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Authors:
Dario Focarelli, Chiara Gesmundo, Carlo Savino

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Willingness to Pay for Health Insurance in Italy: Evidence from a Survey on Consumers' Behaviour[1]

Dario Focarelli*, Chiara Gesmundo and Carlo Savino*

October 2025

Abstract

This paper investigates the demand for private health insurance in Italy, where universal public coverage coexists with high out-of-pocket healthcare spending. Using data from the Italian Survey of Consumer Expectations (ISCE) and a structured willingness-to-pay (WTP) elicitation method, we identify key drivers of WTP. These include income, perceived health risks, prior medical expenses, attitudes toward the public health system and existing health or other insurance policies. All of these are positively associated with higher WTP, reflecting greater financial capacity, risk awareness, and trust in insurance mechanisms. Further, a randomized control trial reveals that providing information on the costs and (shorter) waiting times for private medical services increases awareness of out-of-pocket expenditure risks, raising WTP especially among the self-employed, and corrects prior misperceptions - whether optimistic or pessimistic - thereby aligning expectations with reality and fostering more efficient insurance choices.

Keywords: Health expenditures; Willingness to pay; Insurance.

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(*) ANIA - Trade Association of Italian Insurers. All opinions and views expressed are of the authors.

1. Background and Motivations

Aging population is driving increased demand for healthcare services - largely due to the growing prevalence of chronic degenerative diseases over acute illnesses - and mounting pressure on national welfare systems.

This trend is particularly evident in developed countries, and Italy is no exception. The combination of population aging, universal coverage provided by the publicly funded National Health Service (*Servizio Sanitario Nazionale* - SSN), and the adoption of increasingly costly medical technologies has led to a steady rise in healthcare expenditure: between 2000 and 2023, total spending in Italy grew from €94 billion to €179 billion at current prices (OECD, 2025). Yet, due to budgetary constraints, more recently healthcare expenditure as a share of GDP showed a slight downward trend, declining between 2010 and 2023 from 8.9% to 8.4%.

The growing demand for healthcare services, coupled with public budget limitations, has widened the gap between healthcare needs and the services delivered by the public system. As a result, a significant share of healthcare demand has been financed directly by households. Between 2000 and 2023, privately financed health expenditure (out-of-pocket) rose markedly, increasing from €25 billion to €42 billion at current prices (OECD, 2025).

High out-of-pocket spending is widely considered inefficient from a risk management perspective, as it heightens households' financial vulnerability to unpredictable and potentially catastrophic health expenses. In recent years, economists, industry practitioners, and policymakers have increasingly debated how to strengthen alternative risk-pooling mechanisms to reduce individuals' exposure to major financial losses caused by illness or injury.

A natural candidate to manage these risks more efficiently is the private insurance sector. However, Italy's health insurance market remains relatively underdeveloped compared to other advanced economies. Most private health spending is not channelled through risk-pooling mechanisms. Only 8% of private healthcare costs are covered by insurance companies, and 2.6% by health funds or employer-based schemes, leaving a striking 89% - around €34 billion - paid directly by households.

This paper explores the demand for private health insurance by analyzing the factors that shape households' willingness to pay (WTP). WTP is widely used in policy evaluation as a direct indicator of individual preferences (see Olsen and Smith, 2001, for a detailed discussion of its strengths and limitations in healthcare). Understanding public attitudes toward private health coverage can help design welfare models that better combine public and private resources and support the development of a complementary private healthcare system.

We focus on the factors that drive individuals to consider supplementary private health insurance, despite the presence of universal public coverage. Specifically, we examine the determinants of WTP for a private insurance coverage offering a clearly defined set of benefits in Italy - a country with universal public healthcare but relatively high levels of out-of-pocket spending. This combination suggests possible gaps or perceived weaknesses in the public system that may influence demand for private coverage.

In Italy, voluntary private health insurance (VPHI) plays a dual role. It can function as complementary coverage, reducing out-of-pocket costs for services not fully covered by the national health system, or as duplicate coverage, offering quicker access, more comfort, and greater provider choice for services already included in the public system.

Following Guiso and Jappelli (2025), we also assess how information affects preferences. Using a randomized design, we provided a subset of respondents with data on the performance of the public healthcare system to test whether such information influences their willingness to pay.

To our knowledge, no prior study has examined WTP for health insurance in developed countries with universal public healthcare systems. This paper helps fill that gap by offering new evidence from Italy - a setting where public and private healthcare coexist - and by evaluating whether targeted information can shift individuals' preferences toward private insurance.

Using data from the Italian Survey of Consumer Expectations (ISCE) and a structured willingness-to-pay (WTP) elicitation method, the study identifies key drivers of WTP - including, income, perceived health risks, prior medical expenses, attitudes toward the public health system, and existing health or other insurance policies - all of which are positively associated with higher WTP, reflecting greater financial capacity, risk awareness, and trust in insurance mechanisms. A randomized control trial reveals that providing information increases awareness of out-of-pocket expenditure risks, raising WTP especially among the self-employed, and corrects prior misperceptions - whether optimistic or pessimistic - thereby aligning expectations with reality and fostering more efficient insurance choices.

The rest of the paper is organized as follows. Section 2 provides a review of the relevant literature. The subsequent section describes the data and presents summary statistics. Section 4 outlines the econometric analysis and estimates the impact of various explanatory variables on WTP. Section 5 examines the effect of information on individual preferences. The final section concludes.

2. Review of the Literature

There exists a significant body of empirical literature on the features of the demand for private health insurance starting from the observation of actual ownership of some form of private coverage. Gruber and Poterba (1994) examine how insurance demand changed in response to the US Tax Reform Act of 1986, which introduced a new tax subsidy for health insurance for self-employed. They compare the change in health insurance coverage for the self-employed with that of employed workers and find strong support for a negative price elasticity of demand for insurance coverage. The results from their most carefully controlled comparison, which focuses on insurance demand among unmarried individuals, suggest that a 1 percent increase in the cost of insurance coverage reduces the probability that a self-employed household will be insured by 1.8 percentage points.

Empirical evidence indicates that the decision to purchase a private health insurance is influenced by a range of factors, including socioeconomic status and healthcare needs. Several studies find the probability of VPHI ownership to be positively correlated with income (Harmon and Nolan, 2001; Propper et al. 2001; Barrett and Conlon, 2003) and education (Besley et al., 1999; Harmon and Nolan, 2001; King and Mossialos, 2005; Pedersen, 2005; Machnes, 2006). Empirical evidence suggests that the demand for voluntary private health insurance generally increases with age, particularly during early and middle adulthood (Jofre-Bonet, 2000; Propper et al., 2001; Barrett and Conlon, 2003; Costa and Garcia, 2003; Taylor and Ward, 2006). However, this positive association tends to reverse beyond a certain age threshold and demand for VPHI declines among older adults (Besley et al., 1999; Harmon and Nolan, 2001; Finn and Harmon, 2006; King and Mossialos, 2005; Machnes, 2006; Buchmueller et al., 2013).

Evidence on gender-wise differences is mixed. Studies from France (Buchmueller et al., 2004; Saliba and Ventelou, 2007) and Denmark (Christiansen et al., 2002; Pedersen, 2005) suggest that women are more likely to purchase VPHI, whereas evidence from the UK (King and Mossialos, 2005; Taylor and Ward, 2006) indicates an opposite pattern, with men being more likely to be insured. In other contexts, gender does not appear to have a statistically significant effect (Harmon and Nolan, 2001; Barrett and Conlon, 2003; Savage and Wright, 2003), highlighting the context-dependent nature of this relationship. Regarding household composition, the number of adults within the household appears to reduce the likelihood of purchasing voluntary private health insurance (Besley et al., 1999; Finn and Harmon, 2006; Machnes, 2006).

Considering the effect of labour market on the demand for VPHI, evidence suggests that unemployment has a negative impact (Propper, 1989; Jofre-Bonet, 2000; King and Mossialos, 2005; Buchmueller et al., 2008), whereas self-employment have mixed-impact. Several empirical contributions have identified a positive association between self-employment and the demand for voluntary private health insurance (Jofre-Bonet, 2000; Costa and Garcia, 2003; Machnes, 2006; Taylor and Ward, 2006). Nevertheless, other empirical investigations fail to detect statistically significant effects (Propper, 1989; Besley et al., 1999; Pedersen, 2005).

In addition to socioeconomic factors, health-related characteristics, risk preferences, and structural barriers within the public healthcare system have been identified as important drivers of demand for private coverage. Indicators of chronic health conditions (Propper, 1989; Barrett and Conlon, 2003; Costa and Garcia, 2003) and self-reported measures of health (Propper, 1989; King and Mossialos, 2005) are generally not significant as explanatory variables, probably due to supply-side restrictions (i.e. eligibility requirements). On the contrary, the use of the health care services is found to be positively correlated with the VPHI ownership (Taylor and Ward, 2006; Saliba and Ventelou, 2007).

As regards risk preferences, risk-averse individuals are expected to be more likely to purchase health insurance as a means of protecting themselves against the financial uncertainty associated with health shocks, whereas individuals with greater risk tolerance are expected to exhibit lower demand. However, empirical evidence on this relationship remains inconclusive. Costa-Font and García (2003) find no significant association between risk attitudes and VPHI ownership. In contrast, Doiron et al. (2008) report lower demand among risk-tolerant

individuals, while Tavares (2020) finds that individuals with higher risk tolerance are more likely to purchase VPHI.

Structural barriers within the public healthcare system may also represent a relevant factor in explaining individuals' demand for VPHI. These barriers encompass long waiting times, administrative inefficiencies, delays in obtaining diagnostic services or treatments, and the necessity to obtain referrals from general practitioner to access specialist care. Such limitations can lead to user dissatisfaction and contribute to a decline in the perceived quality of public healthcare (Siciliani and Verzulli, 2009). As a result, individuals may turn to voluntary private health insurance to circumvent these obstacles and secure more timely and personalized access to care. Empirical evidence from Norway (Aarbu, 2010), Great Britain (Wallis, 2003), and Spain (Jofre-Bonet, 2000) shows that VPHI ownership is positively associated with the regional waiting times. Furthermore, perceptions of lower public sector quality have also been found to increase the likelihood of holding private insurance (Costa and Garcia, 2003; Costa-Font and Jofre-Bonet, 2006).

The empirical literature on willingness-to-pay for health insurance is relatively limited and can be broadly categorized into two main streams. The first examines the features of WTP for health insurance in settings where little or no health insurance coverage, neither public nor private, exists and individuals and households are left to pay for healthcare directly. These studies, typically conducted in low- and middle-income countries, aim to assess the desirability of introducing some form of health coverage scheme, whether through a public scheme, a competitive market, or a combination of both (see Nosratnejad S. et al., 2016 for an excellent review of this stream of literature).

A second body of research examines this topic in settings where universal, state-run healthcare systems are in place, as is common in high-income countries. However, these studies typically rely on hypothetical scenarios - assessing individuals' valuations of health insurance as if the existing public system did not exist - rather than measuring actual willingness to pay (WTP) for supplementary coverage.

In particular, Bock et al. (2017) focused on German elderly participants aged 57 to 84 who underwent a geriatric assessment and completed a health economics questionnaire. The study found an average monthly willingness to pay (WTP) for health insurance of €260 - approximately 20% of individual disposable income. WTP was positively associated with higher income, male gender, higher educational attainment, and private insurance status, while neither morbidity levels nor personal healthcare expenditures had a significant effect. The authors concluded that the relatively high WTP among older individuals suggests a greater likelihood of accepting higher contributions to Germany's statutory health insurance (SHI) rather than supporting policies aimed at reducing them.

Similarly, Hajek et al. (2020) examined WTP for health insurance in the general adult population in Germany, using a contingent valuation method with a payment card and a broader set of explanatory variables, including personality traits. Their findings indicated an average monthly WTP of €240, equivalent to 14% of household net equivalent income. Higher WTP was associated with younger age, higher income, greater social support, and private insurance status. Among personality traits, only openness to experience was significantly linked to

WTP. As in Bock et al., the authors interpreted the relatively high WTP as evidence of general acceptance of current SHI contributions and a willingness to support higher payments.

3. Data and Summary Statistics

3.1. The Survey

This study relies on data from the Italian Survey of Consumer Expectations (ISCE), a comprehensive survey designed to capture a representative sample of the Italian population. The ISCE collects information on a broad spectrum of individual demographic and socioeconomic characteristics, including income, wealth, consumption, expectations, and beliefs. The sample is drawn from a larger, regularly updated panel comprising 120,000 individuals maintained by Doxa.

The ISCE methodology is based on two established international high-frequency surveys: the *New York Fed Survey of Consumer Expectations*, which gathers monthly data on consumer views and expectations regarding inflation, employment, income, and household finances (Armantier et al., 2016a); and the *European Central Bank Consumer Expectations Survey* (Bańkowska et a., 2021), which collects similar data from approximately 20,000 households across 11 Eurozone economies. Both the New York Fed and ECB surveys feature core questions that remain consistent across waves, supplemented by specialized modules that vary according to the survey period.

The ISCE survey targets individuals aged between 18 and 75 residing in Italy and employ the Computer-Assisted Web Interviewing (CAWI) method for data collection. Data are collected quarterly - in October, January, April, and July - deliberately omitting December and August to reduce the impact of seasonal fluctuations. This paper focuses on data gathered in April 2024, comprising responses from over 5,000 participants who answered a standardized questionnaire covering demographic and socioeconomic characteristics, lifestyle, and expectations. Additionally, a dedicated section on health economics and insurance was included to gather information on individuals' willingness to pay for health insurance, the penetration of private healthcare, and perceptions of the quality of the public healthcare system.

3.2. Willingness to Pay Measurement

In a dedicated section, the questionnaire elicited respondents' willingness-to-pay (WTP) for private health insurance. This section aimed to capture the monetary value individuals assign to a private insurance scheme covering the costs of major surgeries, minor outpatient procedures, and diagnostic examinations, thereby reflecting their preferences and perceived healthcare needs.

To this end, respondents were guided through a structured elicitation process designed to measure their maximum willingness-to-pay (WTP). Specifically, this was implemented via a tri-directional bidding game

that encouraged respondents to reveal their WTP for a private insurance scheme covering the costs of major surgery, minor outpatient procedures, and diagnostic examinations.

Respondents were initially presented with a proposed price of €1,000 for the private insurance policy, through the following question:

> *Imagine being offered a policy that covers the costs of major surgeries, minor outpatient surgeries (such as skin biopsies, mole or lipoma removals, incisions, etc.), or high-diagnostic exams (e.g., CT scans, MRI, X-rays, ultrasound, etc.) that you might need to undergo. This policy allows you to choose the doctor, facility, and reduce the waiting time for the surgery or exam. Would you be willing to spend 1,000 euros per year for a policy that covers these expenses?*

The questionnaire starts with a relatively high opening bid (€1,000) and participants have the option to accept, reject, or answer: "I don't know" and drop out of the sample. If the respondent declined the amount, the follow-up question lowered the bid, to €500 and eventually €200; if the respondent accepted the amount, the follow-up question raised the bid by €500 at a time, up to a maximum of €2,500. The accepted bid was recorded as the WTP level.

This iterative bidding process offers several advantages that enhance the accuracy and reliability of eliciting respondents' maximum willingness-to-pay (WTP). By presenting bids in a stepwise manner - adjusting upward or downward based on previous responses - the method mimics real-world decision-making where individuals weigh options incrementally rather than in a single, isolated judgment. At the same time, this dynamic approach reduces cognitive burden by breaking down complex valuation decisions into simpler, sequential choices. Additionally, allowing respondents to indicate uncertainty with an "I don't know" response and subsequently exiting the bidding process prevents forcing artificial or unreliable answers, thereby preserving data quality.

Nevertheless, the bidding game is subject to certain potential biases that warrant careful consideration. A possible bias associated with our bidding game method is the *starting point bias*. By beginning the elicitation process with an initial bid of €1,000, respondents' subsequent willingness-to-pay may be influenced or anchored around this value. As a result, even if their true WTP is higher or lower, the initial offer could serve as a psychological anchor, thereby skewing their responses and potentially leading to systematic overestimation or underestimation of their actual valuation.

Another notable concern is *hypothetical bias*. Since the elicitation involves no actual financial transaction, respondents might not engage with the exercise as they would in a real market setting. This can lead to overstatement or understatement of their WTP, particularly if the hypothetical nature of the scenario is not taken seriously.

Finally, information bias may arise if the description of the good or service - namely, private health insurance - is unclear, incomplete, or ambiguous. Given the inherent complexity of health insurance products, respondents may find it challenging to accurately assess the value of the insurance package offered in our bidding game. This difficulty may lead to valuations based on incorrect assumptions or misunderstandings

about coverage, benefits, and costs, thereby undermining the precision and validity of the elicited willingness-to-pay.

Despite the presence of certain potential biases, to our knowledge the tri-directional bidding game remains the most effective method currently available for eliciting willingness-to-pay. Research employing such rigorous and structured valuation techniques in the context of private health insurance is still limited. Considering the complexity of health insurance products and the advantages offered by this approach, we regard this method as the most valid for producing robust and reliable estimates of individuals' true economic valuation of private health insurance coverage.

Table 1 reports the number of participants who accepted each bid value throughout the elicitation process.

Table 1

Distribution of Accepted Willingness-to-Pay (WTP) Bids

This table reports the number of respondents who accepted each bid value in the contingent valuation question. "Undecided" includes respondents who did not express a clear willingness-to-pay (WTP).

WTP Bid (€)	Number of Respondents Accepting the Bid	% of Respondents
0	1,212	24.22
200	556	11.11
500	402	8.03
1000	548	10.95
1500	139	2.78
2000	38	0.76
2500	52	1.04
Total (Decisive Responses)	2,947	58.88
Undecided	2,058	41.12
Full sample	5,005	100

3.3. Descriptive Statistics

This analysis employs a comprehensive set of variables extracted from the ISCE dataset. We examine the impact of individual demographic, socio-economic, and behavioural characteristics on the willingness to pay (WTP) for insurance coverage of a specific set of health services. Our analysis focuses on estimating the probability that individuals are willing to pay a positive amount for health insurance, using a broad range of explanatory variables.

Health-related risk perception

The three core variables in our analysis related to health-related risk perception are:

- the perceived probability of experiencing a catastrophic health event (*Pr. of disaster*),
- self-reported monthly medical expenditure (*chealth*), and
- the perceived quality of the public healthcare system (*qualitassn*).

These variables are expected to be significantly associated with WTP. Higher perceived health risks and greater out-of-pocket medical spending are likely to increase WTP, as individuals may seek financial protection against future healthcare costs (selection effect).

Conversely, the perceived quality of the public healthcare system is generally expected to be negatively associated with WTP - individuals less satisfied with public services may be more inclined to purchase private coverage. However, a positive correlation may also emerge if private insurance is viewed as complementary to public provision, or if individuals with a favorable perception of the public system are more health-conscious and financially proactive.

Socio-economic characteristics and insurance experience

To control for individual characteristics, we include:

- the logarithm of after-tax household income (*Ln income*), expected to have a positive effect;
- gender *(Male*);
- a quadratic specification of age (*Age, Age*^{2}) to capture life-cycle variations in insurance preferences;
- household size (number of family members, *Family Size*);
- ownership of a private health insurance policy (*Asssan*), expected to be positively associated with WTP; and
- ownership of either life or property & casualty insurance (*Insured*), which may signal greater familiarity with insurance mechanisms.

Ownership of a private health insurance policy (*Asssan*) may reflect not only prior exposure to the insurance market but also a higher level of trust in insurance products. Individuals who already hold a health policy are likely to be more confident in the value and reliability of private coverage, which in turn increases their willingness to pay.

Similarly, ownership of life or property & casualty insurance (*Insured*) may indicate greater risk awareness and familiarity with insurance mechanisms. We interpret this variable as a proxy for insurance culture and expect it to be positively associated with the likelihood of purchasing health insurance.

Table 2

Summary Statistics

The table reports variables statistics of the total sample (Panel A) and the subsample with positive WTP (Panel B). Data are drawn from the Aprile 2024 (wave 3) Italian Consumer Expectations Survey (ICSE). Statistics are computed using sample weights.

Variable	No. of Obs.	Weight	Mean	Std. Dev.	Min.	Max.
			Panel A: Full sample			
WTP	5,005	5,004.86	248.70	471.65	0	2500
Ln income	5,005	5,004.86	7.57	0.52	6.62	9.90
Pr. of disaster	5,005	5,004.86	27.32	26.21	1	100
Qualitassn	5,005	5,004.86	5.38	2.17	1	10
Chealth	5,005	5,004.86	254.54	579.95	50	7500
Asssan	5,005	5,004.86	0.24	0.43	0	1
Insured	5,005	5,004.86	0.46	0.50	0	1
Age	5,005	5,004.86	48.40	14.36	18	75
Male	5,005	5,004.86	0.50	0.50	0	1
Family size	5,005	5,004.86	2.79	1.13	1	6
Education						
(1) Primary education	5,005	5,004.86	0.36	0.48	0	1
(2) Secondary education	5,005	5,004.86	0.45	0.50	0	1
(3) Tertiary education	5,005	5,004.86	0.19	0.40	0	1
Employment						
(1) Salaried employee	5,005	5,004.86	0.43	0.50	0	1
(2) Self-employed	5,005	5,004.86	0.08	0.27	0	1
(3) Unemployed	5,005	5,004.86	0.11	0.31	0	1
(4) Inactive individuals	5,005	5,004.86	0.15	0.35	0	1
(5) Retirees	5,005	5,004.86	0.19	0.39	0	1
(6) Students	5,005	5,004.86	0.04	0.20	0	1
			Panel B: Subsample of decided respondents			
WTP	2,947	2,942.14	423.07	551.98	0	2500
Ln income	2,947	2,942.14	7.58	0.54	6.62	9.90
Pr. of disaster	2,947	2,942.14	27.83	26.87	1	100
Qualitassn.	2,947	2,942.14	5.37	2.27	1	10
Chealth	2,947	2,942.14	267.75	616.63	50	7500
Asssan	2,947	2,942.14	0.27	0.44	0	1
Insured	2,947	2,942.14	0.48	0.50	0	1
Age	2,947	2,942.14	48.44	14.64	18	75
Male	2,947	2,942.14	0.53	0.50	0	1
Family size	2,947	2,942.14	2.77	1.12	1	6
Education						
(1) Primary education	2,947	2,942.14	0.35	0.48	0	1
(2) Secondary education	2,947	2,942.14	0.44	0.50	0	1
(3) Tertiary education	2,947	2,942.14	0.21	0.41	0	1
Employment						
(1) Salaried employee	2,947	2,942.14	0.43	0.49	0	1
(2) Self-employed	2,947	2,942.14	0.09	0.28	0	1
(3) Unemployed	2,947	2,942.14	0.10	0.31	0	1
(4) Inactive individuals	2,947	2,942.14	0.13	0.34	0	1
(5) Retirees	2,947	2,942.14	0.20	0.40	0	1
(6) Students	2,947	2,942.14	0.04	0.20	0	1

Demographic profile, human capital, and territorial context

We further control for a set of variables capturing the individual's demographic profile, human capital, and territorial context, including:

- Employment status, categorized as follows: (1) Salaried employee, (2) Self-employed, (3) Unemployed (including both first-time job seekers and individuals currently out of work), (4) Inactive individuals (such as homemakers and financially independent persons), (5) Retirees, and (6) Students;
- Education level, classified into: Primary education, Secondary education, and Tertiary education;
- Regional fixed effects, to account for territorial heterogeneity related to the decentralized structure of the Italian healthcare system and regional differences in service quality and accessibility.

Table 2 reports descriptive statistics for the full sample of 5,005 observations (Panel A, where respondents who did not state a WTP are assigned a value of 0), and for the subsample of 2,947 observations (Panel B) consisting of those who were able to determine a specific WTP amount. As expected, the average WTP differs significantly between the two samples. In contrast, no systematic differences emerge in the distribution of the other covariates, whose means remain broadly comparable across groups.

Table 3 reports WTP across different groups. Panel A covers 5,005 observations, assigning a value of zero to respondents who reported no willingness to pay (WTP). Panel B restricts the sample to the 2,957 respondents who stated a specific WTP amount. Finally, Panel C focuses on the subsample with WTP > 0.

In the full sample (Panel A, N=5,005), mean WTP is €249, reflecting the inclusion of respondents with zero or undecided willingness to pay. Restricting to decisive respondents (Panel B, N=2,947) raises mean WTP to €423, since only those who stated a specific amount are considered. Focusing further on respondents with strictly positive WTP (Panel C, N=1,735), the mean nearly doubles again, reaching €730.

Across all three samples, the average WTP of treated respondents is broadly similar - though marginally lower - than that of the control group. This indicates that the information provided did not have an overall impact, possibly because much of it was already familiar to respondents. Nevertheless, as discussed in Section 5, treatment effects may arise when specific respondent characteristics are taken into account.

Restricting the analysis to Panel B, respondents who already hold a private health insurance policy (*Asssan* = 1) report a significantly higher average WTP (€637) compared to those without such coverage (€345). Likewise, individuals who own any form of insurance (e.g., life or P&C) display higher WTP (€544 vs. €312). These differences suggest a strong association between prior insurance experience and the perceived value of additional health protection.

WTP increases steadily with educational attainment: Primary education: €335, Secondary education: €443 Tertiary education: €529. This is in line with expectations that individuals with more education tend to value and understand the benefits of insurance more.

Table 3

Willingness to Pay Across Different Groups

The table reports summary statistics of respondents' willingness to pay (WTP) for three groups: the full sample (Panel A), a subsample excluding undecided respondents (Panel B), and a subsample including only respondents with WTP > 0 (Panel C). Data are drawn from the April 2024 wave (Wave 3) of the Italian Consumer Expectations Survey (ICSE). All statistics are weighted using the survey sample weights.

Variable	Panel A		Panel B		Panel C	
	N	Mean	*N*	Mean	*N*	Mean
Total	5,005	248.70	2,947	423.07	1,735	730.00
Treatment = 0	2,501	254.43	1,490	428.61	885	730.78
Treatment = 1	2,504	242.98	1,457	417.41	850	729.19
Asssan = 0	3,764	195.13	2,131	344.68	1,097	680.02
Asssan = 1	1,241	417.89	816	636.58	638	818.77
Insured = 0	2,646	177.07	1,505	311.65	707	676.59
Insured = 1	2,359	332.02	1,442	543.63	1,028	767.60
Male = 0	2,535	192.83	1,401	349.15	748	673.26
Male = 1	2,470	305.49	1,546	489.56	987	771.74
Education						
Primary education	1,564	193.15	901	335.45	464	659.45
Secondary education	2,356	254.89	1,354	442.85	806	747.15
Tertiary education	1,085	337.72	692	528.95	465	788.31
Employment						
Salaried employee	2,303	268.48	1,343	460.66	871	710.89
Self-employed	441	355.58	279	560.94	186	841.03
Unemployed	480	155.83	277	269.68	104	705.99
Inactive individuals	664	124.77	352	235.64	138	612.30
Retirees	924	287.91	583	457.27	364	744.32
Students	193	325.83	113	552.18	72	874.24

The highest average WTP is found among the self-employed (€561) and students (€552), followed by salaried employees (€461) and retirees (€457). The unemployed (€270) and inactive individuals (€236) show the lowest WTP levels. This likely reflects both income constraints and differences in perceived need for additional health protection.

There are large differences across regions. Higher average WTP in Valle d'Aosta (€546), Puglia (€501), and Toscana (€466). Lower values in Umbria (€218), Friuli-Venezia Giulia (€325), and Piemonte (€326). These disparities likely reflect territorial differences in income levels, health service quality, and risk perceptions,

consistent with the decentralized nature of the Italian healthcare system. Geographical region fixed effects are included in all regressions but not reported in the tables to save space.

4. Regression Analysis

4.1 Model Specification

We ran all regressions for the probability of being willing to pay for a health insurance using the following simple model:

$$WTP = \phi\,(\beta X + \gamma Z + \delta S) \qquad (1)$$

where ϕ is specified according to the estimation technique employed; WTP is a discrete, non-negative variable representing one of seven increasing euro-denominated amounts (with non-fixed intervals) that respondents declared they would be willing to pay;

- X is a vector of variables capturing health-related risk perception;
- Z is a vector of socio-economic characteristics and insurance experience;
- S is a set of dummy variables controlling for demographic profile, human capital, and territorial context;

and β, γ and δ the respective coefficients.

4.2 Regression Results

Table 4 reports the estimation results. In the left panel (Panel A), the model is estimated on 5,005 observations, assigning WTP = 0 to respondents who did not express any willingness to pay. In the right panel (Panel B), the sample is restricted to the 2,957 respondents who were able to determine a specific WTP amount (see also Table 1).

Overall, the sign and statistical significance of the explanatory variables are consistent across the two samples. Unsurprisingly, marginal effects are considerably larger in the smaller sample, which - by construction - includes only individuals who expressed a willingness to pay (WTP). This group reports a higher average WTP of €423, compared to €249 in the broader sample that also includes respondents who did not state any WTP.

As anticipated, disposable income (*Ln income*) significantly influences individuals' WTP for health insurance. Higher-income respondents are more likely to afford insurance and tend to prioritize health coverage, thus exhibiting a greater WTP. In Panel B, a one-standard-deviation increase in income (0.54) is associated with a €52 increase in WTP. This finding aligns with the theoretical expectation that affordability is a key driver of insurance demand.

We also observe a positive and statistically significant association between the perceived probability of a catastrophic health event (*Pr. of disaster*) and WTP. Individuals who perceive a higher risk of serious illness or accidents are more inclined to seek financial protection through insurance. This is consistent with expected

Table 4

Tobit regression on whole sample and without undecided respondents

The regressions report marginal effects calculated from Tobit regressions for the amount that respondents are willing to pay. The estimated equation is $WTP = \phi(\beta X + \gamma Z + \delta S)$. Heteroskedasticity robust standard errors are reported in parentheses. The symbol *** indicates a significance level of 1 per cent or less; ** between 1 and 5 per cent; * between 5 and 10 per cent. Geographical region fixed effects are included in all regressions but not reported in the tables to save space.

Variables	Panel A	Panel B
Ln income	56.61***	96.35***
	(14.31)	*(21.38)*
Pr. of disaster	1.623***	2.557***
	(0.234)	*(0.357)*
Qualitassn	4.983	15.85***
	(3.048)	*(4.474)*
Chealth	0.0326***	0.0431***
	(0.00951)	*(0.0148)*
Asssan	137.0***	174.2***
	(14.04)	*(20.47)*
Insured	98.01***	161.7***
	(13.39)	*(19.78)*
Age	-14.14***	-15.63***
	(3.490)	*(5.273)*
Age2	0.139***	0.148***
	(0.0378)	*(0.0569)*
Male	57.56***	48.63**
	(12.87)	*(19.21)*
Family size	3.798	11.25
	(5.766)	*(8.784)*
Secondary education	20.02	43.74**
	(13.94)	*(21.31)*
Tertiary education	47.81**	54.25**
	(18.69)	*(27.41)*
Self-employed	66.20***	75.92**
	(24.23)	*(34.88)*
Unemployed	-34.31	-66.06*
	(22.48)	*(35.38)*
Inactive individuals	-45.06**	-91.96***
	(20.40)	*(31.62)*
Retirees	41.59	50.58
	(27.62)	*(39.62)*
Students	-8.141	7.382
	(35.10)	*(57.42)*
N	5,005	2,947

utility theory, according to which greater perceived risk increases the demand for insurance. In Panel B, a one-standard-deviation increase in *Pr. of disaster* (26.9) leads to a €59 increase in WTP. This reinforces the central role of subjective risk perception in shaping insurance behaviour.

The perceived quality of the public healthcare system (*Qualitassn*) also shows a positive effect. This may reflect a perception of complementarity between public services and supplementary health insurance, rather than a view of private insurance as a substitute. In Panel B, a one-standard-deviation increase in *Qualitassn* (2.27) corresponds to a €36 increase in WTP. This suggests that confidence in the public system does not reduce, and may even encourage, willingness to invest in additional coverage.

Finally, self-reported monthly medical expenditure (*Chealth*) also has a positive impact on WTP. Greater out-of-pocket spending likely reflects both higher healthcare needs and increased financial exposure, which can lead individuals to value the financial protection offered by insurance. In Panel B, a one-standard-deviation increase in *Chealth* (617 euros) is associated with a €27 increase in WTP. This supports the idea that prior health spending acts as a signal of demand for risk pooling and financial security.

Taken together, these results confirm that WTP is shaped by a combination of economic capacity (income), subjective risk assessment (perceived health risk), experience of financial vulnerability (medical expenditure), and attitudes toward the public health system (perceived quality). Each of these factors contributes to individuals' perceived need and willingness to invest in supplementary insurance coverage.

Regarding insurance-related variables, having an existing health insurance policy is associated with a €174 increase in WTP, while ownership of a life or non-life insurance policy (excluding health insurance) increases WTP by €162. These results suggest that prior exposure to insurance products enhances familiarity and trust in insurance mechanisms, thereby increasing willingness to pay.

WTP is also significantly influenced by sex, age, and employment status. Female respondents exhibit a lower WTP compared to males, with an estimated difference of €49. This gender gap in WTP is consistent with findings in other contexts and may reflect differences in risk preferences, income levels, or healthcare priorities.

The relationship with age appears more complex. To capture potential non-linear effects, we included both age and age squared in the model. Estimates from Panel B suggest that WTP declines with age up to around 50 years, after which it begins to rise again. This U-shaped pattern may reflect changing health needs, income stability, or perceptions of risk across the life cycle.

By contrast, the number of household members does not show a statistically significant effect on WTP. This may indicate that WTP is driven more by individual-level considerations than by family composition.

The dummy variables for education, employment status, and region are jointly significant in Panel B, with p-values of 0.07, 0.0005, and 0.0027, respectively. This indicates that differences in human capital, labour market position, and territorial context play a meaningful role in shaping individuals' willingness to pay for health insurance.

In particular, self-employed individuals exhibit a WTP that is €76 higher than that of salaried employees, while retirees show a WTP that is €51 higher. Conversely, unemployed individuals report a WTP that is €66 lower than employees. These differences likely reflect variations in perceived financial vulnerability, access to employer-provided benefits, and reliance on public healthcare services across employment categories.

With respect to education, individuals with a secondary education (high school diploma) have a WTP that is €44 higher than those with only primary education, while tertiary-educated individuals (university degree) exhibit a WTP that is €54 higher. These findings confirm that higher education levels are associated with greater awareness of health-related financial risks and a stronger propensity to invest in insurance protection.

4.3 Robustness Check

Focusing on the subsample of 2,947 respondents who provided a defined WTP, we employed three estimation techniques: Ordered Probit, Linear regression, and Tobit (with a lower limit set at zero). Table 5 reports the results, presenting coefficients - not marginal effects - for the Tobit specification.

The findings are consistent across all estimation methods. No coefficient changes sign or loses statistical significance compared to those reported in Table 4, Panel B.

5. The effect of information on the WTP

5.1. The Experimental Design

The national healthcare system, while providing universal coverage at little to no cost, often faces criticism due to prolonged waiting times for treatment. Patients frequently experience significant delays in accessing specialist consultations, diagnostic tests, and non-urgent surgeries. These delays can hinder timely care and, in some cases, negatively affect health outcomes. The opportunity cost of these extended waits, despite the minimal direct financial cost, is likely the primary reason individuals consider costly private healthcare services as a rational alternative.

It's widely acknowledged that the public healthcare system generally involves longer waiting lists compared to the private sector[2]. However, the level of accuracy of this perception, particularly regarding the actual time saved and the costs involved in opting for private services, remains less clear.

To address this, we incorporated a Randomized Control Trial (RCT) to investigate whether providing individuals with specific information about public system waiting times, alongside waiting times and costs for comparable private services, could influence their perceptions of efficiency and cost differences between

[2] IPSOS (2024), a global market research firm, conducted a survey in 2023 on the priorities and expectations of Italians regarding the National Health System. Of the top seven main concerns identified, four were directly related to long waiting lists.

public and private healthcare. Ultimately, we wanted to see whether this information would increase their willingness to pay for private health insurance coverage to manage health risks more efficiently.

Table 5

Specification robustness checks (parameters)

The table reports the coefficients from regressions for the amount that respondents are willing to contribute. The estimated equation is $WTP = \phi\,(\beta X + \gamma Z + \delta S)$. Heteroskedasticity robust standard errors are reported in parentheses. The symbol *** indicates a significance level of 1 per cent or less; ** between 1 and 5 per cent; * between 5 and 10 per cent. Geographical region fixed effects are included in all regressions but not reported in the tables to save space. Cut points from the ordered probit estimations are omitted from the tables.

Variables	Tobit	OLS	Ordered probit
Ln income	165.1***	79.99***	0.222***
	(36.71)	*(24.94)*	*(0.0491)*
Pr. of disaster	4.382***	3.137***	0.00572***
	(0.610)	*(0.406)*	*(0.000810)*
Qualitassn	27.15***	18.64***	0.0356***
	(7.666)	*(4.595)*	*(0.0102)*
Chealth	0.0738***	0.0491***	0.000102***
	(0.0253)	*(0.0184)*	*(0.0000348)*
Asssan	298.4***	185.8***	0.408***
	(35.40)	*(25.95)*	*(0.0476)*
Insured	277.1***	149.5***	0.371***
	(34.26)	*(21.85)*	*(0.0453)*
Age	-26.79***	-15.68***	-0.0373***
	(9.045)	*(5.865)*	*(0.0122)*
Age2	0.254***	0.148**	0.000357***
	(0.0976)	*(0.0620)*	*(0.000132)*
Male	83.33**	60.89***	0.115***
	(32.88)	*(20.86)*	*(0.0443)*
Family size	19.28	12.50	0.0272
	(15.06)	*(9.518)*	*(0.0203)*
Secondary education	76.05**	47.89**	0.109**
	(37.34)	*(22.04)*	*(0.0503)*
Tertiary education	93.65**	64.17**	0.136**
	(47.06)	*(30.10)*	*(0.0638)*
Self-employed	123.6**	98.22**	0.162**
	(55.13)	*(38.41)*	*(0.0741)*
Job seeker	-118.5*	-9.568	-0.170*
	(65.72)	*(34.87)*	*(0.0877)*
Inactive	-168.6***	-44.88	-0.230***
	(60.40)	*(31.35)*	*(0.0813)*
Retired	83.61	68.23*	0.107
	(64.55)	*(38.74)*	*(0.0869)*
Student	12.54	34.06	0.0146
	(97.16)	*(64.92)*	*(0.132)*
N	2,947	2,947	2,947

We designed an experiment where survey participants were randomly assigned to two groups: a treatment group (Group T) and a control group (Group C). This allowed us to estimate the impact of delivering information on average waiting list lengths and costs for two specific medical services in both the public and private sectors.

Before proceeding eliciting individuals' willingness to pay, participants in Group T (the treatment group) were presented with the following statement:

> *In Italy, the waiting time for an MRI in a public facility can be up to 6 months, while for a hip replacement surgery, one can wait up to 4 months. In a private hospital, however, these same services can be provided within a month, but at an average cost of about 400 euros for the MRI, and 8,000 euros for the surgery.*[3]

Participants in the control group, by contrast, were not exposed to any informational treatment and proceeded directly to the willingness-to-pay elicitation.

This informational intervention was designed to investigate whether presenting individuals with concrete instances of the differential in waiting list length between public and private healthcare, alongside the financial implications of accessing equivalent services privately, increases their willingness to pay for supplementary private health coverage to insure against the increased cost of private care.

5.2. Descriptive Statistics and Balance tests

To evaluate formally the effectiveness of our group randomization, we estimated a model to determine whether individual characteristics influenced the likelihood of assignment to one subsample or the other. We created a binary variable, assigning a value of 1 for observations in the Treatment group and 0 otherwise. This variable was then regressed using a Probit model against all relevant variables of interest and controls. We subsequently tested the null hypothesis for each individual coefficient.

The results of this estimation, presented in Table 6, indicate that the group randomization is well balanced. Nearly all baseline individual characteristics did not significantly affect the probability of inclusion in the Treatment group. Specifically, none of the primary variables of our interest - past health expenditure, perceived quality of the public health system, and perceived probability of a future catastrophic health-related financial outlay - nor baseline individual characteristics such as age, gender, marital status, education, employment status, and income, led to a rejection of the null hypothesis.

Only two of the twenty Italian geographic regions, Veneto and Lombardia, delivered coefficients significantly greater than zero, although with statistical significance was at the lower end of commonly accepted levels

[3] These figures are conservative estimates. More recent data from the Italian Ministry of Health indicate that waiting times in some areas can extend up to 12 months for both services. For further details, refer to: https://www.i-com.it/2025/02/14/liste-dattesa-il-vero-ostacolo-per-laccesso-alla-sanita-pubblica/

(10%). We believe this is a minimal statistical deviation that will not compromise the robustness of the results of the analysis.

Table 6

Experiment's balance test

The table reports marginal effects from probit regression for the probability of inclusion in the randomized subsamples. Heteroskedasticity robust standard errors are reported in parentheses. The symbol *** indicates a significance level of 1 per cent or less; ** between 1 and 5 per cent; * between 5 and 10 per cent. Geographical region fixed effects are included in all regressions but not reported in the tables to save space.

Variables	Treatment
Ln income	0.0140
	(0.0163)
Pr. of disaster	-0.000395
	(0.000272)
Qualitassn	-0.00615*
	(0.00344)
Chealth	-0.000000210
	(0.0000124)
Asssan	-0.0332*
	(0.0175)
Insured	0.0249
	(0.0157)
Age	0.000572
	(0.00429)
Age2	-0.0000209
	(0.0000463)
Male	-0.0115
	(0.0155)
Family size	0.00871
	(0.00690)
Secondary education	-0.0202
	(0.0170)
Tertiary education	0.00626
	(0.0222)
Self-employed	0.00203
	(0.0261)
Job seeker	-0.0258
	(0.0266)
Inactive	-0.0114
	(0.0256)
Retired	0.0543*
	(0.0303)
Student	-0.0377
	(0.0424)
N	5,005

5.3. The Effect of Information: Evidence from Group Comparisons

In this section, we examine the heterogeneity of the treatment effect across different groups. Specifically, we aim to examine whether the treatment has different impacts on individuals depending on socio-economic characteristics, such as income level, employment status, risk preferences, and educational attainment.

To assess whether the average treatment effect conceals substantial variation across subpopulations, we estimated the same equation in (1), including all variables and controls from the previous specifications, while splitting the sample along the dimensions of interest.

To further refine the analysis, we estimated the total, intensive, and extensive marginal effects of the treatment on the WTP for each subgroup. This decomposition allows us to distinguish between changes in the probability of being willing to pay for health insurance (i.e. *extensive margin*) and the changes in the magnitude of willingness-to-pay conditional on being willing to pay (i.e. *intensive margin*).

Overall, our results indicate that the treatment has the strongest and most statistically significant effects among the self-employed and individuals with a college degree, while effects are smaller and generally not significant for other subgroups, including those defined by income or risk preferences.

For self-employed individuals, the treatment increases the probability of being willing to pay for health insurance by 9.5 percentage points (*extensive margin*) and raises the expected willingness-to-pay by about €117 (*intensive margin*). Overall, the group's willingness-to-pay rises by approximately €156[4].

These findings indicate that self-employed respondents are substantially more responsive to the treatment than other groups, both in terms of participation and the monetary amount they are willing to pay for health insurance. This may reflect the higher opportunity cost of health-related risks for self-employed individuals, as illness can directly disrupt their work and income.

The treatment appears to have a different impact on individuals with tertiary education. Notably, college-educated respondents are more responsive to the intervention, with the treatment increasing the probability of being willing to pay for health insurance by 5.1 percentage points (*extensive margin*) and raising the expected willingness-to-pay by approximately €58 (*intensive margin*). In this context, education can be interpreted as a proxy for greater awareness of health-related risks and their potential costs. In this sense, an informational intervention is likely to have a stronger impact on a population that is already more conscious of health-related risks and more willing to pay to mitigate them.

Turning to the role of prior beliefs, the results reveal that treatment effects depend strongly on whether individuals held correct or incorrect beliefs about waiting times for a medical examination (e.g., an ultrasound) in the public health care system. The treatment provided information about the actual average waiting time (six months). For individuals who underestimated waiting times - believing they were shorter than three

[4] Considering that the self-employed (see Table 3) have a 66% probability of WTP > 0 and an average WTP of €841 when WTP is positive, the overall effect corresponds to (0.095 × 841) + (0.66 × 117).

months - receiving accurate information significantly increased their probability of taking up health insurance by 4.4 percentage points and the conditional WTP by €47. Overall, the group's willingness-to-pay rises by approximately €63. This finding highlights the importance of correcting misinformation, as respondents who underestimated waiting times adjust their valuation of insurance once provided with accurate information.

Table 7

The effect of treatment on WTP

The regressions report marginal effects from Tobit regressions for the amount that respondents are willing to pay for health insurance. The estimated equation is $WTP = \phi\,(\beta X + \gamma Z + \delta S)$. Heteroskedasticity robust standard errors are reported in parentheses. The symbol *** indicates a significance level of 1 per cent or less; ** between 1 and 5 per cent; * between 5 and 10 per cent. Control variables and geographical region fixed effects are included in all regressions but not reported in the tables to save space.

Variables	Lower-income quintiles (Q1-Q4)	Highest-income quintile (Q5)	Self-employed	Excluding Self-employed	Lower-risk-aversion (Q1-Q4)	Highest risk-aversion (Q5)	College	No college
Total effect	-18.94	16.86	155.7**	-26.78	-8.431	-30.67	79.29**	-34.42*
	(-1.00)	*(0.37)*	*(66.24)*	*(-1.47)*	*(-0.47)*	*(-0.60)*	*(39.92)*	*(19.47)*
Extensive margin	-0.0157	0.00966	0.0951**	-0.0212	-0.00720	-0.0161	0.0508**	-0.0282*
	(0.0156)	*(0.0258)*	*(0.0408)*	*(0.0144)*	*(0.0154)*	*(0.0269)*	*(0.0256)*	*(0.0159)*
Intensive margin	-14.05	12.63	117.0**	-19.84	-6.241	-22.82	58.19**	-25.65*
	(14.00)	*(33.71)*	*(50.21)*	*(13.46)*	*(13.38)*	*(38.37)*	*(29.35)*	*(14.51)*
N	2,390	557	279	2,668	2,390	557	692	2,255

Variables	With health-insurance	Without health-insurance	Intentioned purchase health insurance	No declared intention	Incorrect prior-belief	Correct prior-belief	Pessimistic prior belief	No prior belief
Total effect	-27.09	-4.715	230.4*	-16.45	63.45*	-1.991	79.29**	-34.42*
	(40.07)	*(19.07)*	*(119.7)*	*(18.73)*	*(37.91)*	*(35.07)*	*(39.92)*	*(19.47)*
Extensive margin	-0.0137	-0.00426	0.0594*	-0.0161	0.0436*	-0.00135	0.0508**	-0.0282*
	(0.0202)	*(0.0172)*	*(0.0320)*	*(0.0184)*	*(0.0261)*	*(0.0238)*	*(0.0256)*	*(0.0159)*
Intensive margin	-20.03	-3.528	191.5*	-12.35	46.74*	-3.146	58.19**	-25.65*
	(29.64)	*(14.27)*	*(99.35)*	*(14.06)*	*(27.95)*	*(55.41)*	*(29.35)*	*(14.51)*
N	816	2,131	120	2,011	742	861	692	2,255

Conversely, individuals with pessimistic prior beliefs - those who overestimated waiting times - show a negative and statistically significant treatment effect, with a decrease of 5.1 percentage points in the probability of willingness to pay and a €58 reduction in conditional WTP. This suggests that overly pessimistic individuals may revise their valuations downward when presented with more moderate figures.

For respondents whose prior beliefs were already correct, the treatment had no statistically significant effect, consistent with the notion that information only matters when it corrects existing misperceptions.

Finally, we split the sample based on individuals declared intention to purchase health insurance Within this subgroup, the treatment has a positive and statistically significant effect, increasing the probability of being willing to pay for health insurance by 5.9 percentage points and raising the conditional willingness-to-pay by approximately €192. Overall, the group's willingness-to-pay rises by approximately €230. This suggests that the intervention is particularly effective among respondents who had already expressed an intention to purchase coverage, as the information provided reinforces their preferences and translates into a stronger willingness to commit financially.

5.4. The Effect of Information: Estimating Group Differences within a Unified Tobit Model

We refined our analysis by estimating the same Tobit specification (Equation 1) separately for the two randomized groups. This allowed us to assess how accurate information about the opportunity cost of waiting for medical treatment - correlated with time saved in the private sector and the inverse of its cost - impacted willingness to pay (WTP), both directly and through individual characteristics.

Table 8 presents the estimated marginal effects: the first two columns show results for the treatment and control groups separately, and the third column displays their difference. Consistent with our main regression, all estimates were performed on the sample excluding individuals with undetermined WTP (2,947 observations).

Comparing the two estimations, notable differences emerge between the control and treatment groups. The variable *Qualitassn* is significant at the 6% level in the control group but becomes strongly significant in the treated group. Most notably, *chealth* is not significant in the control group, while it becomes highly significant among treated individuals. Similarly, *age* and *age2* are not significant in the control group but gain significance in the treated group. The same pattern applies to the *male* dummy and *ncomp*, which are only significant among treated individuals. These findings suggest that the informational treatment may have altered the relevance of certain individual characteristics in explaining willingness to pay (WTP).

To assess whether these observed differences are statistically significant, we estimated a Tobit model for WTP that includes all variables and controls from the previous specifications, along with a binary indicator for assignment to the treatment group. Crucially, all covariates were interacted with the treatment indicator to allow for heterogeneous effects. For each interaction term, we tested the null hypothesis that the treatment had no effect on the marginal impact of the corresponding covariate.

Table 8

Impact of treatment on marginal effects

The regressions report marginal effects from Tobit regressions for the amount that respondents are willing to pay for health insurance. The estimated equation is $WTP = \phi\,(\beta X + \gamma Z + \delta S)$. Heteroskedasticity robust standard errors are reported in parentheses. The symbol *** indicates a significance level of 1 per cent or less; ** between 1 and 5 per cent; * between 5 and 10 per cent. Control variables and geographical region fixed effects are included in all regressions but not reported in the tables to save space.

Variables	Treatment	Control	Difference
Ln income	66.07**	130.0***	-63.97
	(28.49)	*(31.00)*	*(42.10)*
Pr. of disaster	2.267***	2.793***	-0.525
	(0.495)	*(0.504)*	*(0.706)*
Qualitassn	18.01***	11.58*	6.431
	(6.326)	*(6.206)*	*(8.864)*
Chealth	0.0777***	0.0191	0.0586**
	(0.0183)	*(0.0201)*	*(0.0272)*
Asssan	138.8***	221.1***	-82.25*
	(31.70)	*(32.78)*	*(45.59)*
Insured	184.4***	147.6***	36.82
	(28.36)	*(27.39)*	*(39.36)*
Age	-24.84***	-5.416	-19.42*
	(7.297)	*(7.524)*	*(10.48)*
Age2	0.228***	0.0529	0.175
	(0.0780)	*(0.0821)*	*(0.113)*
Male	55.05**	40.18	14.87
	(26.90)	*(27.18)*	*(38.24)*
Family size	20.73*	-1.387	22.12
	(12.29)	*(12.55)*	*(17.57)*
Secondary education	38.42	39.48	-1.061
	(29.28)	*(31.08)*	*(42.70)*
Tertiary education	82.95**	21.72	61.22
	(38.47)	*(38.99)*	*(54.77)*
Self-employed	146.7***	5.941	140.7**
	(49.71)	*(47.48)*	*(68.74)*
Job seeker	-66.43	-59.36	-7.071
	(53.89)	*(47.44)*	*(71.86)*
Inactive	-102.0**	-83.49*	-18.49
	(44.70)	*(43.81)*	*(62.59)*
Retired	16.96	103.1	-86.10
	(48.93)	*(63.00)*	*(79.78)*
Student	-111.2	128.4	-239.6**
	(74.73)	*(82.76)*	*(111.5)*
N		2,947	

Focusing on the differences in marginal effects, three key findings stand out. Notably, the informational treatment appears to have redistributed the influence of several key variables on WTP in a non-trivial way:

- *Chealth* (monthly out-of-pocket health expenditure): The marginal effect increases by 0.059 from the control to the treated group, with a statistical significance of 3.1%. This suggests that the information

provided may have heightened respondents' awareness of health-related expenses, thereby increasing their WTP for supplementary coverage.

- *Assan* (ownership of a private health insurance policy): The marginal effect decreases by 82 euros, with a significance level of 6.4%, indicating that the treatment may have reduced the perceived added value of existing private coverage.
- *Self-employment status*: The marginal effect for self-employed individuals increases by €141, signalling a substantial rise in WTP after treatment. Conversely, for students, WTP decreases significantly, suggesting that the treatment may have led them to reassess their need, possibly because students are typically covered under their family's health insurance policy and therefore perceive less need for supplementary coverage.

Overall, these results indicate that the treatment did not merely reinforce existing preferences but rather reshaped the determinants of WTP across specific socio-economic groups, potentially by modifying perceptions of risk, value, and affordability.

6. Conclusions

This paper investigates the demand for private health insurance in Italy, a country characterized by universal public healthcare coverage and relatively high levels of out-of-pocket medical spending. Using data from a representative national survey and a structured willingness-to-pay (WTP) elicitation method, we examine the key drivers of WTP for private insurance and assess the impact of an informational treatment designed to highlight the cost and efficiency differences between public and private healthcare provision.

Our findings reveal that WTP for private health insurance is shaped by a combination of economic capacity, subjective health risk perception, previous health expenditures, and attitudes toward the public healthcare system. Individuals with higher income, greater perceived risk of serious illness, and more extensive out-of-pocket health expenditures display significantly higher WTP. Interestingly, a more favorable perception of the public healthcare system is also positively associated with WTP, suggesting that individuals may view private insurance as a complement rather than a substitute for public services.

Importantly, our experimental design shows that providing individuals with targeted information on public sector waiting times and private sector costs can alter both the level and determinants of WTP. The informational treatment significantly increased the marginal impact of out-of-pocket medical expenditure, suggesting that individuals became more aware of their financial exposure and the potential benefits of supplementary coverage. It also led to heterogeneous effects across employment categories: WTP increased substantially among self-employed individuals, highlighting a heightened perception of risk or need for financial protection in this group. The evidence shows that information acts as a corrective to prior misperceptions: individuals who underestimated waiting times revised their valuations upward, while those

with overly pessimistic beliefs adjusted downward. In both cases, accurate information aligns expectations with reality, leading to more efficient insurance choices.

These findings carry important policy implications. First, they underscore the potential role of private health insurance in filling gaps in public healthcare provision and in protecting households against financial risks related to medical expenditures. Second, they suggest that public awareness and information campaigns may not necessarily increase willingness to pay for private insurance but can improve social welfare by ensuring that insurance decisions are based on accurate expectations rather than misperceptions.

Future research could explore the long-term effects of informational interventions on actual insurance uptake and assess how behavioral factors, such as trust in insurers or financial literacy, further influence WTP and purchasing decisions. In addition, investigating the role of tax incentives and employer-based schemes in fostering broader risk pooling could provide valuable insights for policymakers aiming to strengthen the sustainability and inclusiveness of healthcare financing systems.

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