

WASTE SORTING MOTIVATORS AND DEMOTIVATORS AT THE WORKPLACE

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Abstract

Research purpose. Growing environmental pressures and global sustainability commitments, such as the United Nations' Sustainable Development Goal 12, underscore the importance of effective waste management in all societal sectors. Workplaces, where individuals spend a lot of their time, represent a critical yet underexplored setting for implementing and improving waste sorting practices. This study aimed to examine employees' attitudes toward workplace waste sorting in Latvia, focusing on identifying motivators and demotivators that influence participation.

Design / Methodology / Approach. A quantitative survey was conducted with 108 respondents, representing diverse industries, company sizes, and demographic profiles. The questionnaire covered workplace waste sorting practices, positive and negative influencing factors, and general perceptions. Data analysis focused on identifying patterns in motivators and demotivators, as well as differences by gender, company size, and awareness levels.

Findings. The results show that 79% of surveyed employees engage in waste sorting at work, aligning closely with national household statistics. Most workplaces (92%) have sorting stations, though awareness of specific container availability was slightly lower (82%). Nearly 60% reported that employers provided sorting containers, while only 24% had received training on proper sorting, 25% noted the use of motivational systems, and 27% indicated the presence of visual reminders. Motivators most frequently cited included environmental protection (50%), resource saving (over 35%), habit change (over 35%), and improved workplace appearance (over 35%). Negative factors were led by rapid bin overfilling (over 40%), the need to change established habits (over 40%), and time spent deciding on waste categories (over 40%). Gender differences emerged, with 11% of women and 5% of men unaware of sorting station presence; women were more likely to view habit change negatively (nearly 50% vs. 33% of men), while men more often cited time constraints (46% vs. 37% of women).

Originality / Value / Practical implications. This study provides information on workplace waste sorting motivators and demotivators in Latvia. The findings highlight the need for enhanced communication, better visibility of sorting facilities, and integration of waste sorting into workplace culture to strengthen engagement. Addressing workplace waste sorting offers benefits that extend beyond meeting waste management targets, as it actively engages employees in achieving organisational sustainability goals.

Keywords: waste sorting; workplaces in Latvia; employee survey; motivating and demotivating factors.

JEL codes: D23; Q56.

Introduction

The planet Earth, due to intensive human activities, faces escalating challenges linked to the generation, accumulation, and disposal of waste materials that do not naturally integrate into ecological cycles. This view is supported by Ferradás-González et al. (2024), who argue that, along overexploitation of resources, waste management is among the key global challenges. These by-products of industrial, commercial, and consumption practices accelerate environmental degradation, deplete finite resources, and endanger the health and quality of life of humans as well as other species. Recognising the urgency of this crisis, the United Nations embedded waste prevention and resource efficiency at the heart of its global policy agenda, most notably in Sustainable Development Goal (SDG) 12 “Responsible Consumption and Production” (UN, n.d.). This goal promotes sustainable patterns of resource use, reducing waste generation before it occurs, and restoring value to materials through recovery, recycling, and other regenerative practices (Cifuentes-Faura, 2025; Mariyam et al., 2024; UN, n.d.). Achieving SDG 12 depends on coordinated efforts among governments, businesses, and individuals to transform consumption and production systems into ones that are environmentally restorative, socially responsible, and economically viable. Achieving SDG 12 is crucial for maintaining ecological balance and encouraging the sustainable use of resources, particularly in light of the world’s rapidly expanding population (Cifuentes-Faura, 2025).

The circular economy has emerged as a practical pathway to realising the ambitions of SDG 12 (Cifuentes-Faura, 2025) by redesigning how resources are deployed and valued. Shifting from the traditional linear model of “extract–produce–dispose,” it envisions a system in which materials remain in productive use for as long as possible, with minimal loss of value. This involves designing products for longevity at their maximum value (Muñoz-Briones et al., 2025) while minimising waste (Maqsood et al., 2025), encouraging repair and refurbishment, and ensuring that materials at the end of their initial life cycle are reintegrated into new production processes. Beyond environmental benefits, the circular economy stimulates innovation, supports green job creation, and builds resilience against resource scarcity. When applied in workplace contexts, circular economy principles offer organisations not only a way to meet sustainability commitments (Muñoz-Briones et al., 2025) but also an opportunity to foster employee engagement, strengthen environmental culture, and demonstrate leadership in the global transition toward a regenerative economy.

Although the urgency of addressing waste generation is widely acknowledged (Cohen et al., 2025) and numerous systems, models, and technologies have been developed to combat it, real-world progress remains inconsistent. Policies may be thoughtfully designed, infrastructure may be available, and public messaging may be frequent, yet persistent gaps remain in enforcement, accessibility, sustained participation, and cultural integration. This raises a deeper question: are ecological priorities truly embedded as both personal commitments and shared societal values? Human behaviour often aligns with what people genuinely value, perhaps not always directly or without contradictions, but generally gravitating towards that direction over time. Therefore, if environmental protection, including waste management, holds a recognised place in personal and collective value systems, people are more likely to navigate their decisions in that direction. However, given that waste-related challenges persist, and in certain contexts have even intensified, it is plausible that environmental responsibility holds a relatively low position, if any at all, on the value scale for many individuals and communities. Values serve as guiding principles that influence decision-making and shape behavioural patterns, a connection demonstrated by Gould et al. (2023), and more specifically, by Kim and Kim (2024), who found that certain values drive energy-saving behaviours. Therefore, to effectively understand and promote waste management practices, it is necessary to investigate not only the behaviours that arise from existing values but also the factors that shape those values. Among these, attitudes represent a particularly important determinant.

The relationship between attitudes and behaviour has been explored in multiple theoretical perspectives. For example, the Theory of Planned Behaviour (Ajzen, 1991) suggests that attitudes, combined with social norms, shape intentions, which then guide actual practices - implying that belief and value change precede behavioural change. Earlier, to account for environmentally friendly behaviour, this theory was used by Akhter et al. (2024) on food waste practices and by Mahmud and Osman (2010) on recycling.

Conversely, Cognitive Dissonance Theory emphasises that changes in behaviour, particularly when supported by favourable social or organisational conditions, can gradually alter attitudes to resolve internal inconsistencies between what people do and what they believe (Barnes et al., 2023; Burman et al., 2025). Burman et al. (2025) applied this theoretical lens in their scoping review to account for environmentally friendly behaviours reported in earlier studies, noting that households often shift their actions toward practices such as recycling, reducing electricity use, minimising food waste, and lowering car dependency. Barnes et al. (2023) used this theory to explain water-friendly actions. This bidirectional relationship - attitudes influencing behaviour and behaviour influencing attitudes - makes it relevant to study both the motivators and demotivators that shape people's attitudes and behaviour at the workplace.

The workplace is a common environment where individuals spend a substantial portion of their time, making it a relevant context for examining sustainable practices. Understanding the factors that motivate or discourage employees from engaging in waste management is therefore essential. Among these practices, waste sorting is one of the most widely implemented strategies for reducing resource use and facilitating high-quality material recovery, thereby decreasing reliance on virgin resources (Adu-Gyamfi et al., 2023; Cohen et al., 2025). In a study conducted in Ghana, Adu-Gyamfi et al. (2023) demonstrated that environmental awareness can positively influence waste sorting behaviour, particularly when the practice is perceived as helpful, useful, and beneficial to environmental sustainability. Building on this understanding, the present study investigates employees' general attitudes toward waste sorting in the workplace, analysing motivators and demotivators separately.

To examine how the interplay between personal values, environmental attitudes, and workplace behaviour manifests in practice, this study turns to the Latvian context, where structured workplace waste sorting systems are still emerging. Latvia offers a timely and relevant setting due to its ongoing efforts to align with EU circular economy directives and SDG 12 targets, coupled with a lack of empirical research on how employees' motivators and demotivators shape sustainable practices at work. The research aim was to examine employees' attitudes toward workplace waste sorting in Latvia, focusing on motivators and demotivators. To address the research aim, a survey was conducted to collect data on employees' perceptions, experiences, and reported behaviours related to waste sorting at work. The findings are intended to guide the development of targeted strategies that enhance motivators, reduce barriers, and strengthen workplace waste management performance. This study contributes original insights by examining workplace-specific motivators and demotivators of waste sorting behaviour within the Latvian context, a topic that remains underexplored in current literature. By focusing on employee attitudes toward sorting infrastructure at work, the research fills a gap between environmental behaviour studies and organisational sustainability practices in emerging EU settings.

Literature Review

The progressively harmful impact of industrial activities on the environment has created the need for effective waste management and environmental protection strategies. Sustainable and effective waste management strategies could minimise the harmful impacts on sustainable development and environmental pollution, as well as public health. To demonstrate the relevance of this research topic and identify existing research gaps, the authors of this article conducted a literature analysis.

Waste management incorporates activities and planning measures from prevention to collection, treatment, recycling, composting, and disposal. Waste sorting is the most important part of the process, which involves separating materials into different fractions to ensure efficient further processing, which supports the circular economy (Li et al., 2023; Madrigal & Oracion, 2018; Zutshi & Sohal, 2003). Three main directions of research and action in the context of waste management are as follows:

- Policy and regulatory framework. It impacts the design, development, and operational implementation of waste management strategies, while affecting resource distribution, prioritisation of environmental objectives and the degree of stakeholder involvement in different governance contexts (Jones, 2019; Mmerekhi et al., 2016).
- Technologies in waste management (Czekala et al., 2023; Vorobeve et al., 2023).

- Behavioural aspects. They play an essential role in the effectiveness of waste management systems, critically shaping both individual and institutional engagement in recycling processes (Muturi, 2021; Vicente & Reis, 2008). This, in turn, contains two sub-directions related to individual behaviour towards waste management (Ristic, 2000; Valle et al., 2004) and institutional involvement (Muturi, 2021).

Although robust policy frameworks and advanced waste management technologies are essential for establishing structural and technical capacity, their success ultimately depends on human behaviour. Behavioural aspects drive attitudes and active participation, making them the decisive factor in ensuring the long-term effectiveness of workplace waste sorting initiatives. Research on behavioural aspects of waste recycling has primarily focused on identifying complex factors that promote or inhibit individuals' participation in waste sorting and recycling activities (Phulwani et al., 2020; Raghu & Rodrigues, 2020). The factors influencing recycling behaviour can be categorised as follows:

- Psychological factors, which include attitudes, perceived behavioural control, personal norms, intentions, motivation, and habits (Heidrich & Harvey, 2018; Phulwani et al., 2020; Raghu & Rodrigues, 2020). Psychological variables are used to explain and predict recycling activities in different contexts (Raghu & Rodrigues, 2020), including employees' attitudes towards environmental issues, waste management, and recycling, as well as the perceived costs and benefits to the company (Heidrich & Harvey, 2018).
- Social factors, which represent descriptive, organisational and personal norms, impact the collective action in waste management beyond individual attitude, as well as significantly influence the engagement (Janmaimool, 2017); particularly important for the successful implementation of sorting and recycling programs in the workplace (Abdo et al., 2019; Janmaimool, 2017).
- Contextual and situational variables, such as the availability and design of recycling infrastructure, convenience, and organisational support (Fritz et al., 2017; Miller et al., 2016; Vogt & Nunes, 2014). It should be noted that even when individuals have positive attitudes toward recycling, existing barriers in the workplace, such as insufficient or poorly designed systems, can hinder recycling efforts (Price & Pitt, 2011; Wu et al., 2016). Recycling systems which are poorly designed can have different shortcomings, such as a limited number of waste bins, inconvenient placement, and unclear or confusing signage (Roy et al., 2022; Wu et al., 2016).

Employee attitudes towards waste management are among the key factors of success and effectiveness of organisational waste management systems (Heidrich & Harvey, 2018; Lingard et al., 2000). Considerable attention has been paid to the research question about recycling of household waste; significantly fewer studies have been dedicated to exploring the types of waste generation and disposal by employees at their workplaces. (McDonald & Oke, 2018). Often, lower recycling rates at workplaces than at home show that being environmentally responsible at home does not automatically translate into the same conduct at the workplace (McDonald & Oke, 2018). Employees' attitudes towards waste sorting and management systems in the workplace are significantly influenced by the work environment, which, together with organisational mechanisms, technological development and behavioural changes, forms the basis for effective waste reduction and management (Heidrich & Harvey, 2018; Rani & Yendluri, 2024).

Employee attitude is important not only because it affects the following rules, but it also promotes voluntary environmentally friendly behaviour based on individual attitudes towards waste separation policies and is essential for the implementation of sustainable waste management in the work environment (Fawehinmi et al., 2023; Lingard et al., 2000; Tangwanichagapong et al., 2017). The following factors can influence employee attitude:

- Organisational culture and norms. A work environment that prioritises environmental responsibility and where management commitment is clearly demonstrated in practice can significantly contribute to employees' positive attitudes towards waste management initiatives. (Lingard et al., 2000; Maleviti & Stamoulis, 2017). However, if environmental issues are

considered as less important compared to other company objectives, such as cost, time, and quality, or if the company demonstrates a negative attitude towards environmental management systems, employee attitudes may be less favourable as well (Hillary, 2003; Lingard et al., 2000).

- Training and education. Structured training program which includes PowerPoint presentations, and encourages open discussions significantly improves employee knowledge, stimulates positive attitude, and improves practical performance (Abdo et al., 2019; Khashaba et al., 2023).
- Policies and Communication. Clear, logically structured, uniformly formulated and permanent policy provides essential guidelines and sets norms of behaviour regarding waste management, what as a result influences employee attitudes (Singleton et al., 2021), while a visibly demonstrated commitment by management to implementing policy objectives and employee involvement in identifying solutions promotes more positive attitude towards waste management initiatives (Lingard et al., 2000).
- Demographic differences. Job type, age, education level, gender, and length of service influence employees' attitudes towards waste management by shaping individual perceptions, motivation, and behavioural patterns, which in turn affect their engagement and compliance with the organisation's environmental policy requirements (Heidrich & Harvey, 2018; Madrigal & Oracion, 2018).
- Perceived value of waste management (perceived costs and benefits from waste sorting, recycling, etc.) (Doorasamy, 2026; Lingard et al., 2000).

The outcomes of this literature review on waste management are available in the form of a diagram in Figure 1. The flow moves from a general perspective toward a specific focus on workplace waste management and employee attitudes.

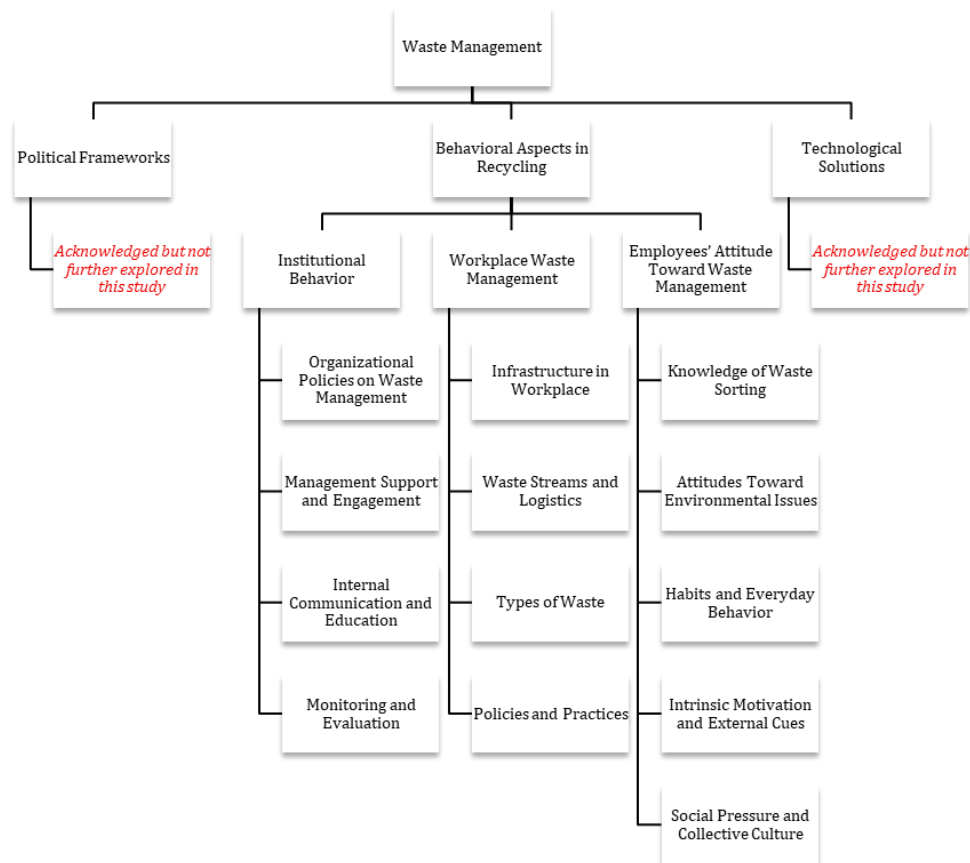


Fig.1. Main directions of waste management research (Source: Created by the authors)

Overall, effective waste management in a company is based on the interaction of multifaceted political, technological, and behavioural components. Although household waste recycling habits are a common subject of research, workplace-specific dynamics remain relatively understudied. Most frequently studied areas for researching and analysing employee attitudes are medical and educational institutions. When developing a company's waste management strategy, it should be considered that environmentally responsible behaviour practised by an employee in their private environment is not always automatically transferred to the work environment. The factors that influence the process of transferring this behaviour still need to be analysed in depth and empirically investigated.

Research Methodology

The research focused on how the introduction of an innovative waste-sorting station in office spaces could influence employee well-being and organisational sustainability, while emphasising the importance of new product testing and the practical application of design thinking approaches. The innovative waste-sorting solution involved replacing individual waste bins at each workstation with a centrally located sorting station, encouraging employees to stand up and actively participate in waste sorting.

The research examined several key aspects:

- How incorporating movement and physical activity into the daily work environment could reduce the negative impact of sedentary work and enhance employee health and well-being;
- How opportunities for waste sorting might affect employees' satisfaction with their work environment and their sense of responsibility toward the environment;
- How such a design intervention could be integrated into organisational resource planning and long-term sustainability strategies.

The research method was quantitative, and the research tool – a questionnaire. The structure of the developed questionnaire is available in Table 1.

Table 1. Structure of the questionnaire

Part	Question	Type of the question; responses
A	Respondent profile	– Gender, age, education level, company's size, business field
B	General question	– B1: waste sorting at the workplace – B2.1 – B2.7: waste sorting practices at the workplace
C	Factors related to waste sorting at the workplace	– C1.1 – C1.9: Positive factors related to waste sorting at the workplace (motivators) – C2.1 – C2.5: Negative factors related to waste sorting at the workplace (demotivators) – C3: open question

The number of respondents who participated in the survey was 108. Of all respondents, 57% were males and 43% females. Of all respondents, 84% were in the age group from 18 to 29 years. Of all respondents, 57% had higher education, 22% graduated from secondary school, and the rest reported a basic education background. Respondents were recruited through institutional networks, with voluntary participation from Master's students enrolled in the Design Thinking course at EKA University of Applied Sciences. While this approach enabled access to a relevant and engaged participant sample, it may introduce sample bias due to overrepresentation of younger respondents (84% aged 18–29) and students or early-career professionals.

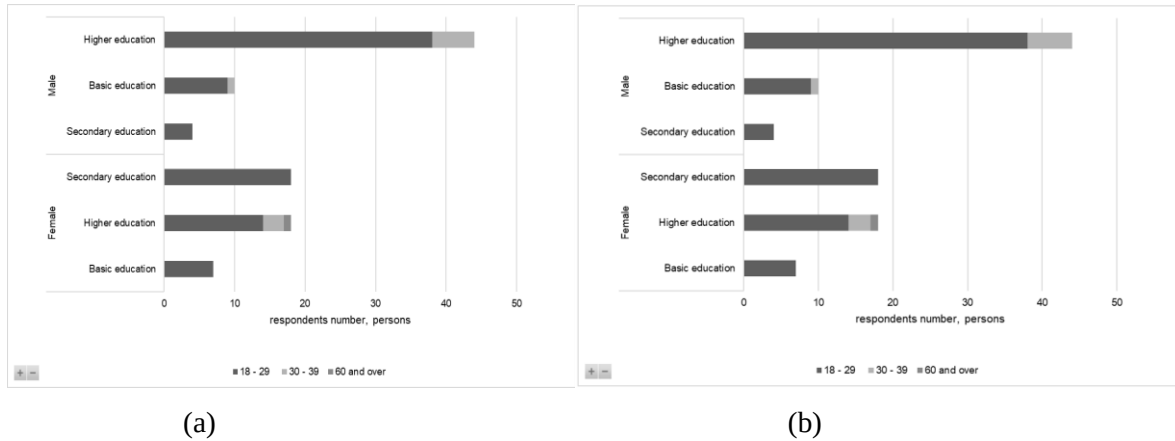


Fig.2 Respondents' characteristics by age, gender, and education: a) by education category, b) by count
(Source: Created by the authors)

Over 55% of the respondents worked for enterprises whose staff accounted for more than 50 employees. Of all respondents, 44% worked in small companies. By occupation, 50% of all respondents were engaged in marketing, education or are students, IT, services, the food industry, or administration. Full categorisation of the survey participants by industry is provided in Figure 2. Of all respondents, 30% did not identify their working activity or were not employed.

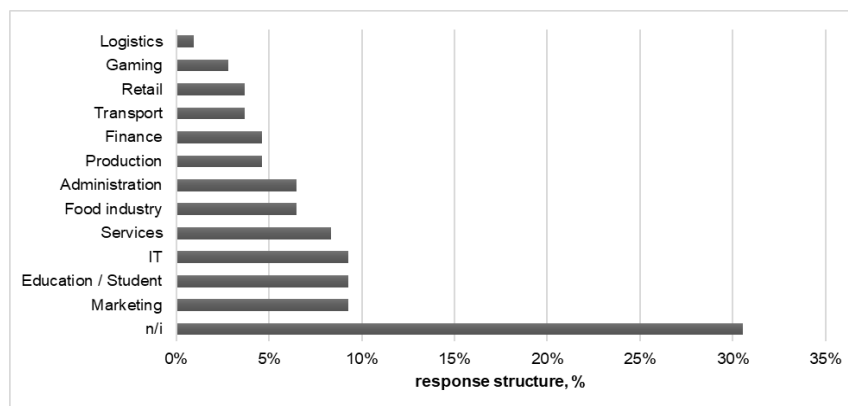


Fig. 3. Respondents' structure by occupation (Source: Created by the authors)

This research was conducted within the framework of the “Design Thinking” course at EKA University of Applied Sciences, involving Master’s students from the Business Management, Circular Economy, and Social Entrepreneurship programs.

Research Results

The authors formed a positive overall impression of the company's involvement in waste sorting initiatives based on the responses provided in the survey. According to the survey, 79% of the companies sort the waste in Latvia. The outcomes of this research are similar to those of the official Latvian statistics.

Respondents were asked about the existence of the waste sorting station at their workplace. Of them, 92% confirmed the availability of sorting stations. However, there is a difference between this cumulative result and answers to other specific questions with feedback on waste sorting utilities' availability in the office, for example, awareness of the waste sorting containers' availability at the working places. 82% of respondents provided positive answers. Definitions of waste sorting stations and waste sorting containers were not provided in the questionnaire, but the meaning was identical. However, probably some respondents did not find it clear, and it might influence the results.

Consistent with the questionnaire block design, the research results are presented in three steps.

1. Evaluation of activities provided by the employer in the office to form a habit of waste sorting

The current section contains seven questions, considering *availability of waste sorting containers in the office, introductory training on proper waste sorting, available visuals in the office on the benefits of sorting waste, existence of a dedicated motivation system for employee waste sorting, implementation of environmental protection measures and waste sorting, office urges staff to engage in waste sorting and support of the zero-waste trend*. The results of the implementation of waste sorting activities are shown in Figure 4.

Almost 60% of the respondents stated that their employers provided waste sorting containers (44% of all answers are for “completely implemented” and 14% for “partially implemented”). However, 24% of the respondents were not aware of the availability of waste sorting containers at the workplace. The authors suggest that the respondents might not yet use waste sorting containers daily, or that such utilities were not located in visible places. The majority of “not informed” respondents represented a minority of employees (with staff from 11 to 50 persons).

Among the companies mentioned in the survey, 36% are involved in implementation of environmental protection measures and waste sorting, 34% invite staff to engage in waste sorting, 30% follow and support zero waste trend, 27% provide visuals in the office on the benefits of waste sorting, 25% stimulate the employees’ involvement by motivation systems, 24% introduce training on waste sorting to their staff.

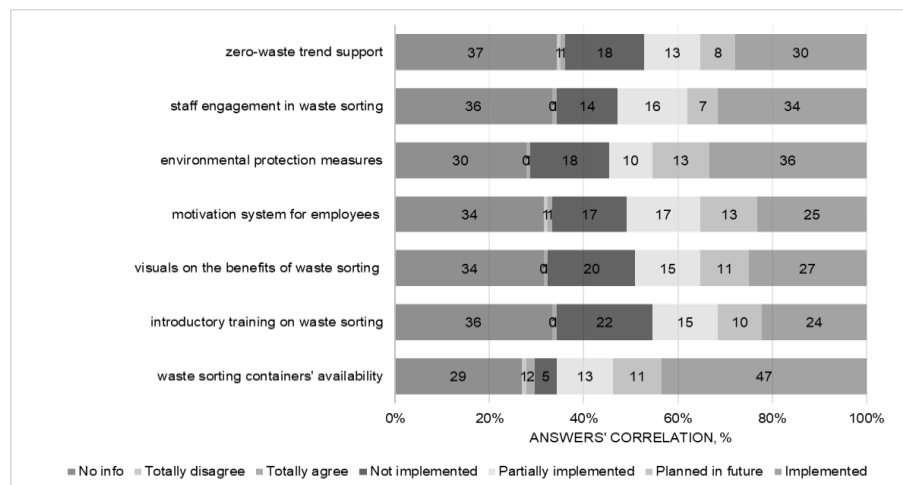


Fig. 4. Waste sorting activities of companies (Source: Created by the authors)

However, according to the analysed data, most of the “no info” responses or 37% result, that, in most cases, people do not know if a company supports zero-waste trends. 39% of the responses judged that this procedure is not yet ready, partially implemented, or planned. Meanwhile, the questionnaire did not contain the question of whether people knew the meaning of a zero-waste trend.

Correlation on the respondents' unawareness of the existence of the waste sorting station is found with the gender of the survey participants: women are less informed about the waste sorting stations' existence in the office (11% of women and 5% of men confirmed their lack of awareness). Other criteria, such as the size of a company, age and occupation of the respondents, are not significant with respect to awareness of the waste sorting station's existence.

2. Foundation of positive aspects if waste sorting stations are installed at work.

This section accounts for nine questions, considering *potential sporting activities as movements towards waste sorting containers, and changing habits, collaboration on optimisation of waste quantity, and cleaners' job, lenient use of resources, reducing the cost of maintaining standard waste boxes,*

elimination of a source of odours in office premises, improving the visual appearance of premises, and conserving the environment. The results are given in Figure 5.

The survey results indicate that environmental protection was identified by respondents as the most positively perceived factor, with 50% expressing agreement. Other factors, such as resource saving, changing habits, improving interior and optimisation of waste quantity gained answer scores over the 35% level.

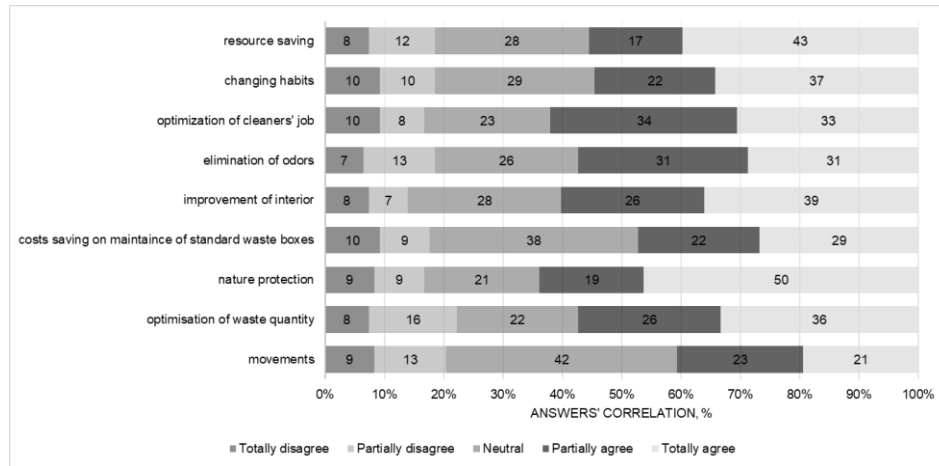


Fig. 5. Positive aspects of having waste sorting stations at the workplace (Source: Created by the authors)

The outcomes suggest that employees frame waste sorting primarily as an ethical and environmental responsibility rather than a convenience-driven or cost-saving measure. The staunch support for environmental protection and resource conservation indicates that pro-environmental values are already present and may serve as effective entry points for encouraging sustainable behaviour. The relatively low value placed on physical effort or cost reduction implies that instrumental or efficiency-based arguments may be less persuasive than value-driven ones. This highlights the importance of aligning workplace interventions, such as sorting stations, with employees' existing environmental attitudes to increase acceptance and long-term engagement.

3. Measurement of negative aspects of waste sorting in the office.

This section contains five issues to revise: *the need for an additional inconvenience, sorting causes trash on work surfaces, time spent thinking about a type of waste to be sorted, frequent and quick overflow of trash bins, and readiness to change habits.* The analysed data are presented in Figure 6.

In respondents' opinion, the biggest negative influence on individuals at work when the waste is being sorted is the quick overflowing of trash bins.

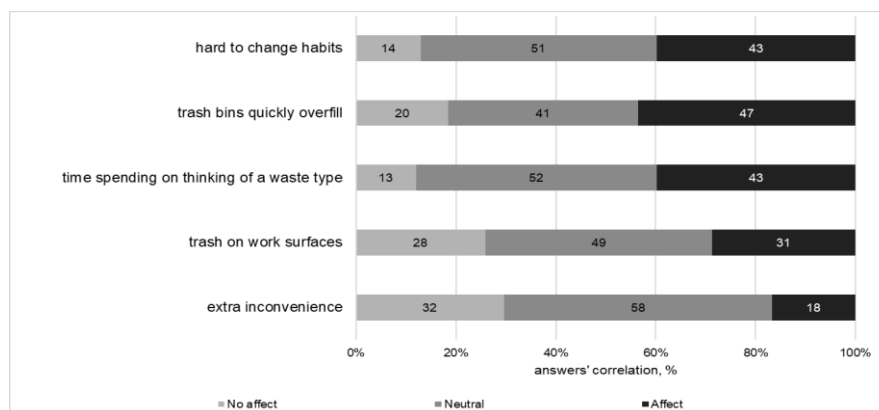


Fig. 6. Negative aspects of having waste sorting stations at the workplace (Source: Created by the authors)

Other inconveniences are making proper decisions on a type of waste and changing habits (over 40%, according to the answers' correlation score). However, more than 45% of all the answers indicated neutrality in the last two aspects. In most cases, people do not experience any inconvenience from the presence of waste sorting stations at work.

However, there is a difference in opinions by gender, with almost half of females and only 33% of males negatively assessing the need to change habits; data are provided in Figure 7(a). Approximately 46% of males and only 37% of females agree, they need extra time to make proper decisions on a type of waste, as provided in Figure 7(b).

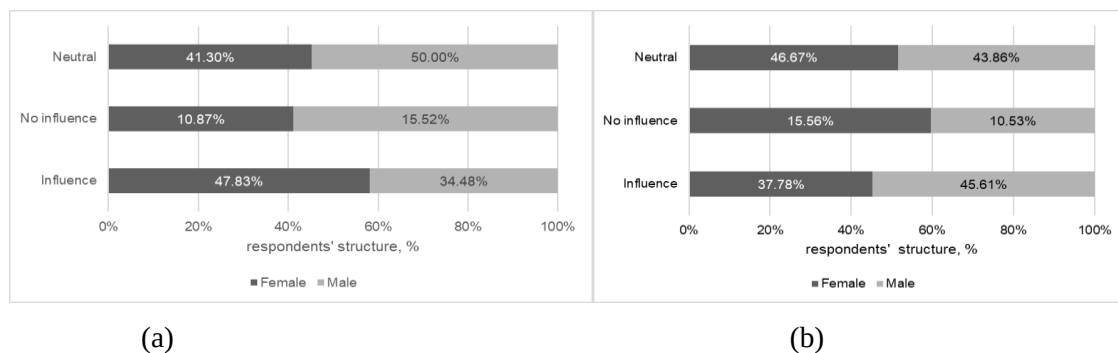


Fig. 7. Correlation by gender on: a) readiness for changing habits, b) time spent on changing habits
(Source: Created by the authors)

Approximately 38% of the responses produced a positive answer. 26% of all the respondents share the opinion that waste sorting stations' presence at work is a responsive action towards wise recycling and sustainability issues. Other positive concerns state social and corporate responsibility, a tidy working environment, and the obligation of its implementation. Some respondents pointed to the cost-saving effect and better health standards.

Conclusions

The aim of this research was to examine employees' attitudes toward workplace waste sorting in Latvia, focusing on motivators and demotivators. The findings show that waste sorting is well-established, with 79% of surveyed employees reporting participation, which in turn is consistent with national statistical data pointing to a similar proportion of households in Latvia engaging in the practice. Most workplaces (92%) reported having waste sorting stations, though awareness of specific container availability was slightly lower (82%), suggesting a need for better visibility and communication.

Employer initiatives varied: while container provision was common, training, motivational systems, and visual reminders were less widespread. Positive perceptions were most strongly associated with environmental protection, resource saving, habit change, and improved workplace appearance. The most frequently cited negative aspects included rapid bin overfilling, the need to change established habits, and the time required to decide on proper waste categories. Gender differences were noted; specifically, women were less aware of the presence of sorting stations but more likely to view habit change negatively, whereas men more often reported time constraints as a challenge.

Overall, the results indicate that while workplace waste sorting is broadly accepted and infrastructure exists, employee engagement and communication could be improved. Enhancing motivators—such as making environmental benefits more visible, ensuring convenient access to sorting facilities, and embedding sorting practices into workplace culture—could increase participation. Addressing demotivators through improved bin management, clear instructions, and supportive behavioural measures would further reduce barriers. These findings can help Latvian organisations better align workplace practices with national waste management goals and broader sustainability objectives. Future research could build on these results by incorporating economic and statistical analyses alongside additional empirical studies.

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