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## Choice Preferences in the Process of Making Regulatory Decisions under Risk and Uncertainty Conditions: An Experimental Study

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**Abstract:**

**Purpose:** This paper aims to identify preferences in regulatory decision-making under conditions of risk and uncertainty.

**Design/Methodology/Approach:** Research using the experimental method was conducted among top-management of the regulatory authority in Poland, Office of Electronic Communications (OEC) and telecommunications National Regulatory Authorities in UE - members of Body of European Regulators for Electronic Communications.

**Findings:** The findings suggest the occurrence of a certainty effect, loss avoidance effect, reflection, ambiguity aversion effect, and the status quo effect, all of which are psychological determinants shaping the preferences of regulatory decision selection under conditions of risk and uncertainty. The preferences under conditions of risk and uncertainty vary depending on the decision-making situation. There is no clear link between declared and actual risk preferences expressed by the OEC top management in decision-making situations. Risk preferences top-management OEC and BEREC are converging.

**Practical Implications:** There is a need to shape the architecture of choice for public decision-makers in a decision-making situation in conditions of risk and uncertainty that take into account their cognitive tendencies.

**Originality/Value:** The findings presented in the article contribute to the discussion on regulators' cognitive tendencies in determining regulatory decision preferences under conditions of risk and uncertainty. An experimental research approach can explain the cognitive tendencies of public decision-makers.

**Keywords:** Regulation, cognitive bias, choice preferences, risk, uncertainty.

**JEL Classification:** E71, H83, L96.

**Paper type:** Research paper.

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## **1. Introduction**

The problems of regulation are widely discussed in the literature, with particular attention given to: a) the legitimacy of conducting regulation, b) taking into consideration the primacy of the public interest over the interests of specific groups, c) the independence of regulatory authorities and the possible influence of interest groups, d) the occurrence of the 'rent-seeking' effect, e) redistribution effects of regulation and bearing the specific transaction costs of regulation (Hantke-Domas, 2003; Shleifer 2005; Hertog, 2010). With the development of behavioral economics, regulation problems were extended to aspects related to interdisciplinary conditions in appraising and making decisions, primarily regarding the possibilities of shaping the architecture of consumer choice ('nudge'). The proponents of 'nudge' (Thaler and Sunstein, 2008) rely on the well-established view of cognitive psychology and behavioral economics that control systems must take into consideration the limited rationality of individuals in the process of making decisions (Baldwin, 2014; Lin, Osman, and Ashcroft, 2017). Identifying consumer cognitive tendencies underlying the appraising and decision-making process allows for developing methods for eliminating or correcting consumer choice preferences in public policy (Kahneman, 2012; Brennan, 2018; Banerjee and John, 2021).

However, it was deemed insufficient to concentrate only on the consumers, and more extensive research is needed encompassing all telecommunication service market entities, including the regulator (Walker, James, and Brewer, 2017; Bellé and Cantarelli, 2018). A behavioral approach to the regulator's decision analysis is another dimension of the regulation theory, which lifts the perfect rationality assumption (Zamir and Sulitzeanu-Kenan, 2017). By linking the observations related to public choice on the one hand, and behavioral economics, we can identify a separate research field exploring behavioral public choice.

This field can provide valuable insight into regulator's anticipated behavior and constant improvements in the regulation policy (Lucas and Tasić, 2015; Smith, 2017). Tasić (2009) argues that regulators are overconfident and believe that they are fully aware of all the reasons behind and consequences of their regulatory decisions. On the other hand, Viscusi and Gayer (2015) suggest that regulators are affected by limited rationality in their perception of risk and losses and in ensuring consistency of their decisions in various areas of policymaking. Battaglio *et al.* (2019) found the following four factors to be present in regulators' decision making: the framing effect, the anchoring heuristic, the status quo bias, and the asymmetric dominance effect. Roberts and Wernstedt (2019) also indicate framing effect among public decision-makers. Dudley and Xie (2019) points to another four cognitive biases that can potentially affect regulators' decisions -the availability heuristic, the confirmation bias, the hyperbolic discounting, and overconfidence.

Cooper and Kovacić (2012), argue that the regulator's evaluation and decision-making processes may be influenced by heuristics and cognitive biases such as the

hyperbolic discounting bias, the availability bias, the optimism bias, or the status quo effect. Bellé *et al.* (2018) test a broad range of cognitive biases branching out from prospect theory in the context of public policy. Results of research show systematic deviations from rationality (Bellé, Cantarelli, and Belardinelli, 2018). In his experimental studies, Szkudlarek (2018a) identified the effect of overconfidence as a potential barrier to collaboration between the regulator and the entities subject to regulation.

The subject of the analysis addresses regulatory decisions under conditions of risk and uncertainty. The study primarily uses perspective theory (Kahneman and Tversky, 1979) to investigate the certainty effect, the loss avoidance effect, and the reflection effect. Further attention has been given to the fear of the unknown and a tendency to preserve the status quo. The necessity for researching regulatory decision-making under conditions of risk and uncertainty emerges from two presumptions. Firstly, new business models and the rapid speed of technological changes present a challenge for the legitimacy of traditional regulatory methods and for seeking new ones that will satisfy the market's expectations, users and operators. This creates the need to make decisions in conditions of risk or uncertainty to accomplish regulatory objectives. Secondly, the regulator's preferences for risk and uncertainty and the accomplishment of set goals of regulation shape the expectations of regulatory policy. This is an essential element in determining the development of operators' business strategies.

The article primarily addresses the identification of the OEC decision-makers cognitive-bias (certainty effect, loss avoidance effect, reflection effect, effect of fear of the unknown, status quo effect) and choice preferences (tendencies, avoidance, neutrality) in the process of making regulatory decisions under conditions of risk and uncertainty. Over and above this, two supplementary goals for the article have been set: to determine convergence between declared and actual risk preferences exhibited in decision-making situations and determine convergence of cognitive tendencies and choice preferences between OEC and BEREC decision-makers. The hypotheses formulated below to emerge from the goals set in the paper:

*H1: regulatory decision preferences under conditions of risk and uncertainty have their strong psychologically based determinants arising out of cognitive tendencies.*

*H2: OEC and BEREC decision-maker's cognitive tendencies and choice preferences are converging.*

The article consists of several parts. The first is an introduction wherein the main assumptions of the article are presented. Then, in the theoretical part, the issues regarding regulation, risk, and uncertainty are discussed, considering the findings of behavioral economics. The next part of the article contains the research methodology, following which the empirical research results are presented. The last part of the article is a summary of the results, discussion, and literature.

## **2. Literature Review**

Regulation in economics is associated mainly with institutional economics (Çetin, 2011; Melody, 2016). *Institutions* are the game rules imposed on the shaping of relationships between organizations -players (North, 1990). An example of a formal institution is regulation specifying what market entities (enterprises, consumers) may or may not do and what behavior is desired by the public regulator. The literature presents several theories of the regulation (Hertog, 2010; Szkudlarek, 2018b). Public Interest Theory assumes that market errors such as market structure, information asymmetry, market deficiency, or negative externalities are sufficient reasons for state regulatory interference in the economy, which is consistent with the public interest. Capture Theory suggests that government regulatory agencies are captured by specific groups which pursue their own rather than public interests. They affect regulatory decisions in exchange for providing politicians with political or financial support. A regulator may opt out of making decisions consistent with the interests of a specific group due to potential costs of lawsuits. Specific groups apply pressure on the regulator to bring them specific gains or to exempt them from the necessity of paying benefits to others. Some groups are more effective in applying political pressure, which may result in, e.g., the scale effect of a given group or better access to the media. Importantly, inducements to regulation and gains derived from that place concern not only regulated entities but also officials and politicians.

With the development of behavioral economics (Tversky and Kahneman 1974; Bennett *et al.*, 2010; Kahneman, 2011), regulation issues extend to aspects related to non-economic conditions in assessing and making economic decisions. The center of focus has been the shaping of the architecture of consumer choice, which is mainly related to the publications of Thaler and Sunstein (2008). *Improving Decisions About Health, Wealth, and Happiness* (Thaler and Sunstein, 2008) gave rise to the idea of ‘nudge’ referring to libertarian paternalism (Sunstein, 2014; Hansen, 2016). This is a specific way of applying the findings of behavioral economics to a policy that does not limit choices through prohibitions and warrants as commonly emphasized in the definitions of regulation but creates a specific architecture of choice. It orientates individuals towards the attainment of specific goals without depriving them of freedom of choice.

In contrast to the idea of ‘nudge’ presented in the literature, this article draws attention to the issues of a regulator’s cognitive tendencies and decision preferences under conditions of risk and uncertainty (Ahmeti and Vladi, 2017). The experience of behavioral economics suggests that cognitive biases are a psychological determinant of the decision-making process under conditions of risk and uncertainty. They are the result of a heuristic approach and thinking systems having an impact on choice preferences. Virtually all choice theories assume that decision-makers prefer higher expected returns than smaller ones, provided all other factors (e.g., risk) are fixed. Conversely, decision-makers prefer more minor risks than bigger ones, provided other factors (e.g., an expected value) are fixed. Research suggests that

individuals tend to disregard potential developments that are highly unlikely or very distant, regardless of the consequences thereof. According to the prospect theory, people perceive the same situation differently and have different risk preferences depending on how a given situation or decision-making problem is being formulated -framing (Kahneman and Tversky, 1982). Under favorable conditions, people exhibit an aversion to risk due to the certainty effect, suggesting that people overestimate results they deem specific about less likely results. People, therefore, value more certain gains than potential more enormous but more uncertain gains.

On the other hand, people tend greater risk under less favorable conditions, resulting from the effect of avoiding unfavorable developments. This represents an inversion of the certainty effect, while a change of choice preferences regarding gains and losses is an example of the reflection effect. This is contrary to the assumption of the stability of preferences. It is also relevant that people are more likely to feel the size of a loss than the same-size profit and tend to overestimate low probabilities and underestimate medium and high probabilities. In the context of decision-making under conditions of risk and uncertainty, the occurrence of the ambiguity aversion effect and of a tendency to preserve the status quo is seen as an expression of reluctance and fear of accepting new challenges, especially under uncertain conditions and of preferring the current state of affairs, which is deemed better than the available alternatives.

The findings on decision-making under conditions of risk and uncertainty suggest that these are extraordinarily complex problems that also concern decisions made by market regulators. It is even suggested that they are more complicated than in the private sector due to diverse competing interests and political influence (Leung and Isaacs, 2008). It, therefore, seems of interest and fully justified to research this area.

### **3. Research Methodology**

The research was conducted among employees of the regulatory authority in Poland (Office of Electronic Communications) having decision-making competencies in the market for telecommunication services in Poland, being President of OEC, deputy Presidents of OEC, Director-General, Departmental Directors, and OEC Branch Office Directors. The study was conducted on a group of 30 people who represented a statistical population, or a finite collective, in which all those surveyed had common characteristics relevant from the point of view of the purpose of the research and from which it was intended to secure information to solve the research problem. Ultimately, the research results were secured from 29 respondents (96.7%).

Comparative surveys (to a narrower extent) were conducted among European members of BEREC, providing significant support to the European Commission and national regulatory authorities in implementing the EU regulatory framework regarding electronic communications (BEREC, 2019). The study was conducted on

28 European regulators, but the research results eventually secured from 10 regulators (35.7%).

In line with the purpose of the research, a set of author-designed experiments encompassing scenarios of hypothetical regulatory decision-making situations under conditions of risk and uncertainty were prepared. The goal of the experiments was to evoke specific responses and observe and measure them to formulate conclusions regarding the subject matter of the research (Poskrobko, 2012).

In the case of the analysis of research results at OEC, one survey question, in particular, was used regarding declared personal characteristics. The survey question (OEC) and four experimental decision-making situations (OEC, BEREC) are presented below.

**Survey Question (OEC):** What person are you? (please tick 'x', 1-the least, 2-averagely, 3 -the most)

*Table 1. Personal characteristics*

Itemisation	Yes			No			Hard to say
	1	2	3	1	2	3	(0)
Liking making risky decisions							

*Source: Own creation.*

**Experiment no. 1 (OEC, BEREC):** Please imagine a situation where you can make one out of two regulatory decisions in two different, independent situations concerning the consumer's empowerment in the telecommunications market. They bring different expected profits and losses for the market. Which option would you choose? (Please indicate "x"):

- situation 1:
  - o decision 1: certain (100%) benefits for consumers amounting to 10 mln PLN<sup>2</sup>
  - o decision 2: possibility of bringing benefits for consumers amounting to 20 mln PLN with probability of 50% or no effects for consumers
- situation 2:
  - o decision 1: certain (100%) losses for consumers amounting to 10 mln PLN
  - o decision 2: possibility of incurring loss of 20 mln EUR for consumers with probability of 50% or no effects for consumers

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<sup>2</sup> BEREC: EUR.

**Experiment no. 2 (OEC, BEREC):** Please imagine a situation, where you have a dilemma concerning regulatory decision on boosting competition on telecommunications market. Which option would you choose? (Please indicate “x”):

- decision 1: possibility of bringing benefits for telecommunications market amounting to PLN 10 mln (50% probability) or the possibility of incurring loss amounting to PLN 10 mln, (50% probability)
- decision 2: possibility of bringing benefits for telecommunications market amounting to PLN 50 mln (50% probability) or the possibility of incurring loss amounting to PLN 50 mln (50% probability).

**Experiment no. 3 (OEC):** As a result of analysis of one of the selected relevant markets, it has become necessary for you to make a regulatory decision. Unfortunately, it is possible to calculate the probability of potential consequences of the decision only for one of them. Which option would you choose? (Please tick ‘x’):

- decision 1: gains for one of the relevant markets PLN 5 mln the probability of securing these gains estimated to be 50%
- decision 2: it is assumed that the decision can yield PLN 5 mln in profits for one of the relevant markets, but the probability of securing them remains unknown

**Experiment no. 4 (OEC, BEREC):** Please imagine that you have a dilemma concerning regulatory decision on boosting competition on one of the relevant markets. Which option would you choose? (Please indicate “x”)

- no regulatory decision and no consequences for the telecommunications market
- taking the regulatory decision that may bring benefits for the market amounting to 2 mln PLN or may incur a loss amounting to PLN 2 mln). Unfortunately, the probability of achieving benefits or incurring a loss is unknown.

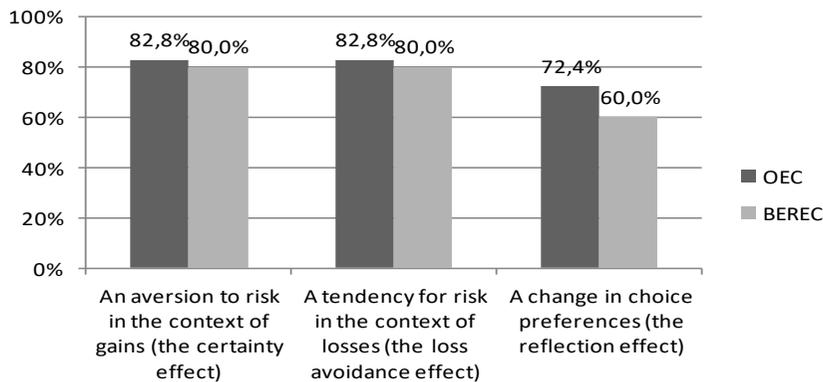
Using the statistical material collected, the null hypothesis that the share of cognitive tendencies and choice preferences among OEC and BEREC decision-makers is the same employing the Chi-Square test has been verified (dichotomous scale No - 0 and Yes - 1 experimental research results were recorded).

#### 4. Empirical Research

According to the research procedure, succeeding decision-making situations regarding regulation were presented to the regulatory authority decision-makers. In the first scenario, the OEC and BEREC decision-makers had the task of choosing regulatory decisions in a situation of gains and losses for consumers. The survey results are presented in Figure 1.

In the first situation, the vast majority of OEC decision-makers (82.8%) chose a regulatory decision that could benefit consumers (BEREC, 80.0%). This is related to the certainty effect, and thus, they exhibited a strong aversion to risk or the possibility of securing higher gains for the consumers, but with a 50% probability of securing them. On the other hand, the OEC decision-makers exhibited a higher tendency for risk in the second decision-making situation in most cases (82.8%), which is related to the loss avoidance effect (BEREC, 80.0%). A juxtaposition of the two decision-making situations also made it possible to identify the reflection effect. In the case of OEC decision-makers, a change in the risk preferences, depending on the context of the decision-making situation, occurred in 21 respondents (72.4%) and 6 (60.0%) for BEREC.

**Figure 1.** OEC and BEREC decision-makers' cognitive tendencies and risk preferences under gain and loss conditions



Source: Own study.

Using the survey results regarding the tendency for risk declared by the OEC decision-makers, they were divided into two groups, and a percentage share was established of those surveyed having an actual tendency for risk in the context of gains and losses emerging from deciding the two decision-making situations (Table 1).

**Table 1.** OEC decision-makers' declared and actual tendencies for risk in decision-making situations in the context of gains and losses

Declared risk preferences	Situation no. 1 Tendency for risk in the context of gains	Situation no. 2 Tendency for risk in the context of losses
Group 1. Declared tendency for risk	21.7%	82.6%
Group 2. Declared aversion to risk	0.0%	80.0%

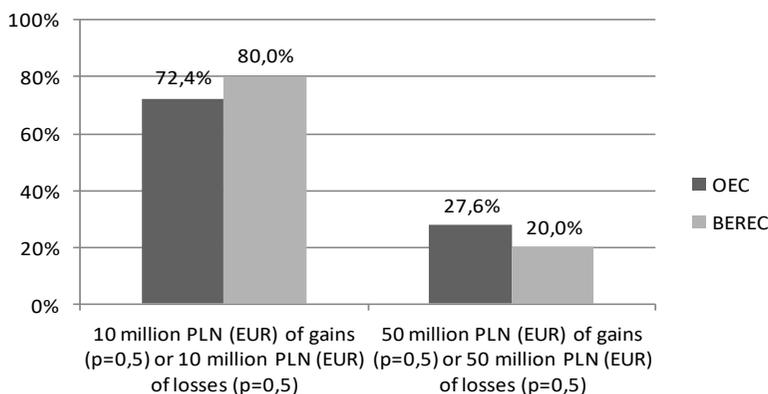
Source: Own study.

The OEC decision-makers who declared a tendency for risk (Group 1) proved it primarily in the decision-making situation under loss conditions (82.6%). Under gain

conditions, only 21.7% of those surveyed proved their declared tendency for risk. Those surveyed who declared their aversion to risk (Group 2) proved it only in the decision-making situation in the context of gains. The aversion to risk has not been noted to be proved in the context of losses.

Employing another scenario of a decision-making situation regarding regulation, the OEC, and BEREC representatives had to choose between two probabilistic alternatives with the same expected value but different variances. The survey results are presented in Figure 2. The vast majority of OEC decision-makers (72.4%) made a regulatory decision in which gains or losses for the consumers are of lower value (BEREC: 80.0%). This choice represents a lower tendency to take a risk emphasizing the fact that not only is the probability of occurrence of a specific development (the same development in both cases) vital to them but also the value of potential gains or losses.

**Figure 2.** OEC and BEREC decision-makers' preferences in a decision-making situation with probabilistic alternatives with the same expected value, but with different variance



**Source:** Own study.

The OEC decision-makers' declared and actual tendencies for risk have also been juxtaposed in this case (Table 2).

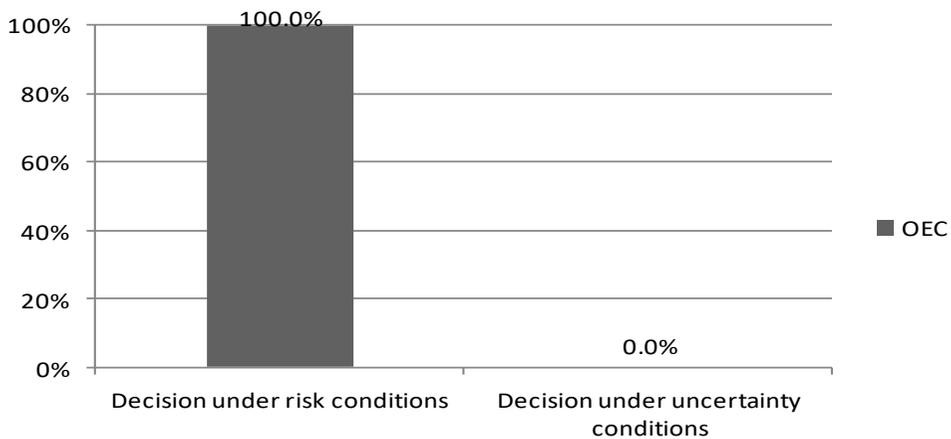
**Table 2.** OEC decision-makers' declared and actual tendencies for risk in a decision-making situation with probabilistic alternatives with the same expected value, but with different variance

Declared risk preferences	Decision 1 chosen (lower tendency for risk)	Decision 2 chosen (higher tendency for risk)
Group 1. Declared tendency for risk	73.9%	26.1%
Group 2. Declared aversion to risk	100.0%	0.0%

**Source:** Own study.

Those surveyed who declared their tendency for risk (Group 1) did not prove it in the presented decision-making situation. Only 26.1% of those surveyed chose the decision whose gains or losses were higher, thereby exhibiting a higher tendency for risk. Those surveyed from Group 2 proved their aversion to risk by failing to choose a decision expressing a higher tendency for risk in either case (0.0%). Employing the third decision-making scenario, the OEC decision-makers had the task of choosing between a decision under risk conditions and a decision under uncertainty conditions (Figure 3).

**Figure 3.** OEC decision-makers' preferences in a decision-making situation under risk and uncertainty conditions



**Source:** Own study.

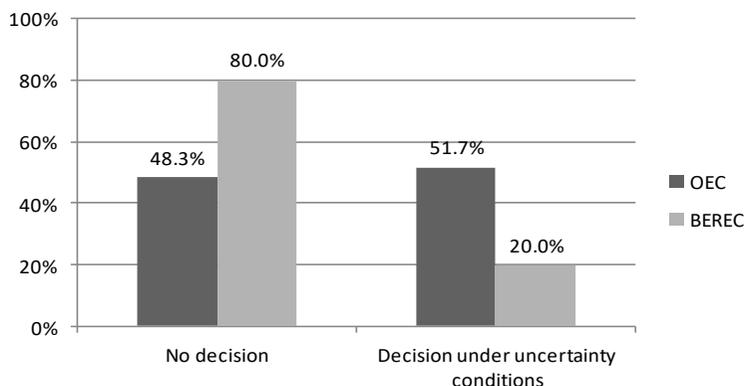
The OEC decision-maker's preferences in making decisions under conditions of risk and uncertainty are unequivocal. All respondents chose a regulatory decision in which the probability of the potential consequences thereof was known, which is a choice representing a lower tendency for risk and indicating the occurrence of the ambiguity avoidance effect. Bearing in mind the survey results (100% of the same replies), it can be assumed that the OEC decision-makers always exhibited the same risk preference emerging from the ambiguity avoidance effect, regardless of the tendency for the risk they declared.

The OEC and BEREC representatives' final task was to choose between choosing a regulatory decision under conditions of uncertainty about securing gains or losses for the market for telecommunication services or making no decision, thus preserving the status quo in the functioning of the market (Figure 4).

In this case, the survey results prevent the drawing of any unequivocal conclusions. Only a slim majority of those OEC decision-makers (51.7%) who made a regulatory decision under conditions of uncertainty (BEREC, 20.0%) can be observed. Without fear of the consequences of this decision, they tended to make more risky decisions.

A slightly smaller share of OEC decision-makers (48.3%) who did not make any decisions, preserving the status quo due to the ambiguity avoidance effect (BEREC, 80.0%), was observed. In this case, the declared and actual tendencies to make risky decisions by the OEC decision-makers are also juxtaposed.

**Figure 4.** OEC decision-makers' preferences in a decision-making situation under uncertainty conditions



*Source:* Own study

**Table 3.** A tendency for risk declared by the OEC decision-makers, and the OEC decision-makers' choices under uncertainty conditions

Declared risk preferences	Decision 1 chosen (status quo effect, ambiguity avoidance)	Decision 2 chosen (Tendency to make risky decisions)
Group 1. Declared tendency for risk	43.5%	56.7%
Group 2. Declared aversion to risk	60.0%	40.0%

*Source:* Own study.

The OEC decision-makers from Group 1 proved their tendency to make more risky regulatory decisions while having an alternative to preserve the telecommunication market's status quo (the ambiguity avoidance effect) a little more often (56.7%). On the other hand, those surveyed from Group 2, in most cases (60.0%), proved their aversion to risk by deciding to preserve the telecommunication market's status quo.

In the final part of the analysis, the survey results of the OEC decision-makers were compared with the results of the surveys conducted at BEREC (except for decision-making situation 3). In order to verify the null hypothesis that the share of cognitive tendencies and choice preferences among the OEC and BEREC decision-makers are the same, the chi-square test of independence with Yates' correction for continuity was used.

The following null hypotheses have been verified with a significance level of  $\alpha=0.05$ :

- $H_0$ : the variables are independent,
- $H_1$ : the variables are dependent.

The test results provided no basis for rejecting the null hypothesis. It can, therefore, be concluded that there are no statistically significant differences between the OEC decision-makers and the decision-makers of regulatory authorities being members of BEREC in the existence of cognitive tendencies and choice preferences under conditions of risk and uncertainty. It can only be noted that the most significant differences, although statistically insignificant, were observed in the occurrence of the status quo effect. Looking at decision-making scenario 4 in particular, most BEREC regulators decided to resign from the conditions of functioning of the market for telecommunication services at the cost of deciding conditions of uncertainty. In Poland, the decision choices in this scenario have not been so unequivocal. The results of the chi-square test of independence are presented in Table 4.

**Table 4.** Results of the chi-square test of independence

Itemisation	<i>p</i>
<b>Experiment no. 1</b>	
-an aversion to risk in the context of gains -the certainty effect	0,7781
-a tendency for risk in the context of losses -the loss avoidance effect	0,6836
-a change in choice preferences -the reflection effect	0,8968
<b>Experiment no. 2</b>	
-a greater tendency for risk (decision under the conditions of bigger gains or losses)	0,9571
<b>Experiment no. 4</b>	
-the status quo effect	0,4119

*Source:* Own study.

## 5. Conclusions

As a result of the conducted surveys, conclusions regarding cognitive tendencies and choice preferences in regulatory decision-making under conditions of risk and uncertainty can be drawn as follows. By verifying the first hypothesis positively, it can be assumed that decision preferences under conditions of risk and uncertainty have powerful psychologically based determinants that shape cognitive tendencies. In the context of decision-making under conditions of gain and loss (scenario 1), the certainty effect, loss avoidance effect, and the reflection effect have all been identified.

The OEC decision-makers, under conditions of gain, have demonstrated a strong aversion to risk emerging from the certainty effect, whereas they tended risk as a result of the loss avoidance effect in the context of losses. In a decision-making

situation with different variances (scenario 2), the OEC decision-makers overwhelmingly made decisions resulting in smaller gains or losses for the telecommunication market. According to the theory of expected value, the distribution of the decisions made in this group should be proportional. Deviation from this theory suggests that risk preferences are dependent not only on the probability of occurrence of a given event but also on the value of a potential gain or loss. The decision-making situations also allowed the identification of the uncertainty aversion effect (scenario 3). By always making a regulatory decision under conditions of risk, the OEC decision-makers supported the thesis that decision-makers under conditions of uncertainty are perceived by decision-makers as more complex and considered a threat rather than an opportunity.

Interestingly, however, in a situation allowing the choice between a decision under conditions of uncertainty and refraining from making a decision, meaning the occurrence of the status quo effect (scenario 4), the OEC decision-makers did not exhibit such unanimity. As a sign of ambiguity aversion, the occurrence of the status quo effect was observed in less than half the OEC decision-makers, with the remainder making a regulatory decision under conditions of uncertainty without fear, in contrast with the previous situation, of potentially adverse consequences. The OEC decision-makers from Group 1 who declared their tendency for risk exhibited an actual tendency to make risky decisions in only two out of five decision-making situations. On the other hand, those surveyed who declared their aversion to risk proved it in three out of five decision-making situations. The second hypothesis was positively verified. No statistically significant differences were observed between OEC and BEREK in cognitive tendencies and decision choice preferences under conditions of risk and uncertainty. It can, therefore, be seen that the behaviour of regulators is characterized by caution in making risky decisions.

The analyses provided a picture of cognitive skills and choice preferences in decision-making by OEC decision-makers within the area of research. They may affect the way of perceiving reality and processing information, which in turn determines the process of formulating assumptions and implementing regulatory policy. The OEC decision-makers must be aware of these psychological determinants, which can result in suboptimal decisions. It is also essential that other telecommunication market entities have this knowledge, particularly the telecommunication operators who come into the agent-principal relationship with the regulator due to their market position. From their perspective, knowing what guides the OEC decision-makers in the decision-making process, what mechanisms and tendencies participate in the decision-making process, and to what extent these decisions can be predictable becomes essential.

The author is aware of the limitations applying to this research. They concern the decision-makers of only one government regulatory authority, suggesting that these results cannot be generalized to all government regulatory authorities in Poland. They operate under specific conditions, among others, risk- and uncertainty-related

conditions typical of a given market. Nevertheless, the results presented in this paper contribute to research into preferences in public authority decisions under conditions of risk and uncertainty. This issue seems to be of significant interest, especially concerning regulators whose decisions continue to have a significant impact on the functioning of the regulated markets.

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