

WHY RESPONDENTS SELECT NO-OPINION RESPONSE OPTION IN CONSUMER RESEARCH?

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Abstract: *In surveys, which are a commonly accepted research method in social sciences, we always observe a certain percentage of respondents giving no-opinion responses such as “no opinion” or “hard to say”. In this study, we treat no-opinion responses as a motivated decision to refuse to respond. The aim of the study was to determine what factors involved in the organisation of a study increase the percentage of respondents who opt for no-opinion responses. The factors on which we focused include in particular the significance of the difficulty of questions; the order of questionnaire questions; motivating respondents through rewards, and the research technique. In the first part of the study, 575 students were divided into 5 groups. Each group was surveyed about environmental consumer attitudes in different survey conditions. In addition, the respondents were asked to rank the difficulty of individual questions in the survey. Findings: The study showed that the percentage of no-opinion responses increases as the questions become more difficult. The respondents were more likely to avoid stating their opinion on those unecological behaviours that they exhibited more frequently. The change of the research technique from a questionnaire to a direct interview caused a decrease in the percentage of no-opinion responses. The respondents opted for a “no opinion” response less frequently when the interview was conducted by a lecturer than when it was conducted by a student. Changing the order of questions also affected the percentage of no-opinion responses; however, that was only true for questions*

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that the respondents recognised as easy. Conclusions: The study showed that the choice of a research technique intended to reduce the percentage of no-opinion responses depends on the quality of questions. If they are difficult and require the respondents to engage cognitive resources, a better solution is to employ the direct interview method. However, if the questions are sensitive and the respondent may feel pressure to give a response that conforms to social norms, a better solution is to ensure them anonymity, e.g. by employing the questionnaire technique.

Key words: rating scale, no-opinion response options, response bias, research technique.

DLACZEGO RESPONDENCI WYBIERAJĄ ODPOWIEDŹ „NIE MAM ZDANIA” W BADANIACH KONSUMENCKICH

Streszczenie: *W badaniach ankietowych, które są powszechnie przyjętą metodą w naukach społecznych, obserwujemy zawsze pewien odsetek respondentów udzielających odpowiedzi beztreściowych, jakich jak „nie mam zdania” czy „trudno powiedzieć”. W obecnym badaniu odpowiedzi beztreściowe traktujemy jako umotywowaną decyzję o odmowie odpowiedzi. Celem badania było określenie, jakie czynniki związane ze sposobem organizacji badań zwiększają odsetek respondentów udzielających odpowiedzi beztreściowych. Wśród tych czynników skoncentrowaliśmy się w szczególności na: znaczeniu poziomu trudności pytań, kolejności prezentacji pytań kwestionariuszowych, motywowaniu za pomocą nagradzania oraz technice badawczej. Łącznie badanie przeprowadzono wśród 743 studentów podzielonych na siedem grup. Badania wykazały, że odsetek odpowiedzi beztreściowych rośnie w miarę wzrostu trudności pytań. Respondenci częściej unikali deklarowania opinii na temat tych zachowań nieekologicznych, których częściej się dopuszczali. Zmiana techniki badawczej z ankiety na wywiad bezpośredni spowodowała spadek odsetka odpowiedzi beztreściowych. Respondenci rzadziej udzielali odpowiedzi „nie mam zdania”, kiedy wywiad prowadzony był przez wykładowcę, niż kiedy prowadzony był przez studenta. Zmiana kolejności zadawania pytań również wpłynęła na zmianę odsetka odpowiedzi beztreściowych, jednak tylko w pytaniach uznanych przez respondentów za łatwe. Badanie wskazało, że wybór techniki badawczej w celu zmniejszenia odsetka odpowiedzi beztreściowych zależy od jakości pytań. Jeśli są trudne i wymagają zaangażowania zasobów poznawczych ze strony respondentów, lepszym rozwiązaniem jest stosowanie metody wywiadu bezpośredniego. Jeżeli jednak zadawane pytania należą do kategorii wrażliwych, a respondent może czuć się zobowiązany do udzielenia odpowiedzi zgodnej z normami społecznymi, lepszym rozwiązaniem jest zapewnienie mu anonimowości, przykładowo stosując technikę ankietową.*

Słowa kluczowe: skala odpowiedzi, odpowiedzi beztreściowe, błąd odpowiedzi, technika badawcza.

INTRODUCTION

In the recent years, social research methodologists have been discussing the impact of including no-opinion response options on the quality of research findings obtained. Many authors claim that inclusion of a “don’t know” or “no opinion” response option prevents detection of false patterns and drawing of conclusions that are inconsistent with the actual opinion of respondents. On the other hand, some researchers believe that no-opinion responses generate incomplete information and less valuable research findings (Saris, Gallhofer, 2014).

This discussion is undoubtedly related to how respondents make their decision to give a no-opinion response, i.e. to refuse to give an opinionated response. Indeed, Krosnick et al. (2002) conducted a survey that proved that respondents are not inclined to make a cognitive effort to give responses that reflect reality, especially to self-reported questions, and consequently opt for the first response option they consider satisfactory. In view of this, a no-opinion response becomes particularly attractive to them, having a negative impact on the quality of survey findings.

According to Tourangeau and Rasinski (1988), a standard model for answering survey questions consists of four stages: (1) comprehension and interpretation of a question; (2) retrieval of relevant information from memory; (3) generalisation of the information and definition of a concise response; (4) expressing an opinion by locating it in the relevant place on the proposed response scale. Each stage of the response process requires a cognitive effort from respondents. Research has indicated that while some respondents make this effort, others tend to avoid it (Holbrook et al., 2003, p. 82). In this context, Krosnick proposed to distinguish two questionnaire response strategies, *optimising* and *satisficing* (Krosnick, 1991; Krosnick et al., 1996; Krosnick and Fabrigar, 1997), where *satisficing* is a combination of the words *satisfy* and *suffice* (Krosnick, 1991). Adopting the *optimising* strategy requires respondents to go through all stages of the decision-making process and engage cognitive resources at each stage. The result of this strategy is a response that reflects the actual knowledge and beliefs of the respondent. According to a concept by Simon (1957), individuals tend to limit the involvement of cognitive resources in decision-making situations. Accordingly, some of them select the *satisficing* strategy. A respondent will opt for an answer they find acceptable, even if it does not accurately reflect their

preferences or behaviours. This means that those individuals are “satisfied” with the first answer that reaches the acceptability threshold (Cannel et al., 1981).

If the Likert-type scale is used, the extreme response option may be the response that meets the acceptability threshold. This phenomenon is known as extreme response style (ESR) and refers to a tendency to favour final points or extreme categories of ordinal or Likert-type scales disproportionately, regardless of the content of a given question (Naemi et al., 2009). On the other hand, a respondent may find a no-opinion response option such as “don’t know”, “no opinion” or “hard to say” sufficient (see e.g. Alwin and Krosnick, 1991; Gilljam and Granberg, 1993). This is also confirmed by studies (Schwarz et al., 1991) indicating that respondents using a numerical response scale with “0” placed in its centre (e.g. from -3 to +3) were considerably more likely to opt for the middle option than those who used the scale from 1 to 7. Moreover, a 2008 study by Kulas et al. indicates that a no-opinion response placed as the middle option on a graphically represented Likert-type scale may be treated by respondents as equal to the “not applicable” response option.

A no-opinion response option is included in a significant number of questions asked to respondents in consumer surveys (Raaijmakers et al., 2000). Wierziński et al. (2014) call such responses “no-opinion responses”, as it is impossible to use them to make any conclusions regarding the research problem under analysis. A study by Krosnick et al. (2002) indicates that the very inclusion of a no-opinion response option in the set of answers discourages respondents from making a cognitive effort in order to give a response that reflects their actual attitude, opinion or preferences. On the other hand, a lack of a no-opinion response option leads to a situation where a respondent is forced to take a stance on a given issue when they have no opinion on it, which may in turn lead to detecting false patterns.

The aim of this study was to determine what makes respondents opt for a no-opinion response among response options proposed when asked to judge behaviours considered detrimental to the environment. The study was conducted among students of the University of Białystok Faculty of Economics and Management.

The study of factors contributing to respondents’ inclination to opt for no-opinion responses focuses on two aspects: (1) individual attributes of the respondents, (2) conditions in which the survey was conducted. From the point of view of social research methodology, it is particularly important to recognise the impact of factors related to the organisation of the survey. Indeed, these factors may be controlled by individuals designing and conducting the survey.

Previous studies have revealed that a no-opinion response option becomes more attractive when placed in the central point of the set of answers (Wieczorkowski et

al., 2009). Krosnick et al. (2002) demonstrated that the percentage of no-opinion responses is higher in surveys than direct interviews. Studies in this regard have indicated that the change of a research technique affects the quality of responses given by respondents due to: (1) the change of response commitment levels (Holbrook, Green and Krosnick, 2003); (2) defining the level of respondent anonymity (Vanderhoven, 2012); (3) the change of respondents' inclination to respond to questions regarding sensitive issues (Burkill et al., 2016), including the change of their inclination to give socially undesirable responses (Triki, Cook and Bay, 2017; Yang, 2017). Krosnick et al. (2002) also found that the respondents' inclination to give "hard to say" responses increases with every new question, with the result being that the share of no-opinion responses is higher if the question is situated farther towards the end of the questionnaire. A study by Tourangeau et al. (2000) showed that the risk of selecting the satisficing strategy by a respondent increases as the survey questionnaire becomes more complicated and the number of response options becomes greater, whereas the percentage of no-opinion responses is lower for questions regarding easily observable behaviours (Wierzbinski, 2009).

The inclination to opt for no-opinion responses also depends on individual characteristics of a respondent. A study by Borgers et al. (2004) conducted among adolescents indicated that girls displayed a greater inclination to give no-opinion responses than boys. Respondents with lesser cognitive skills (measured by their level of education) more often selected no-opinion responses in studies conducted by Krosnick et al. (2002). Galesic et al. (2008), on the other hand, indicated that the said inclination is greater among people reporting a lower level of motivation to participate in the study.

In this study, we did not deal with individual characteristics of a respondent but instead focused on the following question: "what factors involved in the organisation of a survey increase the percentage of respondents opting for no-opinion responses?". The study was therefore intended to gain a deeper knowledge of factors causing a respondent to decide to opt for a "don't know" or "no opinion" response. In order to receive an answer to the main research question, we formulated six detailed research questions: (1) Does the difficulty of a question affect the percentage of no-opinion responses? (2) Is there a correspondence between the frequency of "no opinion" responses to a question about environmental beliefs and the frequency of such behaviours exhibited by respondents? (3) Are respondents more likely to give no-opinion responses, if the survey is a questionnaire? (4) Are respondents more likely to give no-opinion responses, if the survey is conducted by a student as compared to a survey conducted by a lecturer? (5) Does the introduction of small incentives to participate in a survey make respondents less likely to give no-opinion responses? (6) Does the order of questions in a survey affect the percentage of no-opinion responses?

RESEARCH METHODOLOGY

We chose environmental attitudes of young consumers as the research subject. The main part of the questionnaire comprised two matrix questions. The first question regarded behaviours considered unecological, while the second regarded the level of public approval for such behaviours. The surveyed behaviours included:

- (1) taking a shortcut across a lawn (hereafter referred to as question No. 1);
- (2) using disposable plastic bags (hereafter referred to as question No. 2);
- (3) leaving the tap on while brushing (hereafter referred to as question No. 3);
- (4) leaving the lights on while leaving a room (hereafter referred to as question No. 4).

In one group, the respondents were asked additional questions about two easily observable behaviours that the respondents considered easy to answer. The aim was to indicate a relationship between the difficulty of questionnaire questions and the percentage of no-opinion responses. The questions concerned the use of detergents (question No. 5) and disposing of trash in forestland (question No. 6).

The questions about behaviours¹ employed a five-degree scale that did not include a neutral response (1 – very often; 2 – fairly often; 3 – sometimes; 4 – sporadically, and 5 – never). The questions about opinions² also employed a five-degree scale, where a neutral response was included (1 – I definitely don't approve of such behaviours; 2 – I generally don't approve of such behaviours; 3 – no opinion; 4 – I generally approve of such behaviours; 5 – I definitely approve of such behaviours). All respondents were asked about both the behaviours and their opinion.

In addition, the respondents were polled, using the paper-and-pencil questionnaire method, on the difficulty of survey questions. The respondents were asked to rank 6 questions (four questions used in all series of experiments and two additional questions about easily observable behaviours) according to the difficulty level. The respondents ranked the questions, indicating which would be the easiest or most difficult for them to answer.

In total, the study was conducted on a sample of 743 students of the University of Białystok Faculty of Economics and Management, who were divided into 7 study groups (Figure 1).

¹ How often do you take shortcuts by walking across a lawn? How often do you use disposable plastic bags to pack your shopping? How often do you leave the tap on while brushing? How often do you leave the lights on while walking out of a room?

² What do you think about taking a shortcut across a lawn? What do you think about using disposable plastic bags for shopping? What do you think about leaving the tap on while brushing? What do you think about leaving the lights on while leaving a room?

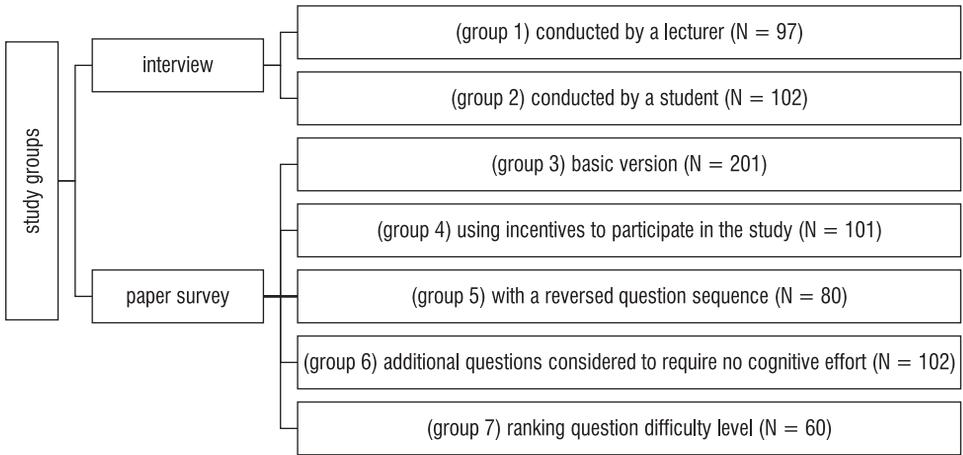


Figure 1. The size and conditions of study groups

Source: own elaboration.

Some groups (1-5) were surveyed in experimental conditions, where one factor was deliberately selected and modified. Students were not individually randomised into groups which constitutes a certain limitation in terms of formulating conclusions, but seminar groups of approximately 20-30 students were randomly assigned to experimental groups. This means that one experimental group consisted of 3-4 randomly assigned seminar groups of students. Consequently, students from one seminar group were not assigned to various experimental groups but were subjected to the same research procedure. The respondents were not reassigned (students who were absent on the day on which the survey was conducted or who did not wish to participate were not subjected to the study in other experimental conditions).

The total of 199 people were surveyed using the direct interview method, with 97 interviews being conducted by a lecturer teaching a course in environmental protection and 102 by a student. Subsequently, a group of 201 students were surveyed using the same questionnaire in the paper form. Another group (101 students) were surveyed using a paper-and-pencil questionnaire with small incentives to participate in the study in the form of organic sweets. Another group of students (80 respondents) were surveyed using a questionnaire with a reversed question order (the respondents first declared their approval for given behaviours and then indicated how often they exhibited such behaviours themselves). In group 6 (N = 102), the respondents were asked additional easy questions (5 and 6). In group 7, the students ranked the difficulty of each question.

Women constituted a majority (66.48%) of all respondents. A majority of the respondents (67.28%) were aged between 20 and 23. Respondents aged under 20 and above 23 accounted for 20.85% and 11.84% of the total, respectively. A majority of the respondents (63.38%) reported that they originated from a town or a city. Table 1 presents the structure of the respondents in individual study groups.

Table 1
Socio-demographic characteristics of respondents in individual study groups

Variable	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
% women	61.90	63.7	81.1	67.3	57.5	53.9	61.7
% respondents aged:							
below 20	–	5.9	33.3	36.6	20.0	16.7	20.0
20-23	69.1	84.3	51.7	51.5	72.5	83.3	80.0
above 23	30.9	9.8	14.9	11.9	7.5	–	–
% respondents from cities	67.0	63.7	51.2	63.4	70.0	72.6	73.3

Source: own elaboration based on the study.

The study groups did not differ from each other significantly in terms of the gender distribution of respondents. The percentage of women in the study sample varied from 53.9% to 81.1%. To a certain degree, individual study groups varied in terms of the age structure of respondents. In group 1, over 30% of people were aged above 23 but none were aged below 20; in groups 3 and 4, every third respondent was aged below 20; in groups 6 and 7, there were no students aged above 23. Individual samples showed certain differences in terms of the origin of the respondents (the percentage of respondents from cities varied from 51.2% to 73.3%). The above-mentioned differences may be treated as a certain limitation in the study presented.

RESULTS

Question difficulty and the respondents' inclination to give a no-opinion response

In an attempt to answer the question “Does the difficulty of the question affect the percentage of no-opinion responses?”, we conducted a survey intended to assess the level of difficulty for individual questions. The authors identify the difficulty of a question with the cognitive effort that a respondent must make in order to answer the question. The difficulty was expressed as a self-evaluation of how difficult it was for the respondent to formulate the response to a given question as compared to other questions presented. In this regard, it is important to distinguish between the difficulty of the question and the difficulty of a specific environmental behaviour,

which was the subject of a study by Byrka, among other researchers³. In order to examine the difficulty of the questions, we introduced two control questions about easily observable behaviours that, according to the authors, do not require a significant cognitive effort to answer, i.e. a question about disposing of trash in forestland and a question about using detergents in a household. A survey was conducted (N = 60) where respondents were asked to rank six questions (four questions from the proper study and two additional, simple questions) according to the level of the difficulty they posed, where 1 meant the easiest question and 6 the most difficult. The arithmetic mean of the rank was subsequently calculated for each question. It was an overall assessment of the question difficulty in the respondents' opinion (Figure 2).

In order to determine the relationship between the difficulty of questions and the percentage of responses, an additional survey was conducted among 102 respondents (group 6), including control questions about easily observable behaviours (What do you think about using detergents, e.g. washing powder or dishwashing soap? What do you think about disposing of trash in forestland?). The aim of introducing additional questions was to verify whether the percentage of no-opinion responses will significantly decrease when respondents are asked about easily observable behaviours. This means that the number of respondents reporting their level of approval for behaviours 1-4 was significantly higher (N = 581) than the number of respondents reporting their level of approval for behaviours 5-6 (N = 102). Figure 2 presents the percentage of no-opinion responses to individual questions.

While analysing the results of the surveys, we established that, regardless of the experimental conditions employed, the percentage of no-opinion responses was higher for certain questions and lower for others. On average, questions No. 1 and 2 (about devastating greenery and using plastic bags) were characterised by a higher percentage of no-opinion responses. The respondents gave a "no opinion" response to question No. 4 (about saving electricity) less frequently; however, the lowest percentage of no-opinion responses was recorded in question No. 3 about saving water. The group asked about their approval for additional (easily observable) environmental behaviours reported 2.2% and 6.5% of no-opinion responses to the question about the disposal of trash in forestland and use of detergents respectively.

The respondents found question No. 2 about using plastic bags to be the most difficult (4.08 difficulty rank). Similarly ranked was question No. 1 about devastating greenery (4.0 difficulty rank). The question about saving water was found easier by the respondents (3.42 difficulty rank). In addition, the questions introduced into the test as control questions were ranked, in line with our expectations, as the

³ The level of difficulty of behaviours is defined as a relative percentage of people exhibiting the target behaviour (Byrka, 2015).

easiest. The respondents assigned an average rank of 3.16 to the question about their opinion on using detergents and 2.2 to the question about their opinion on disposing of trash in forestland. The study revealed a strong, positive correlation between the average rank of question difficulty and the percentage of no-opinion responses given. This is reflected by Spearman's rank correlation coefficient at 0.943, which indicates that the correlation is statistically significant at 0.005. One may therefore state that the percentage of no-opinion responses increased as the questions became more difficult, meaning that a larger part of the respondents declared that they have no opinion on a given matter.

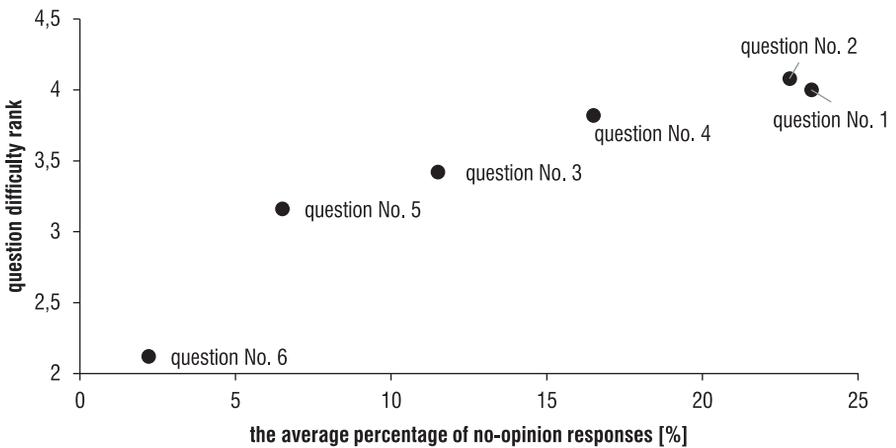


Figure 2. The average percentage of no-opinion responses in groups under study against the question difficulty as ranked by the respondents

* N = 581 for questions 1-4; N = 102 for questions 5-6

** ranking questions 1-6 difficulty level, N = 60

question No. 1 – What do you think about taking a shortcut across a lawn?

question No. 2 – What do you think about using disposable plastic bags for shopping?

question No. 3 – What do you think about leaving the tap on while brushing?

question No. 4 – What do you think about leaving the lights on while leaving a room?

question No. 5 – What do you think about using detergents, e.g. washing powder or dishwashing soap?

question No. 6 – What do you think about disposing of trash in forestland?

Source: own elaboration based on the study.

The respondents' environmental behaviours level and inclination to give no-opinion responses

In order to respond to the second research question formulated for the purpose of the study, we compared:

- the percentage of no-opinion responses in the question about the level of approval for the unecological behaviours listed in the survey;

- the respondents' responses regarding the frequency with which they exhibit unecological behaviours.

The comparison was intended to determine whether there is a correspondence between the frequency of giving a “no opinion” response to a question about the opinion on unecological behaviours and the frequency of such behaviours among respondents. The increased frequency of no-opinion responses could stem from the fact that the respondents who responded to the question about their level of approval by declaring that they had exhibited unecological behaviours could be reluctant to give a response that does not conform to social norms (response about the approval for unecological behaviours) and, at the same time, in order to avoid inconsistency, they gave a “no opinion” response. Table 2 presents the percentage of no-opinion responses in general and those observed in the interviews and paper-and-pencil questionnaires conducted.

Table 2
The percentage of no-opinion responses vs the average result of environmental behaviours depending on the research technique employed

Experimental group ¹		Question			
		1	2	3	4
Percentage of no-opinion responses	interviews and questionnaires in total	23.5	22.8	11.5	16.5
	in interviews	21.6	18.6	13.6	16.6
	in questionnaires	25.4	26.9	9.5	16.4
Average number of environmental behaviours	interviews and questionnaires in total	2.89	2.4	4.12	3.33
	in interviews	3.14	2.47	4.16	3.42
	in questionnaires	2.76	2.28	4.22	3.3

Source: own elaboration based on the study.

As illustrated by Table 2, the respondents exhibited the most environmental attitudes towards behaviour No. 3. The average result of 4.12 indicates that the respondents seldom leave the tap on while brushing (on the scale from 1 to 5, where 5 means that the respondent never does it and 1 that they always do it). The greatest frequency of unecological behaviours was recorded in question No. 2 about using plastic bags for shopping. In general, it may be stated that the respondents showed more unecological attitudes in behaviours surveyed in questions 1 and 2 than behaviours surveyed in questions 3 and 4. At the same time, the respondents were more likely to avoid expressing their opinion in questions 1 and 2 than questions 3 and 4. This means that the respondents were more likely to avoid expressing their opinion on those unecological behaviours that they exhibited more frequently. We recognise two possible explanations for this phenomenon:

- the respondents do not approve of given unecological behaviours but they exhibit them; the increase in the percentage of neutral responses to the question about their opinion is therefore a result of their unwillingness to state an opinion that contradicts their own behaviour (striving for consistency of responses);
- the respondents approve of given unecological behaviours and exhibit them; here, the increase in the percentage of neutral responses to the question about their opinion is a result of their unwillingness to state an opinion that does not conform to social norms.

Detecting which of the explanations given above is true would require the identification of actual opinions of the respondents who opted for no-opinion responses. However, the scope of this study does not allow us to indicate which hypothesis is true.

When comparing the strength of the correspondence between the percentage of no-opinion responses and the strength of environmental behaviours separately for questionnaires and direct interviews, it was observed (Table 2) that the correlation coefficient is higher (-1.0) for the questionnaires. However, one may point out that the lower correlation of results in the interview mainly stems from the higher average rank of behaviour environmentalty in question No. 1 (the correlation analysed for the remaining 3 questions in the interview was statistically significant at 0.01). One may infer that the study revealed the influence of the research technique on the level of declared environmental behaviours, known in literature as the *mode effect* (cf. Doušák, 2017; Holbrook, Green and Krosnick 2003).

The research technique and percentage of no-opinion responses

The aim of the next part of the study was to determine whether a change of the research technique affects the percentage of no-opinion responses. To that end, we compared the percentage of “no opinion” responses given in direct interviews (N = 199) and questionnaires (N = 201). Then, using the chi-squared test, we checked if the response distributions are different, with the variables being recorded in the binary form, 1 – if the respondent opted for the no-opinion response, and 0 – if the respondent opted for another response.

The results of the study indicate that, on average, the respondents asked to state their level of approval for specific unecological behaviours gave fewer no-opinion responses to questions ranked particularly difficult (questions No. 1 and 2) if the survey was conducted as a direct interview. The difference in the response structure was only statistically significant for question No. 2, which the respondents found

the most difficult (Figure 2). It can therefore be inferred that the respondents were more inclined to follow a strategy of satisficing in the case of difficult questions, if the survey was conducted as a questionnaire. It is a research technique where it is the respondent who is in control of the survey (*self-administered mode*). If compared with other research findings (Holbrook, Green and Krosnick 2003, p. 82), this may suggest that the respondents were more inclined to make a cognitive effort when it was the survey administrator who was in control of the survey (*interviewer-administered mode*).

Table 4
The percentage of no-opinion responses depending on the research technique employed

Question	Percentage of no-opinion responses in surveys conducted as:			Chi-squared test, significance
	interview [%]	questionnaire [%]	difference [pp]	
Question No. 1	21.6	25.4	-3.8	0.375
Question No. 2	18.6	26.9	-8.3	0.048**
Question No. 3	13.6	9.5	4.1	0.197
Question No. 4	16.6	16.4	0.2	0.965

** statistical significance 0,05

Source: own elaboration based on the study.

The influence of the survey administrator on the percentage of no-opinion responses

The part of the experiment discussed was intended to determine whether the percentage of no-opinion responses is influenced by the survey administrator. It was expected that this influence will mainly manifest itself in direct interviews. For this reason, the survey was conducted using only this method. In order to verify the hypothesis, the survey was conducted in two sets of conditions:

- 1) the survey was administered by a lecturer teaching a course in environmental protection, environmentalism, environmental economics (N = 97);
- 2) the survey was administered by a student (N=102).

Table 5 shows the differences in the results between the two surveys (H_0 : The distributions of respondents' responses in the survey conducted by a lecturer and a student are the same).

The chi-squared test indicated that the difference in the structure of responses is only statistically significant for question No. 3. This is a question regarding approval for those behaviours in which the respondents exhibit the greatest level of environmentalism (the highest behaviour environmentalism score) as well as

a question that the respondents found particularly easy and requiring no cognitive effort. Consequently, the respondents gave fewer no-opinion responses when the interview was conducted by the lecturer, meaning that they made a greater cognitive effort, when the question was not sensitive (the respondents exhibited environmental behaviours in the given aspect) and when the question was easy. The change of the administrator did not affect the percentage of no-opinion responses to difficult questions. Taking into account the conclusions formulated based on Table 4, it may be stated that an interview as such induces greater cognitive engagement in the case of difficult questions. In the case of easy questions, the fact that the study is conducted by a person recognised as an authority may also induce an additional effort, as supported by the findings of a study by Branas-Garza (2007).

Table 5
The percentage of no-opinion responses depending on the interviewer

Question	Percentage of no-opinion responses in surveys conducted by:			Chi-squared test, significance
	lecturer [%]	student [%]	difference [pp]	
Question No. 1	22.7	20.6	2.1	0.720
Question No. 2	16.5	20.6	-4.1	0.460
Question No. 3	9.3	17.6	-8.3	0.085*
Question No. 4	20.6	12.7	7.9	0.136

* statistical significance 0,1

Source: own elaboration based on the study.

Rewarding and the percentage of no-opinion responses

In the further part of the experiment, another group of students (N = 95) were surveyed, with the introduction of small incentives to participate in the survey (organic sweets). The aim of the survey was to verify whether respondents are less inclined to give no-opinion answers when given small incentives to participate in the study. The differences in the results were compiled and compared in Table 6.

Table 6
The percentage of no-opinion responses depending on rewards for the respondents

Question	Percentage of no-opinion responses in surveys conducted:			Chi-squared test, significance
	without rewarding [%]	with rewarding [%]	difference [pp]	
Question No. 1	25.4	20.0	5.4	0.218
Question No. 2	25.9	23.8	2.1	0.621
Question No. 3	9.5	9.5	0	1.000
Question No. 4	16.4	21.8	-5.4	0.239

Source: own elaboration based on the study.

By comparing the results obtained, one may notice that the introduction of small incentives caused a decrease in the percentage of no-opinion responses, but only for the first question. Furthermore, it can be observed that the last question saw an increase in such responses. Nonetheless, the differences observed are not statistically significant, with the result of the chi-squared test indicating no significant differences in the distributions of the variable. It follows that while the introduction of small incentives to participate in the study indeed increased the respondents' commitment to responding, the differences were insignificant. Interestingly, the last question saw an increase in the percentage of no-opinion responses. One may formulate a hypothesis (one that would require an in-depth analysis) that respondents induced to make a greater cognitive effort at the beginning of the survey opted for no-opinion responses less frequently; however, the more questions they answered, the more they began to experience cognitive fatigue, which caused an increase in the percentage of "no opinion" responses.

The order of questions in the questionnaire and the percentage of no-opinion responses

Our further research was intended to determine whether respondents are more likely to opt for a no-opinion response when they report the frequency of individual behaviours first and express their opinion on them second or when the question sequence is reversed.

Table 7
The percentage of no-opinion responses depending on the order of questions in the questionnaire

Question	percentage of no-opinion responses in questionnaires where the first question was to state:			Chi-squared test, significance
	behaviours [%]	opinions [%]	difference [pp]	
Question No. 1	25.4	21.3	4.1	0.481
Question No. 2	25.9	22.5	3.4	0.820
Question No. 3	9.5	1.3	8.2	0.016**
Question No. 4	16.4	13.8	2.6	0.570

** statistical significance 0,05

Source: own elaboration based on the study.

By comparing the results of the experiment (Table 7), one may observe that the change of the order of questions in the survey caused a decline in the percentage of no-opinion responses across all questions. Again, statistically significant differences in the percentage of responses given were observed for question No. 3. This points to the conclusion that the respondents who were first asked about behaviours

were more likely to declare they have no opinion on the subject in the subsequent question. This relationship was true for all questions in the survey, most notably for the question considered particularly simple (statistically significant difference at $\alpha = 0.01$). One may provide two explanations for this phenomenon: (1) the increase in the percentage of no-opinion responses stems from the order of questions in the survey (*ordering effect*); (2) the increase in the percentage of no-opinion responses stems from striving for consistency of responses (*common method variance*). In the first case, as indicated by studies conducted, *inter alia*, by Krosnick et al. (2002), Schwarz and Clore (1983), the respondent's motivation to participate in the study decreases as they progress to the next question while their inclination to opt for a no-opinion response increases. Furthermore, a study by Rousu et al. (2017) showed that smokers reported themselves in worse health when they were asked to report their weight first. A similar study by Lasorsa (2003) indicated that the respondents who were first asked about their knowledge of politics reported a lower level of interest in politics than those who were only asked to state their interests. This, in turn, is indicative of the respondents striving for consistency in their responses. The study discussed showed that the change of the order of questions in the survey affects the percentage of no-opinion responses; however, it failed to determine the underlying cause.

SUMMARY AND CONCLUSIONS

in conclusion, the study helped indicate certain factors associated with the research methodology that increase the probability of respondents opting for a no-opinion response in declarative studies. One of these factors was the amount of cognitive effort required by the question. Indeed, the study showed that the inclination to give no-opinion responses is particularly high when the respondents consider the question difficult, i.e. requiring a significant cognitive effort. This finding is compatible with the satisficing strategy described by Simon (1957). A respondent searching for an option that describes their frame of mind most accurately settles for the option that expresses their frame of mind well enough. It was also stated that there is a relationship between the frequency of "no opinion" responses to questions about the opinion on unecological behaviours and the prevalence of such behaviours among the respondents. The respondents were more likely to avoid stating their opinion on the behaviours they exhibited more frequently. These relationships may stem from the unwillingness to give inconsistent responses or unwillingness to state opinions that do not conform to social norms.

Furthermore, it was observed that the percentage of no-opinion responses was lower when the survey was conducted as a direct interview. However, this difference only applied to difficult questions. The respondents who were interviewed were presumably more motivated to make a cognitive effort. The study also indicated that if the interview was conducted by a lecturer, the respondents gave fewer no-opinion responses. Although the introduction of small incentives to participate in the survey did not significantly modify the percentage of no-opinion responses given by the respondents, subtle differences were observed that seem interesting. Introducing the incentives caused a decline in the number of no-opinion responses in the questions that appeared at the beginning of the survey; however, the percentage grew as the questions progressed.

The study showed that, to some extent, it is possible to minimise the percentage of no-opinion responses by properly designing the survey. It appears that if the surveyed issues are particularly difficult for the respondents, i.e. if the responses to the questions asked by the researchers require a greater cognitive effort, it is advisable to employ the direct interview technique, which increases the respondent's inclination to make a cognitive effort. At the same time, if the survey regards sensitive issues where it is expected that the respondents may feel pressure to give a socially desirable response, it is advisable to avoid conducting the survey as an interview. Furthermore, if the survey includes both questions about the frequency of specific behaviours and questions where the respondents express their opinion on those behaviours, it is better to first ask about the opinions. Interestingly, rewarding for participation in the survey does not significantly affect the motivation of the respondents to make greater cognitive effort, which in turn means that this measure is essentially ineffective in decreasing the percentage of no-opinion responses in a survey.

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