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COGNITIVE BIASES AS A REACTION TO THE COVID-19 PANDEMIC FROM THE PERSPECTIVE OF BEHAVIORAL ECONOMY

This paper aims to identify selected behavioral effects in people caused by the coronavirus pandemic. The research problem was formulated as a question: has people's behavior changed after the announcement of restrictions related to the coronavirus pandemic in Poland?

An analysis of the literature, the results of the authors' own research, and participant observation confirmed the consistency of the results with the literature on behavioral economics. The results may be of cognitive importance in terms of backward induction, taking into account the behavior of the respondents.

A selected description of actual behavior during the coronavirus situation is a novelty of the paper. The reader may become aware of differences in their own behavior and that of their family, colleagues, or others. They may also realize that we often react subconsciously and are guided by the suggestions of others.

Keywords: cognitive biases, reaction, COVID-19.

1. INTRODUCTION

The COVID-19 pandemic has drastically changed the behavior of people worldwide. It can be stated that "we have all been participants in the greatest natural experiment in behavior change" (Grant, Rebele, 2020). People are concerned about their health, so to counter the pandemic, at the beginning of 2020 many governments introduced restrictions whose scope has changed to date. Counteracting the COVID-19 pandemic depends on mutual decision-making by people. During the COVID-19 pandemic an individual's decision becomes a matter for the community.

The difficult and unusual situation resulting from the pandemic caused a crisis on a global scale. In Poland, from March 11, 2020, i.e. the announcement by the Prime Minister of the decision of the Government Crisis Management Team and the introduction of the first government restrictions for society, a lot has changed in the behavior of people.

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In a crisis situation, which is the pandemic, social behavior is important not only for the rulers but also for entire communities. In the behavioral approach it is very important to determine a possibility of replication of the desired behaviors in different situations, and in this case it is coping with the situation of being infected.

The main purpose of this paper is to identify selected behavioral effects in people's behavior caused by the coronavirus pandemic after the announcement of the first restrictions in 2020 in Poland and a year after the pandemic in 2021.

The specific objective is to make the reader aware of the importance of one's own thoughts and a critical approach, as well as to show how we simplify reality and evaluate the situation.

The research problem was formulated in the form of the question: have the behavior of people changed in Poland after the announcement of the restrictions related to the coronavirus pandemic in 2020?

The research problem is supported by the fact that economic behavior is a topical and interdisciplinary issue that is difficult to measure. Behavior conditioned by a factor other than economic one is associated with the reaction of a person who is guided by a criterion other than rational when making decisions. The presentation of the presented topic in a behavioral framework will allow an assessment of human behavior in an unusual case on a global scale, which is the COVID-19 pandemic.

2. PANDEMIC CRISIS

In the literature on the subject, one can find works that refer to the epidemic situation (Weston et. al., 2018; Barzilay, 2016; Perrings et al., 2014), while the impact of these diseases (including influenza, smallpox, malaria and others) was studied in a small degree in relation to the economy. The analyzes were also not conducted on a behavioral basis. Such research was undertaken and referred mainly to the emotional state of respondents in the context of a possibility of contracting COVID-19 (Andrew, 2020; Behavioral, 2020; Behave, 2020; Baggio, 2020; Devlin, 2020; Jordan, Yoeli, Rand, 2020; Salwa, 2020).

In the case of the COVID-19 pandemic, the analyzes and research most often concern aspects of disease reduction and society behavior (Ghaemi, 2020; Holzwarth, 2020; Lieshout, 2020; Mullainathan, Thaler, 2020), which results from the need to overcome the pandemic.

A man learns behavior based on their own observations and life experience. For the behavioral approach it is very important to define precisely the ways of influencing and the possibility of replicating the desired behavior in other situations and conditions, including the situation of another pandemic. It is also important to define how reality is perceived. This results from the fact that many biases in behavior can be identified in human behavior.

Some biases result from an improper course of the cognitive process or from the influence of factors disrupting this course. Others may result directly from the action of individual factors, e.g. from lack of experience or, on the contrary, from an excess of it. In fact, the COVID-19 pandemic shows our own behavioral bias without limits.

The Spanish flu of 1918–1919, which cost the lives of up to 50 million people, reduced global GDP by a total of 6%. The SARS epidemic resulted in 774 casualties and by 0.1 percentage points lower global GDP in 2003. The so-called bird flu, with 455 victims between 2003 and 2019, also reduced GDP by 0.1 percentage points. Regionally, the Ebola epidemic in 2014-2016 caused heavy losses. It resulted in over 11 thousand victims and

GDP lower by 3.4 percentage points in the Republic of Liberia, 3.3 points percent in Sierra Leone and 2.1 points percent in Guinea in the first year of its duration. In the case of the current pandemic, the baseline annual loss ranges from 5 to 9 percent US GDP and 4 and 4.5 percent. for the entire global economy. The forecasts include even higher estimates – a loss of 8 percentage points in the USA and 6 percentage points globally. These costs are an order of magnitude higher than the estimated costs of previous epidemics and outweigh the costs incurred by economies during the 2008–09 Great Financial Crisis. Then the OECD countries lost an average of 3 percentage points GDP per year (www 2).

The outbreak of the SARS-CoV-2 coronavirus pandemic meant that the activity of societies and economies, including Poland, was frozen on an unprecedented scale in the last century. These actions were necessary to avoid a dramatic increase in the number of cases that would be impossible to cope with by the health care system.

Until March 16, 2020, the first losses for the Polish economy caused by the pandemic in Poland can be estimated. It is over PLN 269 billion (http://straty-covid.pl).

A year and a half since the onset of the COVID-19 pandemic, the global economy is poised to stage its most robust post-recession recovery in 80 years in 2021. But the rebound is expected to be uneven across countries, as major economies look set to register strong growth even as many developing economies lag.

Global growth is expected to accelerate to 5.6% this year, largely on the strength in major economies such as the United States and China. And while the growth for almost every region of the world has been revised upward for 2021, many continue to grapple with COVID-19 and what is likely to be its long shadow. Despite this year's pickup, the level of global GDP in 2021 is expected to be 3.2% below pre-pandemic projections, and per capita GDP among many emerging market and developing economies is anticipated to remain below pre-COVID-19 peaks for an extended period. As the pandemic continues to flare, it will shape the path of global economic activity (The Global, 2021).

The economic uncertainty and economic crisis caused by the coronavirus pandemic is largely a precedent. The social and economic consequences not only for Poland but for the whole world are difficult to assess. The negative economic effects of the pandemic will be additionally aggravated by increased budget expenditure on public health protection and the support of the Polish government for the most vulnerable sectors of the economy and social groups. Stopovers in economy and then launching tools to counteract the crisis, in spite of forecasts and simulations made in conditions of uncertainty, are not able to predict what we will face tomorrow despite more than a year of fighting the pandemic.

3. RESEARCH METHODOLOGY

Cognitive tendencies are the basic concept of behavioral economics. In the literature they are also referred to as: cognitive distortions, cognitive bias, biased attitudes, prejudices, etc. (see Goda, et al., 2015; Polowczyc, 2012; Huck, Zhou, 2011). The cognitive bias in a very widely interpreted term means breaking rules of conduct that are considered rational.

The research conducted in 2020, after the announcement of the first restrictions in Poland, was to indicate the most important behavioral effects in the behavior of students in response to the pandemic situation. The questionnaire was made available online, consisted of 29 questions and was addressed to 209 full-time and part-time students randomly selected. The respondents completed the second-cycle studies. Participation in the study

was voluntary. 93 questionnaires were returned. Cognitive errors were rated on a 5-point Likert scale.

In 2021 the research was repeated, the same questionnaire was used and the respondents were asked for an assessment in relation to the present situation. The survey link was addressed to 199 full-time and part-time, first and second-cycle students. Responses were obtained from 118 people. From the perspective of one year, the difference concerned the functioning and life of respondents during the year in a situation of restrictions, prohibitions regarding the functioning of the economy and contacts with other people. In the case of those surveyed in 2021, the restrictions were relaxed and their scope was changed by state authorities. Polish society was in the period of the first COVID-19 vaccinations, and the number of COVID patients also decreased.

In the process of analyzing the empirical material, a configuration approach was used, which allowed the selection of behavioral errors during the literature analysis and the assessment of their occurrence in the behaviors of the respondents.

The COVID-19 pandemic had a disastrous impact on the Polish economy but also on society. Taking into consideration such a situation, selected behavioral effects, which, in the authors' opinion, are related to the pandemic situation, were adopted for verification in the paper. The research is of a pilot nature with regard to the indicated effects in the period of the first social distancing in 2020 and 2021. The representativeness of the randomly selected sample of respondents who were students may also raise doubts.

The selection of this group of people was related to access resulting from participation in the didactic process. It was not always possible to explore our entire area of interest. It was very difficult due to the size of the entire Polish population and the pandemic situation.

The use of non-probabilistic selection consists in selecting a sample according to the subjective assessment of the researcher or choosing “at random” (Szreder, 2004). However, it allowed an implementation of the goal adopted and an identification of the problem under study.

The introduction of the first restrictions in 2020 regarding social distance and economic restrictions caused uncertainty and fear in Polish society. People were “locked” at home. While carrying out the research process, it was assumed that the on-line questionnaire was completed voluntarily, without repeating the request to fill in the questionnaire. The same mechanism was used in 2021. Substantial doubts may arise when the results of the research were generalized to the entire population and compared with the research of other authors. It was assumed that students were also representatives of society and their behavior in the event of a pandemic and restrictions was also reflected in social behavior (Dudkiewicz, 2004). It should be emphasized that the random selection applied does not guarantee the representativeness of the sample, but may become a premise to get to know the population (Szreder, 2004). Therefore, it was assumed that the research would be continued on a sample representing the entire population of Poland in a more comfortable situation for future respondents, i.e. stabilization of uncertainty related to the pandemic. The study was repeated in 2021 to compare the responses to respondents' behavior.

In the paper there were also presented the conclusions obtained by the participant observation technique of both groups of respondents, both studying in 2020 and 2021, as well as social behavior mainly related to the purchase of consumer goods.

4. BEHAVIOR OF PEOPLE IN THE PERIOD AFTER THE FIRST PANDEMIC RESTRICTIONS WERE ANNOUNCED

The pandemic situation has forced the state authorities in Poland to introduce preventive measures to stop/mitigate the spread of COVID-19. These actions had serious consequences for the entire Polish society. During the restrictions related to, inter alia, the closure of workplaces, resignation from business activity, the introduction of shopping hours for seniors and the rationing of the number of customers in stores, the prohibition of travel, study or remote work, the closing of borders, society collided with a completely different reality. People's lives have been limited not only in Poland but all over the world. People's behavior has also changed.

The research was conducted at the beginning of the pandemic in 2020, therefore respondents were asked which of the news reported in the media they identify with, which convinces them more. Whether it is "wash your hands to avoid spreading the coronavirus" or "wash your hands to avoid contracting coronavirus". The meaning of these messages differs in effect. The answers show that 55.91% of the respondents chose the first answer and 44.09% the second. This may indicate responsibility for the health of other members of the community and a lack of a tendency to self-centeredness, which is manifested in one of the cognitive errors. The respondents' opinions confirmed the positive pro-social reception of the message. Similar results were obtained by Jordan et al. (2020) in an online study conducted in the United States. They found that messages focused on avoiding infecting others ("wash your hands to avoid the spread of coronavirus" or pro-social message) are more effective in promoting individual COVID-19 prevention strategies than messages focusing on avoiding infection (self-interest messages): "Wash your hands to avoid contracting coronavirus". The following answers testify to the people's approach to communication and the information/ recommendations provided. Recommendations for the formation of healthy habits (e.g. washing hands for 20 seconds or not touching the face), which were introduced to reduce the spread of the virus, were fully accepted by 65.59% of people, 27.96% partially, and 6.45% admitted that I don't accept them at all. The responses of the majority of respondents show a pro-social attitude to messages of recommendations and concern for the health of others. In the case of respondents in 2021, when the restrictions were eased and changed, the distribution of responses was the opposite. Slightly less, 48.31% chose the statement "wash your hands to avoid the spread of coronavirus" and 51.69% wash your hands to avoid contracting coronavirus".

The difficult thing, which is also very widely discussed for mental health, is isolating people. "Closure in our apartments, houses" meant that 66.67% of the respondents felt safer, 19.35% did not feel such a state, and 13.98% chose the option I don't know. After one year, as many as 54.24% of respondents chose the option indicating that they did not feel safer being locked in their homes. Only 27.97% felt safe, the rest chose the "I don't know" answer. Over time, when viewed from the perspective of reducing isolation, it has not been judged to be a socially acceptable preventive measure.

In the case of shopping, the potential consumer is guided by the fashion effect. A man is in fact "socially adapted" and strives for the so-called "Crowd following", for example, mindlessly stockpiling hand sanitizers and toilet paper (see Smith & Klemm, 2020). People affected by the pandemic think of the COVID-19 crisis. This way of thinking about the current event leads to a bias in which you tend to rely more on things that you remember more easily and automatically. The more we hear about the coronavirus and the financial

crisis, the more our mindset influences our decisions. Finally, we can also expect a large random effect. People tend to believe that others will "fix" it (Ramsøy, 2020).

The state of the pandemic has shown that most of the society has succumbed to the effect of fashion and accumulated excess supplies, despite information from the rulers that there will be food.

In the case of students, this effect did not take place. At the time of announcing the closure of some business entities, only 29.03% was affected by the phenomenon of excessive purchases. As many as 70.97% did not buy more when shopping. It was similar a year later, as 66.95% of respondents indicated that they were not over stocking. The study did not explain what caused this behavior. Probably, it could have resulted from the return of the majority of students to their family homes, where other family members did their shopping. Most often, in the period when the restrictions were announced, the respondents were accompanied by negative emotions related to their own safety and that of their loved ones. They were: fear, uncertainty, fear, helplessness, regret.

5. IDENTIFICATION OF COGNITIVE BIASES IN THE BEHAVIOR OF RESPONDENTS

Respondents with regard to the state of the pandemic were asked to evaluate their behavior and make decisions. The assessment was made on a 5-point scale (1 I strongly disagree, 2 rather disagree, 3 neither yes nor no, 4 rather agree, 5 I strongly agree). When editing the research questions in the questionnaire, they were not included in the formula of the scientific language, but were redrafted to make them as readable as possible for the respondent.

Due to limitations on the volume of the text, the descriptions of each of the cognitive biases were not used in the research description. The reader can find them in many items of literature on the subject (see Kahneman, Tversky, 1973; Kahneman, Tversky, 1974; Kahneman, et al., 1982; Polowczyc, 201; Kehneman, 2012; Hommes, 2013; Czechowska, 2014; Orlik, 2017; The Behavioral 2021). Also the ratings 1 strongly disagree, 2 rather disagree were presented mostly jointly as the ones that did not confirm a given effect or error, while ratings 4 rather agree, 5 strongly agree were presented jointly as responses confirming its occurrence.

One of the more common cognitive errors is the Pollyanna Effect. It is manifested by the lack of a realistic view, no actual approach to the event or people. Respondents were asked to answer "do they tend to think about pleasant things and look for positive aspects in a situation of risk of illness, while ignoring unpleasant or unpleasant aspects, often related to the possibility of a loved one becoming ill or ill". As many as 38.71% rather agreed with such an action, which makes it possible to confirm that the search for positive aspects takes place even in epidemic situations. 5.38% chose the answer I definitely agree. Some, because as many as 32.26% chose a neutral answer (neither yes nor no), rather 21.51% disagreed with such behavior, while the rest stated that they did not behave like that.

In 2021, the respondents disagreed with the given statement almost twice as often (5.93%). About 5% less likely disagreed, similarly about 3% less respondents had no opinion about choosing the option neither yes nor no. About 1% of responses were recorded in the case of the "I tend to agree" and 2% in the "strongly agree" note. However, there is a trend of giving in to wishful thinking after one year of the pandemic.

The Pollyanna Effect is closely related to the self-fulfilling prophecy effect. It is about an individual approach to life and the things that happen to each person. A person's general attitude to the world defines what their life is like. It happens that a person approaches a task or a matter pessimistically and sees only a negative ending. The self-fulfilling prophecy "works so that it actually happens later" (www1). In relation to this effect, respondents were asked about their behavior connected with the tendency to perform activities that lead to the effects previously predicted by them. The majority, 47.31%, rather agreed that she did so. Only 6.45% definitely confirmed this behavior. 1.08% was of the opposite opinion, 13.98% rather disagreed. Neither the option was chosen by 31.18% of the respondents. This may indicate negative thinking of the respondents. In a life and health threatening situation, especially in the first months of the pandemic, when no one was sure what would happen tomorrow and how the disease would spread, such behavior was typical for many people. A year later, the respondents' moods were more pessimistic, as evidenced by more than 66.10% of responses, I rather agree that I have a tendency to perform activities that lead to the effects previously predicted by us. Half less than in 2020 respondents because 3.39% chose the option I definitely agree. The biggest difference, 14.23%, was recorded in the case of neither yes nor no, compared to 2020.

In difficult situations people tend to select information in terms of those that confirm their previous assumptions. People are looking for information that can confirm what they believe or know. This situation is referred to as the so-called confirmation effect. The research conducted proves that, according to the vast majority of respondents (35.48%), they tended to search only for facts confirming their opinion on the pandemic, and not verifying it. However, 23.66% rather disagreed with this measure, slightly because about 2% more respondents had no opinion on this subject. This situation can be justified by the lack of reliable knowledge about COVID and by publications in the Internet media or radio and TV broadcasts of information that at that time did not have a scientific confirmation of the disease. A year later, the respondents answered in a very similar way.

This behavior is confirmed by the linkage effect. It is related to the social need for closeness to another person. Many people interviewed during on-line classes indicated a lack of direct contact with their peers. In the case of respondents, this error was verified with regard to using too few different sources of information on the pandemic, relying on known methods that they had used in the past. The respondents strongly denied acting in such a way (66.67% chose the answers I strongly disagree and rather disagree), which, in the author's opinion, may be a positive sign of students looking for other sources of knowledge about COVID. In 2021, despite the fact that there was more information about the pandemic, the answers I strongly disagree and rather disagree were chosen by 59.32% of respondents.

A similar situation occurred with the misjudgment action of paying too much attention to one aspect and ignoring others. This means paying attention to factors that do not really matter and is called the focus effect, which the majority of the respondents did not succumb to (52.69%).

A year later, about 10% of respondents were less affected by this effect. Unfortunately, 22.88%, almost 9% more, chose the answer option confirming the presence of this effect.

A different distribution of responses was noted when assessing behavior in relation to accepting things as they are. More than half of the respondents, 50.54% agreed with the acceptance of the situation in which they found themselves. This confirmed the status quo effect, which simply means that you accept things as they are. However, in the event of

a pandemic the explanation is different. The respondents did not change anything because they did not want to take the risk of worsening the situation in which they found themselves. This is probably the result of loss and risk aversion. One year of life in a situation with restrictions and diseases caused noticeable differences in the responses. As many as 38.98% indicated that they rather disagree and completely disagree with the tendency to accept things as they are. Also, about 4% more responses compared to the previous period were recorded for affirmative responses (I strongly agree and rather agree).

The respondents did not confirm the realization of excess inventories and purchases in the first period of the announcement of the restrictions related to the pandemic, and they did not experience the purchase rationality effect.

In 50.54%, the respondents did not agree that they convinced themselves that they had made excessive purchases on purpose. Only 24.74% admitted that after purchasing specifically mentioned products, i.e. excess toilet paper and soap, they found out that it was correct. The remaining respondents chose the neutral answer option. Surprisingly, despite the fact that the above-mentioned products were on the shelves of stores, a slightly higher percentage of respondents admitted that they were overstocking 5.93% (I strongly agree) and 23.73% also chose an affirmative answer (I rather agree). In such a case, the respondents' motives should be examined, taking into account additional conditions that were not possible during the survey.

Currently, there is no full knowledge of the consequences of COVID-19 disease. Despite the reduction and cancellation of some restrictions, the number of infected people is decreasing, but the disease is returning in successive waves and has not been completely eliminated. New outbreaks of infection are recorded all the time around the world, and scientists are giving more and more facts about adverse medical effects after infection.

The respondents had knowledge in the field of economics and finance, not medicine, and despite searching for information about the disease, they did not succumb to the effect of professional bias. This is evidenced by the majority of negative answers of 47.31%, indicating the lack of consent to the assessment of things from the point of view of their own profession. 32.26% indicated neutral behavior. A year later, slight differences in responses were noticed, confirming 38.98% being driven by professional knowledge, and 36.44% not being driven solely by professional knowledge in relation to the analysis and assessment of the state of the pandemic.

An even higher percentage of the respondents (62.37%) disagreed with “doing something (and believing in something) just because many people do it”, which made it possible to exclude the bandwagon bias. The bandwagon is also often called sheep rush or herd mentality. In the event of a pandemic, the more often and more intensively we share information, the more it multiplies its strength and effect. Over time, the respondents also indicated that they did not make this mistake (47.46% of negative answers). However, it is worth noting that the percentage of responses, which was higher by over 12%, amounting to 25.42%, was neither yes nor evidence of uncertainty in the assessment of one's own behavior.

Half of the respondents also disagreed with the statement that they could influence the situation they found themselves in, so they did not succumb to the illusion of control.

Only 25.81% of the respondents were under the illusion of control and indicated that they could influence a situation that they had no real influence on. In literature, this phenomenon is interpreted as the phenomenon of overconfidence. This phenomenon is based on the fact that people are overconfident in their knowledge and skills, the position

most often due to the success achieved in a given field. In the following year, it was 28.81% of the respondents.

Most respondents agreed that they ascribed a higher probability to events that were associated with greater emotions (44.09%). It was probably related to the frequently reported negative information regarding the pandemic. The opposite task was 29.03%, the rest chose a neutral answer. Therefore, it can be concluded that the respondents were less affected by the heuristic of accessibility consisting in assigning greater probability to events that are easier to recall and are more emotionally marked. In 2021, 50.85% of this heuristic succumbed to this heuristic, while 24.58% each chose the negative response option (i.e. I disagree and rather disagree) and had no opinion about assigning greater emotions to some events.

The respondents were not influenced by the information provided on COVID-19 (62.37%) and the majority of the information obtained did not constitute a basis for them to make a judgment about the pandemic. So they did not succumb to the anchoring heuristics and did not draw conclusions based on the first information and simplifications. It was similar a year later (51.69%), although over 6% more respondents indicated the occurrence of such an effect in their behavior (19.49%).

In a pandemic, life-threatening situation, it can be considered that part of the just world effect has occurred. As many as 39.78% of respondents agreed with the statement that the world was somehow fair and people got what they deserved. This means that when they were ill, the misfortune that struck them was the fault of these people. The world, however, remained safe for "us" and nothing bad will happen to "us". Nothing could be more wrong, the disease is unpredictable as evidenced by 26.88% of neutral responses. On the other hand, 33.33% do not agree with the statement that the cause of people's misfortunes, in this case diseases, are themselves. In the case of respondents answering in 2021, more respondents, as much as 44.92%, disagreed with this statement. 33.90% of the respondents agreed with this way of thinking.

6. DISCUSSION AND SUMMARY

Most people have encountered a pandemic for the first time, which is why it is so difficult to deal with this situation. There are no known rules of behavior. They were worked out quickly but still concerned/concern only a short period of time. In such a situation, the reaction of many people is important.

In Poland, most of the society has succumbed to government orders, which means that people have changed their behavior. They stayed at home, disinfected their hands, kept their distance, they adapted to the unexpected situation.

The SARS-CoV-2 pandemic is associated with a humanitarian crisis, but from the economic point of view there has been an increase in consumer spending on the one hand, and on the other one a slowdown in the development of many industries. Apart from other economic consequences, it is worth paying attention to the costs incurred by governments in preventing a pandemic. Some people are trying to continue to do everything to avoid a pandemic by following these recommendations.

It should be noted that people often did not verify the content of the information provided to them, they accepted popular science messages as truth. This was often associated with the purchase costs incurred, not always needed. There has been a cognitive bias in a simple decision situation based on one criterion. In the event of a pandemic,

decisions are made quickly, not sure what will happen next. Each of our behavior is inscribed in the symptoms of virus infection, therefore our actions are aimed at ensuring safety.

In economics, it is important to identify differences with behavior during a pandemic. Studying actual behavior in a specific context is essential to develop strategic solutions.

This means that if managers are to develop effective policies, programs and products that help people make and implement the best decisions for themselves and for society, it is necessary to understand how society behaves. An application of the conclusions of behavioral science analyzes to social problems is of great importance. Examples from the literature concern, for example, saving for retirement, energy costs (see Kehneman, 2012).

Therefore, it be concluded that the environment where people make a decision in this case in the first period of the announcement of pandemic restrictions is of colossal importance. The main conclusion from research that supports the idea of behavioral science is that context matters. Behavioral science teaches us that the interplay between the context of the disease in this case and the comorbidities associated with the pandemic and our behavior can influence biases that occur. In the research the duration of the study was the factor differentiating the assessment, and thus the time in which the respondents participated in the duration of the pandemic and its consequences.

From an economic point of view, insights from behavioral sciences allow us to anticipate and explain inconsistencies that can be overlooked in product design, program development and economic as well as social policy. The insights from the study may point to specific solutions such as:

- faster feedback on how people cope with in a pandemic situation, which may have an impact on their own decision-making, but also other people. Behavioral learning shows a tendency to favor information related to the received message,
- changing people's perception of what a “social norm” is, can make them act differently,
- undertaking new research that will indicate the direction of economic development (see Wnorowski, Niklińska, 2020).

The coronavirus pandemic is a difficult situation that has suddenly hit and changed the whole world. The respondents also felt its influence. It manifested itself in the emotion of fear and uncertainty for the health of oneself and those of relatives, jobs, and the future. Uncertainty comes from a lack of knowledge when we will return to everyday life to the one we know from before the pandemic.

In the case of the respondents, errors were found: status quo, availability, confirmation, belief, a just world or a self-fulfilling prophecy. It should be positively assessed that the respondents were critical when making decisions and behaving during a pandemic. Not knowing what will happen next did not lead to irrational behavior and making many cognitive errors. This may be due to the short period covered by the post-restriction analysis as well as young people's awareness of the operation of the market mechanism and the dissemination of information.

In the face of the consequences of an unknown disease and the introduced restrictions, we do not always behave rationally. Most people were first impressed, implying that others are thinking biased. People committed cognitive errors to a different degree in the first period of the announcement of the restrictions, but the conclusion is that they are committed by everyone, although to a different degree. This is confirmed by the results of studies after

one year of the pandemic. Respondents admitted that in their behavior they had succumbed to the Pollyanna effect, focus, status quo, purchase rationalization, hooking, control or the availability heuristic. These were errors in a greater percentage committed after one year of the pandemic.

Students as respondents to a part of society are a group that should not be omitted in further research, as evidenced by the works of other authors concerning, inter alia, distance education (see Sarkar, 2020; Tawafak, 2021; Lin, 2021). There are also studies on behavioral conduct carried out by other authors on risk (see Fragkaki, 2021), communication (Prieto, 2020) and health-protecting behaviors (Park, 2021; Houdek, 2021, Dryhurst et al. 2020; Glenn, 2021). They will constitute a comparative base while continuing the research undertaken among other strata of Polish society.

Behavioral research shows that people often fall prey to intention-action gaps; that is, we can be aware of how we need to adjust our behavior in order to reduce the risk of disease in this case. Such a mechanism was used in the event of requests to the public to avoid the spread of the pandemic. Reading the actual behavioral responses to a message can be of value in effectively intervening and fighting the disease.

The issues raised have not been fully assessed. There are many cognitive errors and further research should distinguish the relationships between socio-demographic factors and the behaviors of the respondents, identify the impulses that caused such reactions, especially with the variable of time. This may be important when designing the rules of intervention, first in the medical field, then in the economic field.

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