

CHAPTER 5

THE RELATIONSHIP BETWEEN QUALITY AND PRO-ENVIRONMENTAL OPERATION IN THE CASE OF HUNGARIAN COMPANIES

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This article explores the nuanced relationship between product quality and pro-environmental operations in Hungarian companies. Survey responses unveil diverse approaches, with varying levels of commitment and opportunities for enhanced focus on sustainable practices. The findings emphasize the need for further analysis to understand regional patterns and reasons behind disparities. The study delves into the balance between quality and environmental care, providing insights into sustainability practices and proposing further exploration of specific strategies. Companies recognize the importance of environmental considerations in product quality, but variations persist, necessitating exploration of specific strategies in different commitment categories. The study highlights diverse approaches to balancing product quality and environmental concerns, prompting further analysis into reasons and implications. Companies implement a range of activities, from prevalent customer satisfaction surveys to the use of environmental impact catalogs, emphasizing the need for further analysis to gauge effectiveness on product quality and environmental sustainability.

Keywords: quality, pro-environmental behaviour, Hungary, electromechanical industry

1. Introduction

In an era where sustainability has become a focal point for businesses worldwide, the interplay between quality management and pro-environmental initiatives stands as a critical nexus for organizational success. This article delves into the intricate dynamics shaping the relationship between quality and pro-environmental operations, with a specific focus on the practices and perspectives of companies within Hungary¹.

As industries strive to strike a delicate balance between meeting customer expectations for product excellence and navigating the ever-growing demand for environmentally responsible practices, Hungarian companies find themselves at the forefront of this complex intersection. The pursuit of quality, traditionally associated with customer satisfaction and compliance,

¹ S. Nagy, Környezettudatos marketing [Phd, Miskolci Egyetem]. 2005. <http://real-phd.mtak.hu/94/>.

is increasingly intertwined with the imperative to reduce ecological footprints and embrace sustainable methodologies².

The examination of Hungarian companies serves as an insightful case study, offering a microcosmic view into the broader global challenge of harmonizing business operations with environmental stewardship. With a spotlight on the unique economic landscape, industrial sectors, and regulatory frameworks shaping Hungary's business environment, this article seeks to unravel the strategies employed by companies to integrate quality enhancement and pro-environmental initiatives.

As we embark on this exploration, we will scrutinize survey data, industry practices, and company-specific approaches to understand the spectrum of engagements with environmental concerns within the context of product quality improvement. By dissecting the multifaceted relationship between quality and pro-environmental operations in Hungarian companies, we aim to contribute valuable insights that can inform global conversations on sustainable business practices.

Join us on this journey as we unravel the nuanced interplay between quality and environmental consciousness in the corporate realm, with Hungarian companies serving as a pertinent and illuminating case study in the ongoing pursuit of a harmonious and sustainable business landscape.

2. Research method and sample

In 2023, an online survey was carried out in the Visegrad Group nations as a component of the Qualitative-Environmental Aspects of Products Improvement project (IVF 22230264), funded by the International Visegrad Fund. The objective of the study is to assess and compare the prevailing practices of electromechanical industry companies in the V4 countries (Poland, Czech Republic, Hungary, and Slovakia) with the perspectives of their customers or potential customers regarding pro-environmental product quality management. In Hungary, the survey garnered 94 responses from a pool of over 300 companies.

In this chapter we analysed the following questions that are specifically related to the relationship between quality and pro-environmental operation in the case of Hungarian companies:

² A. Pinget, R. Bocquet, C. Mothe, Barriers to Environmental Innovation in SMEs: Empirical Evidence from French Firms, *M@n@gement*, 2015, 18(2), 132. DOI: <https://doi.org/10.3917/mana.182.0132>.

3. I. Piskóti, S. Nagy, L. Dankó, L. Molnár, A. Marien, A társadalmi marketing paradigmái - elméleti-módszertani alapozó kutatás (Piskóti I., Ed.). Miskolci Egyetem Marketing Intézet. 2012. <http://www.marketing-turizmus.hu/otka/11.pdf>.

- How often action to improve products' quality including its impact on the natural environment are taken in the enterprise? (Q13),
- How often does the company take steps to improve the quality of its products while taking care of the natural environment? (Q25),
- To what extent does the need to care for the natural environment affect the activities undertaken in the company when improving the quality of products? (Q26),
- To what extent does the need to care for the natural environment affect the activities undertaken in the company when improving the quality of products? (Q26),
- What quality and environmental measures are taken by the company to improve the quality of its products (Q28),
- Indicate only those activities that are implemented in the company as part of improving products in terms of quality and environment (Q29).

3. Research results

First, we looked at how often action to improve products' quality including its impact on the natural environment are taken in the enterprise? (Table 1).

Table 1. How often action to improve products' quality including its impact on the natural environment are taken in the enterprise? (Q13)

Answer	N	%
They are not taken	16	17.0%
Less than once every three years	10	10.6%
Once every two to three years	24	25.5%
Once a year	28	29.8%
More than once year	16	17.0%

Source: own study.

A short analysis of the responses to the survey question about the frequency of actions taken to improve product quality and their impact on the natural environment in the enterprise:

- **They are not taken (17.0%):** Approximately 17% of respondents indicated that actions to improve product quality and their environmental impact are not taken at all in their enterprise. This suggests a significant room for improvement in these areas in a notable portion of the surveyed organizations,
- **Less than once every three years (10.6%):** About 10.6% of respondents reported that such actions occur less frequently than once every three years. This indicates a relatively low level of commitment to quality and environmental improvement in a smaller subset of the organizations,

- **Once every two to three years (25.5%):** The most substantial percentage of respondents (25.5%) stated that actions are taken once every two to three years. This suggests a moderate level of commitment to quality and environmental initiatives, with some intermittent efforts,
- **Once a year (29.8%):** Nearly 30% of respondents reported that actions are taken once a year. This indicates a more frequent commitment to quality and environmental improvements, which could suggest that these aspects are more consistently addressed.
- **More than once a year (17.0%):** Approximately 17% of respondents mentioned that actions are taken more than once a year. This group shows a higher level of commitment to continuously improving product quality and their environmental impact.

In summary, these responses highlight a range of approaches to quality and environmental improvement across the surveyed enterprises. A significant portion takes actions at least annually, but there are also organizations with infrequent or nonexistent efforts. The results could indicate opportunities for increased focus on sustainable practices and product quality enhancements in some organizations. Further analysis could explore the reasons behind these different levels of commitment and whether specific industries or regions exhibit particular patterns.

In the next question we looked at how often does the company take steps to improve the quality of its products while taking care of the natural environment? (Table 2).

Table 2. How often does the company take steps to improve the quality of its products while taking care of the natural environment? (Q25)

Answer	N	%
Not at all	6	6.4%
Rarely	20	21.3%
Sometimes	26	27.7%
Often	35	37.2%
Very often	7	7.4%

Source: own study.

A short analysis of the responses to the second survey question about the frequency of a company's efforts to improve product quality while considering the natural environment:

- **Not at all (6.4%):** Approximately 6.4% of respondents stated that the company does not take any steps to improve product quality while caring for the natural environment. This indicates a small minority of companies that appear to have little to no commitment to environmentally conscious product quality improvements,

- **Rarely (21.3%):** About 21.3% of respondents mentioned that the company's efforts in this regard are rare. This suggests that a notable portion of the surveyed companies infrequently addresses both product quality and environmental concerns together,
- **Sometimes (27.7%):** The largest group of respondents, at 27.7%, reported that the company occasionally takes steps to improve product quality while caring for the natural environment. This signifies a moderate level of commitment, indicating that there is some effort but still room for more consistent actions in this area,
- **Often (37.2%):** Nearly 37.2% of respondents indicated that their companies often engage in efforts to enhance product quality while being environmentally conscious. This is a substantial proportion, suggesting a significant commitment to combining quality improvement with environmental considerations,
- **Very often (7.4%):** Approximately 7.4% of respondents mentioned that their companies very often prioritize improving product quality while taking care of the natural environment. While this group is smaller, they represent organizations with a particularly strong commitment to these dual objectives.

In summary, the responses reveal a range of approaches in companies when it comes to balancing product quality and environmental care. A significant portion of companies reports frequent or occasional efforts in this direction, but there is also a smaller group with less commitment or, conversely, very high commitment. This data can be used to assess the level of environmental responsibility and product quality emphasis in the surveyed companies, providing insights into their sustainability practices. Further analysis could delve into specific strategies and practices employed by companies falling into each category.

In the next question we looked at to what extent does the need to care for the natural environment affect the activities undertaken in the company when improving the quality of products? (Table 3).

Table 3. To what extent does the need to care for the natural environment affect the activities undertaken in the company when improving the quality of products? (Q26)

Answer	N	%
Very low	8	8.5%
Low	9	9.6%
Average	37	39.4%
High	34	36.2%
Very high	6	6.4%

Source: own study.

A short analysis of the responses to the question about the extent to which the need to care for the natural environment affects activities undertaken in the company when improving product quality:

- **Very low (8.5%):** Approximately 8.5% of respondents indicated that the need to care for the natural environment has a very low impact on the activities undertaken to improve product quality in their company. This suggests that, in this group, environmental considerations are not strongly integrated into the quality improvement processes,
- **Low (9.6%):** About 9.6% of respondents reported that the impact of environmental concerns is low on their company's activities aimed at improving product quality. While slightly higher than the "very low" category, this group still indicates a relatively weak connection between quality improvement and environmental considerations,
- **Average (39.4%):** The largest percentage of respondents, at 39.4%, noted that the impact of caring for the natural environment is average when it comes to improving product quality. This suggests that for a substantial portion of companies, environmental considerations play a moderate role in their quality improvement efforts,
- **High (36.2%):** Around 36.2% of respondents stated that the need to care for the natural environment has a high impact on their company's activities related to product quality improvement. This indicates a significant number of organizations that prioritize and integrate environmental concerns into their quality enhancement processes,
- **Very high (6.4%):** Approximately 6.4% of respondents mentioned that the impact of environmental considerations on their quality improvement activities is very high. This is a smaller group but represents companies with an exceptionally strong commitment to both quality and environmental sustainability.

In summary, the responses reveal that a majority of companies consider the need to care for the natural environment as an average or high factor influencing their product quality improvement activities. However, there are also organizations with low or very low levels of integration of environmental concerns in these processes, as well as a smaller segment with very high commitment. This data can provide insights into the extent to which environmental sustainability is integrated into quality improvement efforts across different companies. Further analysis could explore specific strategies and practices employed by organizations in each category.

In the next question we looked at to what extent does the need to care for the natural environment affect the activities undertaken in the company when improving the quality of products? (Table 4).

Table 4. To what extent does the need to care for the natural environment affect the activities undertaken in the company when improving the quality of products? (Q26)

Answer	N	%
Improving the quality of products is aimed at reducing the negative impact on the natural environment as well as at achieving the quality of products that satisfies customers.	18	19.1%
Improving the quality of products is definitely more focused on achieving the quality of products that satisfy customers than on reducing the negative impact on the natural environment.	44	46.8%
Improving the quality of products is definitely more focused on reducing the negative impact on the natural environment than on achieving the quality of products that satisfy customers.	32	34.0%

Source: own study.

A short analysis of the responses to the question regarding the company's current approach to actions aimed at improving the quality of products in terms of quality and the environment:

- **Improving the quality of products is aimed at reducing the negative impact on the natural environment as well as at achieving the quality of products that satisfies customers (19.1%):** Approximately 19.1% of respondents mentioned that their company's approach to improving product quality places equal importance on reducing the negative impact on the natural environment and satisfying customer needs. This indicates a balanced and integrated approach to quality and environmental considerations,
- **Improving the quality of products is definitely more focused on achieving the quality of products that satisfy customers than on reducing the negative impact on the natural environment (46.8%):** The largest group, at 46.8%, reported that their company's primary focus is on achieving product quality that satisfies customers, with less emphasis on reducing the negative impact on the environment. This suggests that for this group, customer satisfaction takes precedence over environmental concerns in their quality improvement efforts,
- **Improving the quality of products is definitely more focused on reducing the negative impact on the natural environment than on achieving the quality of products that satisfy customers (34.0%):** About 34.0% of respondents stated that their company's approach is primarily centered on reducing the negative impact on

the natural environment, with less emphasis on meeting customer quality expectations.

This group indicates a stronger commitment to environmental sustainability in their quality improvement efforts.

In summary, the responses show a variety of approaches to balancing product quality and environmental considerations in the surveyed companies. While a significant portion places a stronger emphasis on customer satisfaction over environmental concerns, there is also a substantial group that prioritizes reducing the negative impact on the natural environment. Additionally, a smaller but noteworthy group takes a balanced approach, giving equal weight to both quality and environmental considerations. This data provides insights into how different organizations weigh these two critical aspects in their product quality improvement efforts, which can be important for understanding their sustainability strategies. Further analysis could explore the reasons and implications behind these different approaches.

In the next question we looked at what quality and environmental measures are taken by the company to improve the quality of its products.

Table 5. What quality and environmental measures are taken by the company to improve the quality of its products. (Q28)

Answer	N	%
Activities are undertaken separately, taking into account customer requirements as to the quality of products and taking into account the impact of products on the natural environment	33	35.1%
Activities are undertaken simultaneously taking into account customer requirements as to the quality of products and taking into account the impact of products on the natural environment	51	54.3%
No such environmental activities	3	3.2%
We do not have such things.	3	3.2%
We focus only on the quality	4	4.3%

Source: own study.

A short analysis of the responses to the question about the quality and environmental measures taken by the company to improve the quality of its products:

- **Activities are undertaken separately, taking into account customer requirements as to the quality of products and taking into account the impact of products on the natural environment (35.1%):** About 35.1% of respondents mentioned that their company undertakes activities separately, considering customer quality requirements and the environmental impact of their products. This suggests a bifurcated approach, where quality and environmental concerns are addressed as distinct processes,
- **Activities are undertaken simultaneously, taking into account customer requirements as to the quality of products and taking into account the impact**

of products on the natural environment (54.3%): The majority of respondents, at 54.3%, reported that their company integrates quality and environmental considerations by undertaking activities simultaneously. This indicates a more holistic approach where both customer quality requirements and environmental impact are considered in tandem during product improvement efforts,

- **No such environmental activities (3.2%):** A small percentage, 3.2%, indicated that their company does not engage in any specific environmental activities alongside product quality improvements. This suggests a lack of focus on environmental sustainability in this subset of companies,
- **We do not have such things (3.2%):** Similarly, another 3.2% of respondents reported that their company does not have environmental activities related to quality improvement, indicating a lack of integration or focus on environmental considerations,
- **We focus only on the quality (4.3%):** Approximately 4.3% of respondents mentioned that their company concentrates solely on product quality and does not consider environmental factors during the improvement process.

In summary, the responses reflect varying approaches to integrating environmental considerations with product quality improvement. While a significant portion of companies simultaneously addresses both customer quality requirements and environmental impact, there are also smaller groups that either focus solely on quality, treat these aspects separately, or have no environmental activities in place. These results provide insights into how different organizations balance quality and environmental concerns in their product improvement efforts. Further analysis could explore the reasons and outcomes associated with these different approaches. First, we looked at what activities that are implemented in the company as part of improving products in terms of quality and environment (Table 6).

Table 6. Indicate only those activities that are implemented in the company as part of improving products in terms of quality and environment. (Q29)

Answer	N	%
A catalog of activities aimed at improving the quality of products is kept	5	5.3%
Catalogs describing the impact of products on the natural environment are being developed	12	12.8%
Computer software is used to support making quality and/or environmental decisions as a part of the product improvement,	9	9.6%
Satisfaction surveys of customers and interested parties are conducted regarding the impact of products on the natural environment	13	13.8%
Specification of products catalogs are being developed	17	18.1%
Surveys of customer satisfaction with the quality of products are conducted	38	40.4%

Source: own study.

An analysis of the responses to the question about activities implemented by the company as part of improving products in terms of quality and the environment:

- **A catalog of activities aimed at improving the quality of products is kept (5.3%):** Approximately 5.3% of respondents reported that their company maintains a catalog of activities focused on improving product quality. This indicates a relatively small portion of companies with a structured approach to quality improvement,
- **Catalogs describing the impact of products on the natural environment are being developed (12.8%):** About 12.8% of respondents mentioned that their company is developing catalogs that describe the environmental impact of their products. This suggests a growing interest in documenting and communicating environmental aspects of products,
- **Computer software is used to support making quality and/or environmental decisions as a part of the product improvement (9.6%):** Approximately 9.6% of respondents reported using computer software to support decision-making related to product quality and environmental concerns. This indicates a moderate but not widespread use of technology in these areas,
- **Satisfaction surveys of customers and interested parties are conducted regarding the impact of products on the natural environment (13.8%):** About 13.8% of respondents conduct satisfaction surveys among customers and stakeholders to assess the impact of products on the environment. This reflects a level of engagement in understanding and addressing environmental concerns,
- **Specification of products catalogs are being developed (18.1%):** Nearly 18.1% of respondents mentioned that their company is developing catalogs specifying product details. While the question doesn't explicitly link this to environmental considerations, such catalogs may include environmental information as well,
- **Surveys of customer satisfaction with the quality of products are conducted (40.4%):** The majority of respondents, at 40.4%, conduct surveys to gauge customer satisfaction with the quality of their products. This is a commonly used approach to assess product quality and customer perception.

In summary, the responses indicate a range of activities implemented by companies to improve products in terms of quality and the environment. While customer satisfaction surveys are the most prevalent, other activities, such as developing environmental impact catalogs and using computer software, also play a role. These results provide insights into

the diversity of approaches used by companies to address both quality and environmental aspects in their product improvement efforts. Further analysis could explore the effectiveness and impact of these activities on product quality and environmental sustainability.

4. Summary

In summary, the survey responses reveal diverse approaches to quality and environmental improvement across surveyed companies. While a significant portion takes annual actions, there are also instances of infrequent or nonexistent efforts, suggesting opportunities for enhanced focus on sustainable practices. The data highlights variations in commitment levels and could indicate potential patterns in specific industries or regions. Further analysis is recommended to explore the reasons behind these disparities.

The findings indicate a spectrum of approaches among companies in balancing product quality and environmental care. While many report frequent or occasional efforts, a smaller group exhibits either lower or higher commitment levels. This data allows assessment of environmental responsibility and product quality emphasis, offering insights into sustainability practices. Further analysis could delve into specific strategies employed by companies falling into each category.

The responses underscore that a majority of companies view caring for the natural environment as a significant factor in product quality improvement. However, variations exist, with some organizations showing low integration of environmental concerns and others displaying high commitment. This data provides insights into the extent of environmental sustainability integration across different companies, warranting further exploration of specific strategies in each category.

The survey responses demonstrate a variety of approaches to balancing product quality and environmental considerations. While some emphasize customer satisfaction over environmental concerns, a substantial group prioritizes reducing negative environmental impact. A smaller yet noteworthy group takes a balanced approach. This data provides insights into how organizations weigh these critical aspects in product quality improvement, crucial for understanding sustainability strategies. Further analysis is needed to explore reasons and implications behind these different approaches.

The responses reveal varying approaches to integrating environmental considerations with product quality improvement. While many companies address both customer quality requirements and environmental impact, smaller groups focus solely on quality, treat these aspects separately, or lack environmental activities. The results provide insights into how

organizations balance quality and environmental concerns in product improvement efforts, prompting further analysis into reasons and outcomes associated with these approaches.

In summary, companies implement a range of activities to improve products in terms of quality and the environment. While customer satisfaction surveys are prevalent, other activities like developing environmental impact catalogs and using computer software also contribute. These results highlight the diversity of approaches used by companies to address both quality and environmental aspects in product improvement. Further analysis is recommended to explore the effectiveness and impact of these activities on product quality and environmental sustainability.

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