

Microinsurance Demand and Willingness to Pay

José L. Carvalho

English version: Gustavo Caldas

Introduction

Risks may be individually absorbed by insurance. Because the evaluation of any one risk is subjective, people react in different ways to the same exposure to a particular risk, under comparable conditions. The literature features three types of individuals according to their attitude to risk: risk averse, risk neutral and risk-prone. In addition to this individual attitude towards risk, the actions individuals may take to manage the risks they face depends on how much it costs to guard against such risks and on the value of the expected loss. Therefore, the price that an individual is willing to pay for a given protection against specific risks depends, among other things, on their assessment of the risk and on their income. In general, people are expected to be risk averse.

In most countries, low income families are shut out of formal insurance markets due to price constraints of policies, and regulations on the minimum coverage of risk inherent in the policies. Thus, low-income families have to find alternative mechanisms to protect

themselves against losses resulting from death, disability, health problems or property losses due to theft, fire or other damage to property. How do these families manage these risks? In general, they are self-insured and rely on a system of mutual protection, in which members of the community help each other. Is this informal insurance system based on solidarity successful?

As a microfinance component, the microinsurance approach has been adopted, in many countries, to overcome the difficulties of low income families in managing the risks they face. What features should an insurance policy have (regarding premium, coverage, exclusions) to meet the tastes and the ability to pay of low-income families?

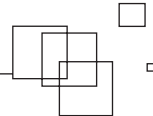
By means of a survey, the aim of this research is to determine the maximum price that low income people, in a family context, would be willing to pay for insurance protection (willingness-to-pay); in particular, for life insurance. Based on this maximum price, two inferences are made. The first is to establish an association between the buyer characteristics and this maximum price. The second is an attempt to estimate the gain in welfare for low-income families by the very existence of a microinsurance market. Although simple and crude, the estimation of this gain helps demonstrate the importance of developing a microinsurance market in Brazil.

The survey was commissioned by Funenseg and conducted by *Datafolha*, a company specializing in this type of research. The questionnaire used in the survey took into account the definitions of microinsurance and low-income population in Brazil issued by the SUSEP's Working Group on Microinsurance established by SUSEP Decree 2960 of 12/06/2008:

Microinsurance is the financial protection provided by authorized providers for low-income population against specific risks in exchange for premium payments that are proportional to the probability and costs of the risks involved, in accordance with the law and the generally accepted insurance principles.

Low-income population for microinsurance purposes in Brazil is the sector of the population with per capita monthly income of up to two minimum wages, whose occupation can be both in the formal sector and in the informal sector of the economy.¹

¹ Partial Report I, SUSEP Working Group on Microinsurance, p.20, SUSEP, August 2008.



Because a family context was considered, the survey selected households with family income between one and five minimum wages, although the contribution to the total income of each member of the household has been identified. In addition to evaluating the concept of microinsurance according to the view of the potential users' population, information on the willingness of the low income population to pay for two different microinsurance life policies was collected. Further to the specific information on microinsurance, the survey determined the socio-economic and demographic profile of the household members, as well as their financial background and the existence of formal protection against risks by means of insurance. Special emphasis is given to the concept of insurance and how people evaluate it (positive and negative aspects), as well as willingness or not to buying insurance. Annex I shows the questionnaire applied to 212 households in districts of the city of São Paulo and 216 households in the administrative regions of Rio de Janeiro².

In the following section, the data obtained from the *Datafolha* survey will be analyzed and the variables that will be used in the study of willingness to pay will be described. Section three presents the analysis of willingness to pay for the two life insurance policies considered in the survey. The well-being resulting from a microinsurance market is estimated in section four, followed by the conclusions of this paper.

Data Description

The survey conducted by *Datafolha* produced 428 final interviews, 216 of which were held in various administrative regions in Rio de Janeiro and 212 in districts of the city of Sao Paulo. In both cities the choice of the administrative region was made according to the concentration of low-income population (universe) in each location. The interviews, which took place from July 06, 2009 to July 10, were made in blocks (clusters) drawn at random from the census data obtained from IBGE. People interviewed in each household were, by necessity, the householder or the spouse of the householder, over 18 years of age and with a family income ranged from one to five national level minimum wages. The questionnaire contained questions specifically related to the household characteristics, the people living in the household, to the identification of the householder and spouse, as well as the degree or type of relationship of each resident with the householder. Information on the education and occupation of each resident was collected. Information on the financial background, as well as that specifically related

² For further details, as well as a description of the data collected for the survey, see Evaluation of the Concept of Microinsurance among a Low Income Population, report submitted to Funenseg. *Datafolha*, July 2009.

to insurance, was also collected, along with the attitude of the respondent in relation to insurance, with emphasis on the concept of microinsurance.

With the available information about the 428 households, and in order to study the willingness to pay for the two insurance policies presented to the respondent with five pricing options for each policy, the following variables were established:

City: 0 if Rio de Janeiro and 1 if São Paulo;

Family income: family income amount in *reais*;

Householder Gender: 0 if female and 1 if male

Age of Householder: age of the householder in years;

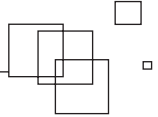
Education of householder: 0 = illiterate, incomplete elementary school or unknown;
1 = complete elementary school or incomplete middle school;
2 = complete middle school or incomplete high school;
3 = complete high school;
4 = incomplete or complete college education;
5 = post-graduate

Occupation of householder: 0 = housewife, trainee, student or unemployed seeking job or not;
1 = unregistered employee and free-lancer
2 = formal self-employed (paying social security – INSS), entrepreneur;
3 = registered employee;
4 = government employee, retired, living on savings

Children 5 years of age or less: number of children aged 5 years or less;

People 60+ years of age: number of persons aged 60 years or more;

Financial background: 0 = no financial background, that is, answered negatively to questions on possible background, refused to inform or did not answer the questions;
1, 2, 3, 4, 5, 6, 7 or 8 according to the number of answers ‘yes’ to the questions:
Do you have a checking account in a bank?
Do you have a savings account?
Do you have a credit card?



- Do you have any bank financing?
 Do you participate in any buying consortium?
 Do you have shares in any investment fund?
 Do you have any mortgage or other form of real estate financing?
 Do you have any capitalization financial security?
- Householder with insurance:** 0 = if householder does not hold life insurance;
 1 = if householder holds life insurance;
- Will buy life insurance:** 0 = if not willing to buy one of the life insurance policies (*does not know if will buy, probably won't buy, or certainly won't buy*);
 1 = if willing to buy one of the life insurance policies (*options certainly will buy and probably will buy*);
- WTP10:** 0 = not buying at any price;
 = price that would pay for the R\$ 10k policy; policy offered from the highest to the lowest premium; R\$ 15,00; R\$ 12,50; R\$ 10,00; R\$ 7,50 e R\$ 5,00;
- WTP30:** 0 = not buying at any price;
 = price that would pay for the R\$ 30k policy; policy offered from the highest to the lowest premium; R\$ 37,50; R\$ 31,25; R\$ 25,00; R\$ 18,75 e R\$ 12,50.

Willingness to Pay

The absence of a microinsurance market creates a situation in which inferences about that market require the use of techniques similar to those used in the valuation of common property resources, particularly environmental resources. There are several ways to estimate this valuation, but the method often used is contingent valuation. This method consists of finding out, directly from the population or community associated with the environmental resource, through the means of surveys, what value this resource is considered to have. The valuation is said to be “contingent” because of the conditions imposed on the valuation process. Thus, people are asked about how much they are willing to pay (or receive) to accept a change in the use of the common property, even if they do not make direct use of that property.

Therefore, two specific questions on microinsurance were presented, in which the interviewee was offered two life insurance policies, one worth an amount of R\$ 30k

and another worth R\$ 10k. Five premiums were considered for each policy, and each of them was initially offered at the highest price. If the respondent agreed to pay the premium, the interviewer recorded the fact and proceeded to the other questions. In case the respondent refused to purchase the policy, the same policy was offered at the next lower premium. The process continued until the acceptance of the policy at a particular premium. If the respondent did not accept the policy, the premium was registered as zero.

Since people differ in their preferences, family, education and income condition, the willingness to pay for life microinsurance was studied for each of the policies through regression analysis as discussed below. The goal was to identify how these individual differences affect the willingness to pay for life microinsurance. Annex II shows some descriptive statistics and simple correlations between the variables used in the regression analysis.

The constants of the regressions represent how many Brazilian Reais more (whether positive) or less (whether negative) people are willing to pay for the corresponding life insurance policy according to the following conditions:

- If the household is located in Rio de Janeiro, with no children with five or fewer years of age and no persons with 60 or more years of age;
- If the householder is female, illiterate, with incomplete elementary school or unknown condition, with occupation of housewife, trainee, student or unemployed seeking job or not, not holding a life insurance policy
- If the family does not have financial background, not willing to buy life insurance and would not buy the microinsurance policy alternative to the one considered in the analysis i.e. zero price for the R\$ 10k policy in the case of willingness to pay for a R\$ 30k policy and a similar situation to the willingness to pay for the R\$ 30k policy compared to the R\$ 10k policy.

Table 1 summarizes the results obtained by regression analysis (simple method of minimum squares) for willingness to pay for the R\$ 30k policy. According to statistics of overall evaluation of the regression (adjusted $R^2 = 0.865$ and statistic $F = 200.35$), the linear model adopted adheres very well to the data. The total number of observations (households) in the regressions differs from 428 by the lack of information on some variables, particularly family income. One must consider the interpretation of the results.

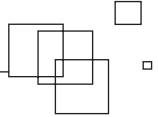


Table 1 – Factors affecting willingness to pay for a R\$ 30k life microinsurance policy (Dependant Variable WTP30)

<i>Explanatory variables</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>Stat t</i>	<i>value-P</i>
Constant	-2,3563	1,8971	-1,2420	0,215025
City	-1,2166	0,6357	-1,9138	0,056436
Gender of householder	-2,0118	0,7453	-2,6993	0,007276
Age of householder	0,0838	0,0321	2,6151	0,009295
Education of householder	0,0818	0,2781	0,2941	0,768876
Occupation of householder	-0,2470	0,2159	-1,1436	0,253546
Children 5 years of age or less	1,6096	0,6611	2,4348	0,015382
Persons 60 years of age or more	-1,0303	0,6916	-1,4897	0,137188
Family income	0,0010	0,0006	1,5423	0,123871
Financial background	-0,2060	0,2520	-0,8174	0,414212
Householder holding life insurance	1,5406	0,7766	1,9839	0,048030
Buying life insurance	26,6784	0,9774	27,2947	0,000000
WTP10	0,3268	0,0708	4,6154	0,000005
<i>Variance analysis</i>				
<i>Variation source</i>	<i>gl</i>	<i>SQ</i>	<i>MQ</i>	<i>F</i>
Regression	12	83863,0243	6988,585	200,347393
Residue	361	12592,5238	34,882	
Total	373	96455,5481		
<i>Regression statistics</i>				
Multiple R		0,9324		
Square-R		0,8694		
Adjusted Square-R		0,8651		
Standard error		5,9061		
Observations		374		

The constant is not statistically different from zero, both in relation to a significance level of 10% or 5%. Thus, the characteristics of the householder and those of the household included in this parameter are not significant in explaining willingness to pay. Interestingly, because the *City* coefficient is negative and statistically different from zero with a significance level of just over 5%, we can infer that, all else kept constant, residents in the city of São Paulo show a willingness to pay for the life insurance policy in question in the amount of R\$ 1.22 less than residents in Rio de Janeiro. The variables

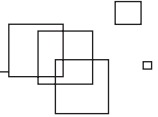
Gender and Age of the householder are significant at 1% and have a negative and a positive impact, respectively, on willingness to pay. Households whose householders are males, all else kept constant, show a lower willingness to pay in the amount of R\$ 2.01, whereas that same willingness to pay, all else kept constant, increases by about 8.4 cents per additional year of age of the householder.

Variables *Occupation of householder* – built to increase its numerical value according to the stability of family income flow – and *Education* are not statistically significant. The presence of children aged five years or less has a positive effect on willingness to pay and it is statistically significant at just over 1%. The coefficient of this variable suggests that family willingness to pay increases by about R\$ 1.61 when one or more child lives in the household. The presence of people aged sixty or older has a negative effect on willingness to pay, although it is only statistically significant at 14%. The increase in willingness to pay by the presence of one more child overcomes the negative effect caused by the presence of one more elderly person at the household (of less than R\$ 1.03).

The variables associated with family finance, except for *financial background*, are statistically significant. The indication of the *family income* coefficient, although positive, is very small, showing an increased willingness to pay in 10 cents of Real for every R\$ 100 increase in income. It is noteworthy that the coefficient of variable *Householder holding life insurance* is positive and statistically significant at 5%. This may be an indication that the experience of holding a life insurance policy makes the householder more likely to consider policies offering better protection to the family should the householder die. The coefficient of that variable indicates, all else kept constant, a willingness to pay in the amount of R\$ 1.54 more for the insurance offered.

The variable of greatest significance is the willingness to buy a life insurance policy (*buying life insurance*). The existence of this willingness contributes with R\$ 26.68 to willingness to pay. The premium of the alternative policy (WTP10) has a positive effect on willingness to pay for the R\$ 30k policy, indicating that, all else kept constant, an increase in the R\$ 10k policy premium makes people willing to pay more for the higher value policy.

Table 2 shows, for the same explanatory variables, the analysis of willingness to pay for a R\$ 10k life insurance policy (WTP10). The adherence of the model to the data is lower than that for the R\$ 30k policy (adjusted $R^2 = 0.610$ and statistic $F = 49.69$). Only three explanatory variables are statistically significant and all of them have a positive effect on willingness to pay. *Gender of householder*, with a statistically significant coefficient at 10%, indicates that for households whose householder is male, all else kept constant, the willingness to pay is R\$ 0.90 higher. Note that the effect of this variable is negative



for the higher value policy and that it has a much greater effect on willingness to pay. The other two variables with positive effect on willingness to pay are the most relevant in terms of statistical significance. The willingness to buy a life insurance policy (variable *buying life insurance*) has a positive impact of approximately R\$ 5.23 on willingness to pay, much less than that of the R\$ 30k policy. Relative to the average premium, there is a big gap. Whereas the impact on the predisposition to buy a life insurance is 52.4% of the average premium (R\$ 10) for the R\$ 10k policy, this impact is 107% of the average premium (R\$ 25) for the R\$ 30k policy.

Table 2 – Factors affecting willingness to pay for a R\$ 10k life microinsurance policy (Dependant Variable WTP10)

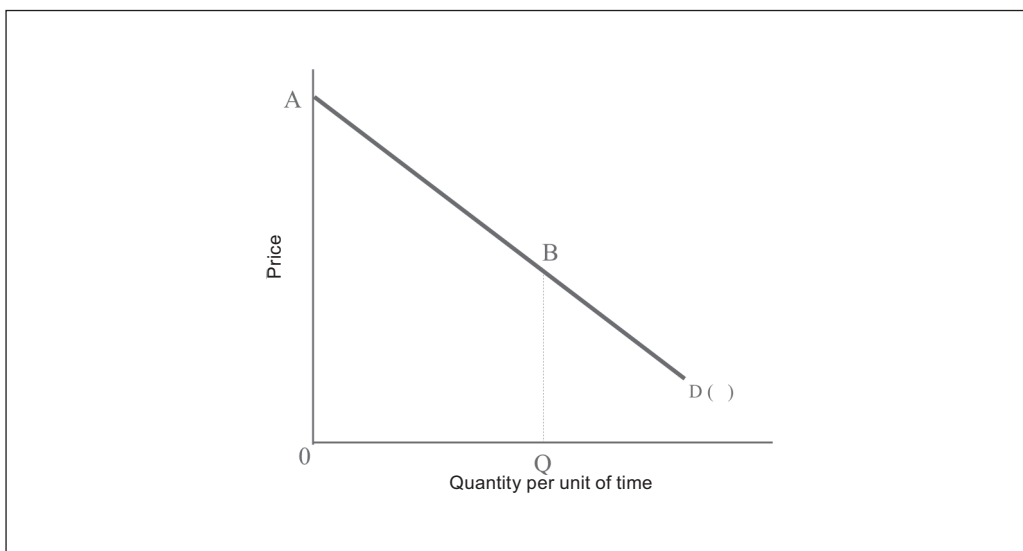
<i>Explanatory variables</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>Stat t</i>	<i>value-P</i>
Constant	1,8034	1,3698	1,3165	0,188833
City	0,0778	0,4615	0,1687	0,866136
Gender of householder	0,8981	0,5417	1,6580	0,098181
Age of householder	-0,0187	0,0233	-0,8021	0,423039
Education of householder	0,2900	0,2003	1,4478	0,148553
Occupation of householder	-0,0253	0,1562	-0,1621	0,871357
Children 5 years of age or less	0,1113	0,4813	0,2313	0,817181
Persons 60 years of age or more	0,2128	0,5009	0,4248	0,671254
Family income	-0,0008	0,0005	-1,6313	0,103699
Financial background	-0,2377	0,1818	-1,3078	0,191766
Householder holding life insurance	-0,5318	0,5632	-0,9442	0,345679
Buying life insurance	5,2293	1,2046	4,3410	0,000018
WTP30	0,1705	0,0369	4,6154	0,000005
<i>Variance analysis</i>				
<i>Variation source</i>	<i>gl</i>	<i>SQ</i>	<i>MQ</i>	<i>F</i>
Regression	12	10850,2857	904,1905	49,690131
Residue	361	6568,9656	18,1966	
Total	373	17419,2513		
<i>Regression statistics</i>				
Multiple R	0,7892			
Square-R	0,6229			
Adjusted Square-R	0,6104			
Standard error	4,2657			
Observations	374			

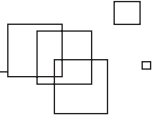
The premium of the alternative policy (*WTP30*), similarly to the higher value policy, has a positive effect on willingness to pay and is statistically significant. The variable *Householder holding life insurance*, unlike the previous case, has a negative sign, but it is not statistically different from zero. *Family income* has a negative effect on the willingness to pay (statistically significant at 11%), contrary to the effect registered for the R\$ 30k policy, although in both cases the coefficients of this variable are quite similar in absolute terms. In this case the reduction in willingness to pay is 8 cents for each R\$ 100 increase in income, all else kept constant. The *education of householder* has a positive effect on willingness to pay, but it is statistically different from zero at a significance level of 15%.

Gain in Welfare

Whenever the demand for goods or services is known, it is possible to estimate the social benefit generated by the possibility to meet this demand at a specified price. It is obvious that the lower the price, the higher the quantity demanded and, as a result, the greater the social benefit. Thus, one can simulate the social benefits for various prices. The figure below characterizes this social benefit, at price QB , by means of the trapezium area $ABQ0$, where the height of demand represents the maximum price that buyers are willing to pay for various amounts, all else kept constant.

Figure 1 – Total benefit to consumers for the existence of a market





This is not a net benefit as to the cost of acquisition of the asset. Therefore, it is necessary to deduct the total expenditure of consumers with the goods or service. Based on the data obtained on the survey, we can determine five points of demand for each of the life insurance policies considered.

Table 3 – Willingness to pay for a life insurance policy: distribution of buyers for a premium higher than or equal to the suggested premium

Ref.	R\$ 30k Policy		R\$ 10k Policy	
	Premium (R\$)	Buyers	Premium (R\$)	Buyers
A	37,50	94	15,00	125
B	31,25	113	12,50	136
C	25,00	137	10,00	155
D	18,75	156	7,50	168
E	12,50	183	5,00	187

Table 3 summarizes the information on willingness to pay of respondents for the two insurance policies considered. Thus, 94 respondents would be willing to purchase a R\$ 30k life insurance for a R\$ 37.50 premium. However, if the premium was R\$ 31.25, 19 more respondents would be willing to purchase such insurance. Thus, it is observed that 113 respondents would be willing to purchase the insurance for a R\$ 31.25 premium, i.e., the 94 respondents that would be willing to pay R\$ 37.50 and, therefore, would keep buying insurance, plus the 19 respondents that would purchase the insurance for a R\$ 31.25 premium. This is a direct consequence from what the height of the demand curve represents: the maximum price that buyers are willing to pay to acquire particular goods or services. Note that all the characteristics of each interviewee are kept constant in the declaration of willingness to pay as we move from one premium option to another, indicating that the five points for each insurance belong to the same demand curve.

Table 4 shows the distribution of the 428 families interviewed according to the option of buying each one of the two insurance policies, both policies, only one policy, or not buying any insurance.

For the five-point demands of the insurance policy, we can calculate four price elasticities (arc) for each one, as shown in the table below. This table also presents the elasticities in each point of the demand curve for each of the five premiums considered, assuming these demands are rectilinear.

Table 4 – Distribution of the interviewed families according to attitude to insurance

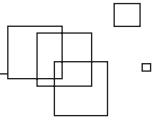
Options	Distribution			
	Families		Percentage	
	Yes	No	Yes	No
Buying R\$ 30k policy	183	245	42,8	57,2
Buying R\$ 10k policy	187	241	43,7	56,3
Buying both policies	158	270	36,9	63,1
Buying only R\$30k policy	25	403	5,8	94,2
Buying only R\$10k policy	29	399	6,8	93,2
Not buying insurance	216	212	50,5	49,5

Table 5 – Estimates of price elasticity of life insurance demand

Reference	Based on survey's responses		Based on linear approximation*	
	WTP30	WTP10	WTP30	WTP10
A Between A and B	-1,0097	-0,4636	-1,4106	-0,7488
B Between B and C	-0,8640	-0,5876	-0,9779	-0,5735
C Between C and D	-0,4539	-0,2817	-0,6453	-0,4026
D Between D and E	-0,3982	-0,2676	-0,4250	-0,2786
E			-0,2415	-0,1668

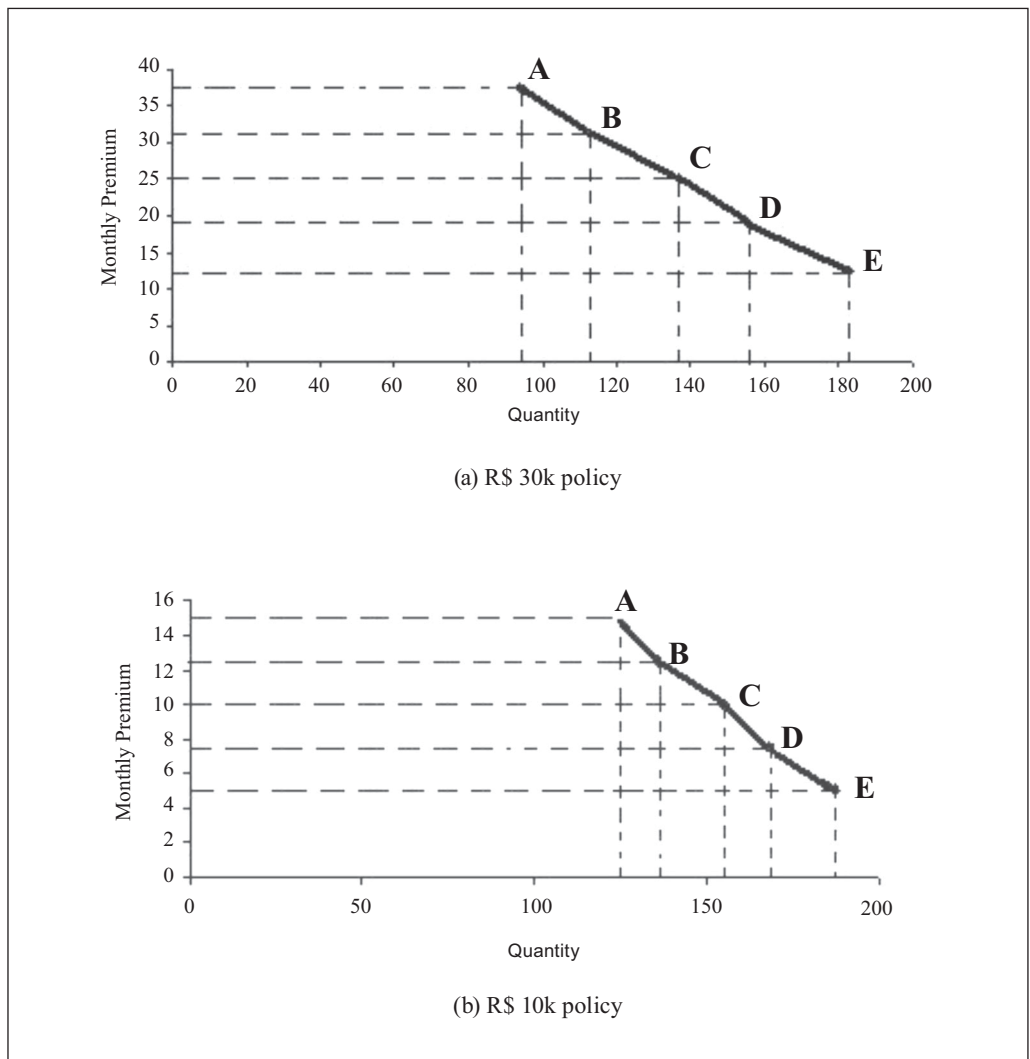
* Linear approximation by minimum squares to the five observations to evaluate the approximation to be adopted.

Comparing the estimated elasticities with those obtained by linear approximation, we find that the linearity assumption is reasonable and closely fitting with the information provided by respondents for the R\$ 30k insurance. For higher premiums, the demand/price elasticities are larger in absolute value, except between B and C for the R\$ 10k policy. Thus, in our effort to quantify the gross benefit that the creation of a microinsurance market would bring to policyholders, we're assuming that the demands for the policies considered are linear demands. For both life insurance policies, Figure 2 shows the number of respondents who would buy insurance (on the horizontal axis) for each premium specified on the vertical axis, according to the survey results.



As the gross benefit appropriated by buyers of a product or service in a market is the area under the demand curve, all else kept constant, we can estimate this benefit to the sample used in this study by adding the areas of the trapezoids vertically defined by segments AB, BC, CD, and DE for each of the policies. This is possible because at the time of the survey and for each family, their characteristics and that of the households, their incomes and prices of other goods and services, are given, i.e., they do not vary.

Figure 2 – Graphic representation of willingness to pay for life insurance policy



Suppose that the average premium for both policies is the premium at which the policies are sold. Thus, the gross benefit from the acquisition of each of these policies to the families included in the sample is the sum of the trapezoid areas vertically defined by segments AB and BC in parts (a) and (b) of Figure 2. As the premium must be monthly paid, the demand flow is per month. The results are summarized in Table 6 below.

Table 6 – Estimated gross benefit by the existence of microinsurance based on the 428 families sample – R\$ per month

	R\$ 30k policy	R\$ 10k policy
Area under segment AB	653,125	151,25
Area under segment BC	675,000	213,75
Total	1.328,125	365,00

From the results obtained from our sample, we infer on the gross benefit that the existence of a microinsurance market could generate from marketing the two policies considered for the Brazilian population with family income between one and five national level minimum wages. Table 7 shows the distribution of families for our sample sourced from 2007 PNAD, according to family income by minimum wages class, for the Southeast region and Brazil.

Table 7 – Distribution of families according to family income class in minimum wages

Classes in M.W.	Sample		Southeast Region			Brazil		
	Families	%	Fam. 1000	%A	%R	Fam. 1000	%A	%B
1 to 2	130	30,3	7.498	60,9	28,3	14.595	62,7	24,3
2 to 3	126	29,4	2.718	22,1	10,3	4.949	21,3	8,2
3 to 5	173	40,3	2.094	17,0	7,9	3.738	16,0	6,2
Total	428	100	12.310	100	46,5	23.282	100	38,7

Sources: Sample: Datafolha 2009; Southeast and Brazil: IBGE/PNAD 2007

Notes: %A refers to the distribution of families with family income from 1 to 5 minimum wages; %R refers to the percentage of families in the region with family income in the corresponding range; %B refers to the percentage of families in Brazil with family income in the corresponding range.

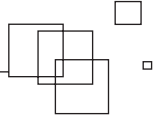


Table 4 tells us that about 40% of the respondent families of the sample would buy insurance at the suggested premiums. However, at the average premiums, about 32% and 36% of the families of the sample would buy, respectively, the R\$ 30k insurance and the R\$ 10k insurance. Thus, it is reasonable to assume that about 30% of the families with income between one and five minimum wages in all Brazil would be willing to buy microinsurance at the average premium, in a similar behavior to that of the sample families.

Note that the sample that we use has about half the percentage of families with income between one and two minimum wages reported to the Southeast region (60.9%) and Brazil (62.7%), in percentage points. In Table 8 we present the percentage distributions of families purchasing the policies offered in the survey according to family income in minimum wages, for each of the policies and at premiums equal to or higher than average premiums. We can see that for the R\$ 30k policy, the distribution of families buying the R\$ 25 premium is quite close to the distribution of families in the sample. For the R\$ 10k policy, the buying families are proportionately higher than the sample total for the income range between two and three minimum wages, and lower for other classes. For both policies, for family income range between one and two minimum wages, the percentage of buying families is very close to 30% and this is the income range with the lowest incidence of buyers.

Table 8 – Distribution of families in the sample by monthly family income class according to willingness to pay for life insurance policies.

Monthly family income by class	R\$ 30k policy			R\$ 10k policy		
	R\$ 37,50	R\$ 31,25	R\$ 25,00	R\$ 15,00	R\$ 12,50	R\$ 10,00
12 minimum wages	30,9	31,6	29,3	37,0	25,0	29,4
23 minimum wages	30,9	15,8	31,7	31,5	33,3	35,3
35 minimum wages	38,2	52,6	39,0	31,5	41,7	35,3
Buying families	94	113	137	125	136	155

According to IBGE, in 2007 Brazil had 23.282 million families with income between one and five minimum wages. Assuming that thirty percent of the group would buy the microinsurance offered, we can estimate the gross benefit for these families using the estimated gains in Table 6 for the 43 (137 – 94) families who were willing to purchase the R\$ 30k policy and for the 30 (155 – 125) families

relating to the R\$ 10k policy. If the demand for insurance for each policy in the entire country holds the same characteristics of each identified demand in our sample, we can estimate the total gross benefit appropriated by Brazilian families due to the existence of a microinsurance market using the average benefit per family estimated for our sample.

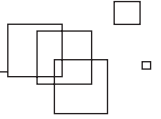
As the distribution of families according to income class in minimum wages in our sample differs from the distribution of the population, it is necessary to correct it when identifying the population that buy an insurance policy. The sum of the demand curves for goods can only be done at the same price for the goods, all else kept constant. As the latest data relating to the Brazilian population, and used in this simulation, refer to 2007, the condition “all else kept constant” does not strictly apply. For example, the number of household members (especially with children aged five years or less), the purchasing power of the minimum wage, and the prices of other goods, certainly will all have varied from the year the PNAD was performed to July 2009 and when our sample was extracted. Thus, these results should be seen as indicative of the magnitude of the gross benefit generated by the introduction of a microinsurance market that incorporates the policies considered.

The correction of the distribution of the population is simple and consists in keeping the same distribution of families by income class shown in our sample to the population. Thus, instead of taking the 23.282 million families with income from one up to five minimum wages, we considered 16.228 million families with the same distribution according to minimum wages ranges as that of our sample. Therefore, 4.868 million of these families (30% according to our hypothesis) would buy insurance policies. The table below summarizes our estimate:

Table 9 – Simulation of the gross benefit appropriated by families buying life microinsurance, according to policies offered in the survey

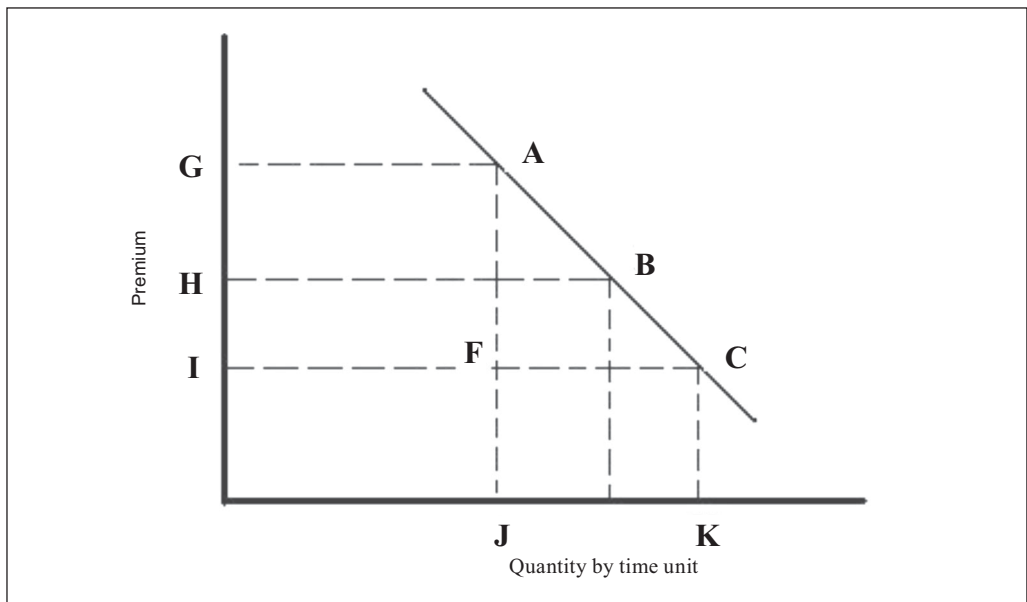
(monthly and annual flow, in R\$)

	R\$ 30k policy	R\$ 10k policy
Number of 1,000 families buying insurance	4.868	4,868
Average gross benefit per family in the sample	R\$ 30,89	R\$ 12,17
Monthly flow of total gross benefit	R\$ 150.372.520,00	R\$ 59.243.560,00
Annual flow of total gross benefit	R\$ 1.804.470.240,00	R\$ 710.922.720,00



Thus, the gross benefit appropriated by low-income families, at the average premiums used in the survey, could be as much as R\$ 1.804 billion per year if the R\$ 30k policy were marketed or R\$ 710.922 million per year for the R\$ 10k policy. The net benefit appropriated by the buying families can be obtained by discounting from the gross benefit the premium payment of R\$ 25.00 for the R\$ 30k policy and R\$ 10.00 for the R\$ 10k policy. This is represented in Figure 3 by the area of triangle AFC, which is the area of trapezoid AJKC, which represents the gross benefit, less the area of the rectangle FJKC representing the expenditure of buying the good; in our case, an insurance policy at a premium KC. Note that the trapezoids ABHG and BCIH add the net benefits of the buyers of this insurance policy at premium KC. This net benefit represents an area larger than that of triangle AFC because other buyers who value the policy at a premium above JA, the biggest premium considered in the survey, also appropriate a net benefit for paying a KC premium, below the value they attribute to the policy.

Figure 3 – Graphic identification of the net benefit to the consumers in a market



These simulations illustrate why microinsurance is successful in terms of welfare: small gains to a lot of people. To get an idea of the importance of microinsurance, *Programa Bolsa Família's* budget (a state funded social program) for 2009 is R\$ 10.9

billion. Thus, the net benefit of a life microinsurance policy with a R\$ 30k coverage at a R\$ 25 per month premium is 3.2% of the largest government social program. However, the comparison should be made with the gross benefit since the program's budget does not take into account the expenses incurred for transferring the funds. The gross benefit generated by this insurance policy is 16.56% of the Program's budget.

Table 10 – Simulation of the net benefit appropriated by families buying life microinsurance, according to policies offered in the survey

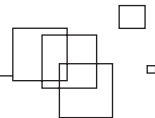
(monthly and annual flow, in R\$)

	R\$ 30k policy	R\$ 10k policy
Number of 1,000 families buying insurance	4.868	4.868
Average net benefit per family in the sample	R\$ 5,89	R\$ 2,17
Monthly flow of total net benefit	R\$ 28.672.520,00	R\$ 10.563.560,00
Annual flow of total net benefit	R\$ 344.070.240,00	R\$ 126.762.720,00

Conclusion

The analysis of willingness to pay for the two insurance policies considered in the survey make it clear that the intention of buying insurance has a positive and statistically significant effect on the premium the buyer is willing to pay for the policy. The positive effect of willingness to pay for a policy on the willingness to pay for the alternative policy is clear. In terms of adherence of data to the linear model adopted, the results of regression analysis for the R\$ 30k policy were better. Furthermore, relatively to this policy, 7 of the 13 explanatory variables (including constant) had coefficients statistically different from zero for a significance level between 1% and 6%, and two variables had coefficients statistically different from zero for a significance level between 12% and 14%. As for the R\$ 10k policy, only two explanatory variables had coefficients different from zero, with a significance level of less than 1%, and two others had coefficients statistically different from zero at a significance level between 9% and 11%. We will focus our final comments on the R\$ 30k policy.

Among the variables describing the characteristics of the householder (gender, age, education and occupation), gender and age were statistically significant, indicating that



the male householder is willing to pay less for the insurance policy, but willingness to pay increases with age. Both education of the householder as his/her occupation were not statistically significant in explaining willingness to pay. This may have resulted from the way in which these variables were built, particularly occupation. The location of the household in Sao Paulo implies a lower willingness to pay. The presence of children aged five years or less in the household increases willingness to pay for an insurance policy, while the presence of people aged 60 years or more, with less statistical significance, has a negative effect on the larger amount policy.

The results for household income, with similar statistical significance, are opposed for the two policies, with a negative effect on the R\$30k policy. The financial background has no statistical significance in explaining willingness to pay in the analysis of the two insurance policies and the fact that the householder holds insurance is statistically significant only for the R\$30k policy and its effect on willingness to pay is a positive one.

The simulations to estimate the benefits generated by the implementation of a microinsurance market, although seen as indicative of the importance of such a market, are subject to various approximations. Despite all the simplifications and approximations adopted, it is clear that the benefits of a microinsurance market for low-income families are not negligible. Considering the two insurance policies, the gross benefit appropriated by families when buying life insurance can vary from 16.6% to 6.5% of the 2009 budget for the largest government social program, *Bolsa Família*. The percentages of the net benefits can vary from 3.2% to 1.2% of the 2009 budget of that program.

Annex I – Questionnaire

PM 643119 – “Microinsurance” evaluation

CHECKING:		1. CHECKED	2. NO PHONE	3. WRONG PHONE	4. INTERVIEWEE NOT FOUND	CPD NB:	<input type="text"/>
V. CLOSED:	<input type="text"/>	QTY:		QUESTIONNAIRE NB:	<input type="text"/>	CLUSTER NB:	<input type="text"/>
V. OPEN:	<input type="text"/>	QTY:		INTERVIEWER NB:	<input type="text"/>	CITY NB:	<input type="text"/>
TYPE:	1. PROBABILISTIC 2. INTENTIONAL 3. ENROLLMENT				BEGINNING TIME:	<input type="text"/>	<input type="text"/>
CHECKER NB:	<input type="text"/>	CRITIC NB:	<input type="text"/>	DATE:	/ /2009	ENDING TIME:	<input type="text"/>

FILL IN AFTER ADMINISTERING THE QUESTIONNAIRE:

NAME OF INTERVIEWEE:	<input type="text"/>		
ADDRESS:	<input type="text"/>		
DISTRIC:	<input type="text"/>	CITY:	<input type="text"/>
PHONE 1: ()	<input type="text"/>	PHONE 2: ()	<input type="text"/>

PF.4a By adding your income and the income of the people living with you, how much, approximately, is the total monthly family income in your home? (**SPONTANEOUS AND SINGLE**)

R\$

99 Don't know

97 Refused to answer

PF.4b (SHOW INCOME CARD F4) According to this card, by adding your income and the income of the people living with you, how much, approximately, is the total monthly family income in your home? (**STIMULATED AND SINGLE**)

1. Up to R\$ 464,00 (below 1 MW) → **STOP, IT'S ENROLLMENT**

2. From R\$ 465,00 up to R\$ 930,00 (from 1 up to 2 MW)

3. From R\$ 931,00 up to R\$ 1.395,00 (more than 2 up to 3 MW)

→ **PROCEED**

5. From R\$ 1.396,00 up to R\$ 2.325,00 (more than 3 up to 5 MW)

6. R\$ 2.326,00 or above (more than 5 MW) → **STOP, IT'S ENROLLMENT**

97. don't know/refusal → **STOP, IT'S ENROLLMENT**

P.1 Not counting employees, how many people, including you, live in your home?

P.2 Starting with you, what is the first name and age of each of the residents? (**INTERVIEWER, WRITE DOWN GENDER**)

P.3 Who is the householder? (**PREFERABLY THE HOUSEHOLDER OR HIS/HER SPOUSE IS TO BE INTERVIEWED**)

P.4 (FOR EACH OF THE RESIDENTS, INCLUDING THE INTERVIEWED) What relation is _____ (**NAME THE RESIDENT**) to the householder?

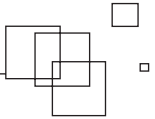
P.5 Until which school year has _____ (**NAME THE RESIDENT**) studied?

P.6 Currently, is _____ (**NAME THE RESIDENT**) working? (**IN CASE YES**) _____ (**NAME THE RESIDENT**)'s main job is: (**READ CATEGORIES IN "PEA" CARD**). (**IN CASE NOT**) Studying only, retired, housewife or unemployed? (**IN CASE UNEMPLOYED**) Is he/she looking for a job or not?

P.7a (TO EACH OF THE RESIDENTS) How much approximately is _____ (**NAME THE RESIDENT**)'s individual income?

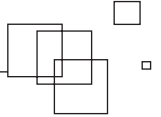
P.7b (TO EACH OF THE RESIDENTS WITHOUT SPONTANEOUS INCOME) According to this card, how much approximately is _____ (**NAME EACH RESIDENT**)'s individual income?

1. Up to R\$ 464,99 2. From R\$ 465,00 up to R\$ 930,00 3. From R\$ 930,01 up to R\$ 1.395,00 4. From R\$ 1.395,01 up to R\$ 2.325,00 99. Don't know 97. Refused to answer



P1	P.2	P.2 Gender	P.2 Age	P.3	P.4	P.5 Education													P.6 Occupation													P.7a	P.7b
Resident's Total	Resident's name	Male	Female	Householder	Relation to Householder	Illiterate/ not studying	Incomplete elementary school	Complete elementary school	Incomplete middle school	Complete middle school	Incomplete high school	Complete high school	Incomplete or complete college education	Post-graduate	Registered employee	Unregistered employee	Government employee	Formal self-employed (paying social security - INSS)	Liberal professional	Entrepreneur	Free-lancer/Small jobs	trainee (paid)	Housewife only	Retired only	Student only	Living on savings only	Unemployed (not looking for job)	Unemployed (looking for job)	Others (WRITE DOWN)	Spontaneous income	Stimulated income (WRITE DOWN CODE)		
1	Entr.	1	2	1		9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	11	12	13	14	16	10			R\$		
2		1	2	2		9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	11	12	12	14	16	10			R\$		
3		1	2	3		9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	11	12	12	14	16	10			R\$		
4		1	2	4		9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	11	12	12	14	16	10			R\$		
5		1	2	5		9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	11	12	12	14	16	10			R\$		
6		1	2	6		9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	11	12	12	14	16	10			R\$		
7		1	2	7		9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	11	12	12	14	16	10			R\$		
8		1	2	9		9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	11	12	12	14	16	10			R\$		

Interviewer, check whether the sum of each resident's income is equal to the family income shown in F-4b



P.10 Still thinking about what we have just read, I would like to know which aspect of **insurance** you **dislike** the most, i.e., what do you like the least about this kind of protection? (**SPONTANEOUS AND MULTIPLE – EXPLORE AND CLEAR**)

P.12 (SHOW CARD 12) Taking into consideration your needs and those of your family, how important is it for you or your family to be insured? (**STIMULATED AND SINGLE**)

- 5 very important
- 4 important
- 3 somewhat important
- 2 little important **or**
- 1 not important?

P.13a Currently ____ (**NAME EACH INSURANCE?**)

P. 13b Do you hold any other insurance that wasn't named? (**STIMULATED AND SINGLE BY LINE**)

		P.13 Holding Insurance	
		Yes	No
a.	do you hold life insurance , as a holder or as a beneficiary?	1	2
b.	do you hold a home insurance ?	1	2
c.	do you or any other resident in your home hold an auto insurance ?	1	2
d.	do you hold any health insurance or health plan , as a holder or as dependent?	1	2
	Which one?(WRITE DOWN) _____		
e.	Others (WRITE DOWN) _____	1	2

P.14 (TO ALL) (SHOW CARD 14) Regardless of holding insurance or not, thinking about an insurance that best meets your needs and those of your family, if you were to choose an insurance today, regardless of your financial situation or price, which insurance would you choose among these? (**STIMULATED AND POSSIBLY MULTIPLE**)

P.14e Some other insurance that is not on the card. This insurance may or may not currently exist, what matters is that you tell me for which property or situation you would like to hold an insurance to protect yourself or your family against an occasional loss. (**SPONTANEOUS AND MULTIPLE**)

P.15 (SHOW CARD 14) Considering your current financial situation and the price to be paid, or even the price you imagine, thinking about your needs and those of your family, which insurance would you choose among these? (**STIMULATED AND POSSIBLY MULTIPLE**)

P.16 (FOR EACH INSURANCE MENTIONED IN P14 and/or P15) How much would you be willing to monthly pay for an insurance like ____ (NAME THE INSURANCE OF P14 OR P15) that you said you would choose? (SPONTANEOUS AND SINGLE)

		P.14 Potential without price	P.15 Potential with price	P.16 Value that would pay
a	Life: in case of death of the insured, insurer will pay to the appointed beneficiary an amount in cash	1	1	,00
b	Home: in case of theft or fire, insured will be paid, in cash, the value of the stolen properties or the value of the damage, up to the limit of the value defined/agreed with the insurer	2	2	,00
c	Auto: this insurance can cover theft, fire and collision. After inspection, the insurer defines the values of the car and of the collision coverage that will be paid.	3	3	,00
d	Health according to the type of insurance chosen, the insured and his/her family may be eligible for medical services, consultations, tests, surgeries and hospitals in the network specified in the insurance	5	5	,00
e	Others (WRITE DOWN)	98	98	,00
				,00
				,00
f	None	96	96	-

(SHOW CONCEPT CARD AND READ IT ALONG WITH THE INTERVIEWEE)

Let's talk a little bit more about life insurance now.

A householder can contract a life insurance policy paying a certain monthly value to the insurer. In the event of his death, the family will receive, in one single payment or in monthly installments for a specified period, a cash payment that depends on the monthly amount paid to the insurer by the householder. Usually the insurance contract has duration of one year and may be renewed as many times as the customer wants.

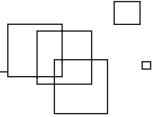
It is important to remember that the insurer is paid for protection. Thus, the insurance will only be paid in case of eventual death of the insured. The insurer does not refund the monthly values paid.

P.17 Thinking about this life insurance that I have just read, how much did you like this life insurance: (READ UNTIL THE QUESTION MARK – STIMULATED AND SINGLE)

5 liked a lot 4 liked 3 sort of liked 2 liked a little **or** 1 didn't like?

P.18 (SHOW CARD 18) How much do you consider this life insurance adequate to your personal needs and to those of your family? (STIMULATED AND SINGLE)

5 very adequate
4 adequate
3 somewhat adequate
2 little adequate **or**
1 not adequate?



P.19 (SHOW CARD 19) According to this card what is your intention of buying a life insurance with these characteristics in the next 12 months? **(STIMULATED AND SINGLE)**

5. will certainly buy
4. will probably buy
3. don't know if will buy
2. probably won't buy **or**
1. certainly won't buy this life insurance?

P.20 For what reasons did you say _____ **(READ ANSWER TO P.19)** this **life insurance in the next 12 months?** **(SPONTANEOUS AND MULTIPLE – EXPLORE AND CLEAR)**

P.21 Assuming that the amount paid to the family in the event of death of the insured was **R\$ 30.000,00**, what is your intention of buying a life insurance with a monthly payment of _____ **(READ EACH VALUE IN THE TABLE)? (IF BUYING)** Certainly or probably?

	VALUES IN REAIS	CERTAINLY WOULD BUY	PROBABLY WOULD BUY	WOULDN'T BUY
a	R\$ 37,50	1 PPP 22	2 PROCEED	3 PROCEED
b	R\$ 31,25	1 PPP 22	2 PROCEED	3 PROCEED
c	R\$ 25,00	1 PPP 22	2 PROCEED	3 PROCEED
d	R\$ 18,75	1 PPP 22	2 PROCEED	3 PROCEED
e	R\$ 12,50	1 PROCEED	2 PROCEED	3 PROCEED

P.22 Assuming that the amount paid to the family in the event of death of the insured was **R\$ 10.000,00**, what is your intention of buying a life insurance with a monthly payment of _____ **(READ EACH VALUE IN THE TABLE)? (IF BUYING)** Certainly or probably?

	VALUES IN REAIS	CERTAINLY WOULD BUY	PROBABLY WOULD BUY	WOULDN'T BUY
a	R\$ 15,00	1 PPP 23	2 PROCEED	3 PROCEED
b	R\$ 12,50	1 PPP 23	2 PROCEED	3 PROCEED
c	R\$ 10,00	1 PPP 23	2 PROCEED	3 PROCEED
d	R\$ 7,50	1 PPP 23	2 PROCEED	3 PROCEED
e	R\$ 5,00	1 PROCEED	2 PROCEED	3 PROCEED

P.23 Now I am going to read a few phrases and I would like you to tell me how much you agree or disagree with each of them with regard to insurance. So, as for _____ (**READ EACH PHRASE**) do you agree or disagree? (**IF AGREEING OR DISAGREEING**) Totally or in part? (**STIMULATED AND SINGLE**)

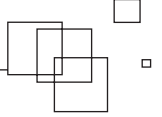
	(APPLY ROTATION)	Totally agree	Agree in part	Neither agree nor disagree	Disagree in part	Totally disagree
a	Holding an insurance makes me feel more relaxed, because I don't have to worry with eventual losses	5	4	3	2	1
b	Holding an insurance guarantees the well being of my family	5	4	3	2	1
c	Insurance is for rich people with a better financial condition.	5	4	3	2	1
d	I am afraid of paying and not receiving the agreed amount.	5	4	3	2	1
e	It is too complicated to contract insurance; I don't understand how it works.	5	4	3	2	1
f	Insurance is important for those who are not registered employees.	5	4	3	2	1
g	I have always wanted to hold an insurance, but I have never found anything adequate to my financial situation.	5	4	3	2	1

P.24 Would you like to receive more information about insurance? (**IN CASE YES**) By what means? (**STIMULATED AND MULTIPLE**)

1. E-mail
2. Direct mailing
3. Magazines
4. Newspapers
5. Cell phone
98. Others (**WRITE DOWN**) _____
96. I wouldn't like to receive information

P.25 Currently, do you hold any _____ (**READ EACH ITEM IN THE TABLE**)? (**STIMULATED AND SINGLE – BY LINE**)

	ROTATION!	HOLDING	NOT HOLDING
a	Checking account in a bank?	1	2
b	Savings account?	1	2
c	Credit card?	1	2
d	Bank financing?	1	2
e	Buying consortium?	1	2
f	Investment fund?	1	2
g	Mortgage or other form of real estate financing?	1	2
h	Capitalization financial security?	1	2



P.26 Is the house you live in owned, rented or borrowed? **(STIMULATED AND SINGLE)**

1. Owned 2. Rented 3. Borrowed 98. Other answers

(WRITE DOWN) _____

P.27 Just for classification purposes, could you tell me if you have **(READ ITEMS BELOW)** in your home? **(IN CASE YES)** How many?

COMFORT ITEMS	DO NOT HAVE	QUANTITY					
		1	2	3	4	5	6+
a. Color TV	96	1	2	3	4	5	6
b. Passenger car	96	1	2	3	4	5	6
c. Radio (not counting car's radio)	96	1	2	3	4	5	6
d. Registered house maid	96	1	2	3	4	5	6
e. Vacuum cleaner or vaporeto	96	1	2	3	4	5	6
f. Washing machine	96	1	2	3	4	5	6
g. DVD	96	1	2	3	4	5	6
h. Videocassette	96	1	2	3	4	5	6
i. Bathroom	96	1	2	3	4	5	6
j. Refrigerator	96	1	2	3	4	5	6
k. Freezer (independent device or part of a duplex refrigerator)	96	1	2	3	4	5	6

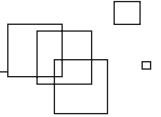
THANK AND CLOSE

Annex II

Descriptive Statistics of the Variables Used in Regressions

Statistics	Gender of the Householder	Age of the Householder	Education of the Householder	Occupation of the Householder	Children 5 or less years of age
Mean	1,2727	49,7594	1,7647	2,1417	0,2380
Standard error of the mean	0,0231	0,8314	0,0647	0,0827	0,0262
Median	1,0000	48,0000	2	3,0000	0
Mode	1,0000	45,0000	3	3,0000	0
Standard deviation	0,4460	16,0793	1,2505	1,5988	0,5068
Sample variance	0,1989	258,5425	1,5638	2,5563	0,2569
Kurtosis	-0,9551	-0,7036	-0,9264	-1,5434	4,6862
Skewness	1,0247	0,2825	0,1552	-0,3280	2,1851
Width	1	69	5	4	3
Minimum	1	19	0	0	0
Maximum	2	88	5	4	3
Count	374	374	374	374	374

Statistics	People aged 60 years or above	Family income	Financial background	Householder holds life insurance	Buying life insurance
Mean	0,4011	1281,4198	1,3930	0,2299	0,4358
Standard error of the mean	0,0345	26,40	0,0686	0,0218	0,0257
Median	0	1200,00	1	0	0
Mode	0	2000,00	0	0	0
Standard deviation	0,6668	510,54	1,3274	0,4214	0,4965
Sample variance	0,4446	260649,26	1,7620	0,1775	0,2465
Kurtosis	0,9870	-0,85	0,4518	-0,3411	-1,9429
Skewness	1,4577	0,31	0,8267	1,2887	0,2599
Width	3	1860,00	7	1	1
Minimum	0	465,00	0	0	0
Maximum	3	2325,00	7	1	1
Count	374	374	374	374	374



Statistics	WTP10	WTP30
Mean	5,6952	13,0348
Standard error of the Mean	0,3534	0,8315
Median	0	0
Mode	0	0
Standard deviation	6,8338	16,0809
Sample variance	46,7004	258,5940
Kurtosis	-1,6501	-1,4328
Skewness	0,4826	0,6026
Width	15	37,50
Minimum	0	0
Maximum	15	37,50
Count	374	374

Variance-covariance matrix of the variables used in analysis of willingness to pay for a life insurance policy

	City	Gender	Age	Educ	Occup	Child5-	Prs60+	FmlInc	FinBok	LfIns	Buy	WTP10	WTP30
City	0.24929												
Gender of householder	-0.02868	0.19835											
Age of householder	-1.25560	1.74745	257.85118										
Education of householder	-0.07392	0.02674	-4.97908	1.55961									
Occupation of householder	-0.09871	-0.04400	9.06886	-0.11639	2.54944								
Children 5 years of age or less	0.02973	-0.01142	-2.65931	-0.04026	-0.05511	0.25621							
Persons 60 years of age or more	-0.01875	0.01629	7.71951	-0.18905	0.40306	-0.06336	0.44342						
Family income	4.80027	-17.67866	-256.93374	174.37417	-31.48462	-0.19615	-29.20312	259952.33447					
Financial background	-0.14825	0.10501	6.99731	0.10617	-0.14613	0.01110	0.04102	306.10249	25.51391				
Householder holding life insurance	-0.00080	-0.01191	-0.64253	0.06747	0.06100	-0.00927	-0.02271	33.96764	0.22081	0.17707			
Buying life insurance	0.00573	-0.00122	-1.73469	0.03838	0.02380	0.05137	-0.04111	-15.28991	-0.15116	-0.00931	0.24588		
WTP10	0.01483	0.11121	-20.47442	0.68496	-0.05172	0.64339	-0.50609	-328.00573	-0.45465	-0.20665	2.59809	46.57554	
WTP30	-0.09785	-0.27953	-49.33656	1.34575	0.49240	1.82796	-1.35084	-174.53932	-0.41144	-0.07283	7.35383	83.68573	257.90254

Correlações simples entre as variáveis usadas nas análises da disposição a pagar por uma apólice de seguro de vida

	City	Gender	Age	Educ	Occup	Child5-	Prs60+	FmlInc	FinBok	LfIns	Buy	WTP10	WTP30
City	1												
Gender of householder	-0.12899	1											
Age of householder	-0.15661	0.24435	1										
Education of householder	-0.11856	0.04807	-0.24829	1									
Occupation of householder	-0.12382	-0.06187	0.35371	-0.05837	1								
Children 5 years of age or less	0.11765	-0.05068	-0.32718	-0.06370	-0.06819	1							
Persons 60 years of age or more	-0.05638	0.05491	0.72193	-0.22734	0.37908	-0.18797	1						
Family income	0.01886	-0.07786	-0.03138	0.27386	-0.03867	-0.00076	-0.08601	1					
Financial background	-0.05878	0.04668	0.08627	0.01683	-0.01812	0.00434	0.01220	0.11886	1				
Householder holding life insurance	-0.00381	-0.06355	-0.09509	0.12840	0.09078	-0.04350	-0.08103	0.15832	0.10389	1			
Buying life insurance	0.02313	-0.00550	-0.21786	0.06197	0.03006	0.20466	-0.12450	-0.06048	-0.06035	-0.04461	1		
WTP10	0.00435	0.03659	-0.18683	0.08037	-0.00475	0.18625	-0.11136	-0.09427	-0.01319	-0.07196	0.76773	1	
WTP30	-0.01220	-0.03908	-0.19132	0.06710	0.01920	0.22488	-0.12632	-0.02132	-0.00507	-0.01078	0.92347	0.76356	1