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LATVIAN RAIL TRANSPORT SECTOR STAKEHOLDERS' PERCEPTION OF GREEN DEAL POLICY MEASURES

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Abstract. The EU sets ambitious climate and energy goals for 2030, or the so-called European Green Deal, in compliance with the new global framework for sustainable development adopted by the UN General Assembly on 25 September 2015. The Green Deal is accompanied by legislative acts ensuring that both public and private funding depend significantly on the sustainability of economic activity. The definition and classification of sustainable activities are embedded in the EU Taxonomy Regulation. The aim of the present study is to find out how the stakeholders of railway sector perceive, react to, and feel about the Green Deal policy measures and approaches. After investigation of the relevant literature and compiling a structured questionnaire, persons involved in the operation of the railway sector (railway transport policy makers; railway undertakers and railway infrastructure managers) were convened and a focus group was conducted. The article describes the results of the focus group and identifies future directions for design thinking research on market responses to government interventions in supply chain operations.

Keywords*: Focus group, Green Deal, railway, taxonomy.*

JEL Classification: H23, L92

INTRODUCTION

Over the past decade, most research has emphasized the human-induced climate change stem from Intergovernmental Panel on Climate Change statement that warming of the climate system is unequivocal and will amplify existing risks and create new risks for natural and human systems (IPCC, 2014). In compliance with the new global framework for sustainable development adopted by the UN General Assembly (United Nations, 2015), the EU set ambitious climate and energy goals for 2030, or the European Green Deal (European Commission, 2021):

- No net emissions of greenhouse gases by 2050,
- Economic growth decoupled from resource use,
- No person and no place left behind.

The issue of railway development has grown in importance considering the emergency of climate change. The transportation sector has a major influence on Europe's greenhouse gas (GHG) emissions, whereas road transport has more than 70 %. European Parliament (2016) reported that under the influence of conflicting factors, e.g., sharp increase in economic activities and gradual implementation of

environment policy measures, the steady decline in transport emissions appeared only in 2007. The modal shift to environmentally friendly railway and water transport is an underlying factor in future transport policy. However, it was and is likely to remain steady, unless the OECD (2017) reports that global supply chains, which today account for 70 % of global GDP, see the move towards sustainability as an inescapable truth, and are aware that their security of existence is threatened by a series of unforeseen forces: extreme weather, pandemics, geopolitical shifts, supply constraints, traditional fuels and due to the lack of rare earth metals.

The causal role of target transport policy supported by investments in infrastructure and rolling stocks has been demonstrated by Evangelista et al. (2017). ARISCC (2016), Baker et al. (2010), UNECE (2020), Armstrong et al. (2017) and many other authors identified that the capacity of the current rail network and railway adaptation to the effects of climate change are generally seen as factors strongly related to rail future advantages. Most of these discussions originated as the "grey literature" (i.e., public bodies' reports). It can thus be concluded that governmental bodies have a sense of risks and challenges posed by climate change and require to both boost and adjust railway industry to them. However, there is increasing concern that political efforts are being disadvantaged by railway stakeholders because of their poor awareness of climate change impacts, shortage of capital investment and time, etc. (see for instance surveys' results conducted by Garmabaki et al. (2021), Palin et al. (2021), Wang et al. (2020). Evangelista et al. (2017) suggest that a weak link may exist between global supply chains and railway undertakings on small networks. A number of studies have reported so far that the state must ensure sustainability compliance standards that are compatible with the standards set by global supply chains. These challenges are even more significant in the case of Latvia, where the economy consists mainly of small and medium-sized enterprises, which are often excluded from the consideration of global supply chains.

The Directive 2012/34/EU establishing a single European railway area provides other state intervention to ensure climate goals, namely, infrastructure charges may be modified to consider the cost of environmental effects caused by the operation of the train. Latvia's transport policy stipulates that by 2023 the Latvian Charging Body (LRN) must develop a balanced financing model for railway infrastructure charging to promote competitiveness of environmental advantages in domestic freight and passenger transport. The lack of information on how the transport market reacts to the reduction of infrastructure charges is a significant obstacle to the application of this state intervention tool.

The availability of investments has been examined within the framework of the European Green Deal. In the future, 40 % of the investments made by the European Fund for Strategic Investments in infrastructure and innovation projects will be directed towards climate investment, while private fund as well as certain large enterprises, which also include many railway companies in Europe, will have to disclose information about the sustainability of their investments (European Commission, 2020). Therefore, the availability of both public and private financing will significantly depend on the sustainability of economic activity.

There is also one more challenge that researchers have not treated in much detail. According to the International Energy Agency (2019), 55 % of the energy used to power trains in the global rail industry in 2020 was generated by diesel or coal. The findings of this study suggest that reaching net zero by 2050 by shifting to rail must be approached with some caution. The contradictory result may be due to the fact that running a locomotive on coal generated energy produces as many GHG emissions as a diesel locomotive. Furthermore, there is a significant portion of railway carbon footprint produced by upstream suppliers as well as by downstream undertakings. There would therefore seem to be a definite need for combined effort by all railway supply chain members.

Publications that concentrate on supply chain sustainability management more frequently adopt an agency theory only in relation to their direct suppliers (Villena & Gioia, 2018). Existing research (Vlachos & Dyra, 2020) recognises the critical role played by a principal (e.g., 4PL company) on agent (e.g., 3PL company), but it is not consistent to a third-degree cooperation partner, as the theory fails to specify information asymmetry and other failures that occur in the extended system (Awan, 2019). This indicates a need to understand the various perceptions of supply chain sustainability management that exist among small and medium-sized enterprises involved in a supply chain.

Despite the growing interest in the concept of sustainability and the amount of research conducted on the topic, it is continually challenging to decide on the efficient approach to implement sustainability in practice. Therefore, the paper aims to provide useful insight into the current state of play when implementing ESG in the Latvian railway system. To achieve the aim set, the following tasks have been formulated:

- To assess the level of understanding of ESG within the railway sector. The assessment can help determine how railway stakeholders perceive, react to, and feel about the Green Deal policy measures and approaches. It will help to propose relevant adaptation policies.
- To design the ideal experience of railway stakeholders when developing sustainable strategies in transportation and to identify which state intervention activities in the railway sector can provide balanced conditions of competition with other modes of transport.

The paper is structures as follows: the introduction is followed by the discussion of the definitions and key terms used in the paper as well as the methodology. Chapter 3 analyses the results of the focus group discussions undertaken during the study. Chapter 4 discusses the results in a form of design thinking methodology. Finally, some conclusions are drawn.

1. DEFINITIONS AND KEY TERMS USED IN THE PAPER

The section explains the sustainability paradigm and its subareas to better understand the sections that follow.

1. In accordance with the EU Taxonomy, an economic activity is considered environmentally sustainable only if it is conducted in line with the OECD Guidelines for Multinational Enterprises (OECD, 2011) and ILO Declaration

on Fundamental Principles and Rights at Work (ILO, 2022), especially the principles of prohibition of slavery, forced labour and discrimination. Therefore, sustainability is not only environmental, but social responsibility and corporate governance as well. Throughout the paper, the term ESG will refer to sustainability that consists of these three subareas.

2. Environment subarea consists of harm mitigation, where:
   - In the field of climate change, harm refers to activities resulting in significant greenhouse gas emissions; adverse effects on the current and expected future climate, on the activity itself or on people, nature, or assets,
   - In sustainable use and protection of water and marine resources, harm refers to actions that harm the good condition or ecological potential of water bodies,
   - In the circular economy, harm refers to activities that create significant inefficiency in the use of non-renewable resources, or significantly increase the generation or disposal of waste,
   - In the pollution prevention and control areas, harm refers to actions that result in a significant increase in pollutant emissions to air, water or soil compared to the situation before the action began; or activities that harm the protection and restoration of biodiversity and ecosystems.

   Moreover, an activity is perceived to be sustainable only if at the same time it does not cause significant harm to any other goals.
3. Social responsibility covers inclusion conditions, such as the possibility to work remotely in the conditions of the spread of the virus; reducing bias in relation to age, gender, nationality, and other biases; business ethics and evaluation process of cooperation partners; promotion of democratic processes in company management.
4. Corporate governance includes prevention of corruption through centralized reporting and other pre-corrupt actions; prevention of money laundering and promotion of tax payment; cyber security and data protection (GDPR); whistleblowing.
5. The scope of emissions and social responsibility of railway sector covers not only direct emissions from trains and infrastructure processes, but also consists of well-to-tank (impact of energy production) footprint and other indirect emissions from rail companies' suppliers and associated processes (e.g., additional handling procedures in combined transportation).
6. Greenwashing is a dishonest advertising method or misleading information using differences in criteria for the green label in order to present a sustainable business image.

2. METHODS AND PROCEDURES

Design thinking first described by Simon (1969) is a typically used method for complex and long projects that are bad defined or unknown. It is an iterative process of understanding the user and redefining problems with the aim to identify alternative solutions that might not be perceptible with the initial evidence. Many

features of ESG and huge resources it consumes during the long-life cycle of transport investments deter railway stakeholders from desired sustainable actions. Design thinking seeks to generate a holistic and empathic understanding of the problem and to propose alternative strategies by challenging presuppositions.

This paper provides first two out of six steps of design thinking process: (1) Observe; (2) Synthesis; (3) Ideate; (4) Prototype; (5) Test; (6) Iterate, by following the step-by-step guidelines for performing a design thinking published by Scheer et al (2012). The output of these two steps is an observation of ESG and consolidated information of railway stakeholders' insights. The discussion part generates a lot of ideas for the solution to the problem that will be tested and iterated during the next steps of the research.

The observation of railway stakeholders was performed using a focus group. The benefits of this approach are time saving, possibility to request further clarification of personal experience and to observe interaction among the groups of stakeholders. To avoid subjectivity due to its dependence on experts' opinions and selection process, the focus group was comprised of several representatives in every of three stakeholders' groups:

- Railway policy makers,
- Railway professionals (undertakers),
- Implementers of railway policy – responsible employees of LRN (charging body).

For the aim of the present study, a questionnaire was designed based on the literature review and design thinking observation philosophy (asking about past and exploring specifics) to understand stakeholders' experience, main objectives, and motivations as well as "pain points".

To achieve a maximally uniform understanding of the development and depth of ESG processes, the moderator of the focus group first identified the known ESG theory for those present and then offered open questions (a visual diagram was offered for each question, see the Results Section):

- What is your experience in ESG activities in terms of development? Describe your experience using the rough outline: a place on the timeline and a brief description of what has been done since the start of the ESG process; what prompted you to be at this stage of development (events before starting the ESG process).
- What is your existing experience in ESG activities in terms of involvement? Describe your experience using the rough outline: fields of engagement and a brief description of progress; depth of involvement (direct impact; indirect impact; supply chain impact); what encouraged you to get involved in these fields.
- How did you feel on the ESG playing field? Choose a "blob" that best reflects your feelings on the ESG playing field. Tell us how you perceived the emotions of this "blob".
- Tell us more about how external processes have affected your involvement in ESG: (geopolitical conditions, coronavirus, economic developments) without being limited to these and name as many conditions as possible that are important to your activity. What do you want to preserve?

- What would you see as an ideal cooperation with LRN in terms of ensuring sustainability? Look again at the "blob" playground. Choose a "blob" that best reflects your expectations from LRN ESG on the playing field. Tell us how you perceived the actions of this blob.
- Is there anything else I should have asked you?

Interesting, unclear, or contradictory experiences were clarified with specific questions.

The participants were offered to answer the question in detail but within a time limit of 2–3 min. The participants were also allowed to react (comment, compare with their own situation) to the answers of other participants, but were forbidden to ask other questions and counterargument. Participants were warned that there were no "right" or "wrong" answers to focus group questions, that the research team was willing to hear a wide variety of opinions, receiving honest answers, even if someone's opinion or beliefs differed from the majority.

The focus group was led by a moderator and involved an observer, who recorded not only the answers, but also the reactions and overall involvement in the process. The focus group discussion was recorded for technical purposes, the participants were warned about the recording, as well as the fact that the answers would remain anonymous and no one's name would be mentioned in any report – only group membership.

In the next step, according to the design thinking methodology, stakeholder-need-insight was synthesized, and questions were prepared for reframing.

3. RESULTS

3.1. Development of ESG

With regard to the first question – "What is your experience in ESG activities in terms of development? Use the scheme to state your position" –, answers were offered by indicating the place of the self-represented company on the scale (see Fig. 1).

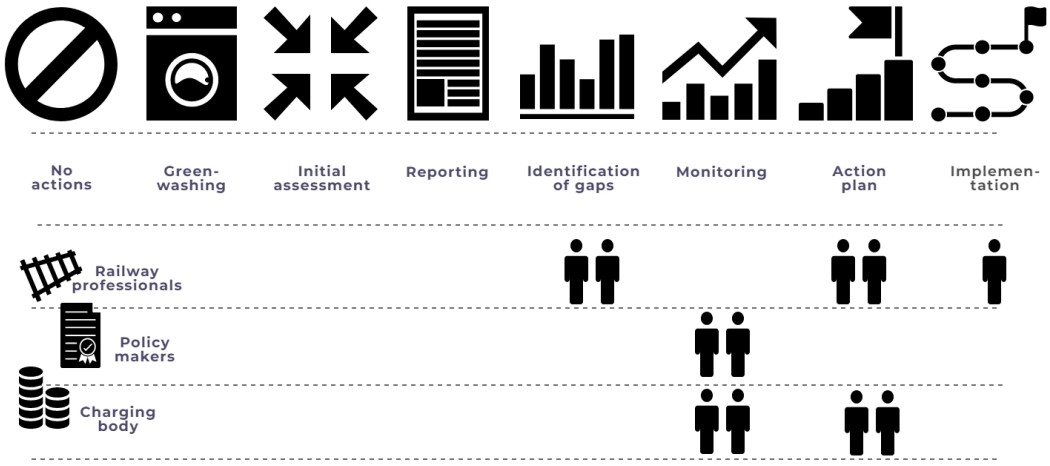

Fig. 1. Experience of focus group participants with ESG processes.

Figure 1 shows the results received from the focus group. In the group of railway transport professionals, the infrastructure manager was the only one to mention the action plan implementation procedures and generally demonstrated a high level of development of ESG processes. Among railway undertakers, the opinion about the development of ESG processes within the company was divided: private undertakers pointed to accountability and evaluation of individual processes, while state-owned companies indicated that they had action plans and corporate environmental policies. Policy makers stated that monitoring environmental issues was their daily routine, but the development and implementation of a practical action plan was hampered by a lack of funding. LRN specialists demonstrated heterogeneous involvement in ESG processes – action plans had been developed and gradually implemented in relation to social responsibility and corporate governance, while the company only monitored environmental factors without taking specific actions to address identified gaps.

3.2. Involvement in ESG

With regard to the second question – "What is your current experience in ESG activities in terms of involvement?" –, the research group tried to find out the level of awareness of ESG. The participants were offered to mark areas where any development level activities were implemented and were also offered to supplement them with other areas that they thought were related to ESG. The results are reflected in Fig. 2.

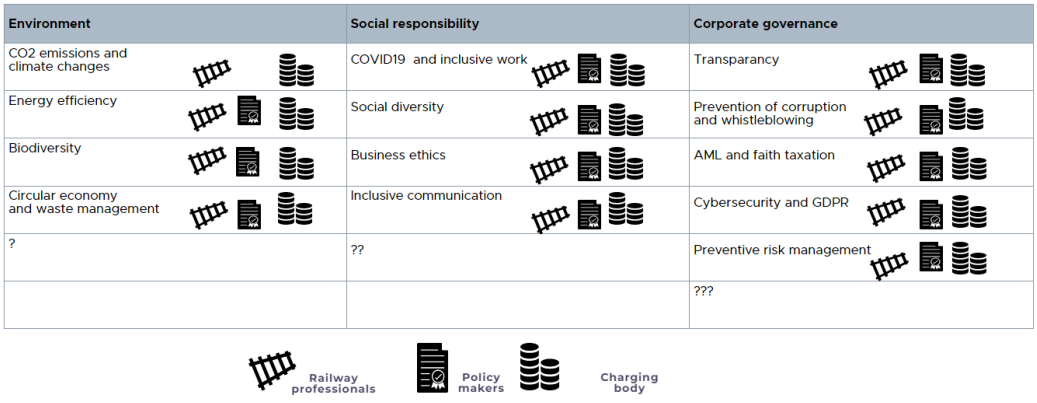

Fig. 2. Involvement of focus group participants in ESG processes.

Figure 2 demonstrates the answers formally given by the focus group members– it can be observed that all group members were willing to demonstrate that they fully understood ESG processes and participated in them. However, finding that the participants started their answers with "doing everything required by the law", the moderator began to dig deeper, asking to detail specific actions that the participants performed in one or another area. When receiving detailed answers, it was easy to understand that social responsibility and governance processes were implemented to a larger extent than environmental processes, for all participants. In addition, the first outcome is ensured by a strong trade union in the industry, and

the second by the standards set in regulatory acts, as well as the requirements of the banks.

3.3. Perception of ESG

Considering the lack of time after detailing the second question, the third question: "How did you feel on the ESG playing field?" was combined with the fifth question "What would you see as an ideal cooperation with LRN in the matter of ensuring sustainability?". To help express their feelings more precisely, the participants were offered to look at the "blob test" (Wilson, 2010). The moderator explained that the participants of the focus group were asked to position themselves as an ESG player or observer, as well as to choose a blob that was more characteristic of them when describing what the participant associated with the visualization of the "blob". The results are presented in Fig. 3.

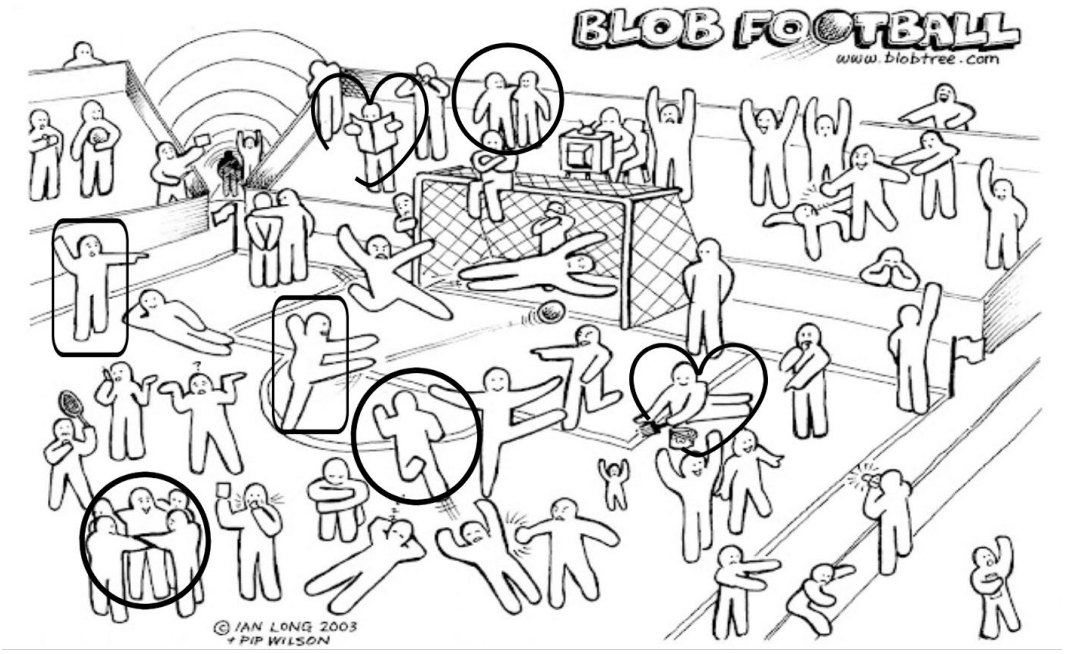

Fig. 3. Focus group participants' perception on ESG field (circle – railway professionals; square – policy makers; heart – charging body).

In the visualization of the answers in Fig. 3, it is possible to observe that most organisations believe that both they and LRN take an active part in the implementation of ESG processes in the railway sector, i.e., they are players. When interpreting blob's activities in the ESG field, a significant difference was observed between sector policy makers, who see themselves as coaches or ball rulers, and sector professionals, who see themselves as team players and who have no ESG ball or even interest in it. It is interesting that some of the participants of the focus group see the LRN in the same role. The rest of the sector participants expect from LRN a supportive role, monitoring and gathering of information, so that ESG processes are ensured as less painful as possible for all parties involved. On the other hand, the LRN participants themselves had very varied thoughts about their

position on the ESG field: from information seekers outside the ESG field to football field creators (that is, those who draw the lines of the field).

3.4. Motivation of ESG

The fourth question "Tell me more about how external processes have influenced your involvement in ESG? What do you want to preserve?" was asked with the aim of finding out which Green Deal policy measures and approaches were more effective. The participants' answers to this question showed "whip motivation", that is, the desire for development and innovation was not found, but the process was integrated through several regulatory legal acts. Railway professionals believe that the pressure of the European Union slows down the development of Latvia's transport sector, because it can only take place in the manner determined by them and does not solve other pressing problems unrelated to sustainability (reduction of cargo volumes because of sanctions, rigidity of the banking sector, etc.). At the same time, railway professionals have said that they expect a bonus policy from LRN, namely, infrastructure charge concessions for participants who meet a certain percentage of ESG guidelines. It is an interesting observation that despite the generally negative assessment of policies and communications, railway professionals would not abandon any of the ESG achievements (especially digitization of record keeping, energy efficiency, waste management, social and corporate management) even if there were no longer any regulatory framework.

3.5. Dominant Concepts

Evaluating the average level of involvement of the participants, the observer noted that all involved parties provided answers to the questions raised in the focus group and demonstrated interest in the topic. Both the groups of railway transport professionals and LRN responsible employees had a representative who answered the questions asked briefly and without including the experience related to the question, but the representatives of the group of railway transport policy makers answered each question in detail, i.e., providing insight into both the institution's personal and sectoral regulatory activities. It was observed that representatives of companies and policy makers commented more extensively on the ESG aspect of environmental protection. The observer noted that the participants of the focus group used very similar and formal patterns, only some of the participants of the focus group stood out with an original story of their experience when answering the questions. Table 1 summarises the most frequently used phrases when describing their experience in ESG:

- As the first question is concerned, it can be observed that the majority of the focus group does not perceive ESG as part of their corporate identity. Processes have been initiated and function to fulfil the mandatory requirements. There are many requirements, and they are fragmented.
- With regard to the second question, the prevailing view is that the industry tries to meet the requirements of the legislation without going beyond them. In the group of railway professionals and LRN, the opinion has been repeatedly

expressed that the demands of the bank and trade union increase the documentation processes, without improving the nature of the demands.

- In terms of the third and fifth questions, one can observe great enthusiasm in interpreting the behaviour of the blob. Most observers see themselves "on the ground" and look for support from LRN representatives, which takes the form of sharing information and examples of good practice.
- With regard to the fourth question, the participants mostly indicate what should be done by a third party, not the company itself ("shall be reviewed/ prevented/added", etc.), as well as the lack of employee education.

Table 1. Frequently Used Phrases within the Focus Group

Question 1: Experience in ESG activities in terms of development	**Question 2:** Experience in ESG activities in terms of involvement	**Questions 3 and 5:** How did you feel on the ESG playing field? What do you expect from LRN?	**Question 4:** What influenced the implementation of ESG processes and what would you preserve if even these circumstances no longer exist
"Initiated Unknowingly" "According to law" "Don't have own ESG goals"	"We do everything you ask" "Strong trade union" "Excessive documentation"	"We work according to the principle of good practice" "We are on the ESG playing field"	"Sanctions" "The market wants cheaper, not greener" "State interventions" "I would keep the changes that have already been made"

Overall, these results indicate that the participants' general knowledge and understanding of ESG process management in the railway industry is rather weak: in environmental issues, the main emphasis is currently placed only on energy efficiency and activities related to the digitalization of record keeping. Involvement in ESG is not deliberate, it happens following the requirements of legislation, and although the changes made have been beneficial in all organisations, but most of them admit that more than the specified minimum will not be done and none of the participants saw themselves as the promoter and developer of the processes. The greater pain of this situation is the crudity of the market – the buyer wants cheaper, not greener, as well as the employees' lack of understanding of the processes. The main appeal is for railways as a sector to position itself as the most environmentally friendly option in the transportation sector to achieve an "automatic" competitive advantage in the transport market without unnecessary investments.

4. DISCUSSION

The results of this study indicate that the level of awareness of ESG within the Latvian railway sector is rather low. This result corresponds with UNECE (2020) results that only 20 % considered that the climate change impact would be a

problem in less than 10 years. This result may be explained by the lack of dedicated educational programs that help the society recognize the effect of global warming and change purchase habits of the market. This finding, while preliminary, suggests that the main communication audience must be changed from government and authorities to final consumers. This is an important issue for future research as this kind of communication requires to be simple to understand, with many visual representations and involving emotional responses to track their progress on saving the world, rather than financial bonuses desired by commercial companies.

The current state of awareness in the field of ESG is anxiously very close to green washing, as stakeholders simply follow the pressure of legislation and lack a broad perspective of the question. Detailed questioning showed that even the focus group was contextual (i.e., all information about ESG processes was given prior to questions), the stakeholders tended to give insights into what they suggested doing, and this was often not even the same as what they did. Stakeholders' roles to suggest improvements are not addressed, and all actions expected from the industry (e.g., deploying electrification and increasing the share of renewable energy purchased; cleaner alternative-drive technologies for locomotives; actively promoting sustainability across the value chain) are too expensive for the market. Therefore, the design of the ideal experience of railway stakeholders when developing sustainable strategies in transportation is expected not just as smaller GHG emissions, but also higher efficiency, flexibility, connectiveness and lower costs throughout the railway sector supply chain.

An implication of these disappointing findings is the possibility to synthesise insights:

- Railway policy makers believe that a clear political stance and focus of funding are the shortest way to deliver the Green Deal since they never see consequences of their decisions on final consumer market.
- Railway professionals (undertakers) demand that rail transport has automatic advantages among other forms of transport, thus not paying attention to a wider scope of emission and not improving its efficiency, flexibility, connectivity, and costs.

These insights are important implications for the development of the so-called "What if?" or "How might we?" (HMW) questions:

- HMW encourage green purchase habits of the final consumer market?
- HMW calculate the consequences of the Green Deal on final consumer market?
- HMW rise awareness of ESG processes to all three scopes of emissions?
- HMW entirely prevent damage from occurring?
- HMW we make railways as a role model of sustainable transportation?
- HMW involve competing modes of transport in the creation of co-modal transport, using the advantages of each mode of transport?
- HMW guide global decisions at the individual stakeholder's level?
- HMW make sustainability desirable for rail stakeholders?

Further research should be undertaken to investigate the reframing of the challenges and testing it among the stakeholders.

CONCLUSION

The study has discussed how railway transport stakeholders perceive, react to, and feel about the measures and approaches of the Green Deal and attempted to design the ideal experience of railway stakeholders when developing sustainable strategies in transportation. The study has identified the low level of awareness of ESG within the Latvian railway sector and has raised important questions about the nature of stakeholders' motivation when providing sustainable development strategies.

The main insights that the study offers are: (1) that railway policy makers do not count on the readiness of the final consumer market; (2) that railway professionals rely on their default climate advantage and make no effort for their efficiency, flexibility, connectiveness and costs.

This is the first report on Latvian rail transport sector stakeholders' perception of Green Deal policy measures from national representatives. The small sample size and specific transportation market did not allow the methods used to be applied to other networks elsewhere in the world. However, if the HMW debate is to be moved forward, a better understanding of railway sector stakeholder needs can be developed. At this stage of the research, it can be clearly seen that greater efforts are needed to ensure final consumer and railway professionals' communication.

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AUTHORS' SHORT BIOGRAPHY

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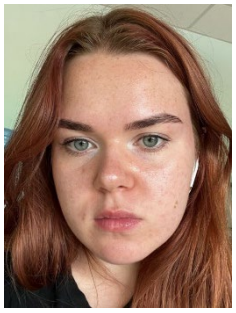

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