
Environmental Workplace Behaviors - It Takes Two to Tango

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Abstract:

Purpose: The present study deals with the problem of evaluation of environmental workplace behaviors. In the present study three basic goals were set out: determination of kinds and scale of occurrence of behaviors which harmful to environment in places of work, evaluation of the level of the negative nature of these behaviors, as well as diagnosing dependences between these evaluations.

Design/Methodology/Approach: The research was conducted between 15 July and 15 August 2019, with the use of the online questionnaire (computer-assisted web interviewing). The material which was collected was subject to a statistical analysis.

Findings: 72.8% of the respondents were thinking about the impact of the examined negative behaviors on the environment. It is both employees and the organization who bear the responsibility for the occurrence of behaviors which are detrimental to environment (89.5% of the respondents). 71.6% of the questioned admitted that they did not know whether their companies prevented in any way behaviors which are harmful to environment. The results suggest a strong common dimension underlying evaluations of counter-ecological behaviors in the workplace.

Practical Implications: Providing a good working conditions is not just a matter of complying with the law. Common workers can contribute to the environment free of unwelcome conduct.

Originality/value: So far research has not been ventured on the scope of perception of negativism of particular types of behaviors which are harmful to environment and which occur in the place of work, as well as eventual correlations between evaluations of these behaviors.

Keywords: Workplace, counter-ecological behaviors, environmental protection, small and medium-sized enterprises.

JEL classification: D22, J81, L29, Q59.

Paper Type: Research study.

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1. Introduction

Nowadays, the issue of environmental protection is of interest to a wider and wider circle of society as well as professional scientists. This is a most appropriate trend since every person remains under the influence of natural environment and depends on it to a great extent. No wonder commercial enterprises and organizations of the public sector include issues relating to conservation of natural environment into the priority tasks of their economic activity. What is more, the question of taking care of the environment has not only become a priority of choice, but also a duty due to relevant legal regulations of the European Union (Ćwik, 2010). The Constitution of the Polish Republic of 2 April 1997 contains records dealing with protection of environment, too. Thus, the basic task of the environmental protection, according to this act, is to rationally shape the environment, manage natural resources, prevent and eliminate detrimental impacts on it, ones that are responsible for its pollution, contamination, damage, changes in physical features or in the character of natural constituents, as well as to effectively restore the state of their proper natural elements.

Propagating a new, more environmentally-friendly lifestyle to be adopted by the public is the major way of preventing negative phenomena that result from the global ecological crisis, since pro-ecological behaviors do influence consumers' purchase decisions with respect to their searching for healthy and safe food which would be grown with the use ecological methods. Consumers more and more often pay attention to the information inserted on the labels on the products they purchase (Wądołowska *et al.*, 2011; Single Market for Green Products Initiative, 2020).

On the one hand, the legal scope of environmental protection and the increasingly higher awareness of society, which results from progressing broadening of man's knowledge and people's sensitivity to ecological questions (Jarosz *et al.*, 2014), and - on the other one - lower levels of Poles' anxiety in connection with the state of the environment in their closest surroundings (than with reference to the whole country) (Wądołowska *et al.*, 2011), made the authors undertake to examine the subject matter of individuals' perception of behaviors that are detrimental to environment in their workplaces. Places of work should be qualified as the closest environment, hence it can be supposed that employees' concern for the state of their surrounding at work can be rather low, which makes carrying out research within occupational environment only too justified.

In the present study, three basic goals were set out, that is: determining the types and scale of occurrence in workplaces of behaviors which are harmful to environment, assessing the level of negativism of these behaviors by students of extramural studies, as well as diagnosing the dependence between the evaluations.

The diagnostic survey was conducted purposefully among students of weekend courses, who work professionally in different places of work and who - at the same

time - are familiar with the problems of environmental protection. This group of students-employees are particularly susceptible to acquiring information from social media, where issues of environmental protection are frequently raised. According to the data published by Ziernicka-Wojtaszek (2011), a relatively high percentage of students raise their ecological awareness during their studies. Over the decades a great amount of research has been carried out on the subject of students' ecological awareness and it has revealed a tendency of steady growth in this respect (Cichy, 1993; Szulborski, 2001; Kowalski *et al.*, 2007; Bednarek-Gejo *et al.*, 2012; Moryń-Kucharczyk *et al.*, 2016; Redo, 2017).

2. Identification of Behaviors Detrimental to Environment in the Light of Legal Regulations

Identification of behaviors that are detrimental to environment is possible due to several legal rules which regulate the questions of protection of environment. The aim of the regulations accepted by the EU is to prevent serious environmental damage in member countries and to remove effects of this damage. In the directive dealing with responsibility for environment, a pan-Union system of responsibility based on the principle of "the polluting party pays" was established (Odpowiedzialność za Środowisko, 2020).

Directive 2004/35/CE stipulates that the EU member countries should set up different public organs to perform the role of a guardian of natural environment. Their duties include identifying perpetrators of contamination as well as seeing to that the entities responsible for creating direct threat of damage to environment or causing such damage, undertook to finance or indeed financed relevant preventative or reparation means.

Each year the European Commission draws up a report on monitoring application of the EU law in response to conclusions of European Parliament and EU countries, like *Report 04 July 2019: 2018 Commission report and factsheets on monitoring the application of EU law*. It follows from the Report that in 2018, the Commission initiated 644 proceedings in cases of breaching of the member country's commitments. The greatest number of such proceedings concerned the internal market, industry, entrepreneurship, and small and medium-sized enterprises (101), mobility and transport (97) and environment (73). Towards the end of 2018, 1571 proceedings in cases of infringement of commitments of a member state were in progress. The number of new cases with delayed transposition dropped by 25% (419 of new cases in 2018, 558 cases in 2017).

The substantive scope of the legal protection of environment results also from the Constitution of the Polish Republic of 2 April 1997, which contains records dealing with environmental protection. It follows from the Constitution that the Republic of Poland [...] provides environmental protection, being directed by the principle of sustainable development. The public authorities are obliged to fight epidemic

diseases and prevent results of degradation of environment that are negative for health. In turn, Art. 47 says that:

1. The public authority runs the policy to secure ecological safety to contemporary and future generations.
2. Protection of environment is a duty of the public authority.
3. Everybody has the right to obtain information on the state and protection of environment.
4. The public authority supports citizens' efforts in the sphere of protection and improvement of environment.

Moreover, it was indicated that everybody is obliged to care for the state of environment and bears the responsibility for its deterioration which they caused. The principles behind the responsibility are defined by the act (The Constitution of the Polish Republic, 1997). Also, in Standard *ISO 26,000 Guidance on social responsibility* can we notice the importance of protection of natural environment. The Standard treats Corporate Social Responsibility (CSR) as responsibility of organizations for their decisions and - in consequence - impact on society and environment through transparent and ethical behaviors.

3. Environmental Workplace Behaviors

Environmental quality strongly depends on human behaviors. There has always been debate over how to affect pro-environmental behaviors, how to eliminate counter-ecological behaviors and how individuals can contribute to the environmental achievements (Fujii, 2006; Ones and Dilchert, 2009; 2012). The research of 2018 (Szatanowska *et al.*, 2018) shows that behaviors aimed at protecting environment are not too popular with Poles. Poles use reusable bags and endeavor to avoid using disposable packaging. Yet only 20% of the respondents would be inclined to spend their own means to use energy that is not burdensome to environment.

Workplace behavior is one of the significant aspects of human behavior. There is extensive literature on the subject of green workplace behaviors (Francoeur *et al.*, 2019) and environmental counterproductive workplace behaviors (Ciocirlan, 2017). The environmental performance of organizations largely depends on the voluntary participation of employees (Yuriev *et al.*, 2018). Common workers possess tacit knowledge that can be used to introduce pro-environment-oriented initiatives in the place of work (Buhl, 2016; Fernández *et al.*, 2013; Wolf, 2016). Therefore, the research hypothesis is as:

Hypothesis 1: *In places of work there occur a diversified variety of behaviors that are detrimental to environment.*

In the context of environmental behaviors, much research focuses on the Theory of Planned Behavior (TPB) or the Theory of Reasoned Action (TRA) (Chen and Tung, 2014; Concari, 2020). Several studies have shown a correlation between attitudes, subjective norms, behavioral intention, and subsequently to behavior (Alhusen, 2019; Blankenberg, Chen, and Concari, 2020; De Leeuw *et al.*, 2015; Farrow *et al.*, 2017; Nyborg, 2018; Okumah *et al.*, 2020; Tung, 2014).

According to the TPB, determinants of pro-environmental behaviors are beliefs, attitudes, and behavioral intentions. TPB suggests that positive attitude towards pro-environmental behavior, believe important others already do it or believe it should be done lead to the behavior to be performed. The TRA suggests that pro-environmental behavior is more likely to occur when intentions are stronger. Stronger intentions generally lead to increased effort to perform a particular behavior which also increases the likelihood for the behavior to be performed. Intention to perform a certain behavior precedes the actual behavior.

Counter-ecological behaviors in workplace should be examined to identify avenues for reduce their impact on environmental degradation. They're part of the problem and will be part of the solution. The question of how people evaluate behaviors is of interest to researchers studying attitudes and behavior in many different settings. The following hypotheses were subject to verifying:

Hypothesis 2: *There exist differences in evaluations, depending on the behavior which is evaluated.*

Hypothesis 3: *There is a positive correlation between evaluations of behaviors that are harmful to environment.*

So far research has not been ventured on the scope of perception of negativism of particular types of behaviors which are harmful to environment and which occur in the place of work, as well as eventual correlations between evaluations of these behaviors. Thus, the studies conducted by the authors in this respect make a novelty in the research field.

4. Research Methodology

The first stage of the studies was of a pilot character and consisted in carrying out a diagnostic survey among students of WSB University in Opole. This stage included sending out information on realization of the research to extramural students of the following study majors: management, management engineering, logistics, finance and accountancy, administration, and internal security. The request to have the online questionnaire (CAWI) filled in was addressed to students in employment. Participation in it was voluntary and anonymous. The survey was conducted between 15 July and 15 August 2019. The analysis of the literature on the subject - basically legal rigors concerning environmental protection and the growing pro-

ecological consciousness of society - gave rise to formulating the following questions:

- What kinds of behavior which is harmful to environment are encountered in places of work?
- Are there differences in evaluations in dependence on the type of behavior which is evaluated? Or perhaps all kinds of such behavior are evaluated in a similar way?
- Does a correlation between evaluations of different types of behavior which is detrimental to environment occur?

We used principal component analysis (PCA) to better understand outcomes related to respondents' perceptions of environmentally harmful behaviors. The dependences were examined with the use of Spearman's rank correlation coefficient.

Instead of requesting the respondents to offer their assessment of personal behaviors, questions were formulated in such a way that they referred to evaluation of behaviors of other co-workers. The authors wished to avoid Rosenberg's effect which consists in that a worker's self-evaluation concerning manifestations of negative behaviors can be subjective and falsified because the examined issue is personal and 'touchy'/sensitive. The subjectivity of self-evaluation in the scope of behaviors which are socially condemned causes the evaluation to be unreliable (Carpenter *et al.*, 2017). Taking the above into consideration, the authors decided to exclude elements of self-evaluation from their research. Then, perception of negativism of individual types of behaviors was designed to be assessed by means of a scale spanning 0 to 10, where 0 - the behavior is not negative, and 10 - I assess the behavior as negative.

The research was of the pilot character. We fielded the survey to students at one university. The study was limited by its non-random sample, reducing the study's power. Length (short questionnaire) posed another important constraint of survey.

5. Results and Discussion

The CAWI examination covered 342 students of extramural studies provided by WSB University in Opole, who are in employment on a regular basis, representing different age groups and length of work experience (Table 1). Over 90% of the surveyed reside and work within Opole Voievodship. All respondents are employed in small and medium-sized enterprises. In places of work, there appears a varied spectrum of behaviors which are detrimental to environment (Figure 1). The first hypothesis was supported. It was most worrying to find out that in many companies there occur cases of breach of regulations concerning waste management, since in their places of work, 68% of the questioned observed taking away rubbish to be dumped in a forest, dropping waste on a 'wild tip', or disposing of hazardous waste straight into the sewer; 47% of the questioned are affected by the problem of non-

segregation of rubbish, 31% - reported incineration of waste, and 17% - burning of leaves, grass, branches. The problems and abuses of environment, which are observed in workplaces, are most frequently not reported to relevant authority (24% of the respondents).

Table 1. Respondents' characteristics ($n = 342$).

	Frequency	%
Gender		
Women	262	76.6
Men	80	23.4
Age		
18–23 years	72	21.1
24–38 years	175	51.2
39–53 years	83	24.3
54 years or more	12	3.5
Length of employment		
Up to 1 year (inclusive)	24	7.0
Over 1 year up to 5 years (inclusive)	120	35.1
Over 5 years up to 10 years (inclusive) włącznie	55	16.1
Over 10 years	143	41.8

Source: Own study.

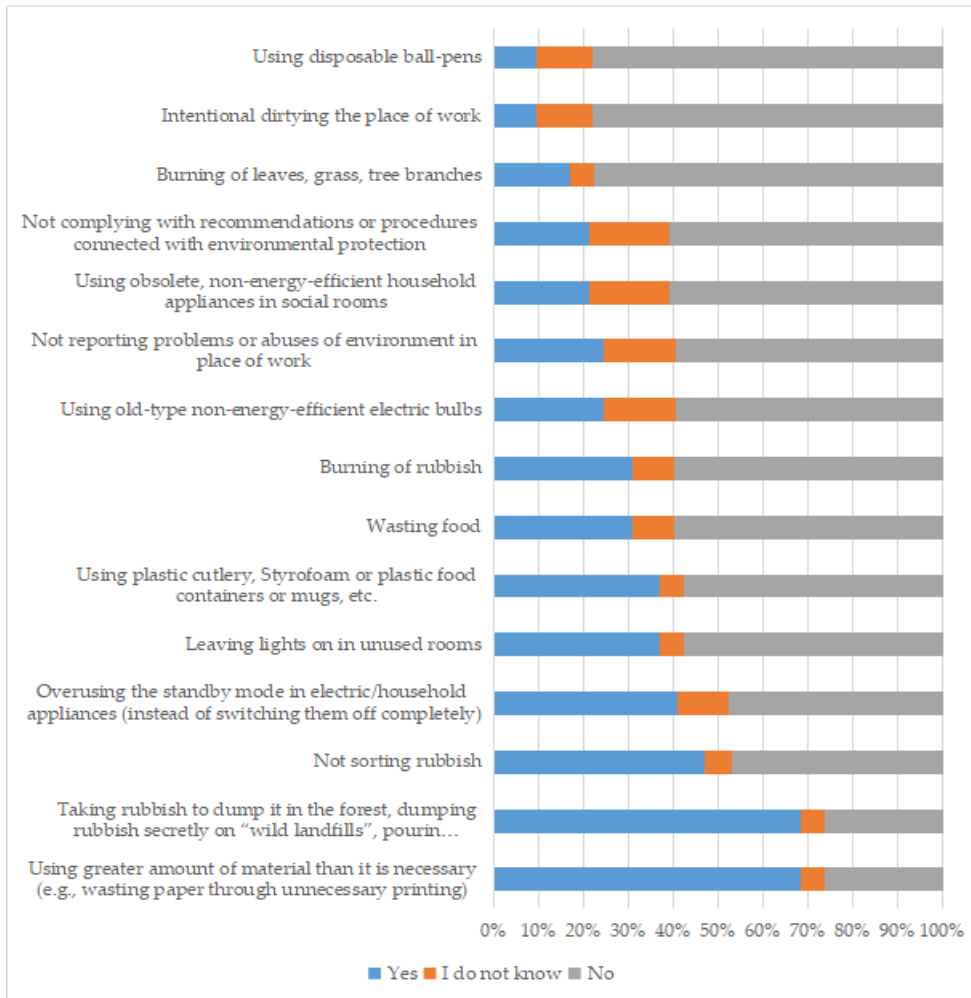
In companies represented by the students-respondents, there occur instances of improper usage of materials, installations, devices or lightning. 68% of the questioned observed using up far larger amount of material than it is necessary, 41% - overusing the standby mode in electronic devices and household equipment (instead of complete switching off), while 37% - reported leaving lights on in rooms which are not used.

As regards the open question concerning other negative behaviors on the part of workers, which can be noticed in workplaces, the respondents listed, among others, using disposable plastic bags to pack products, incineration of foil packaging or wrappings, pouring hazardous substances into the sewer, excessive use of water in periods of drought (e.g., to wash cars), buying water in plastic bottles, drinking water out of disposable mugs, using air-conditioning when it is not necessary, not closing windows when the air-conditioning is on, coming to work by car by workers who reside nearby, notorious leaving lights on in rooms when there is nobody inside or turning lights on when it is not necessary. Part of the respondents admitted that they were losing faith in the sense of segregation of rubbish when they see the previously sorted waste put into the same one container while being taken to the tip.

Selected counter-ecological behaviors in the workplace were assessed through 14 items of the survey questionnaire. The respondents' task was to evaluate the individual behavior in the workplace. The items were measured on the 11-point scale (from 0 - the behavior is not negative to 10 - I regard the behavior as very negative).

The results of the examination of negativism of types of behavior are presented in Table 2. There occur differences in assessments, depending on the evaluated behavior. The second hypothesis was partially supported. Scores were moderate. The mean values were situated just above the halfway position on the scale, they vary from 5.61 to 7.60.

Figure 1. Do you notice in your place of work any of the behaviors against the environment which are listed?



Source: Own study.

Principal Components Analysis was conducted (Table 3). Looking at the one-component versus two-component solution, the variance explained is 71.65% with one component and 80.07% with two components. It is likely that the 14 items of the questionnaire are measuring two constructs.

Table 2. How much negative do you rank the following behavior of people in your workplace?

Behavior	M	SD
Wasting food (X ₁)	6.60	3.88
Using more material than necessary (X ₂)	7.60	2.84
Soiling the place of work on purpose (X ₃)	6.56	4.06
Leaving lights on in rooms which are not used (X ₄)	6.61	3.45
Using obsolete energy-inefficient electric bulbs (X ₅)	6.04	3.52
Using obsolete energy-consuming appliances (X ₆)	6.11	3.38
Overusing the stand-by mode in electronic/household appliances (instead of completely switching them off) (X ₇)	6.04	3.30
Not segregating rubbish (X ₈)	7.16	3.54
Burning leaves, grass, tree branches (X ₉)	6.40	4.19
Burning rubbish (X ₁₀)	6.91	4.25
Taking rubbish to the forest in order to dump it on wild landfills, pouring hazardous waste into the sewerage system (X ₁₁)	6.82	4.48
Using disposable ball-pens (X ₁₂)	5.61	3.63
Using plastic cutlery, styrofoam or plastic containers for food or mugs, etc. (X ₁₃)	6.07	3.67
Not reporting problems or abuses connected with environment, which are noticed in the workplace (X ₁₄)	6.25	3.67

Notes: M - mean, SD - standard deviation.

Source: Own study.

Table 3. Total variance explained (Extraction method: Principal Component Analysis)

Component	Total	Initial Eigenvalues	
		% of variance	Cumulative %
1	9.88	70.60	70.60
2	1.13	8.09	78.68
3	0.63	4.47	83.15
4	0.49	3.48	86.63
5	0.40	2.88	89.52
6	0.28	2.01	91.53
7	0.28	1.97	93.49
8	0.23	1.65	95.14
9	0.19	1.34	96.48
10	0.16	1.17	97.65
11	0.13	0.93	98.58
12	0.09	0.64	99.22
13	0.06	0.43	99.65
14	0.05	0.35	100.00

Source: Own study.

The component matrix (Table 4) revealed the presence of a structure with all components showing a number of strong loadings and almost all items loading on only one component (component 1), which may be characterized as general counter-ecological behavior. Thus, the results suggest a strong common dimension underlying evaluations of counter-ecological behaviors in the workplace. The statistical results indicated a positive relationship between evaluations of behaviors that are harmful to environment (the third hypothesis was supported).

Table 4. Component matrix

	Component 1	Component 2
Wasting food (X ₁)	0.83	0.18
Using more material than necessary (X ₂)	0.75	0.09
Soiling the place of work on purpose (X ₃)	0.89	0.28
Leaving lights on in rooms which are not used (X ₄)	0.90	0.18
Using obsolete energy-inefficient electric bulbs (X ₅)	0.92	-0.05
Using obsolete energy-consuming appliances (X ₆)	0.89	-0.11
Overusing the stand-by mode in electronic/household appliances (instead of completely switching them off) (X ₇)	0.81	-0.29
Not segregating rubbish (X ₈)	0.83	-0.17
Burning leaves, grass, tree branches (X ₉)	0.87	0.23
Burning rubbish (X ₁₀)	0.88	0.32
Taking rubbish to the forest in order to dump it on wild landfills, pouring hazardous waste into the sewerage system (X ₁₁)	0.86	0.34
Using disposable ball-pens (X ₁₂)	0.63	-0.64
Using plastic cutlery, styrofoam or plastic containers for food or mugs, etc. (X ₁₃)	0.81	-0.36
Not reporting problems or abuses connected with environment, which are noticed in the workplace (X ₁₄)	0.87	-0.21

Source: Own study.

For correlation analyses, the Spearman correlation coefficient (r_s) was used. Our task was to determine agreement between the evaluations. 91 separate correlations were run, using the distinct behaviors previously discussed (X₁ - X₁₄). The r_s values are displayed in Table 5.

Spearman correlation coefficient values varied from as low as 0.37 to high as 0.93. All Spearman r_s values were statistically significant ($p < 0.05$). It can be seen that the agreement for ranking was moderate. Of the 91 Spearman r_s values, 34.1% were above 0.7 (strong correlation), 58.2% were between 0.5 and 0.7 (moderate correlation), and 7.7% were between 0.3 and 0.5 (weak correlation).

Table 5. Correlation of ratings of counter-ecological behaviors in the workplace.

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂	X ₁₃
X ₁													
X ₂	0.62												
X ₃	0.73	0.64											
X ₄	0.71	0.70	0.84										
X ₅	0.68	0.71	0.77	0.83									
X ₆	0.66	0.69	0.73	0.77	0.93								
X ₇	0.60	0.60	0.62	0.73	0.80	0.83							
X ₈	0.62	0.57	0.62	0.64	0.71	0.73	0.69						
X ₉	0.67	0.55	0.75	0.73	0.77	0.70	0.60	0.65					
X ₁₀	0.69	0.50	0.77	0.74	0.70	0.65	0.57	0.65	0.87				
X ₁₁	0.70	0.48	0.82	0.78	0.69	0.66	0.59	0.62	0.79	0.90			
X ₁₂	0.46	0.43	0.37	0.51	0.57	0.56	0.67	0.60	0.49	0.44	0.37		
X ₁₃	0.63	0.53	0.60	0.67	0.70	0.68	0.67	0.72	0.56	0.54	0.58	0.73	
X ₁₄	0.65	0.57	0.65	0.69	0.75	0.76	0.73	0.73	0.65	0.67	0.64	0.67	0.78

Source: Own study.

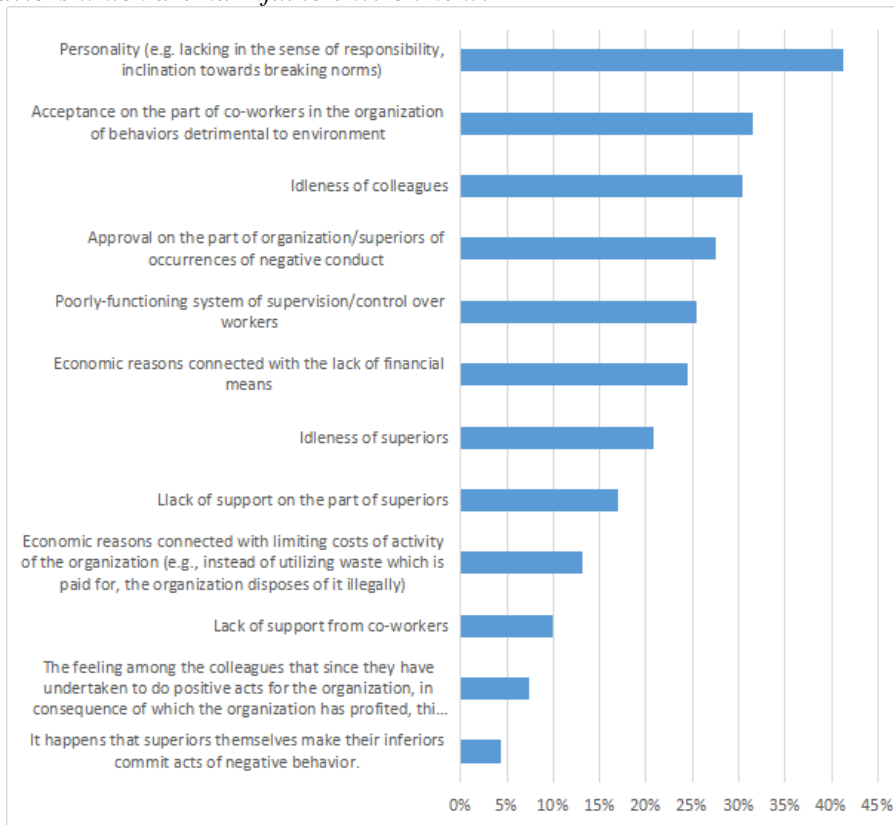
72.8% of the respondents were thinking about the impact of the examined negative behaviors on the environment. 71.6% of the questioned admitted that they did not know whether their companies prevented in any way behaviors which are harmful to environment. As it follows from the survey, it is both employees and the organization who bear the responsibility for the occurrence of behaviors which are detrimental to environment (89.5% of the respondents). 6.1% of the respondents blamed solely the employee who uses negative forms of conduct for the occurrence of behaviors which are harmful to natural environment. 4.4% of the respondents declared that it was exclusively the organization who are responsible for this.

The examined most often listed the following among the reasons for the occurrence in the place of work of conduct which is harmful to environment (Figure 2): personality (41.2%), acceptance of behavior detrimental to environment on the part of co-workers in the organization (31.6%), colleagues' idleness (30.4%), approval on the part of the organization/superiors of the occurrence of negative behaviors (27.5%), poorly functioning system of supervision/control over workers (25.4%), economic reasons connected with limiting costs of activity of the organization (e.g., instead of utilizing waste which is paid for, the organization disposes of it illegally) (25.4%), economic reasons connected with the lack of financial means (e.g., purchase of new energy-efficient appliances) (24.6%), superiors' idleness (20.8%), lack of support on the part of superiors (17.0%), economic reasons connected with limiting costs of activity of the organization (e.g., instead of utilizing waste which is paid for, the organization disposes of it illegally) (13.2%).

Respondents were also asked to offer their opinion on the effectivity of preventative actions with respect to environmental protection. According to the respondents, the

effectivity of preventative actions can be raised through external financing obtained from sources which come from pro-environmental enterprises realized by the company outside it (44.2%), effectively functioning internal system of control (38.9%), effective execution of punishments for negative behaviors (31.9%), as well as active external system of control (19.9%).

Figure 2. What are the reasons behind the occurrence in your place of work of behaviors which are harmful to environment?



Source: Own study.

6. Conclusion

Summing up the above presented considerations, it needs pointing out that in small and medium-sized enterprises occur a series of counter-ecological behaviors. To increase the chances of perfecting the sphere related to environmental protection, enterprises should pay special attention to employee behaviors. Who is responsible for occurrence of behaviors which are detrimental to environment in the workplace? As it follows from the survey, it is both employees and the organization who bear the responsibility.

It needs emphasizing that the impact of community and social surrounding plays a vital role in shaping people's attitudes and behaviors which can take on either pro-or counter-ecological forms. According to Fazio and Olson (2003), such attitudes can function on the overt or hidden levels. As Rutkowska-Piontek states, the open attitude towards selective waste collection may yield positive effects as the subject can consider such actions to be highly beneficial and desirable, and also can support all educational schemes in this respect. However, in a direct situation of spontaneous disposal of waste, they get rid of rubbish without segregating it, since they hold a hidden negative attitude towards selective waste collection, which can possibly be rooted still in the periods of their childhood and maturing.

The above-mentioned dependencies can partially explain the behaviors which are typical of Polish society whose awareness relating to environmental protection is steadily on the rise and whose overt attitudes are positive, whereas the hidden ones - resulting probably from the upbringing in family homes - are negative and in consequence produce behaviors that are detrimental to environment in their adult life (both in the professional and private spheres).

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