

Sustainable performance across various sectors: a multiple case analysis

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ABSTRACT Sustainability has increasingly become a central business focus in times when most societies realise the critical industrial influence on both the environment and human health. Transport is the fastest growing sector in terms of the consumption of energy and the production of greenhouse gases in the European Union. Following a multiple case study approach, the paper compares the Austrian transport and logistics sector to the sectors of production of building material and wholesaling. It aims at providing insights as to why there are differences in the environmental performance among the sectors. This is done by identifying the specific characteristics of the transport and logistics sector concerning environmental protection and explaining the respective influencing factors. The data of each case study was analysed anonymously for each company and sector followed by a cross-sector analysis. The findings show that there is a general awareness for sustainability across all sectors; however, the behavior differs considerably. Compared to the wholesalers, transport and logistics companies appeared to behave environmentally friendlier. Based on our findings, we propose implications for improving the environmental behavior of transport and logistics companies.

Keywords: sustainability, transport sector, logistics sector, Austria

1. INTRODUCTION

Environmentally-friendly activities have become increasingly popular in many industries over the last years. However, companies do not introduce environmental management just for the sake of it; there needs to be some business rationale for taking decisions to go green. In all cases, managers must believe that there is either a direct or an indirect advantage. For example, some actions improving a company's environmental performance might also raise revenues and profit; others change the company's image and thus – indirectly – have a positive impact on its income. Further influencing factors include legitimation and ecological responsibility (Bansal and Roth, 2000). What distinguishes “environmental” measures from “sustainable” ones, however, is the motivation for taking these measures. If an action is taken to reduce costs in the short term only and ignores possible systemic relations with other parts of the business, it will be less useful than a long-term strategy based on a holistic view considering systemic interaction (Dahlmann et al., 2008; Espinosa et al., 2008).

This article examines the framework of such management decisions. Recent business research has focused strongly on sustainability matters, particularly on shaping definitions, investigating aims and motivations, examining the role of attitudes and commitments as well as the effects of sustainability on companies, the economy and society. The importance of sustainable behaviour already became evident in research a long time ago; the practical implementation of the results of this research differs among industries, with some of them severely lagging behind

others (Jänicke et al., 1997). But what drives companies within certain industries while those in others largely deny it? A variety of factors may play a decisive role, such as the legal framework and general economic conditions; the awareness of the general public and of customers about sustainable measures and thus also the company's public exposure; company size; and the competitive situation the business faces (Gadenne et al., 2009; Hart, 1995; Hillary, 2004; Porter and van der Linde, 1995; Russo and Fouts, 1997; Walley and Whitehead, 1994).

The existence of significant differences between sectors has already been proven empirically (Jänicke et al., 1997). The reasons for such disparities, however, still need to be revealed. In light of the present economic situation and in view of current social developments, there is little doubt that sustainability has to be achieved in order to save future generations from significantly poorer living standards.

In this respect, we discussed the matter with company representatives from selected sectors, namely industrial manufacturing, transport and logistics, and wholesale and retail trade (represented by the sectors C, G and H of NACE Rev. 2 and the ISIC Rev. 4 classifications) (Eurostat, 2008). Austria offers an optimal framework for this research as the country is a full member of the European Union, one of the largest harmonised common markets with vast and harmonised legal frameworks, a well-developed industry and service sector and a high degree of environmental performance.

This paper aims to analyse and investigate the significance and relevance of environmental management in the sectors mentioned above by discussing reasons for going green and the impact of this on efficiency and effectiveness. It also examines the integration of environmental management into the overall management concepts and strategies of the company.

The structure of the article is as follows. Section 2 provides information on the background and a state-of-the-art literature review. Thereafter the methodological approach and the data gathered are described (Section 3). The results of our cross-case and cross-sector analyses are provided in Section 4 and discussed in Section 5. The paper ends by drawing conclusions and presenting some implications which can be derived from our findings.

2. BACKGROUND

“Environmental management” (EM) refers to the objectives, decisions, organisation, action, control and corrective actions within a company which are oriented at ecology and the environment (Müller-Christ, 2001). Additionally, these activities have the ultimate aim of reducing a company's environmental pollution and (negative) impact to a minimum (Baumann et al., 2005). At the time EM first emerged, it was considered hardly more than complying with the relevant rules and regulations, but after some time it became clear that solutions with more positive effects for the company and the environment were also achievable (Walley and Whitehead, 1994). More recent perspectives argue that environmental management should be embedded in a holistic and systemic approach in order to be successful, starting at the operative level, extending to the strategic and normative management levels (Schwaninger, 2003) and eventually heading for corporate sustainability (Brown et al., 1987; Daily and Ehrlich, 1996;

Goodland and Daly, 1996). There are manifold reasons for companies to implement EM, including several general, external and internal influencing factors (Bansal and Roth, 2000; Wittstruck and Teuteberg, 2012).

Among others, general factors include the size of a firm (Aragón-Correa, 1998; Brammer et al., 2011; Dahmann et al., 2008; Gadenne et al., 2009; Hillary, 2004) as well as its sector affiliation – which will be outlined in detail later in this article – as there is a correlation between a particular industry or sector and the degree of “unsustainable” processes. Hence, some industries have a lower basis to start from, the transport sector being a case in point (European Environmental Agency, 2000). In this domain, there is a greater need, but therefore also greater potential, for improvements (Roth and Kaberger, 2002). Furthermore, the competitive situation is highly relevant as it determines the company’s ability to finance sustainable investments (Fürst and Oberhofer, 2012). Finally, a company’s international operations also play a role as such companies are usually more eco-friendly than companies with a domestic focus (Delmas and Toffel, 2004; González-Benito and González-Benito, 2006, 2010).

Regulations and stakeholder interests – e.g. the requirements of customers and the general public – make up the most prominent external factors (Alniacik et al., 2011; Gunningham et al., 2004). A business’s visibility usually determines the amount of pressure it is exposed to (Bowen, 2000). The position of a company within the supply chain is also crucial: the closer a company is to the end user, the more emphasis is put on sustainability and the better its environmental performance will be (Handfield et al., 1997; Walker et al., 2008). Additionally, business partners or suppliers (B2B), as well as parent companies or NGOs, can substantially influence a company’s environmental behaviour (Delmas and Toffel, 2004; Dong et al., 2001).

Finally, internal factors cover managers’ attitudes (Ajzen, 1991, 2005; Fishbein and Ajzen, 1975; Plaza-Úbeda et al., 2009; Sweet et al., 2003; Winn et al., 2012) as well as efficiency and profitability (Hahn et al., 2012). Regrettably, costs and benefits in the context of environmental management are not easily quantifiable, which should not, of course, lead to the conclusion that highly beneficial situations do not exist. Eventual benefits depend highly on a company’s environmental efficiency (Alberti et al., 2000), since a surplus can be generated through the realisation of opportunities for increased revenues and reduced costs (Ambec and Lanoie, 2008). Boiral et al. (2011) showed that firms committed to environmental protection tend to record a better financial performance than other firms. More recently, sustainable actions have been identified as value-adding by improving efficiency, saving costs and thus ensuring the company’s existence (MIT Sloan Management Review and The Boston Consulting Group, 2012; Semchi-Levi, 2010). Operating in extremely competitive environments and being exposed to enormous customer pressure – particularly in times of limited growth – companies seem to be reluctant in investing in capital intensive initiatives, such as environmental measures. Consequently costs and profitability appears to remain the most decisive impact factor for environmental behaviour (Bretzke and Barkawi, 2010).

In the three sectors which are in the focus of our empirical research, there is substantial need for gradational environmental improvements and sustainable management. Among the various sectors, transport accounts directly for 13.1% of the global GHG emissions (24% in the EU-27 (Eurostat, 2011)). Another main source of GHG emissions is the energy sector (25.9% globally,

37% in the EU-27), while industry (manufacturing) accounts for 19.4% and 22% globally and in the EU-27, respectively. Agriculture plays a somewhat minor role (13.5% globally, 13% in the EU-27) (Eurostat, 2011; IPCC, 2007). Hence, road transport and industry are among the major sources of CO₂ emissions (Eurostat, 2010). The manufacturing sector (producing goods), the wholesale and retail sector (distributing goods) and the transport and logistics sector (responsible for the transport in between of those) are therefore important players in terms of environmental improvements. However, it remains unclear as to whether the businesses involved see the need for, show the willingness to and have the capability of achieving fundamental environmental improvements (Oberhofer and Fürst, 2012; Thornton et al., 2008). Referring to the factors mentioned above which influence the introduction and adoption of EM, this study investigates the differences between three sectors. We argue that despite a general awareness and acknowledgement of the need for EM-related measures which can be found at companies regardless of a specific sector affiliation, differences exist between the sectors indicated. For instance, the intensity to which a company is exposed to various impact factors may affect its willingness to implement change (Delmas and Toffel, 2004; González-Benito and González-Benito, 2010; McKinnon, 2010). End-user pressure, for example, is very low for transport companies, whereas demands from business partners and customers (B2B) play a more important role. The sectors also vary in terms of market pressure (i.e. the number of market players and thus the competitive situation), average firm size, public exposure and operating area (i.e. whether they act nationally or internationally). As these factors have been reported as important, we investigate – in light of the differences due to specific sector characteristics – how they actually influence investments in environmental measures of manufacturing, wholesale and retail as well as transport and logistics companies.

3. METHOD AND DATA

A case-based approach with multiple field studies and personal interviews was used to identify and evaluate the environmental practices of the companies and to discuss the role of profitability and other influencing factors. The Research was based on multiple data sources by combining primary interview data (semi-structured interviews; see table 1) with secondary data (Yin, 2002), such as media reports and information from corporate websites.

Table 1: Structure of the interview

Development corporate environmental management	
Q1	How did environmental management develop in your company over time?
	Evaluation of various factors of influence
Q2	How does profitability affect environmental management decisions?
Q3	How do regulations affect environmental behaviour?
Q4	How do stakeholders (society, customers, partner companies, etc.) affect the company's environmental behaviour?
Illustration of specific environmental measures	
Q5	Which specific measures had a positive impact on the overall business performance? Please specify with "costs and benefits".
Problems and outlook	
Q6	Did any problems arise during the implementation of EM measures?
Q7	Which specific measures would you predict have the highest potential?

An important step in case study research is the sample selection. Eisenhardt (1989) proposed four to ten cases while more recently Yin (2002) recommended using six to ten cases, arguing that these provide sufficient evidence. The choice of particular cases depends on the setting, people and social processes (Miles and Huberman, 1994). To keep the results from the three sectors comparable and coherent, we decided to concentrate on a certain field within each of the three sectors. Thus, we first targeted large, internationally operating transport and logistics companies that only focus on freight transport and logistics. In the sector of industrial manufacturing, we chose to concentrate on the production of building material. There are some large companies in Austria representing this industry which – as is also the case in the field of transport and logistics – serve both national and international markets. As these two industries also share an orientation towards B2B rather than B2C, we also used this criterion when selecting companies from the trade sector and concentrated on wholesalers of food and beverages. Out of several thousand businesses, the company chosen from each of the three respective sectors in Austria rated among the top 30 companies of the field according to turnover. Large companies were deliberately chosen based on existing evidence that they (1) are more exposed to public monitoring; (2) have more funds at their disposal for EM or social activities; and (3) do not suffer from problems found in SMEs such as limited employee resources, knowledge and capacities to focus on topics that do not belong to their core competences (Gadonne et al., 2009; Gunningham et al., 2004). Finally, we ended up with a set of twelve cases (four from each domain) which are operationally similar within their group/cluster, but largely different in other respects.

Table 2: Key facts of case study sample (numbers are rounded to ensure anonymity)

Sector	Company	Global Turnover 2011/12 in € bn. (Austria)	Global Employees (Austria)
Transport	A	20.00 (1.50)	96,000 (5,000)
	B	2.00	11,000
	C	1.50	1,500
	D	0.60	2,000
Production	E	2.00 (0.10)	13,000 (400)
	F	15.5 (0.10)	68,000 (370)
	G	0.10	600
	H	0.20	500
Wholesale Trade	I	0.20	700
	J	0.30	1,000
	K	0.30	900
	L	0.40	1,000

The data of each case study was first analysed on the basis of the individual company and further used for a cross-case analysis.

4. CASE STUDY ANALYSIS

4.1. Sector-Specific Case Study Analysis

A single case analysis was conducted using the following steps. First, a general description of the company was prepared, with special emphasis on the actual implementation of environmental management. Factors inducing or hindering EM-related activities were assessed in particular and the economic perspective was identified in relation to other factors including legislation and stakeholder interests (i.e. Customer, Society, Business Partner). Furthermore, some specific EM measures were described, followed by a discussion of their impact on both environmental performance and the overall performance of the company. The individual analysis concluded by depicting barriers and by giving a forecast of expected developments.

4.1.1. Sector 1 Transport and Logistics

The following table presents the “within-case” analysis of four companies from the sector of transport and logistics (see table 3):

Table 3: Summary of cases in transport and logistics

	Key figures (worldwide)	Integration of sustainability/EM	Influencing Factors		
			Profitability	Regulations	Stakeholders (Customer, Society, Business Partner)
A	<ul style="list-style-type: none"> Transport and logistics service provider (road, air, sea, specialised logistics solutions) Operating globally 96,000 employees worldwide (5,000 in Austria) Worldwide turnover 2011: €20.00 bn. (in Austria: € 1.50 bn.) 	<ul style="list-style-type: none"> Board strongly supports sustainability Incorporated into CI Sustainability has been part of corporate culture since 1990s → pioneers of EM in transport & logistics sector 	<ul style="list-style-type: none"> Central decision criteria Long-term perspective Exceptions for cost-intensive EM projects → regular amortisation time can be expanded 	<ul style="list-style-type: none"> Regarded as essential Basis for motivation and acceleration of innovative corporate measures 	<ul style="list-style-type: none"> Important influence of customers/business partners Increasing environment-related customer requests
B	<ul style="list-style-type: none"> Logistics service provider (formerly state owned) Focus on Austria plus Central and South-Eastern Europe 11,000 employees Turnover 2012: €2.00 bn. 	<ul style="list-style-type: none"> Of minor concern due to difficult economic situation Listed in mission statement Ambitions towards sustainable employee behaviour 	<ul style="list-style-type: none"> Central decision criteria No exceptions for non-profitable projects 	<ul style="list-style-type: none"> Regarded as very important Suitable for improving the overall environmental situation 	<ul style="list-style-type: none"> In recent past, only few customer/business partners requests were monitored Increasing inquiries lately
C	<ul style="list-style-type: none"> Specialised in European full-truck loads (family-owned) European focus 1,500 employees Turnover 2012: €1.50 bn. 	<ul style="list-style-type: none"> Support of Board of Directors, holistic view Pioneers in sustainable logistics Stagnating performance in past few years New ambitions to claim back position of sustainability leader in the logistics sector 	<ul style="list-style-type: none"> Major role Only profitable measures are implemented 	<ul style="list-style-type: none"> Regarded as a decisive and necessary factor 	<ul style="list-style-type: none"> Customers/Business partners are the driving force Integration of customers into the creation of innovative sustainable solutions
D	<ul style="list-style-type: none"> Specialised in transportation and integrated logistics (family owned) Operating globally 2,000 employees Turnover 2012: €600 m. 	<ul style="list-style-type: none"> Board supports sustainability approaches Foundation of "environmental association" in 2007, ISO 14001 certification in 2008/09 Listed in mission statement, integration of employees (first sustainability report in 2010) 	<ul style="list-style-type: none"> Central decision criteria No definition of specific environmental goals; however, environmental aspects are considered in every investment 	<ul style="list-style-type: none"> Regarded as important and essential for overall improvement of the transport and logistics sector 	<ul style="list-style-type: none"> Customers play a decisive role Customers in individual emissions calculation

In general, the awareness for the importance of sustainability is strong. However, significant differences could be found among the companies analysed. Company A can clearly be labelled as an “environmentally progressive” firm. It has had a holistic environmental orientation for many years and has integrated a broad range of environmentally friendly measures covering several corporate fields. The company started to respond to customer demand early and regarded environmental protection as an important way of being competitive in the long run. As a result, sustainability has become a key component of its corporate identity. Compared to company A, the others appear to lag behind in terms of environmental protection activities. However, they can be subdivided into environmentally “stagnating” and “ambitious” companies. Company B seems to be stagnating somewhat as – considering its size (employee number and turnover) – environmental activity appears to be poor (e.g. number of measures or projects, unsatisfactory quality of sustainability reports). Furthermore, a long-term ambition to move towards increased protection of the environment is absent. On the other hand, we could identify companies C and D as being very ambitious concerning their environmental behaviour. They have recently initiated new steps towards holistically-orientated environmental management. This is also strongly supported by their management boards and closely related to customer and partner requests. For company D, on the one hand, sustainability is a relatively new topic. Due to limited resources, it is not able to realise a broad range and large number of projects immediately; however, it has introduced a strategic orientation that is based on a long-term perspective and recently published its first sustainability report. On the other hand, company C – after a period of stagnation, presumably due to a difficult economic situation – hopes to regain its position as one of the leaders in sustainable transport and logistics operations in Austria.

Table 4 illustrates successfully implemented measures derived from the cases of the transport and logistics sector which could be included in the “road map” for other companies.

Table 4: Environmental measures taken by transport and logistics companies in our sample

Eco-efficient vehicles	<ul style="list-style-type: none"> • “Natural gas” vehicles / EURO 5 class and above • High initial investment costs, expected economic pay-off in the long run • Reduction of CO₂ emissions
Shift from road to rail / Inter-modal transport	<ul style="list-style-type: none"> • Reduction of CO₂ emissions • Reduction of negative external effect
Transport Bundling / Route optimization	<ul style="list-style-type: none"> • Reduction of CO₂ emissions • Reduction of empty mileage
Calculating tool	<ul style="list-style-type: none"> • Free-of-charge online tool for calculating environ. balance of global supply chains across all modes of transport • Co-operation with renowned German research institutes
Driving training	<ul style="list-style-type: none"> • Optimisation of road behaviour • Monitoring of effects through on-board units • Fuel savings and reduction of CO₂ emissions
Eco-efficient warehousing	<ul style="list-style-type: none"> • Optimisation of heating systems (chopped goods combustion, gas heating including molecular vaporiser), electricity, cooling systems, photovoltaic systems

4.1.2 Sector 2 Production of Building Materials

The case study results of four companies from the “production of building materials” sector are presented in table 5.

Table 5: Summary of cases in the production sector

	Key figures (worldwide)	Integration of sustainability/EM	Influencing Factors		
			Profitability	Regulations	Stakeholders (Customer, Society, Business Partner)
E	<ul style="list-style-type: none"> World’s largest producer of bricks Operating globally 13,000 employees worldwide (400 in Austria) Worldwide turnover 2011: €2.00 bn. (in Austria: € 100 m.) 	<ul style="list-style-type: none"> Board strongly supports sustainability Incorporated into Business Strategy First attempts in 2004; first sustainability report in 2010 Holistic view: besides environmental protection, strong focus on social factors (i.e. safety, health, diversity, donations to aid organisations) 	<ul style="list-style-type: none"> Main decision criteria Detailed cost-benefit analysis by experts Important factor for financial success 	<ul style="list-style-type: none"> Regulations have a high impact Companies confronted with a variety of legal restrictions Exceeds requirements 	<ul style="list-style-type: none"> All stakeholder have important influence
F	<ul style="list-style-type: none"> World leader in building materials Operating globally 68,000 employees worldwide (370 in Austria) Worldwide turnover 2011: €15.5 bn. (in Austria: € 100 m.) 	<ul style="list-style-type: none"> Deeply rooted in corporate identity First sustainability report in 2002 Integrated part of the company Very detailed, well documented and structured measures and concepts Holistic view of sustainability including a broad variety of social and ecological projects 	<ul style="list-style-type: none"> Economic factor not predominant High priority for social and ecological projects 	<ul style="list-style-type: none"> Very important Strong orientation towards and compliance with legal framework 	<ul style="list-style-type: none"> All stakeholders play a decisive role Demand is perceived mainly from society (neighbours of production side) while customers and business partners seem to be less interested
G	<ul style="list-style-type: none"> Specialised in wood processing and manufacturer of parquet floors (family-owned) Focus on the Austrian market 600 employees Turnover 2011: € 100 m. 	<ul style="list-style-type: none"> Support of CEO Focus on environmental sustainability Collaborations with official organisation and standardised programmes 	<ul style="list-style-type: none"> Major role Long-term strategic thinking; acceptance of short-term losses if pay-off in long run 	<ul style="list-style-type: none"> Less important due to proactive behaviour 	<ul style="list-style-type: none"> Customer orientation is central Customer education and awareness raising
H	<ul style="list-style-type: none"> Building material manufacturer (cement, lime, screed); (family owned) 	<ul style="list-style-type: none"> CEO has supported sustainability since 2000 	<ul style="list-style-type: none"> High investments in sustainable (pioneer) projects Acceptance of high initial investments 	<ul style="list-style-type: none"> Seems to be less important due to proactive behaviour 	<ul style="list-style-type: none"> Majority of customers and business partners are not interested in

<ul style="list-style-type: none"> • Focus on the Austrian market • 500 employees • Turnover 2011: €200 m. 	<ul style="list-style-type: none"> • Integrated part of the corporate strategy • Ambition to be pioneers in the sector in the long run • Employees are a central part of their understanding of sustainability 			<p>sustainability and sustainable products</p> <ul style="list-style-type: none"> • Society as main driver
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The integration of ecological sustainability is strong in the cases in the construction sector and has been integrated into the companies' corporate identity for many years. Although being a central criterion for investment decisions, the economic factor is not solely decisive and short-term losses are accepted in order to carry out environmental activities. This is due to the long-term strategic thinking of the decision makers. Social (aid) projects are often a focus of the companies analysed. Consequently, sustainability is viewed holistically (comprising ecological, social and economic aspects). In general, customers are not regarded as a major driving force in terms of environmental protection; however, society (e.g. neighbours, NGOs, etc.) does appear to be influential.

Differences in the environmental behaviour within our sample could be identified, particularly between large/international and smaller/national companies. Large/international companies – in our sample companies E and F – are oriented towards simply meeting existing regulations. In contrast, the smaller companies (G and H), which operate nationally, seem to be proactive in complying with the legal framework. In particular, smaller, family-owned companies focus on innovative niches in order to stay competitive in the long run, resulting in good sustainable behaviour. This could be due to a stronger focus on retaining employees and passing the company on to the next generation. Successfully implemented measures from the cases of the production of building materials sector that could be included in the “road map” for other companies are illustrated in table 6.

Table 6: Environmental measures taken by production of building materials sector in our sample

Energy mix optimisation	<ul style="list-style-type: none"> • Optimisation of the energy mix through renewable energy sources and reuse of waste • Reduction of CO₂ emissions • Improved energy efficiency
Sustainable production	<ul style="list-style-type: none"> • Investments in sustainable production machine (thermic renewable) • Reduction of carbon-intensive building material compositions • Reuse of waste • Reduction of CO₂ emissions
CSR projects	<ul style="list-style-type: none"> • Support of humanitarian projects and disaster relief through financial aid and provision of materials
Sustainable transport and logistics	<ul style="list-style-type: none"> • Optimisation of routing • Sustainability considered in tender offers of transport companies • Investments in innovative and automated conveyors for raw materials to replace road transport • Reduction of CO₂ emissions, dust and noise

4.1.3 Sector 3 Wholesale Trade Cases

The four cases from the sector of wholesale trade are presented in table 7:

Table 7: Summary of cases in wholesale trade

	Key figures (worldwide)	Integration of sustainability/EM	Influencing Factors		
			Profitability	Regulations	Stakeholders (Customer, Society, Business Partner)
I	<ul style="list-style-type: none"> Family-owned wholesaler in the food and non-food industry in Austria 700 employees Turnover 2012: €200 m. 	<ul style="list-style-type: none"> Integrated in corporate identity since 2007 Both ecological and social projects are implemented Long-term orientation 	<ul style="list-style-type: none"> Economic factor is central decision criteria 	<ul style="list-style-type: none"> Legal framework regarded as “minimum-standard” for sustainable behaviour 	<ul style="list-style-type: none"> Customers and business partners demand eco-friendly behaviour
J	<ul style="list-style-type: none"> Group consisting of ten private wholesalers in Austria 1,000 employees Turnover 2012: €300 m. 	<ul style="list-style-type: none"> General awareness for the importance of sustainability However not sufficiently integrated No sustainability report and no information available on their homepage Strategic decisions on sustainability are not centralized – each wholesaler is responsible for own initiatives 	<ul style="list-style-type: none"> Profitability is decisive factor 	<ul style="list-style-type: none"> Decisive for sustainable behaviour 	<ul style="list-style-type: none"> Customers are not willing to pay additional costs for sustainable performance; low prices most important for them
K	<ul style="list-style-type: none"> Food- and Non-Food Wholesale industry operating in Austria (part of an international company group) 900 employees Turnover 2012: €300m. 	<ul style="list-style-type: none"> Awareness of sustainability – integrated into parent’s corporate identity in 2008 First sustainability report of company group in 2009 	<ul style="list-style-type: none"> Major role However in some cases profitability is pushed into the background for the sake of product quality, safety, image, etc. 	<ul style="list-style-type: none"> Legal framework is important for sustainable behaviour 	<ul style="list-style-type: none"> rice-sensibility of customers is particularly high in the wholesale industry compared to other companies in group (i.e. retailers)
L	<ul style="list-style-type: none"> Food- and Non-Food Wholesaler in Austria (part of an Austrian company group) 1,000 employees Turnover 2012: €400 m. 	<ul style="list-style-type: none"> Little but growing awareness for sustainability Not communicated in the corporate identity No sustainability report, only little information on the corporate website 	<ul style="list-style-type: none"> Decisive factor 	<ul style="list-style-type: none"> Proactive behaviour No legislative influence except some regulations in transport and logistics 	<ul style="list-style-type: none"> Customer orientation through focus on product quality and organic food

Since they lack contact with the end customer, the selected wholesale companies appear to behave rather unsustainably. Ecological and social principles are poorly integrated into the corporate identity and awareness has risen little in recent years. For companies which are part of large groups including retailers with end-user contact, environmental awareness and proactive behaviour is stronger (e.g. company K in our sample). This is mainly due to centralised strategic management decisions affecting all group members. Nevertheless, profitability is the main driver for these decisions as the sector is closely oriented towards customer demands. Finally, minimum standards defined by the legal framework are met but there is not much activity beyond compliance.

Exemplary sustainable measures from the wholesale industry are illustrated in table 8.

Table 8: Environmental measures taken by wholesale trade sector

Energy-efficiency	<ul style="list-style-type: none"> • Investments for improving the energy-efficiency of sites and warehouses • Reduction of CO₂ emissions
Product quality	<ul style="list-style-type: none"> • Support of product quality and organic food projects
Sustainable transport and logistics	<ul style="list-style-type: none"> • Optimisation and innovation in vehicle fleet • Reduction of CO₂ emissions and fuel consumption

4.2. Cross-Sector Analysis

An awareness of sustainability can be seen across all sectors. However, the integration into corporate strategies differs. The *Production of building materials* sector has faced sustainability issues for many years. This is shown in comprehensive and well-structured sustainability reports as well as a holistic approach to sustainability which includes a variety of social and ecological goals and projects. In contrast, the *Transport and logistics* sector has rather recently integrated sustainability, particularly environmental protection, into its corporate strategies, while a positive trend towards increasing environmentally friendly behaviour can be observed. However, there are still companies where sustainability is of minor concern, mainly due to a difficult economic situation. In the *Wholesale* industry, sustainability appears to be not yet integrated, resulting in very few initiatives and poor reporting. Due to the lack of contact with end-users, the external influence is weak. Their main customers, which are gastronomy companies (bars and restaurants) see no additional value and are unwilling and unable to transfer higher costs to their customers.

Throughout the whole sample, profitability plays a decisive role for sustainability investments. Nevertheless, some exceptions apply, particularly for social projects in the *Production of building materials* sector. The regulatory framework is generally respected; for the *Transport and logistics* and *Production of building materials* sectors, compliance is an important driver for sustainable behaviour, though companies from the latter seem to be proactive and often go beyond mere compliance. In contrast, the legislative framework plays a minor role for

Wholesalers as they do not belong to manufacturing industry and thus do not face such stringent regulations.

Customers and business partners strongly influence the sustainable behaviour of all companies. Customers, being companies themselves and thus operating in a competitive environment, are not willing to pay additional costs for environmental initiatives, mainly because the product and service quality is not improved. Only companies from the *Production of building materials* are encouraged to behave sustainably as they are monitored by society both directly and indirectly. The resulting initiatives of the companies from the different sectors vary in terms of cost and time intensity as well as the width and breadth of sustainability. Companies from the *Production of building materials* sector invest in cost- and time-intensive measures (e.g. production machines and sites) and approach sustainability holistically (i.e. from a social, ecological and economic perspective). Although *Transport and logistics* companies also invest in cost- and time-intensive projects (e.g. the modernisation of fleet and warehouses as well as route optimisation), they only address ecological and economic sustainability issues. Similarly, measures taken by the *Wholesalers* are also only focused on ecological and economic sustainability and tend to be less cost-intensive than in the other sectors.

4.3. Limitations

The study presented in this article is subject to some limitations. First, only a selected number of companies from three different sectors have been analysed. Though this is in line with the methodological requirements and the research has a primarily qualitative character, this means generalisability is limited to compatible contexts. Controlling for the validity of inductively generated statements therefore would require further quantitative/confirmatory work. Data collected through interviews and information addressing the general public may include some social desirability bias, and an inter-expert bias (resulting from the different personalities and context of the respondents) should also be considered. Despite guaranteeing strict confidentiality, it is possible that respondents might have tried to protect their companies' reputation. Moreover, a clear focus was put deliberately on large and very large companies and their respective environmental behaviour and thus small firms were not the focus of our projects. While both environmental performance and individual environmental impact can be deemed limited, it should not be ignored that in a small-scale economy the cumulative impact of these is significant.

5. DISCUSSION AND CONCLUSION

In this paper, we analysed the sustainability orientation of companies from three sectors. Transport and logistics companies were compared to wholesalers of food and beverages as well as producers of building materials. Our study focused on the integration of sustainability into corporate identity, the role of profitability, the impact of the (regulatory) framework and the influences of stakeholders. The research contributes to the ongoing discussion about the integration of environmental management in various sectors. Being among the most harmful

sector in terms of CO₂ emissions and energy consumption, the sector of transport and logistics is discussed in detail. In order to benchmark the sector to other industries we compared the performance of transport companies to wholesaling companies as well as producers of building material.

The findings showed that there is a general awareness of sustainability across all sectors (Fransson and Gärling, 1999); however, the behaviour of the companies across each sector differs considerably. Among the sectors analysed, wholesaling companies proved to be the least environmentally friendly. Compared to the wholesalers, transport and logistics companies appeared to act in a more environmentally-friendly manner. Although both sectors suffer from high price pressure, the customers of transport and logistics companies increasingly require sustainable behaviour, resulting in improved environmental performance and more sustainable management among transport and logistics companies. Due to a lack of financial resources for measures that do not pay off in the short term, environmental activities are generally the side effects of economic decisions. This is also reflected in the strong orientation towards the legal framework. Moreover, society views transport as a main source of pollution, thus imposing pressure on companies for improved eco-friendliness. As a consequence, these companies tend to focus on environmental initiatives rather than on social projects.

Compared to the producers of building materials, however, transport and logistics companies also lag behind in terms of sustainability. Producers of building materials approach sustainability in a more holistic way and invest in cost-intensive measures. While they are able to pass on the increased costs of related ecological and social investments to the products, the customers of transport and logistics services are not willing to pay additional costs, regularly being companies themselves. Transport is not yet covered by the EU Emissions Trading Scheme (ETS), whereas the producers of building materials are to a minor extent. Our findings thus support Salzmänn et al. (2005) and Banerjee et al. (2003), who identified industry affiliation as a moderator of environmental management practices. Further quantitative empirical research is needed to specify influential sector characteristics. To further improve environmental behaviour in the transport and logistics sector, we suggest supporting companies by providing incentives for investments in new technologies as well as increasing training and education on environmental behaviour and communicating successful examples.

In general, two main factors seem to have an important impact. On the one hand, the position in the supply chain influences companies' sustainable performance as companies with end-consumer contact face more demands for sustainable behaviour. Often these companies transfer these requests to transport and logistics companies which represent the connection points in large supply chains (mainly without end-consumer contact) and consequently are also externally forced to increase sustainability initiatives. Wholesalers, in contrast, are not confronted with end-user demands and additionally do not feel any pressure from their business partners up- and downstream in their supply chains. Sustainable behaviour is therefore mainly motivated 'from the inside' (philosophy, personal interest of decision-makers, etc.). The final customers of construction and building material are directly connected to the manufacturer by 'using' the product although intermediaries and distributors (e.g. wholesalers and transport and logistics companies) might be interconnected. The advantages and disadvantages of

sustainability measures and quality are always connected to the product (and its producer) in the long run. Companies in this sector therefore are considerably more aware of sustainability issues. On the other hand, company structure also appears to be decisive. Independent of belonging to a sustainably-proactive sector or not, certain structural factors, such as ownership (e.g. family-owned companies) or product specialisation (e.g. niche products) seem to support sustainable behaviour. Being oriented towards the long term, family-owned companies invest in cost-intensive initiatives with longer amortisation times as they do not have to report to external shareholders (Belz and Schmidt-Riediger, 2010; Block and Wagner, 2013). Moreover, many suppliers of sustainable goods and services still operate in niche markets (Schaltegger and Wagner, 2011). In conclusion, while this study focuses on a relatively small number of companies, it indicates clearly that attitude towards and the implementation of sustainability measures differ both across and within sectors. While some of the influencing factors for these are external, others are internal. The cost of implementing sustainability measures and the possibility of passing these costs onto customers directly or indirectly are particularly crucial in all sectors. Consequently, the study opens up clear avenues for further research to examine whether this is also the case in other sectors and on a larger scale.

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