The impact of globalization on the implementation of green purchasing in companies operating in the forest-based sector

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Abstract

Research background: The global environment influences the behaviour of companies. This concerns the requirements for increasing number of products, product lines, brands, the need for market segmentation, consumer demand, innovations as well as the behaviour of consumers and suppliers including environmentally appropriate purchasing. The forest-based industries must respond to changes from the perspective of the globalization process by appropriate adaptation and, inter alia, to focus on the introduction of environmentally properly procurement. The integration of green purchasing principles into business systems is increasingly mentioned in the process of globalization of economies in connection with the huge potential for gaining a sustainable competitive advantage.
Purpose of the article: The aim of the paper is to identify and analyze the factors affecting the implementation of environmentally friendly purchasing in the companies of forest-based sector in Slovakia.
Methods: The reasons for implementing responsible practices in supply chains are based either on the stakeholder theory or the assumption that companies have a more proactive approach to implement sustainable purchasing practices as they are aware of the possible benefits. Using a questionnaire survey the companies operating in all sub-sectors of the forest-based industry - wood, pulp and paper and furniture manufacturing, including their suppliers of wood raw material in Slovakia, were questioned with the aim to identify the reasons for implementing sustainable purchasing practices.
Findings & Value added: Data obtained are used to identify the factors that are crucial for the introduction of green purchasing in companies in dependence on the specific company characteristics and conditions of the market environment under which companies operate.

Keywords: *green purchasing; globalisation; forest-based sector*

JEL Classification: *Q56; D29; L73*

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1 Introduction

Society perceives the negative effects of globalization on the environment and government policy representatives want to solve this issue. Therefore, various voluntary regulatory systems have emerged that solve CSR issues as a key element of the current globalization process in the production, trade and consumption of goods and services (GPP, 2016). In response of the growing demand from interested parties on production conditions information, certification and labelling schemes, code of conduct, corporate reporting and more have emerged in the markets. These systems set quality, social or environmental standards and, in particular, have a high degree of coordination, tracking and monitoring of the supply chain. They also serve as tools that provide information to interested parties, including consumers, who need to make informed and confident decisions (Sarkis et al., 2011). In order to meet consumer demands, businesses have introduced green purchasing into the business (Dagher and Itani, 2014). Green purchasing support common environmental decisions throughout the purchasing process, initial selection of the supplier, product design, process and through product disposal (Brunori, 2012). Businesses that want to maintain a competitive advantage in the business world are putting it into practice. Carter (1996) defined green purchasing as purchasing to facilitate reuse and recycling by reducing resources. Purchasing should be considered in all supply chain management activities, and more specifically, re-used, recycled materials should be purchased in such a way as to reduce resource use as much as possible. Zsidisin and Siferd (2001) defined green purchasing as a set of principles and methods, assuming completeness with regard to the environmental impact. Behaviour according to these principles is not mandatory, it is not defined by legal conditions, its implementation is based on voluntariness. However, business entities and companies have understood that it has many benefits for their future existence in the market. At present, the principles of CSR in the Slovak Republic are applied not only in global companies but increasingly also in domestic companies (Nadanyiova et al., 2021).

2 Theoretical framework

Green purchasing is a key strategy for businesses to reduce waste, increase efficiency and improve competitiveness (Min and Galle, 1997). The main benefits gained from the implementation of green purchasing are higher profitability, gaining a competitive advantage, improved relationships with interested parties, better environmental performance and better company image. The integration of green purchasing principles into business systems is increasingly mentioned in the process of globalization of economies in connection with the huge potential for gaining a sustainable competitive advantage (Werther and Chandler, 2005). Green purchasing is the practice of applying environmental criteria to the selection of products or services. It has several forms, from relatively simple to relatively complex. It is now relatively common among larger companies and seems to be increasingly used as a business practice (Shah, 2002). Green procurement policies apply to all companies, regardless of their size. Eco-procurement programs can be relatively simple, such as purchase of renewable energy or recycled office paper or more complex, e.g. setting environmental requirements for suppliers and business partners. Green purchasing can enable a company to offset financial and environmental risks, rather than inheriting them from its suppliers (Hamner, 2006). Evaluations and comparisons can help a company with this process. Green purchasing can bring important benefits in terms of risk management, environmental efficiency, closer supplier relationships and improved environmental performance (Rizza, 2008). It goes without saying that companies that change their strategy and become more environmentally friendly also think about the benefits of this change. The global expansion of responsible consumption presents huge opportunities for companies to gain competitive

advantage in several areas (Mebratu, 2001). Some benefits are obvious, some less visible. The specificity of a company brings with it specific benefits and enables companies to better understand the company's greening program (Werther and Chandler, 2005; Yee et al., 2019). The context between green purchasing and the company's brand is gaining in importance, it is not enough to focus only on customers, but it is also necessary to focus on employees, investors, suppliers, partners, sellers. However, businesses entities and companies have understood that it has many benefits for their future existence in the market. The claim that one of the biggest benefits of green purchasing for a business is his higher competitiveness is justified (Slovenská agentúra životného prostredia, 2014). The benefits of applying this tool are very diverse and in addition to the benefits associated with environmental protection, it is possible to specify a number of benefits for businesses, e.g. in the form of reducing the costs of handling and disposing of hazardous waste; saving money by saving energy, water, fuel and other resources; reducing the risk of accidents at work, thereby reducing health costs; improving the good name of the company and higher competitiveness in the market, etc. The benefits of green purchasing are not only about reducing the direct impact of activities on the environment, but can also bring social and economic benefits (Hazra, 2016).

Green purchasing has spread to several areas of industry. Great emphasis has begun to be placed on environmental requirements in the woodworking industry as well. Although the process brings some complications to companies associated with the introduction of green purchasing, after its implementation will bring some benefits to the company. On the other hand, it is also the public that is putting increasing pressure on businesses in relation to green properly purchasing requirements in the woodworking industry (Haasnoot et al., 2013). At the global level, forestry and the timber industry have been, and continue to be, devastated and permanently destroyed. These facts led to the emergence of forest certification. Both PEFC and FSC systems are found on a wide range of wood and paper products, which use wood and wood fibres as raw materials. Both systems certify not only forestry practices but also supply chain practices. Thus, any commercial or wood processing business is a part in a chain that starts in the forests with timber and ends with final consumers. The importance of chain of custody certification lies in ensuring and controlling the transmission of information on the certified origin of wood products from wood raw material producers through wood processors, producers of final wood products, traders to final consumers (i.e. monitoring the origin of wood at various stages of its processing and use). Industry is the most important sector of the national economy, decisively influencing the development of individual regions (FSC, 2021; PEFC, 2021). The forest-based sector is one of the EU's most important, dynamically developing industrial sectors, accounting for around 10% of the EU's total manufacturing industry. Forestry is linked to forest-based sector by a common and renewable raw material - wood, close cross-sectorial relationships in the supply and processing of wood, the use of wood residues, their recycling and a common approach to policy at EU level. Because the forest-based sector covers several sectors, each has a significant impact on the performance of the others. Therefore, a deep knowledge of the nature of these interdependencies and the ability to translate them into clear analyses of their impacts at the corporate, cluster and social level, form the essence of the political activities of individual components of forestry and forest-based sector (Parobek et al., 2015). The forest-based sector currently covers several sectors including the sawmilling industry, wood based panels production, pulp and paper production and its processing as well as furniture manufacturing. Wood, like no other material, combines ecological requirements with constructive progress and natural beauty. The forest area in Slovakia is 2 mil. ha (year 2019), of which a share of commercial forests is 73%, protective forests 17% and special purpose forests 10%. At the current level of timber harvesting, which is more than 9 million m^3, the structure and volume of production of wood products, the annual amount of carbon in the products has increased by approximately 1.5 mil. tons. Since the main way of using non-coniferous timber in

Slovakia is the production of pulp and paper, the deterioration of the carbon balance results from the short life, and thus the inability to store carbon for a longer period of time (Loucanova et al., 2015). Slovakia currently exports more timber than it imports. The average volume of exports over the last ten years has reached 2.5 million m^3. Coniferous veneer logs and saw logs prevailed in the export of wood. Overall, forest owners recorded higher net profit than in the past. In 2017 it was 14 mil. euros, in 2018 by 5 mil. euros more and in 2019 they ended up in a surplus of 23 mil. euros. This was most likely reflected in the fact that total volumes of produced timber have been gradually increasing in recent years, due to the increasing volumes of incidental felling. On the other hand, in 2020 the profit could have been even higher if the markets for surplus wood in the European Union and in the world did not naturally react in the autumn with a sharp fall in the prices of sawn wood and finished products. However, the pillar sector and its price performance and efficiency were largely influenced by accidental felling not only in our country, but especially in neighbouring countries, especially in the Czech Republic (Faostat, 2021).

3 Methodology

The aim of the paper is to identify and analyse the factors influencing the implementation of environmentally friendly purchasing in companies in the forest-based sector in Slovakia. The evaluation of the implementation of environmental purchasing in the wood processing sector in the Slovak Republic was carried out through a questionnaire survey. Companies operating in all subsectors of the forest industry were interviewed – furniture production, pulp and paper production, sawmill sector, wood trade and wood production, production of wood based panels, printing, wood fuel, wooden constructions, including their suppliers of wood raw material in Slovakia. The questionnaire identified the reasons for the implementation of sustainable purchasing practices in order to increase competitiveness of the sector. The process was as follows:

- Development of a questionnaire
- Determination of the required sample of respondents
- Implementation of a questionnaire survey among companies in the sector
- Analysis of results
- Identification of the reasons for the implementation of green purchasing.

The basic method of data collection was a questionnaire survey, which is a research, development and evaluation tool to quickly find out information about the knowledge, opinions or attitudes of respondents about the given issue. The questionnaire was developed and sent out as an electronic (google questionnaire), proceeded by a telephone call or a personal inquiry. The questionnaire contained questions compiled on the basis of theoretical assumptions about the functioning of the process of green purchasing in companies. These were followed by other information such as awareness, use, reasons for the introduction of green purchasing in the forest-based sector and the benefits for increasing the competitiveness of companies. Due to the qualitative nature of the research, respondents report the answers using a prepared Likert scale on a scale from 1 to 4 (where 1 means complete agreement and 4 complete disagreement). The questionnaire consisted of questions of corporate characteristics (corporate sector) and the introduction of social responsibility and green purchasing (Have you already encountered the concept of green purchasing? Do you have a corporate social responsibility or environmental policy in place?). Subsequently, for the purposes of data analysis the respondents were divided into two groups of respondents, those who have established green purchasing and those who do not have green purchasing.

The general structure of the questionnaire was as follows:

a. business characteristics (size, capital, sector, etc.)
b. implementation of social responsibility and green purchasing
c. for companies with implemented green purchasing the incentives for its implementation
d. for companies without implemented green purchasing the reasons for its potential implementation

To determine the required minimum sample of survey respondents, basic statistical procedures were used to calculate the sample size in order to obtain relevant and reliable results. The minimum sample was determined on the basis of the database of forest-based sector companies in Slovakia. There are currently 3,168 production and training companies in the sector. The largest part of the companies (more than 50%) is in the sector SK NACE 16.2 Manufacture of wood, cork, straw and plaiting materials, while the lowest share is in the SK NACE 17.1 Manufacture of pulp, paper and paperboard. Some 85% of companies have less than 20 employees, with the exception of the SK NACE 17.1 branch, where companies with more than 20 employees are dominating. In addition to commercial companies, there are self-employed persons in the sector, consisting of 12,345 entities, out of which only 0.3% has over 20 employees, mainly in the furniture production. The minimum sample of respondents was calculated from the total size of the population of 15,513 enterprises, with a margin of error of 5%, a variance of 50% and a confidence level of 90%. The required minimum sample then was 266 companies that needed to be surveyed. During the survey, we were able to collect questionnaires from 320 respondents.

The evaluation of the questionnaire survey was carried out using statistical analyses of data in MS OFFICE EXCEL software. Frequency analysis was used as the basic analysis.

Based on the conducted questionnaire survey and evaluation of the collected data it will be possible to suggest measures for introducing green purchasing in the companies operating in the forest-based sector.

4 Results and discussion

We evaluated the questionnaire using frequency analysis. Figure 1 shows the structure of the responding companies in the sector according to the type of operation. The most represented are companies trading wood and wood products (39%) followed by sawmilling industry (29%) and furniture manufacturing (13%). Other sectors such as construction / wooden building, printers, pulp and paper industry, production of wood based panels are represented by 3% to 5%.

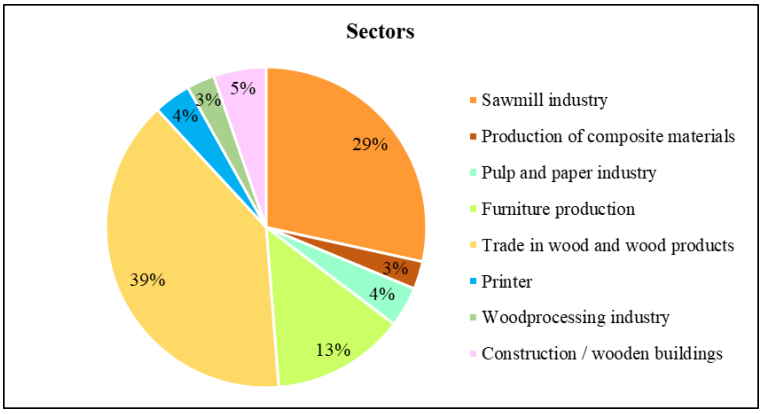

Figure 1. Structure of respondents according to operation (%)

Source: Own processing.

The questionnaire survey also revealed whether the companies in the sector have already encountered the concept of environmentally friendly purchasing or procurement, respectively (Figure 2). Out of 320 respondents some 75% answered that they have already encountered this concept.

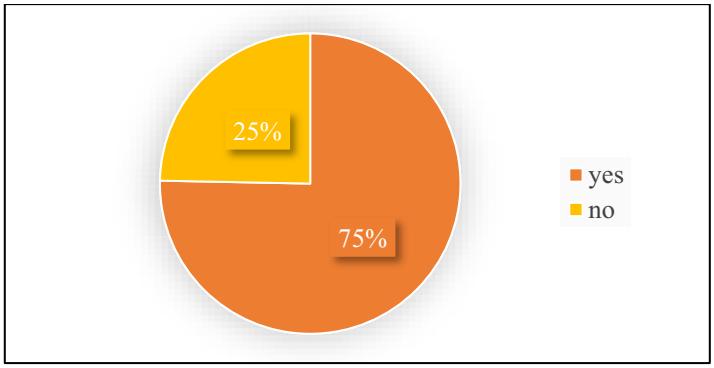

Figure 2. Awareness of the green purchasing / procurement

Source: Own processing.

Although companies are familiar with the term green purchasing they still do not use a large number of social responsibility policies or environmental policies in enterprises. This is shown in Figure 3, where only 40% of the respondents have an established social or environmental responsibility policy (129 respondents).

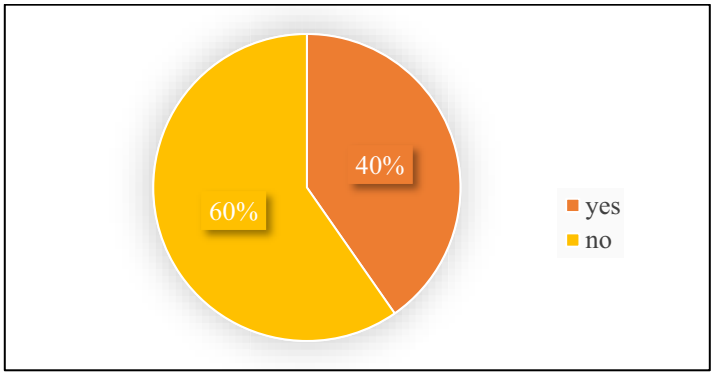

Figure 3. Implemented policy of social / environmental responsibility

Source: Own processing.

Even if the majority of respondents do not have formal social or environmental policy in place almost 52% reported that use green purchasing in their processes. The remaining part of the sector reported no use of such measures (48%). Based on their status regarding the implementation of green purchasing the respondents were asked questions about the incentives for its implementation and reasons for its potential implementation, respectively. Figure 4 shows the mean values of identified incentives following from green purchasing in the companies that are already using it. Among the most important incentives were the improvement of the company's image, reduction of waste production by recycling (separation, recovery), gaining new market opportunities and an increase of market competitiveness. Least perceived incentives are e.g. the increase in the profit margin, streamlining of the efficiency of business processes and the reduction of costs.

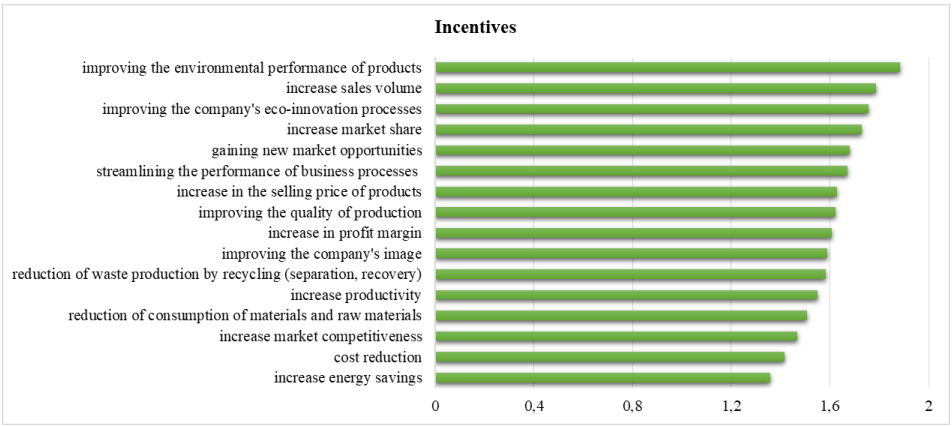

Figure 4. Incentives for implementation of green purchasing

Source: Own processing.

The second group of respondents included the companies without practicing green purchasing. Therefore, they were hypothetically asked about the reasons that would affect their decision to implement the requirements of green purchasing (Figure 5).

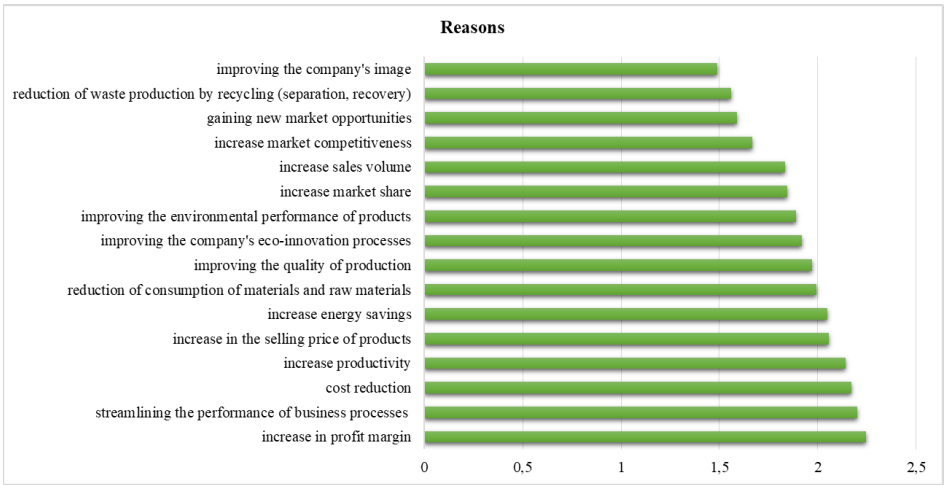

Figure 5. Reasons for possible implementation of green purchasing

Source: Own processing.

As shown in Figure 5, the companies would make the decision to implement green purchasing if it helped them to increase energy savings, reduce costs, increase market competitiveness and productivity as well as reduce consumption of materials. Factors such as the improvement of environmental performance of products, increased sales volume, and market share are the least important for the companies.

5 Conclusion

Green purchasing assures that purchased goods and services generate benefits, not only for the organization, but also for the environment, society and the economy. Leadership therefore requires thinking expansively and holistically about the full range of benefits that an

organization may be able to achieve through strategic green purchasing. Green purchasing involves thinking about the full range of factors and operating contexts that an organization may need to consider and address when implementing a purchasing program and consider where it can produce the greatest benefits.

The purpose of this questionnaire survey was to examine the current state in the implementation of green purchasing and define the reasons for its implementation to increase competitiveness of companies in the forest-based sector in Slovakia. Although up to 75% of the respondents are aware of the concept of green purchasing only 40% have formally implemented any social or environmental policy. The main advantages from implemented green purchasing result in the improved image, reduction of the production of waste by recycling (separation, recovery), gaining new market opportunities and increasing competitiveness in the market. At the same, companies would implement this tool if it resulted in energy savings, reduced costs, increased market competitiveness and increased productivity.

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