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Skills and Willingness to Buy Insurance Policies

Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania 51/3, 67-75

2018

Artykuł został opracowany do udostępnienia w internecie przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego. Artykuł jest umieszczony w kolekcji cyfrowej bazhum.muzhp.pl, gromadzącej zawartość polskich czasopism humanistycznych i społecznych.

Tekst jest udostępniony do wykorzystania w ramach dozwolonego użytku.

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SKILLS AND WILLINGNESS TO BUY INSURANCE POLICIES

ABSTRACT

In this article attention is paid to the influence of one's skills on the propensity to buy insurance policy and the aim of the work is to check whether in some situations decisions on concluding insurance policy are connected with individuals' ability to avoid harmful event. A hypothesis is put forward that people skilled higher are less willing to buy insurance policy against material loss (which probability is somehow related to a person's skills) than people with lower skills. To verify the hypothesis an experiment was conducted. It consisted of asking students if they would like to insure themselves against obtaining negative points on the exam and later checking how many points they would get if not insured. Results show there is no significant difference between decisions made by those who gained more and less points.

Keywords: insurance, behavioral economy, decision under uncertainty

Introduction

Most of decisions a person is making in her life are decisions taken under conditions of risk or uncertainty. Deciding where to go on holiday is connected with uncertainty about weather, safety or hotel's standard. Choosing your major in the

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university can in the future make you unoccupied or a rich man. Deciding whether to buy home or car insurance is also an example. The determinants of daily decisions may be seen to lie in both personal character traits (a different level of knowledge, different propensity to risk, etc.) and external conditions relating to the consequences of potential decisions, access to information, etc. In this article attention is paid on the influence of one's skills on the propensity to buy insurance policy and the aim of the work is to check whether in some situations decisions on concluding insurance policy are connected with individual's ability to avoid harmful event. It seems that a person who is considering buying an insurance policy for his car is not only looking on the general loss ratio (which, by the way, he doesn't know exactly) but also on his driving skills. It has been shown that most car drivers overestimate their driving skills and think they are less likely to have a car accident than others (eg. Sandroni, Squitani, 2004). Allegedly that is why they don't buy as much insurance policies as they should. Moreover, it has been shown that also in other aspects of life people tend to overestimate their skills (Kruger, Dunning, 1999). Knowing that eliciting true values of intangible variables is difficult and different methods of eliciting estimates of perceived skills can lead to different results (De Craen, Twisk, Hagenzieker, Elffers, Brookhuis, 2011) Author of this paper decided to verify a hypothesis that people skilled higher are less willing to buy insurance policy against material loss (which probability is somehow related to a person's skills) than people with lower skills. If the hypothesis is true it could mean that individuals' estimation of their skills is in a way correlated with their real skills. If the hypothesis is false it could mean that or decision about buying insurance has nothing in common with the assessment of own skills or that the assessment is completely wrong.

1. Literature review

Nowadays, a person can get insurance policy almost against all harmful events. We can buy insurance against UFO attack or against losing our good look. An individual who is considering buying an insurance policy has to determine whether the price of the insurance is consistent with the value of the insurance product and sufficiently low to transfer the risk to an insurance company. To do so, he can carry out an analysis that is mainly based on the value of the insured entity (the only known value to be compared with the price), the subjective evaluation of the proba-

bility of loss occurrence (or the frequency of such loss in the past) and the cost of the past losses (if any were present). The most problematic part seems to be assessing the probability of loss occurrence. It's been shown that people in case of choice under uncertainty overestimate small probabilities (Erev, Wallsten, 1993), which may cause the increased belief that a loss may occur. On the other hand, it has been shown that small probabilities (when known) are underweight (Weber, Blais, Shafir, 2004), which may influence the willingness to buy insurance in a different direction. Sometimes probability of an unwanted event is completely independent of us and sometimes we may have some influence on diminishing the threat. For example a farmer has no influence on the strong frost occurrence but homeowner can diminish the risk of burglary by installing an alarm. However, people often do not realise which probabilities they can affect. It has been noticed that in many cases individuals suffer of so called illusion of control – especially in cases when the decision situation is more similar to “a skill situation in outcome-independent ways” people tend to believe they can somehow influence outcomes' probabilities (Langer, 1975) and therefore they tend to underestimate risks that seem to be under their control (Nordgren, Pligt, Harreveld, 2007).

In a situation when the probability of an unwanted event can really be affected it could be hard to estimate the degree of influence. As it was mentioned earlier in case of driving people often overestimate their skills what leads easily to underestimation of probability of participating in car accident. It is surely connected with the fact that “subjects who are led to believe they are very competent at decision making see more opportunities in a risky choice and take more risks” (Krueger, Dickson, 1994). However, valuing high your skills doesn't mean you are really skilled. It was shown that people skilled in earning non-monetary rewards (not those who think they are skilled) take more prudent decisions in case of possible additional non-monetary gains but there is no statistical difference in risk attitude between more and less skilled in case of non-monetary losses (Rólczyński, Forlicz, Kuźmiński, 2015). Having that in mind one would expect that a person skilled for example in driving and person less skilled wondering whether to buy insurance policy against car damage not taking into consideration their skills should make the same decision. If they could assess their skills properly and took this factor into consideration a person with higher skills should be less willing to buy insurance. But, if the assessment is somehow biased that could not happen.

2. Research method

The simplest and the cheapest method of conducting research on risky decisions is a questionnaire. However, very often this form of research is accused of not allowing the actual preferences of the respondents to be extracted. For example it was shown that there are significant differences between the declared and the actual amount for which the respondents would decide to sell or buy some specified good (Bishop, Heberlein, 1979; List, Shogren, 1998; Neill, Cummings, Ganderton, Harrison, McGukin, 1994), and also that declarations regarding hypothetical behaviors in a given situation often differ from real behaviors (Chang, Lusk, Norwood, 2009; Fifer, 2011, p. 177). On the other hand, some scientists point to the fact that despite the existence of hypothetical bias, the results of surveys can be a good predictor of real actions (Botelho, Pinto, 2002; Dohmen et al., 2005). A characteristic feature of the results obtained in hypothetical studies is greater variability of results (Barreda-Tarrazona, García-Gallego, Georgantzis, Andaluz-Funcia, Gil-Sanz, 2011; Etchart-Vincent, L'Haridon, 2011; Irwin, McClelland, Schulze, 1992), which could indicate that the respondents put less weight on hypothetical decisions. This is confirmed by Taylor's research (2012), which showed that the respondents put less effort and devote less attention to hypothetical decisions. A better form of conducting research on preferences seems to be an experiment that provides real payouts. The advantage of this form of research in relation to the survey is the exclusion of the hypotheticality of the decision, and in relation to the observation of real behavior, meeting *ceteris paribus* condition. For this reason an experimental research was conducted in order to verify the hypothesis (and also other hypotheses not mentioned in this work) stated in the introduction part.

The study was conducted among 124 students frequenting a course in quantitative methods. Most of the respondents were between 20 and 25, 10% of people were between 40 and 50 years of age, 70% were women. Payoffs (or better say losses) in the experiment were real although non-monetary. The course of the experiment was spread over time and took part during classes. During the first meeting students were informed that they were given 30 points that would be added at the end of the course to their total score in the subject. Moreover, they were also informed how many points one needs to score to obtain certain note (see Table 1) and were warned that on the exam it would be possible to gain or lose points and that maximum points to be gained would be 30.

Table 1. Final punctuation and notes

Points	Final note
<0;30>	Unsufficient
(30;36>	Sufficient
(36;42>	Plus Sufficient
(42;48>	Good
(48;54>	Plus Good
(54;60>	Very good

Source: own work.

30 points given to the students at the beginning of first classes were assigned to them for two reasons. Firstly, students needed to get accustomed to possessing those points, so that later the possibility of losing them would seem more painful and so subjects would not treat them as windfall money. Secondly, the 30 points needed to be assigned to students so that they had something to lose (so a situation of decision about buying insurance could be reflected). In the second part of the experiment, during last classes before exam, students were informed that there would be three questions on the exam. One question would make possible losing 18 points in the worst case and gaining 10 points in the best case, second question could give a result between minus 9 and plus 10 points and third between minus 3 and plus 10 points. Not to make students think that the question with minus 18 points would be most difficult question numbers of questions were randomized. Moreover, in case of every question in order to get at least 0 points one needed to answer the question correctly in 50%. This way students should assign same probability of obtaining negative points in each question. Next, students were offered a possibility to buy insurance against obtaining negative number of points in each question. Prices of these insurance policies, which were subtracted from the initial amount of 30 points, were calculated as 40% of a maximum possible loss (for prices see Table 2). The prices were set at 40% because of the past “loss ratio” i.e. percentage of people who usually could not cope with questions in quantitative subjects. Students were asked to state their decision on a piece of paper and give it to their teacher.

Table 2. Insurance policies prices according to questions' punctuation

Points to be gained in a question	Insurance policy price
$\langle -18; 10 \rangle$	7.2 point
$\langle -9; 10 \rangle$	3.6 point
$\langle -3; 10 \rangle$	1.2 point

Source: own work.

After the exam information about points gained during exam were combined with information on people who decided to buy insurance policy/policies.

3. Results

Out of 124 students present in the last classes before exam 116 approached it two weeks later. Among those 42% decided not to buy any insurance and 34% decided to insure all questions. 11% of students insured one out of three questions and 13% insured two questions. Average number of points gained by those who decided not to insure any question (49 students) was 3.31 and among those who decided to insure every question (39 students) was slightly higher 4.38, however, the difference is not statistically significant ($p=0.6816$). If we compared those who didn't buy any insurance with those who have insured at least one question the difference is even lower (average in this group was 2.51 and p -value for difference between two means 0.7363). When we reverse the calculation and compare decisions of students who gained positive number of point with decisions of those who gained negative number of points we see that in the former group 36% decided not to buy any insurance and in the latter 42%, but again the difference is statistically insignificant (chi-square test, p -value=0.7758).

4. Discussion

Results that were obtained in the course of the experiment can lead to diverse conclusions. Firstly, they can mean that people do not realize at all how they are skilled in some field. Secondly, it could mean that considering whether to buy insurance policy they do not put any attention on their ability to avoid harmful event (in this case losing points) and possibly they think of the result of an exam in terms of having good or

bad luck (it was shown in various works that students attribute partially their failure in the exam to external factors and not only to their abilities (eg. Forsyth, Story, Kelley, McMillan, 2009)). In the future it would be worth to examine if drawing individual's attention to his skills would make him take decisions more consistent with his abilities.

Conclusions

At the beginning of this paper a hypothesis was put that people skilled higher are less willing to buy insurance policy against material loss (which probability is somehow related to a person's skills) than people with lower skills. The hypothesis was verified by conducting an experiment which consisted of offering a group of students possibility to insure themselves against obtaining negative points on the exam. After making this proposal and after the exam Author calculated how many points every person would get if she hadn't bought insurance. Number of points gained was combined with person's decision about insurance. Results showed that there was no statistically significant difference between decisions made by students who gained more and less points.

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SKŁONNOŚĆ DO ZAWIERANIA UMÓW UBEZPIECZENIOWYCH W ZALEŻNOŚCI OD UMIEJĘTNOŚCI

Streszczenie

W niniejszym artykule skupiono się na wpływie, jaki mają umiejętności danej osoby na jej skłonność do zawarcia umowy ubezpieczenia. Celem pracy jest sprawdzenie, czy w pewnych sytuacjach decyzje dotyczące ubezpieczania się są związane z umiejętnością jednostki do unikania niechcianych szkodliwych zdarzeń. Postawiono hipotezę, że osoby wyżej uzdolnione są mniej chętne do ubezpieczania się od strat materialnych (których prawdopodobieństwo zaistnienia jest w pewien sposób powiązane ze wspomnianymi umiejętnościami) niż osoby niżej uzdolnione w tej kwestii. W celu weryfikacji postawionej hipotezy przeprowadzono eksperyment, który polegał na zaproponowaniu studentom możliwości ubezpieczenia się od otrzymania na egzaminie punktów ujemnych, a następnie sprawdzeniu, jak sobie poradzili na owym egzaminie. Rezultaty wskazują, że nie występuje istotna różnica w decyzjach podjętych przez osoby mniej i bardziej uzdolnione w materii, której dotyczył egzamin.

Słowa kluczowe: ubezpieczenia, ekonomia behawioralna, decyzje w warunkach niepewności

Kody JEL: D81, D91