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The Value of a Degree

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The Value of a Degree

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Abstract

The global rise in tertiary educational attainment has been attributed to various factors, most commonly higher expected earnings, improved protection against technological change, and prospects for upward social mobility. In a large-scale discrete-choice experiment with nearly 6,000 adults, we show that when these three factors are held constant, individuals show on average no additional intrinsic willingness to pay (WTP) for a university degree. Individuals are willing to forgo an amount of income roughly equivalent to the total cost of obtaining a university degree—including opportunity and direct costs—when trading off such a degree against basic vocational education. However, we observe significant heterogeneity depending on respondents' own educational attainment, gender and type of tertiary education: individuals with tertiary qualifications and men assign a higher value to higher education and the WTP is higher for university of applied degrees compared to academic university degrees.

Keywords: University, discrete choice experiment, willingness to pay, Switzerland
JEL classification: I21, I23, I26

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Introduction

For decades, the number of individuals attaining higher education qualifications—commonly referred to as tertiary education in many countries—has been steadily increasing. This expansion, often termed the massification of higher education, is driven by two interrelated forces. On the one hand, it reflects changes in labor market demand, where employers increasingly require higher and thus longer educational qualifications. On the other hand, it mirrors broader societal changes, including a growing desire for higher education as a marker of prestige and social status.

While the economic motivations for pursuing higher education—such as increased earnings and improved job security—are well documented and relatively straightforward to quantify, the intrinsic and social value individuals attach to educational qualifications is much harder to measure. Preferences for higher education typically conflate these economic returns with non-monetary factors, making it difficult to isolate the symbolic or intrinsic value of a degree.

This paper seeks to disentangle the key components of individuals' motivations for pursuing tertiary education using data from a large-scale survey experiment. The original design of this discrete-choice experiment (DCE) was intended to estimate individuals' willingness to pay for protection against the risk of job loss due to automation (Cattaneo et al., 2025). However, the data also allows us to estimate the willingness to pay (WTP) for higher education qualifications, as educational attainment was one of the attributes systematically varied in the choice sets.

In addition to educational attainment, the experiment included two further attributes: first, annual earnings at age 40—which are used for calculating WTP—and second, hierarchical position in the job. Together, these three attributes—earnings, risk of automation, and hierarchical position—capture the primary drivers commonly cited in the literature for the continuing expansion of tertiary education and its growing relevance in the labor market. These include (1) the wage premium associated with additional years of schooling (reflecting the

continued high returns to education), (2) the protective effect of education against technological change (as argued by Autor et al., 2020), based on the observation that technological progress has historically complemented higher education through increased demand for non-routine cognitive skills (Gschwendt, 2022), and (3) the social status conferred by educational attainment. This last factor may arise directly from the degree itself or indirectly through improved access to leadership and management positions.[1]

The central innovation of this study lies in the experimental design's ability to control for these three major perceived benefits of higher education. This allows us, for the first time, to estimate whether individuals assign an intrinsic value to the educational qualification itself—beyond the financial and non-financial returns explicitly included in the experiment. Moreover, the experiment offers a test of whether participants behave in line with the predictions of human capital theory: namely, that when two educational options yield identical benefits, in broad terms, the one with lower direct and opportunity costs should be preferred.

Data and experimental design

The experiment was conducted with a representative sample of 5′952 adults in Switzerland, aged between 25 and 60 years. Participants were recruited from a panel of approximately 120,000 individuals maintained by a professional survey institute, yielding an exceptionally high response rate of 91% (for details, see Cattaneo et al., 2025). Each respondent was presented

[1] A framing experiment showed that high management positions are a good proxy for social status. In the experiment, participants had to assess whether academic tertiary qualifications had a higher social status than vocational training at upper secondary level. When randomly selected participants were given the factually correct information that 88% of people with an academic degree would never advance to a top management position, the social status advantage of academic degrees over lower educational qualifications was halved (Cattaneo & Wolter 2021).

with seven distinct choice sets, in which they were asked to indicate their preferred option between two hypothetical scenarios.

The scenarios were framed around a hypothetical child aged 40, i.e., at a mid-career stage. Each profile varied along four key attributes: (1) gross annual earnings, (2) highest educational attainment, (3) the probability that the occupation would be automated within the next ten years, and (4) the hierarchical position within the firm or organization. Additionally, each respondent was randomly assigned the gender of the hypothetical child—either a daughter or a son.

In total, the experiment yielded over 83,000 observations of evaluated hypothetical profiles, enabling the estimation of average willingness to pay (WTP) values for each of the three non-monetary attributes (see Table 1 in the Appendix for details).

The educational attainment variable comprised three distinct qualification levels. The first was an upper-secondary vocational education and training (VET) diploma, typically acquired through a 3- or 4-year apprenticeship. The second and third options reflected tertiary-level qualifications: First, an academic university degree, generally requiring five to six years of study culminating in a Master's degree; and second, a degree from a university of applied sciences (UAS), usually consisting of a three-year Bachelor's program. UAS students in Switzerland typically enter higher education with a vocational background, having completed an apprenticeship, whereas students pursuing academic university degrees most often enter with a general upper-secondary school-leaving certificate (Baccalaureate).

Results and heterogeneity in WTP

As expected, the estimated willingness to pay (WTP) for a reduced probability of job automation and for a higher hierarchical position is positive and statistically significant (see Table 1 in the Appendix). Surprisingly, however, the WTP for a university degree—relative to an upper-secondary vocational qualification—is negative—in other words a willingness to forgo earnings in order not to attain the higher education level. Similarly, the coefficient for a

tertiary degree from a university of applied sciences (UAS) is also negative, though not statistically different from zero.

To explore the observed heterogeneity in WTP for tertiary education, we use individual-level WTP values as the dependent variable in a regression model (see Table 1).[2] The results reveal only two respondent characteristics that significantly explain differences in preferences for higher education. First—and unsurprisingly—the respondent's own highest educational attainment: individuals with a tertiary qualification themselves exhibit a lower willingness to forgo earnings for tertiary degrees compared to those with lower qualifications (e.g. Abramitzky et al. 2024). Second, and somewhat striking given the current majority of women in higher education, male respondents also show a significantly willingness to forgo earnings, at least with respect to academic university degrees.

Contrary to expectations, language region does not significantly influence WTP, even though the signs of the coefficients suggest that respondents in German-speaking Switzerland have a lower WTP compared to those in French- or Italian-speaking regions, where tertiary attainment rates are higher. The small regional differences, despite large regional disparities in preferences for tertiary education (see Cattaneo & Wolter, 2022), suggest that WTP is shaped less by cultural or linguistic context and more by differing expectations regarding the labor market outcomes and social status effects of educational qualifications.

[2] We also examined different forms of interaction in the explanatory variables (gender and language regions) but did not find any qualitatively different results.

Table 1

Individual determinants of WTP for tertiary degrees compared to an apprenticeship

	(1)	(2)
	University degree	UAS degree
Male	1533.2**	172.9
	(538.5)	(263.3)
35–49	250.6	260.3
	(701.3)	(338.8)
50+	554.0	112.5
	(767.0)	(367.2)
French region	1144.7	474.2
	(616.9)	(300.4)
Italian region	1406.6	131.6
	(784.6)	(366.7)
Below secondary degree	-406.5	752.2
	(1132.6)	(583.6)
Tertiary degree	4297.1***	1612.1***
	(590.5)	(287.9)
Swiss citizen	-1057.2	-240.8
	(650.3)	(314.5)
Parent	280.7	181.8
	(572.7)	(275.6)
Trait: patient	514.6	-36.85
	(552.0)	(268.8)
Trait: risk-seeking	-211.4	67.59
	(552.9)	(268.3)
Constant	-13379.4***	-632.0
	(946.3)	(453.8)
N	5948	5948

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: The reference person is a non-Swiss female from the German-speaking region below the age of 35 with a secondary education, no children, and impatient and risk-averse traits.

Comparing negative WTP and educational costs

Our finding that, on average, respondents are willing to accept lower earnings at age 40 in exchange for not having acquired tertiary education, indicates that—given equal outcomes in terms of income, automation risk, and social status—they recognize that a tertiary qualification entails higher direct and indirect educational costs that must be offset. While we did not directly elicit respondents' perceptions of the costs associated with different educational pathways, in the following we reconstruct their reasoning based on well-supported assumptions and straightforward back-of-the-envelope calculations.

Specifically, we compare the negative WTP for the two tertiary degrees (academic university and university of applied sciences) across respondents' gender and educational qualifications, multiplying the WTP by an assumed working life of 40 years, and relate this to two cost scenarios for each degree type. These scenarios represent the lower and upper bounds, which differ primarily in terms of assumptions about the duration of education and foregone earnings during study.[3]

If the estimated education costs exceed the negative WTP, we may interpret this as an indication of a positive willingness to pay for the intrinsic value of the qualification itself, and vice versa. If the values are roughly equal, this suggests that—beyond the benefits already controlled for in the experiment—there is no additional value attributed to the degree *per se*.

[3] Although the WTP for UAS degrees is very low compared to an apprenticeship, the calculations of the WTP minus education costs do not differ greatly from academic university degrees because the education costs, especially the opportunity costs for UAS training, are significantly lower. This is partly because the standard qualification for UAS is a three-year bachelor's degree, whereas at academic universities it is a five-year master's degree. Furthermore, although five years is the minimum, the average duration of study is over six years. Moreover, there are no opportunity costs at upper secondary level because UAS students usually also have an apprenticeship, and finally, the opportunity costs of studying are quite low because most students not only work more during their studies but also earn more in this work because they already have a professional qualification.

To facilitate interpretation, we express the differences between education costs and cumulative WTP as a percentage of lifetime earnings. As shown in Table 2, most of these differences are relatively small and distributed around zero. Admittedly, these are approximate comparisons between estimated education costs and respondents' willingness to forgo income in exchange for avoiding such costs. However, the tight clustering of values around zero—with few exceptions—strongly suggests that the negative WTP for tertiary education roughly corresponds to the expected cost of acquiring such qualifications.[4]

Table 2: WTP for a degree ./. costs of education

		University		University of Applied Science	
Respondent	Education / Costs	Lower Bound	Upper Bound	Lower Bound	Upper Bound
Women	Upp. Secondary	-4.08	-0.59	1.52	4.46
	Tertiary	0.22	3.70	3.31	6.25
Man	Upp. Secondary	-2.31	0.86	1.54	4.18
	Tertiary	1.60	4.76	3.15	5.80

Notes: The values are the differences between the willingness to forgo earnings for not having a tertiary degree minus the costs of obtaining such a degree in percent of the average life-time income. Positive values show a positive net WTP for a higher education degree and *vice versa*. Data: Salary data from the wage structure survey of the Federal Statistical Office of Switzerland.

[4] It goes without saying that other forms of presentation could also be chosen. For example, the average willingness to forego wages in order to avoid having to complete a university degree, extrapolated to 40 years of employment, is CHF 414,200. This figure is practically in the middle of the lower limit (CHF 353,000) and upper limit (CHF 467,000) of education costs. In other words, it can be assumed that the amount people would be willing to give up is roughly equal to the costs they would have had to bear if they had completed a university degree.

Conclusion

In a large-scale discrete-choice experiment, we find that participants' willingness to pay for higher education degrees is negative and close to the expected costs of education when monetary returns (such as higher earnings and protection against job displacement due to technological change) and non-monetary returns (such as social status) are held constant. The only exception are respondents who have a tertiary qualification themselves. For these, we find that they would on average be willing to accept educational costs that are higher than the extra income.

These findings lead to two main conclusions: First, the pursuit of higher education appears on average—at least for university degrees—to be driven primarily by extrinsic factors—both monetary and non-monetary—rather than by any intrinsic value attributed to the qualification itself. Second, despite that most respondents are unlikely to have formal training in economic theory, their responses suggest behavior that is consistent with the predictions of human capital theory—that is, they act *as if* they were applying a cost–benefit framework to educational decisions, in the spirit of Friedman's (1953) notion of behavior guided by theoretical models.

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Appendix

Table A.1
Mean mixed logit estimates and WTP for career path attributes

	(1) Mean estimated coefficients	(2) Willingness to pay
University degree	-0.560***	-10910.1***
	(0.042)	(912.3)
UAS degree	-0.030	-586.6
	(0.033)	(638.6)
Top management position	0.0670**	1305.9**
	(0.025)	(485.2)
Lower automation risk (10 ppt.)	0.787***	15333.1***
	(0.024)	(366.8)
Annual gross wage (CHF 10,000)	0.513***	
	(0.013)	
N	83,328	83,328

Notes: The multivariate regression is based on the mixed logit model used by Cattaneo et al. (2025). The willingness to pay (WTP) in column 2 is calculated as the ratio of the estimate for the respective career path attribute and the estimate for annual gross wage in column 1 times CHF 10,000. Population weights are applied, standard errors are shown in parentheses, and * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.