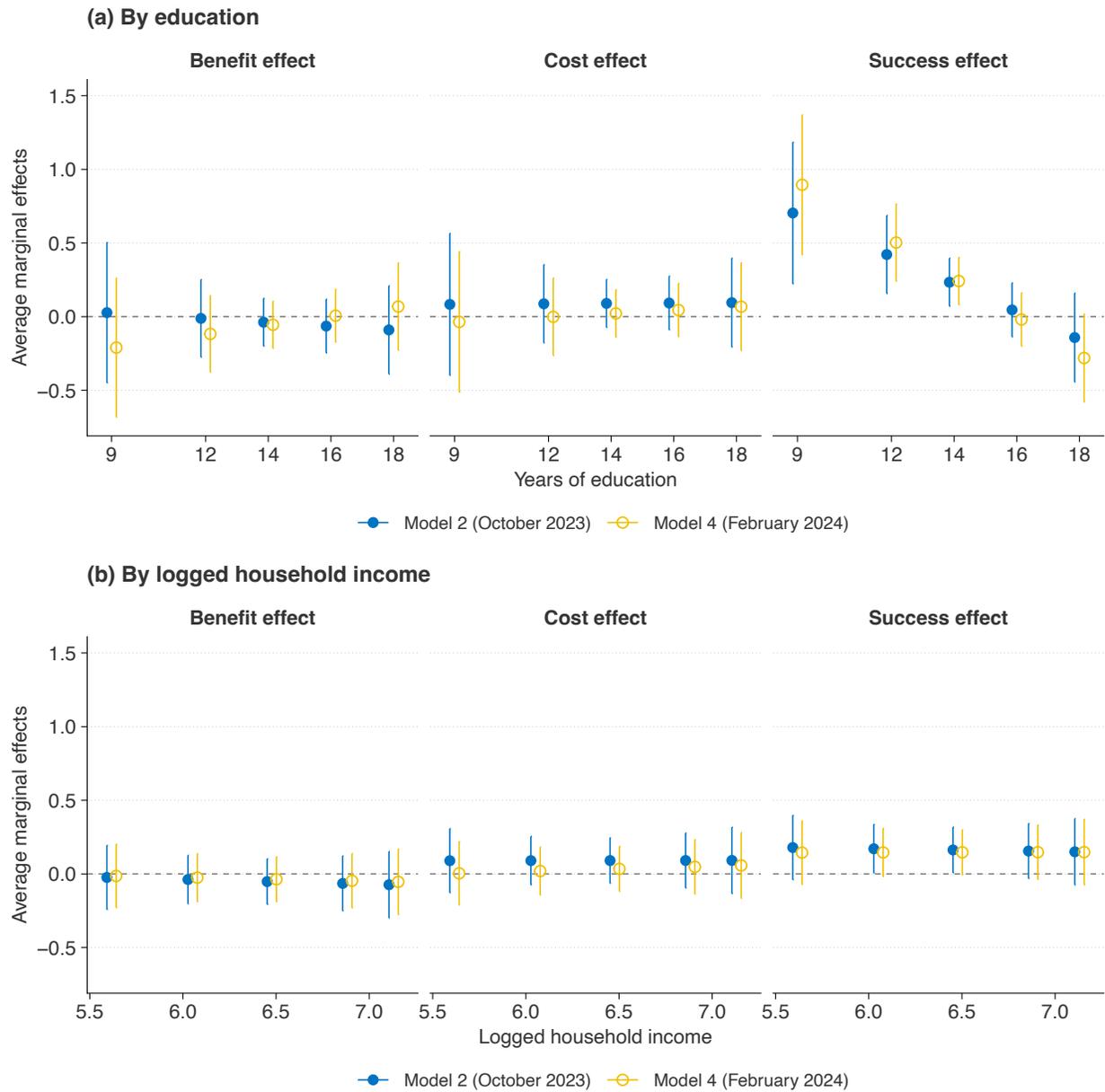
Figures

Figure 1. Predicted Educational Expectations by Parental Education and Income



Note. Predicted values and 95% confidence intervals are shown. Estimates are based on Model 1 in Table 3, holding the values of cost, benefit, and success information at zero, which represents baseline educational expectations in the absence of any information provision. Household income is set at the 10th, 25th, 50th, 75th, and 90th percentiles. Results using the standardized dependent variable are shown in Figure B1 in the Supplementary Material.

Figure 2. Average Marginal Effects of Information Provision by Parental Education and Income



Note. Average marginal effects and 95% confidence intervals are shown, derived from Model 2 in Table 3. Household income is held at the 10th, 25th, 50th, 75th, and 90th percentiles. Results using the standardized dependent variable are shown in Figure B2 in the Supplementary Material.

Appendix A: Adjustment for Panel Attrition Using the Inverse Mills Ratio

We used data from the National Online Survey on Living and Work in Japan (SSJDA Panel), a panel survey that randomly sampled individuals aged 20 to 40 across Japan in February 2021 and February 2022. In February 2021, 1,482 respondents were obtained from a planned sample of 5,000 individuals (response rate: 29.6%). In February 2022, an additional sample of 6,600 individuals was drawn, yielding responses from 1,865 individuals (response rate: 28.3%). In total, the panel survey involved 3,347 respondents and is administered every six months. The experimental module used in this study was incorporated into Wave 6 (October 2023) and Wave 7 (February 2024), raising the possibility of bias due to panel attrition.

Table A1 presents descriptive statistics for the variables in the baseline sample. As shown in the table, only about 41% of respondents participated in both Waves 6 and 7, indicating a relatively low follow-up rate. However, a low response rate does not necessarily imply sample bias, and previous research has demonstrated that this survey produces a high-quality, population-representative sample compared to other large-scale surveys in Japan (Fujihara et al., 2024). Nevertheless, addressing potential bias arising from panel attrition remains important. To account for this, we controlled for the inverse Mills ratio predicted from a probit model estimating the likelihood of responding. The model included gender; age and age squared, measured in February 2021 and February 2022; educational attainment; and household income, marital status, and housing tenure, all measured in February 2021 and February 2022.

Table A1. Descriptive Statistics for the Baseline Sample

	N	Mean	SD
Response at Waves 6 and 7			
Did not respond	3,347	0.583	

Responded in both Waves 6 and 7	3,347	0.417	
Gender			
Male	3,311	0.445	
Female	3,311	0.555	
Age	3,347	30.026	5.859
Educational Attainment			
Junior high school (ISCED 2)	3,096	0.038	
High school (ISCED 3)	3,096	0.223	
Vocational school (ISCED 4)	3,096	0.128	
Junior college (ISCED 5)	3,096	0.077	
University (ISCED 6)	3,096	0.486	
Graduate school (ISCED 7–8)	3,096	0.049	
Household income (logged)	2,682	6.289	0.744
Marital status			
Single	2,911	0.546	
Married	2,911	0.423	
Divorced or widowed	2,911	0.033	
Housing tenure			
Homeowner	3,289	0.547	
Renter/company housing, etc.	3,289	0.453	

Table A2 presents the results of probit regression analyses predicting which respondents continued to participate in both Waves 6 and 7. The results indicate that individuals with higher educational attainment and women were more likely to remain in the panel. Specifically, older respondents and those with vocational school, junior college, university, or graduate school degrees (compared to high school graduates), as well as women (compared to men), were more likely to continue participating. To address potential selection bias, this paper includes an inverse Mills ratio, derived from the estimates reported in Table A2, as a control variable.

Table A2. Probit Regression Results Predicting Participation in Waves 6 and 7

	Model 1
Gender (ref. Male)	
Female	0.224*** (0.051)
Age	0.096* (0.050)
Age squared	-0.001 (0.001)
Educational Attainment (ref. High school)	
Junior high school (ISCED 2)	-0.013 (0.142)
Vocational school (ISCED 4)	0.196** (0.087)
Junior college (ISCED 5)	0.294*** (0.107)
University (ISCED 6)	0.264*** (0.065)
Graduate school (ISCED 7–8)	0.286** (0.122)
Household income (logged)	0.043 (0.036)
Marital status (ref. Single)	
Married	0.041 (0.058)
Divorced or widowed	0.126 (0.148)
Housing tenure (ref. Renter/company housing, etc.)	
Homeowner	0.054 (0.051)
Intercept	-2.406*** (0.761)

Observations	2640
Pseudo R^2	0.021

Note. *** $p < .001$, ** $p < .01$, * $p < .05$ (two-tailed tests). Standard errors are in parentheses.

Reference for Appendix A

Fujihara, S., Ishida, K., & Taniguchi, S. (2024). Potential for the push-to-web survey. *Advances in Social Research*, 33, 28–37.

Appendix B: Additional Analyses Using Standardized Educational Expectations

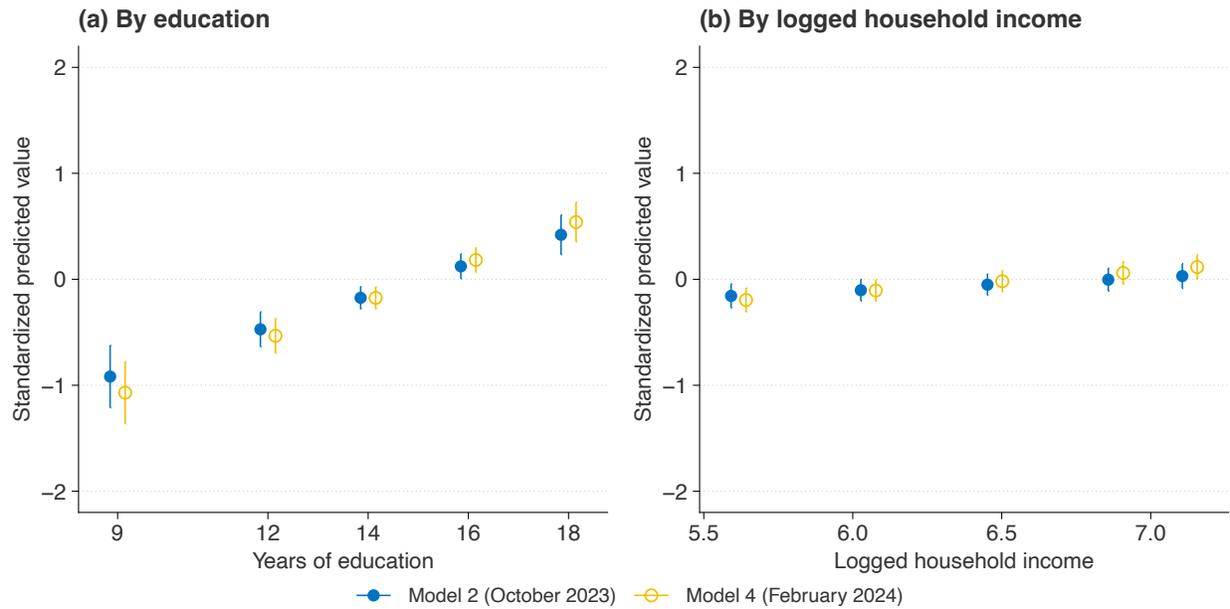
Table B1. Impact of Information Provision on Standardized Educational Expectations

	Model 1		Model 2	
	Oct 2023	Feb 2024	Oct 2023	Feb 2024
Years of education	0.149*** (0.025)	0.179*** (0.025)	0.187*** (0.034)	0.214*** (0.033)
Household income (logged)	0.124** (0.040)	0.205*** (0.040)	0.136 (0.070)	0.196** (0.070)
Benefit information	-0.035 (0.053)	-0.026 (0.053)	0.241 (0.551)	-0.221 (0.547)
Cost information	0.060 (0.053)	0.019 (0.053)	0.043 (0.555)	-0.249 (0.551)
Success information	0.112* (0.053)	0.101 (0.053)	1.140* (0.554)	1.407* (0.550)
Interaction terms with years of education				
Education × Benefit information			-0.009 (0.027)	0.021 (0.027)
Education × Cost information			0.001 (0.028)	0.008 (0.028)
Education × Success information			-0.064* (0.028)	-0.089** (0.028)
Interaction terms with household income				
Household income × Benefit information			-0.022 (0.073)	-0.018 (0.073)
Household income × Cost information			0.001 (0.073)	0.024 (0.073)
Household income × Success information			-0.013 (0.073)	0.002 (0.073)

Age	-0.117 (0.076)	-0.085 (0.075)	-0.113 (0.076)	-0.083 (0.075)
Age squared	0.002 (0.001)	0.001 (0.001)	0.002 (0.001)	0.001 (0.001)
Women (ref. Men)	0.044 (0.112)	0.331** (0.111)	0.045 (0.112)	0.337** (0.111)
Marital status (ref. Married)				
Single	0.011 (0.083)	-0.071 (0.083)	0.014 (0.083)	-0.067 (0.082)
Divorced or widowed	0.215 (0.139)	0.156 (0.138)	0.225 (0.139)	0.168 (0.138)
Child status (ref. No children)				
Children aged 0–5	0.165 (0.093)	0.123 (0.093)	0.170 (0.093)	0.129 (0.093)
Children aged 6–15	0.124 (0.095)	0.087 (0.094)	0.131 (0.095)	0.093 (0.094)
Children aged 16 and older	-0.485** (0.166)	-0.304 (0.165)	-0.462** (0.167)	-0.277 (0.166)
Inverse Mills ratio	-0.237 (0.630)	0.878 (0.626)	-0.225 (0.631)	0.915 (0.627)
Intercept	-0.845 (2.051)	-3.537 (2.040)	-1.578 (2.094)	-4.087* (2.078)
<i>N</i>	1246	1246	1246	1246
<i>R</i> ²	0.144	0.153	0.148	0.161

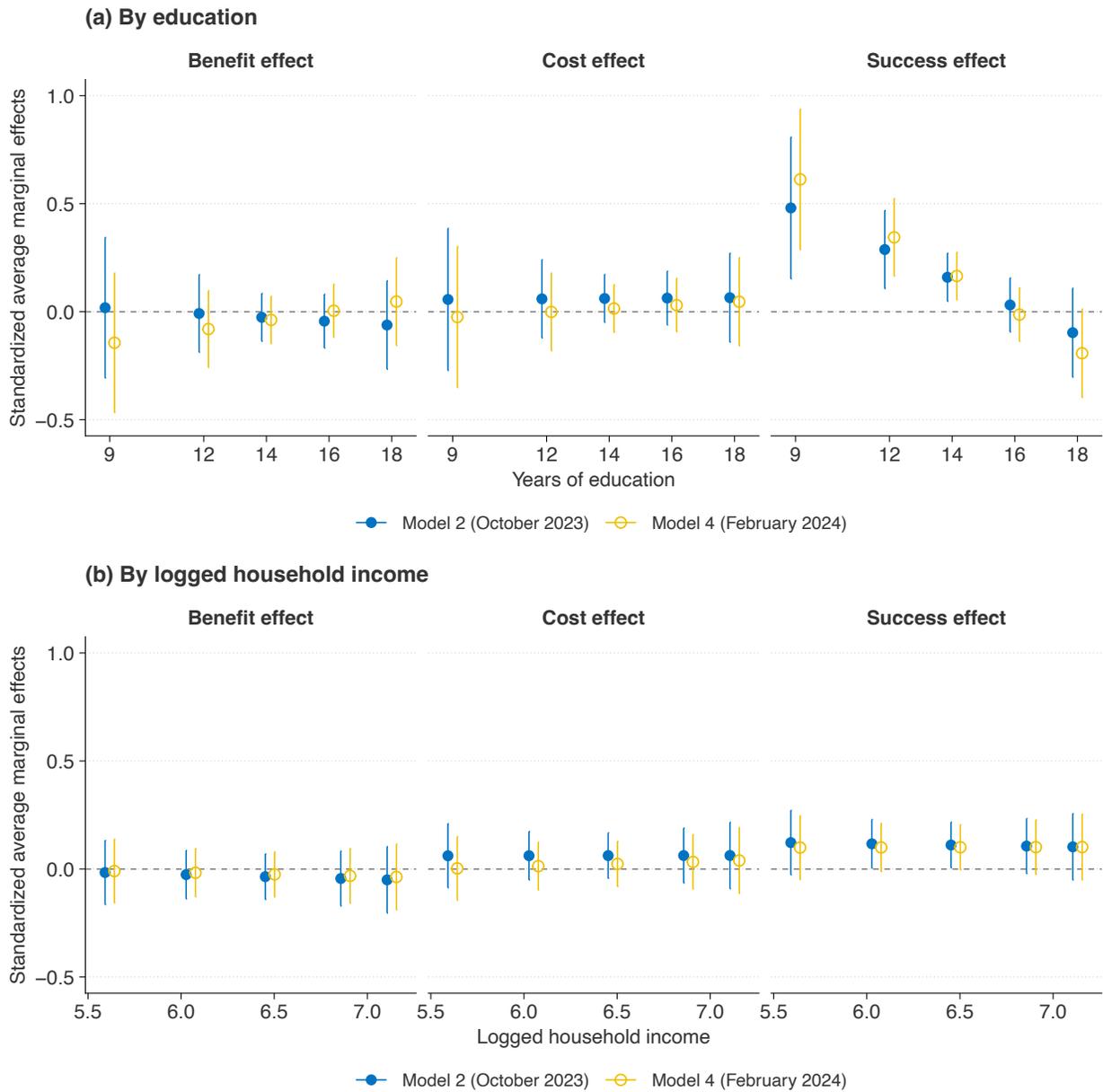
Note. *** $p < .001$, ** $p < .01$, * $p < .05$ (two-tailed tests). Standard errors are in parentheses.

Figure B1. Predicted Values of Educational Expectation by Education and Income



Note. Predicted values and 95% confidence intervals are reported. These are obtained from Model 1 in Table B1, holding the values of cost, benefit, and success information at zero, which represents baseline educational expectations in the absence of any information provision. Household income is held at the 10th, 25th, 50th, 75th, and 90th percentiles. Results using the standardized dependent variable are shown in Figure B1 in the Supplementary Material.

Figure B2. Average Marginal Effects of Information Provision by Education and Income



Note. Average marginal effects and 95% confidence intervals are shown, derived from Model 2 in Table B1. Household income is held at the 10th, 25th, 50th, 75th, and 90th percentiles.