

Valuing the intangible costs of alcohol dependence. A contingent valuation study

Workshop on Contingent Valuation

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1. Introduction

- Excessive alcohol consumption causes numerous health and social problems: alcohol related diseases, accidents, violence, premature death and familial and professional problems.
- A moderate level of alcohol consumption also has a protective effect and is associated with reduced mortality.
- The impact of alcohol on mortality thus depends on the choice of the counterfactual scenario (abstinence or moderate consumption).

- There are two main types of study used to assess costs of alcohol: production-based method (human capital often described as "cost-of-illness") and contingent valuation.
- The only alcohol study which provides an estimate of intangible cost is the work by Collins and Lapsley (1996 and 2002). However the estimate is pragmatic and not based on individual preferences.
- Most contingent valuation (CV) studies are used to assess the benefits of medical treatments. The aim of this study is to use a CV survey to assess the non resources (or intangible) costs of a specific diagnosis: the alcohol dependence syndrome.

2. Good being assessed

- Alcohol dependency is the most severe alcohol disorder. Alcohol dependent people experience a need for increased amount of alcohol to experience the desired effect. Withdrawal occurs when alcohol intake has decreased. Alcoholic spend a lot of time on drinking and obtaining the product.
- Health effect of alcohol dependency can be divided into two components: damage to the body and psychosocial damages.

- Both type of health effects have a negative impact on quality of life and also impose economic costs on the community (reduced productive output due to deteriorated health state, additional health care costs).
- The study focuses on the behavioural and psychosocial costs of alcohol dependency.
- It aims at obtaining an estimate of the quality of life costs of alcohol dependency for the dependant person and his or her relatives, that is an estimate of intangible costs
- The economic costs stricto sensu (treatment costs and other resource costs, losses of production) are not considered here.

3. Method

- Contingent valuation method.
- Restricted perspective: the purpose of the CV is to value only the cost components for which no monetary value exists on an actual market.
- Eliciting format: payment card techniques, with follow-up bidding using direct interviews with visual aids.
- Ex post approach.

4. Design of the contingent valuation survey

■ Conceptual framework

- The questionnaire could be addressed to alcohol dependant individuals or to a sample of the general population: however the first option is not feasible (alcoholic would probably not accept to participate, uncertainties of cognitive capabilities). The only option is to address the questionnaire to the general population.
- We could propose to respondents a mean to reduce the risk of becoming alcohol dependant (ex ante perspective) or a curative treatment (ex post perspective).

- Focus group have shown that individuals drinking alcohol or abstinent do not believe being at risk of becoming alcohol dependant. The ex post perspective seems to be the only feasible approach.
- Preventive or curative treatments of alcoholism generate private and also public benefits and both types of benefits can be valued.
- Treatment of alcohol dependence was considered here as a private good: the respondent is considering the benefit for the sick person and for his or her relatives (household perspective).

■ Scenario

- Respondents are asked to consider living with (or have in his relatives) an alcohol-dependent person.
- They are informed of the consequences that this situation would have on their own lives and on the lives of other family members (or relatives). In the description of the condition, the stress is placed on symptoms, psychosocial effects, children development, social life, not on economic consequences.
- The description of the effect of alcohol dependency was prepared with an alcohol specialist.
- Respondents are informed of the existence of a new (hypothetical) treatment that suppresses the symptoms and enables a rapid return to a normal life. To be effective the treatment must be taken life-long.

■ Survey

- A test version of the questionnaire was submitted to three focus groups.
- When describing the consequences of alcohol dependency, we have to make a trade-off between the quality of information and the necessity to keep the fact sheet as short as possible.
- Some participants to the focus group stated that they had not sufficient information to decide whether to buy the treatment or not.

- A pilot study was conducted with two versions of the questionnaire, one providing more information to the respondents.
- We noticed no change in the acceptance rate of the contingent market and thus maintained the first version of the final questionnaire.
- We surveyed the general population over 18 in the Western part of Switzerland.
- Face-to-face interviews were conducted at respondent's home, each interview lasting 40 minutes on the average.

■ Characteristics of the sample

- 236 persons were interviewed.
- The structure of the sample is matching the structure of the general population.
- The average respondent age is 43 and the mean household monthly income is CHF 6'300.
- 60% of the respondents stated that they know a person with problematic alcohol consumption.

Respondents' characteristics

Variable	% in the sample	% in the general population*
<i>Sex</i>		
Women	50,5%	50,6%
Men	49,5%	49,4%
<i>Age groups</i>		
18-29	21,4%	20,3%
30-44	33,2%	33,8%
45-64	34,6%	34,5%
65-74	10,9%	11,4%
<i>Socioprofessional categories</i>		
Executives and self-employed professionals	20,5%	20,7%
Intermediate occupations	20,5%	19,7%
Qualified white collar and manual workers	37,7%	37,0%
Unqualified workers	21,4%	22,6%
<i>Living in an urban area</i>	57,1%	67,2%
<i>Living alone</i>	21,2%	32,5%

*Source : Population survey, OFS (1990)

■ Data screening

- « False zero bids » : 8 respondents didn't accept to pay anything, while (apparently) attaching some benefit to the treatment ("somebody else should pay");
- Abnormally high bid: WTP exceeding 30% of the household income have been excluded, as we supposed that these answers underwent a hypothetical bias.

Non valid observations

Starting sample	240	100,0%
Non-returned questionnaire	4	-1,7%
Incomplete questionnaire	16	-6,7%
Dropped out questionnaire (before the statistical treatment)	36	-15,0%
Refusal of treatment	4	
DAP nulle ne reflétant pas la valeur attribuée au traitement (« faux zéro »)	8	
Abnormally high bid (hypothetical bias)	9	
Non consistent answer, does not understand the scenario or the question to elicit WTP, or do not like hypothetical question, lack of cooperation.	15	
Valid questionnaire	184	76,6%

5. Results

■ Validity test

- The differences in WTP are supposed to reflect the preferences towards the treatment and its health outcome.
- We estimate a regression model using two specifications, linear and log-linear (where all continuous variable are expressed in logarithm);
- The main theoretical expectation – the positive relation between income and WTP – was confirmed.

- We have also found a positive relation between WTP and an indicator of the marginal utility of income.
- The other socioeconomic variables also have the expected sign and are all the significant.
- R2 adjusted is higher in the log-linear model, all other results being close (all but one variable are significant in both models).

Variable name	Description
INCOME	Net monthly income of the household, adjusted to the number of consumption unit in the household.
MARGINAL UTILITY OF INCOME	Variable takes the value 1 if a change of CHF 500 of monthly income is considered as having an important impact on the purchasing power.
SEX	Variable takes the value 1 for women.
AGE	Age groups : 1 = 18-29 ; 2 = 30-44 ; 3 = 45-64 ; 4 = 65+.
EDUCATION	Variable takes the value 1 if respondents have less than 4 years of education after compulsory school.
YOUNG ADULTS	Variable takes the value 1 if there are young adults (15-24 years old) in the household.
CHILDREN	Variable takes the value 1 if there are children (<15 years old) in the household.
HOUSEHOLD'S QOL	Variable takes the value 1 if the respondents consider that the quality of life of both the dependent and other members of the household is strongly reduced.
CLOSENESS OF HYPOTHETICAL DEPENDENT	Variable takes the value 1 if the person imagined as being alcohol-dependent is the partner, a child or parent; 0 if it is a sibling, a friend or someone else.
KNOW AN ALCOHOL ABUSER	Variable takes the value 1 if the respondents know someone who, according to them, drinks too much alcohol.

WTP regressions

Variables	Linear model WTP (monthly)			Linear-logarithmic model ¹ lnWTP (monthly)		
	Coefficient	t-tests	p-value	Coefficient	t-test	p-value
Constant	-109,78	-0,745	0,457	0,98	1,037	0,301
Adjusted income	0,091***	3,686	0,000	0,51***	4,398	0,000
Marginal utility of income	218,89**	2,552	0,011	0,36***	3,225	0,001
Socioprofessional categories	161,16**	2,038	0,043	0,18*	1,753	0,081
Urban-rural	167,00**	2,171	0,031	0,24**	2,391	0,017
Living alone	367,19***	4,065	0,000	0,54***	4,195	0,000
Close relative	206,05***	2,724	0,007	0,27**	1,985	0,048
Attitude face à la maladie	-268,85***	-2,976	0,003	-0,23**	-1,981	0,049
Qualité de vie				0,32***	3,289	0,001
n	184			184		
R2	0,310			0,376		
R2 ajusté	0,282			0,347		
Prob (F-stat)	0,000			0,000		

***(**) (*) Coefficients statistically significant at 1% (5%), (10%).

¹ All continuous variable in logarithm.

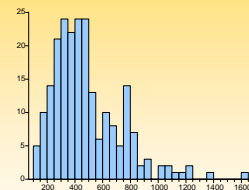
Quality-of-life cost of alcohol dependency

- Costs of alcohol dependency can be assessed by using the mean or median stated WTP or the estimated WTP from the model.
- The (log-linear) model reduces the impact of the high values (which might result from a hypothetical bias).
- We chose the latter: mean estimated WTP is CHF 486, the median CHF 433, which are about CHF 100 francs lower than the sample mean or median.

Descriptive statistics

Estimated WTP (n=222)	
Average	486,14
Mean	433,37
Max	1601,14
Min	106,21
Standard deviation	247,79
Skewness	1,27
Kurtosis	5,19
Variation coefficient	0,50

DAP estimées selon le modèle logarithmique



Série : DAP mensuelle	
Observations : 222	
Moyenne	486,14
Médiane	433,37
Maximum	1601,14
Minimum	106,21
Ecart-type	247,79
Skewness	1,27
Kurtosis	5,19
Jarque-Bera	104,42
Coeff. de variation	0,50
Coeff. de Pearson	0,21

- The perceived cost (mean value) of living with an alcoholic-dependant person represents 7% of the average monthly income and 13% of the average monthly adjusted income.
- The yearly cost per case of alcohol dependency is CHF 5832 (based on the average value).
- According to ISPA () there are 300'000 alcohol-dependent in Switzerland, which is about 5% of the adult population. The annual intangible cost of alcohol dependency in Switzerland is thus CHF 1,75 billion.

7. Discussion