

ARNOLD BERNACIAK

Uniwersytet WSB Merito w Poznaniu
<https://orcid.org/0000-0003-1099-286X>
e-mail: arnold.bernaciak@pozn.merito.pl

KATARZYNA KOWAL

Wyższa Szkoła Biznesu w Gorzowie Wlkp.

Sustainable Development in Business Practice: Ecological Awareness and Legal Knowledge of Polish Entrepreneurs

Abstract. This purpose of the following study was to investigate ecological awareness of Polish entrepreneurs and their knowledge of regulations that determine their environmental obligations. The study is based on data collected during a CAWI survey from entrepreneurs representing various sectors. The study's findings reveal a moderate level of ecological awareness, with evident gaps regarding the knowledge of regulations and lack of compliance, especially among representatives of small and medium-sized enterprises (SME). This can be attributed mainly to limited resources for implementing eco-friendly measures. Despite legal pressures and the growing recognition of the importance of sustainability, many SMEs do not rely on external advisors to help them fulfil their environmental obligations, which indicates a need for a wider offering of training and awareness programs in this area.

Keywords: business process management, industry, innovation, transformation, organizational excellence

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1. Introduction

The growing importance of ecological awareness in the business sector, particularly among entrepreneurs, is a critical topic in sustainable development. The following article delves into the nuanced nature of entrepreneurs' environmental consciousness, leveraging theoretical frameworks of essential studies. The exploration of organizational learning by Brown and Duguid (1991) reveals the role of knowledge in sustainable business practices. Similarly, Elkington's (1997) concept of the triple bottom line provides a useful tool for how to balance economic,

social, and environmental responsibilities. Hart (1995) and Porter and Kramer (2006, 2011) offer insights into ways of aligning sustainability with corporate strategy, while Schaltegger and Wagner (2011) present a comprehensive approach to integrating environmental concerns into business decision-making.

The following study highlights the importance of understanding legal, ethical, and practical aspects of environmental protection in business, as emphasized by Kielczewski (2001), Górką, Poskrobko, and Radecki (1995), and examines the complex interplay of legal frameworks, ethical considerations, and market dynamics shaping entrepreneurs' attitudes towards environmental sustainability.

By analyzing current business practices through these theoretical lenses, the authors seek to get a better understanding of ecological awareness among entrepreneurs and its implications for sustainable business practices. The study contributes to the research on sustainable development in the business sector by offering fresh perspectives and directions for future research and policymaking.

In particular, the article explores various dimensions of entrepreneurs' ecological consciousness and offers insights into potential strategies for fostering a more sustainable business environment.

2. Review of the Literature

The degree to which Polish entrepreneurs are aware of the legal requirements in the area of environmental protection has so far been the subject of few studies. One of them was a survey conducted by Bank Ochrony Środowiska (Raport BOŚ, 2019) on a representative group of 300 small and medium-sized enterprises. 59% of survey respondents reported that eco-friendly activities were important or very important in their operations, 36% had no clear opinion on the subject, and only 5% claimed that environmental protection was unimportant. In the three-year period prior to the survey, 70% of the responding companies had invested in at least one eco-friendly action, e.g. investments that reduce energy consumption. The most popular action of this type, according to the survey, was the switch to energy-efficient lighting (46%) and thermal modernization of buildings (22%). Nearly one in five enterprises in the sample had replaced their fleet of vehicles with newer or more eco-friendly ones (19%). The responding companies had also taken steps to reduce the use of materials and resources (13%), change the source of heating (10%), or switch to a different source of energy (10%). Less popular solutions included the introduction of ecological standards in production (5%), installation of photovoltaic panels, modernization of sewage systems or treatment plants, waste segregation or disposal, and the use of recyclable materials. The

survey results indicate the growing awareness of positive and profitable effects of implementing eco-friendly actions.

According to Żyła (2014), modern enterprises have the necessary knowledge and conviction to change how they conduct their business activities by incorporating ecological aspects into their business strategies. To be in line with the eco-friendly trend organizations from all sectors need to follow the principles of sustainable production, which means they should manufacture goods and provide services to reduce negative environmental impacts and save energy and resources while keeping human safety and health in mind. However, economic costs of such measures pose a serious barrier to many enterprises. It can generally be said that the larger the enterprise, the more it can invest in eco-friendly measures. Żyła concludes that there is a tendency for small businesses to limit their involvement in this regard to basic measures required by law. In contrast, larger companies can afford to modernize their equipment, introduce more environmentally friendly technologies, seek less costly and energy-consuming solutions, and introduce waste recycling. As Żyła points, actions undertaken by organizations for the sake of environmental protection are often determined by the ecological awareness of their management staff and the extent to which they feel responsible for the safety of employees and customers. According to a 2011 report, as the size of an enterprise increases, so does the number of people engaged in environmental protection. Large enterprises often have special teams of employees dedicated to improving the environmental impact of production (PARP, 2011).

In her study, Świrk (2020) analyzed ecological responsibility of companies listed in the WIG-ESG stock index. They were found to be mainly interested in measures to improve their energy efficiency and waste management, reduce greenhouse emissions, water consumption and the use of plastic and paper, educate employees and engage them in environmental issues, and protect biodiversity. Examples of initiatives undertaken by these companies include the purchase of hybrid vehicles, encouraging employees to use bicycles by offering free repairs and racks, carpooling/carsharing, limiting business travel to a minimum, counteracting food waste, mitigating noise, choosing environmentally responsible suppliers, and encouraging customers and local communities to adopt eco-friendly behaviors. Świrk also lists industries responsible for the highest level of environmental pollution, such as mining, energy production or construction, which also spend the most on environmental protection. On the one hand, companies are required to do this by national and European laws, which, for example, introduce the obligation for large companies to conduct energy audits; on the other hand, companies are motivated by policies of many banks, which refuse to finance 'dirty' businesses, thus encouraging more ecological behaviors. Enterprises are also

moved to action by their desire to maintain good reputation; this is why they introduce green accounting to monitor costs and profits and evaluate and optimize environmental actions. This motivation is closely associated with the rising awareness of consumers, employees, and local stakeholders who are increasingly concerned about the environment they live in.

Ecological awareness of businesses and their eco-friendly activities are determined by a number of factors, which Leśniewski (2016) classifies into soft and complex factors. Soft factors include aspects like employees' awareness of the natural environment, participation in trainings, and their knowledge of sustainable development issues. Complex factors are regulations and management standards that enable the implementation of environmental solutions in the organization. While complex factors are indisputable and must be applied and enforced, soft factors can be flexibly shaped depending on the person, their situation, perception, or conditions in which they find themselves.

Studies indicate that small and medium-sized enterprises find it particularly problematic to observe environmental protection regulations. This is confirmed by a study conducted by Fundacja Partnerstwo dla Środowiska, which indicates that companies of this kind need support to fulfil their environmental obligations. However, most of them cannot afford to hire a specialist or an ecological protection inspector and do not use consultancy services, and, as a result, are unable to comply with constantly changing regulations. This is why many Polish businesses perceive environmental protection as an unnecessary financial and bureaucratic burden and do not associate it with development opportunities.

As Kornecki (2010) points out, compliance problems stem from inadequate knowledge of environmental regulations. Inspections conducted by Provincial Inspectorates of Environmental Protection in 2007 confirmed that the highest level of non-compliance with environmental standards was observed among small and medium-sized companies. The most common violation is the absence of legally required decisions and permits for the economic use of the environment. Other examples include a lack of waste records, failure to pay fees for the use of the environment, and failure to submit environmental reports. Violations of environmental regulations were found in 67% of audited companies. The biggest number of violations concerned waste storage (75%), measure to prevent or limit pollution emissions (73%), waste management (73%), and waste burning (69%).

A study conducted by Cheba (2017) shows that small and medium-sized firms tend not to identify and document the environmental impact of their business operations. Companies that do that are more likely to pay attention to energy efficiency when purchasing new equipment than firms that do not fulfil these

obligations. They also are much more likely to purchase energy-saving devices, even if their price is higher.

Only a few companies surveyed in Cheba's study had a department or organizational unit responsible for planning, organizing, and implementing eco-friendly solutions. In small companies these tasks were usually handled by a single employee acting as an environmental protection specialist. The fact that on average companies in the survey showed little interest in implementing certified ecological protection systems can be interpreted as evidence of their relatively low ecological awareness. Generally, entrepreneurs do not see the need or feel obliged to diagnose environmental impacts of their business activities. This can lead them to a mistaken conclusion that such environmental impacts are negligible. According to Cheba's study, about 61% of Polish small and medium-sized companies that try to comply with environmental requirements do not use any external support in this regard.

3. Research Method

Data for the following study were collected in January 2023 using in a CAWI survey, which made it possible to reach a large group of respondents while maintaining anonymity. The target group for the survey were entrepreneurs from different industries. The survey questionnaire included ten questions concerning various activities connected with environmental protection that respondents undertook in their companies. The questionnaire contained open-ended, semi-closed, and closed-ended questions.

The self-selected sample included respondents from 107 companies representing in the following industries: construction (27%), wholesale and retail trade (16%), services (15%), transport and warehouse management (11%), agriculture, forestry, fishing and hunting (8%), industrial processing (8%), waste management (6%), accommodation services (5%), information and communication services (2%), energy production and provision (1%), and financial and insurance services (1%).

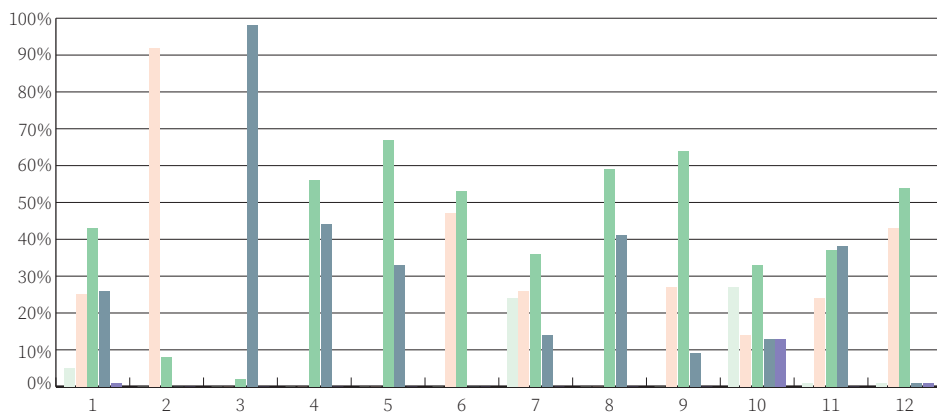
In terms of the length of business operation, 22% of companies had been in business for a period of 16–20 years, 21% – for more than 20 years, 20% – for 11–15 years, 19% – for up to 5 years and 18% – or 6–10 years.

The structure of the sample in terms of company size was as follows: micro businesses (with fewer than 10 employees) accounted for 71% of all responding companies, small businesses (with up to 50 employees) – 24%, medium-sized companies (with up to 250 employees) – 4%, and large companies (with more than 250 employees) – 1%.

The overwhelming majority of companies in the survey (93%) mainly operated on the domestic market and were domestically owned (96%).

4. Results

As can be expected, individual businesses differ in the nature and scale of their environmental impacts. Respondents were asked about their subjective assessment of these impacts, which are summarized in Figure 1. As can be seen, the prevailing opinion (44%) was that these impacts were moderate; 26% of respondents rated them as high, and 25% – as low.



	1	2	3	4	5	6	7	8	9	10	11	12
very low	5%	0%	0%	0%	0%	0%	24%	0%	0%	27%	1%	1%
low	25%	92%	0%	0%	0%	47%	26%	0%	27%	14%	24%	43%
medium	43%	8%	2%	56%	67%	53%	36%	59%	64%	33%	37%	54%
high	26%	0%	98%	44%	33%	0%	14%	41%	9%	13%	38%	1%
very high	1%	0%	0%	0%	0%	0%	0%	0%	0%	13%	0%	1%

Fig. 1. Respondents' subjective assessment of environmental impact of their businesses by industry

Legend: 1 – all respondents, 2 – finance and insurance, 3 – energy production and supply,

4 – information and communication, 5 – accommodation-related services, 6 – waste management, 7 – industrial processing, 8 – agriculture, forestry, fishing, hunting, 9 – transport and warehousing, 10 – other service activities, 11 – wholesale and retail trade, 12 – construction

Source: Own work

There are differences in assessments between companies representing different industries. As can be expected, high environmental impacts were reported by companies from the energy and agriculture sectors. Interestingly, relatively

large percentages of respondents from companies involved in wholesale and retail trade, communication and information, and accommodation-related services gave the same assessment. This is likely due to a higher level of knowledge in the respective fields (communication and information) and environmental standards (and their awareness) in each industry. On the other hand, it is surprising that relatively many respondents from companies operating in industries such as industrial processing, wastewater management, transport and warehousing should have assessed their environmental impacts as low. This could be indicative of a relatively lower environmental awareness among representatives of these industries.

Figure 2 presents results of subjective assessments of environmental impacts depending on company size.



Fig. 2. Respondents' subjective assessments of environmental impact of their businesses by company size

Source: Own work

Since companies need to comply with environmental requirements, such as the obligation to obtain appropriate permits and submit annual reports, in the next question respondents were asked to evaluate their knowledge of regulations in this area. Results of these assessments are presented in Figure 3.

Not surprisingly, respondents from companies operating in industries directly related to the natural environment, such as agriculture, forestry, fishing, and hunting, reported relatively the highest level of knowledge in this area. What is surprising, however, is that a high percentage of respondents from companies representing the information and communication industry also rated their knowledge as high. This result could be attributed to their having direct access to such information as part of their daily professional activities. By far the biggest share of respondents who evaluated their knowledge of environmental regulations as low represented the finance and insurance sector.

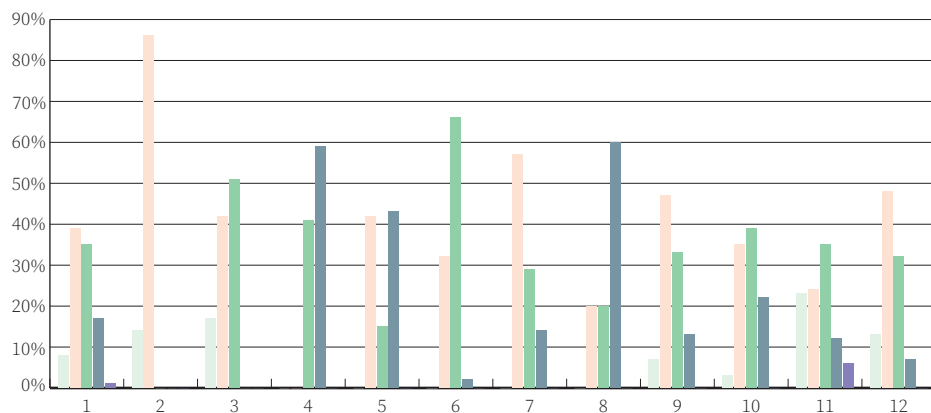


Fig. 3. Respondents' subjective assessments of their knowledge of environmental requirements by industry

Legend: 1 – all respondents, 2 – finance and insurance, 3 – energy production and supply, 4 – information and communication, 5 – accommodation-related activities, 6 – waste management, 7 – industrial processing, 8 – agriculture, forestry, fishing, hunting, 9 – transport and warehousing, 10 – other service activities, 11 – wholesale and retail trade, 12 – construction

Source: Own work

Awareness of environmental impacts and legal obligations in this area is the first step towards taking countermeasures and, where possible, mitigating the damage caused by the company's activities. Modernization can significantly reduce negative environmental impacts and, in addition, help to save costs.

In another question respondents were asked if they had made any eco-friendly investments in the last ten years. Positive answers were given by companies representing the following sectors: trade (32%), construction (17%), services (15%), industrial processing (14%), agriculture (14%), accommodation services (6%) and transport and warehousing (2%).

Asked to indicate reasons for eco-friendly investments, 63% of respondents mentioned having to meet legal requirements. The second most common reason was the desire to reduce the company's negative environmental impact (47%). Other reasons included market requirements (10%) and expectations of business partners (4%).

Among the most common investments was the installation of photovoltaic panels, thermal modernization of company facilities, sealing and modernization of fuel storage tanks, and waste segregation.

The knowledge of environmental impacts and ways of mitigating their consequences, as well as legal requirements in this area can be expanded by offering dedicated training to employees and managers. 89% of respondents reported that no such trainings were organized in their companies. This fact was justified by the lack of need (41%), small company size linked to the belief that the company's environmental impact was negligible (36%), reliance on services provided by external companies (6%), and the lack of funding for such purposes (6%).

The most common reason given by respondents from companies that organized environmental trainings was to raise employees' awareness of environmental hazards and the desire to decrease the company's environmental impact (56%). Other reasons include the desire to learn proper waste segregation (27%) and the necessity to implement solutions to ensure compliance with new regulations (17%).

Only 13% of respondents reported having participated in trainings to increase their environmental awareness. They were mainly motivated by the desire to increase their knowledge (52%) and the need to comply with environmental regulations (37%). Those who did not participate in such courses justified it by the absence of such a need (62%), lack of time (14%), lack of sufficient knowledge in the subject area (13%), and the absence of an obligation to participate in trainings (11%).

5. Discussion

Environmental impacts result from the way companies operate. The scale of these impacts largely depends on the type of production or service activity, but the business's environmental awareness also plays a significant role. In addition to general knowledge, ecological awareness includes familiarity with requirements imposed by regulations. The level of ecological awareness among entrepreneurs depends on industry, company size, and the length of business operations. Every kind of economic activity is subject to specific legal requirements regarding environmental reporting. In industries like construction, industrial production, transportation, agriculture (particularly livestock production), etc., which generate large quantities of waste, including hazardous waste, the legal requirements are much stricter than those that apply to activities such as finance and insurance. The results of the survey indicate that respondents from companies involved in what can be called 'dirty' production did not demonstrate a higher level of environmental awareness than those from other industries.

Entrepreneurs who responded to the survey most often rated their knowledge of environmental protection as average or low, which means their awareness of environmental impacts of their enterprises was insufficient. Most respondents also confirmed that their knowledge of environmental regulations was low or average.

Some survey questions were designed to check respondents' knowledge of environmental requirements. Most of them were only familiar with essential reporting obligations, mainly those connected with the Waste Database (*Baza Danych Odpadowych* – BDO). Generally, respondents from large and medium-sized companies were familiar with reporting requirements, while most respondents from small and micro-enterprises were convinced these regulations did not apply to them because they thought their activities did not have very limited or no impact on the environment. In other words, company size is a key factor in the level of ecological awareness, which was found to be generally higher in the group of large and medium-sized companies.

In summary, based on the data obtained in the survey, it can be concluded that the overall level of ecological awareness among the respondents was found to be average. The main reason for the lack of knowledge was the absence of dedicated trainings for employees and the fact that only a small percentage of entrepreneurs participated in them. It also turned out that many entrepreneurs wanted to gain more knowledge about eco-friendly investments that could be used to modernize their companies' activities and help to reduce environmental impacts.

The last part of this study consists in comparing the results of the survey with results of previous studies regarding environmental protection. The study

conducted by the Partnership for the Environment Foundation (Fundacja Partnerstwo dla Środowiska, 2004) indicated that small and medium-sized enterprises needed support to fulfil their environmental obligations, especially when it comes to keeping track of changing regulations. They usually did not have specialists to deal with such matters nor used consultancy services. This is consistent with results of our survey, in which the majority of respondents (particularly from small and medium-sized businesses) admitted to not complying with their reporting obligations and rated their knowledge of environmental protection as average or low.

Similar results are reported by Kornecki (2010), who concluded that the problem of non-compliance stems from insufficient knowledge. Over half of respondents in his survey demonstrated a relatively low level of ecological awareness. Most cases of negligence in this area occurred in small and medium-sized companies, where the most common violation was the absence of legally required decisions and permits for the economic use of the environment. Typical examples of non-compliance include legal the lack of waste records, failure to pay environmental fees and submit reports. Most respondents in Kornecki's survey believed their enterprise was too small and did not produce any toxic waste and therefore did not need special permits. The most common justification was that the company's waste was managed by external companies, which, in their view, made them exempt from responsibility. Entrepreneurs mainly demonstrated knowledge of one type of reporting, such as BDO, while others, like KOBiZE report, ROP, or PKE, are less known and seldom submitted¹.

According to a study by Cheba (2017), businesses, especially small and medium-sized ones, often needed to identify and document their environmental impacts. Those who reported their impact more frequently were found to pay more attention to the need for eco-friendly investments. They perceived such actions as benefiting the environment and helping to save the costs of production and business operations. Cheba concluded that most entrepreneurs were uninformed and did not have enough knowledge about how to obtain funding for eco-friendly investments. Many respondents also believed that such investments were unnecessary since their companies were small and had negligible ecological impacts.

¹ BDO – Waste database, KOBiZE – National Centre for Emission Balancing and Management, ROP – Extended Producer Responsibility, PKE – Public Educational Campaigns

6. Conclusions

The main way in which companies can be motivated to take eco-friendly actions is by tightening regulations. They are also increasingly interested in eco-friendly investments, particularly in modernizing machinery and production. However, this is still a drop in the ocean of needs. Most Polish businesses are small and medium-sized and do not have sufficient funding for larger investments in this area or sufficient knowledge about ways to secure such funding. It is therefore crucial that they should participate in trainings offered by various organizations to increase awareness in this area. Small and medium-sized companies need to create departments or organizational units responsible for planning, organizing, and implementing eco-friendly solutions. Many companies do not even have a single specialist dedicated to matters of environmental protection. On the other hand, it is difficult to expect micro businesses (e.g., self-employed persons or with only one or two employees) to create such posts. In such cases, it all depends on the entrepreneur's willingness to educate themselves. As already noted, the problem of low ecological awareness primarily affects small and medium-sized enterprises. As companies get bigger, so does the level of ecological awareness, since larger enterprises have more incentives to invest in eco-modernization solutions, tend to organize ecological trainings more frequently, and are more aware of harmful environmental impacts of their activities.

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Zrównoważony rozwój w praktyce biznesowej: świadomość ekologiczna i wiedza prawna polskich przedsiębiorców

Streszczenie. Celem opisanego w artykule badania była ocena poziomu świadomości ekologicznej oraz stopnia zrozumienia zobowiązań prawnych dotyczących ochrony środowiska wśród przedsiębiorców działających na terenie Polski. Analiza opiera się na danych zebranych wśród przedstawicieli różnych sektorów gospodarki za pomocą sondażu diagnostycznego, realizowanego w formie wywiadu internetowego (CAWI). Uzyskane wyniki wskazują na umiarkowany poziom świadomości ekologicznej badanych. Zaobserwowano wyraźne braki w zakresie wiedzy prawnej i przestrzegania obowiązujących regulacji, szczególnie wśród przedstawicieli małych i średnich przedsiębiorstw (MŚP). Można to wytłumaczyć ograniczonymi zasobami przeznaczonymi na wdrażanie strategii proekologicznych. Mimo rosnącej presji prawnej oraz świadomości ekologicznej, znaczną część MŚP nie korzysta ze wsparcia zewnętrznych doradców w realizacji wymogów ochrony środowiska, co wskazuje na konieczność rozszerzenia oferty szkoleń i programów edukacyjnych w tym obszarze.

Słowa kluczowe: świadomość ekologiczna, wymagania prawne, przedsiębiorcy, ochrona środowiska, rozwój zrównoważony

