Comparative analysis of sustainable consumption and production in Visegrad region - conclusions for textile and clothing sector

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Abstract. Gradual environmental degradation, shrinking of non-renewable resources, and lower quality of life are directly or indirectly arising from snowballing consumption. These unfavorable processes concern increasingly textile and clothing sector and are increasingly being felt in Visegrad Region (V4). The objective of the article was to access current consumption patterns in V4 countries, identify the factors that influence those patterns and finally to draw the conclusions for more sustainable consumption and production models as well as to make a comparative analysis of the results across V4 countries. A consumer survey was conducted to examine V4 citizens’ attitudes and behaviors in the context of sustainable consumption. To ensure sample size and comparability across countries 2000 randomly-selected V4 citizens, aged 18 and over, were interviewed. To analyze the supply side of the market and legal framework, the desk research was used. The results allowed to give some guidelines for the joint V4 strategy for solving ecological and social problems of V4 countries as well as the conclusions for textile and clothing sector.

1. Introduction

The Visegrad Group (also known as the "Visegrad Four" or "V4") reflects the efforts of the countries of the Central European region (Czech Republic, Hungary, Poland and Slovakia) to work together in a number of fields of common interest (such as education, culture, science, environment, regional development, civil society development, transport, etc.) within the all-European integration. One of this field of this cooperation is also sustainable development and more recently circular economy model.
Gradual environmental degradation, shrinking of non-renewable resources, and lower quality of life are directly or indirectly arising from snowballing consumption. These unfavorable processes concern increasingly textile and clothing sector and are increasingly being felt in Visegrad (V4) countries. They will not stop unless consumption patterns are modified [1]. Therefore, the sustainability agenda has gradually been shifting to include consumption alongside production. Manufacturers may use new designs and technologies to minimize the impact of a product on the environment, but their efforts are pointless if consumers do not buy more sustainable goods and do not change their consumption habits. Therefore, a change in the attitudes of textile and clothing companies and consumers towards a more responsible behavior is needed. It is a gradual process that needs appropriate knowledge, awareness, and frequently the modification of long-standing habits. These needs and challenges have brought the authors to the objectives of the project „Prospects of the Visegrad cooperation in promoting a sustainable consumption and production model” implemented within the framework of the Visegrad Fund Strategic Grants. The main results of the project are presented in the article.

1.1. The research aims
The objective of this project was to support and strengthen the cohesion of the V4 countries in the efforts to achieve a more sustainable consumption culture and thus more sustainable production models in the selected consumer goods’ markets one of them was was textile and clothing market. In order to do that, the project undertook the analysis of immediate connections and influences of: the demand side of the markets (consumers), the supply side of the market (producers), legal framework and cultural impact. An important part of the project was a comparative analysis of the results across V4 countries allowing to give some guidelines for the joint V4 strategy for solving ecological and social problems of V4 countries.

1.2. The research scope and methodology
One of the main objectives of the project was to access current consumption patterns in V4 countries, identify the factors that influence those patterns and finally to draw the conclusions for more sustainable consumption models.
For this purpose, the primary research study was used. A consumer survey was conducted to examine V4 citizens’ attitudes and behaviors in the context of sustainable consumption. In particular, the survey examined following aspects of consumers’ behavior: environmental knowledge and concern, perceived consumer effectiveness (PCE) and perceived marketplace influence, environmental actions undertaken within last twelve months, barriers and buying behavior (PMI). To ensure sample size and comparability across countries 2000 randomly-selected V4 citizens, aged 18 and over, were interviewed. The interviews were carried out via Computer Assisted Web Interviewing (CAWI). behaviour. To determine if there are statistically significant differences across the V4 countries, the Kruskal-Wallis H test (one-way ANOVA on ranks) was used. To analyse the supply side of the market and legal framework, the desk research was used - analyze of the available survey results, reports and statistical data. In this part we concentrated on the following aspects: sustainable production prospects (in the context of social and ethical as well as economic determinants), development of sustainable products markets in Poland, sustainable patterns of production in business operations, the main barriers and challenges of sustainable production.

2. Research results
In the first step we concentrated on the demand side of the market represented by consumers, their values and attitudes.

2.1. Demand, values, attitudes, cultural impact – differences and similarities
To access the level of respondents’ environmental knowledge they were asked how much they agree or disagree with the three statements (“When I am choosing a product, I very often pay attention to
environmental or social labelling before deciding to buy”, “I don’t feel I have enough knowledge to choose more sustainable products with less environmental and/or social impact”, “I often read articles or news about environmental and/or social impact of products I buy”). A Kruskal-Wallis H test showed that there was a statistically significant difference in case of all the statements between the V4 countries. The value of the mean rank as well as the the distribution of answers suggest that the country whose respondents access their environmental knowledge lowest is Slovakia. It is also worth to outline that in all countries we can observe relatively high proportion of uncertain answers „neither agree or disagree”. This may suggest that respondents had some problems with clear understanding the right meaning of the questions concerning environmental knowledge, or that the issue was not so important for them.

Another very important factor influencing sustainable consumption is environmental sensitivity. The knowledge itself very often is not enough. What we need is a combination of knowledge, the awareness resulting from it, and the individual predisposition of a particular person which produces a category referred to as concern [1]. Together they can lead to seeking and purchasing sustainable products. Generally, the results indicate that, compared with environmental knowledge, the respondents in all V4 countries represent a higher level of environmental sensitivity. Most people from the V4 countries think that “we are approaching a disaster and politicians make little effort to protect the environment”. However, there are some differences between the countries. People from Poland, the Czech Republic and Slovakia showed a similar level of concern about environmental conditions for future generations. In contrast, the respondents from Hungary differed from the other V4 countries in these area, as a higher percentage of them agreed that they were afraid when they are thinking about environmental conditions for future generations and that we are approaching an environmental disaster if we continue our current style of living. At the same time the highest percentage of them disagreed (“strongly” or “rather”) that environmental problems were greatly exaggerated by the opponents of the environmental movement. Therefore, we could conclude that (at least at the level of declarations), the Hungarians represent slightly higher environmental sensitivity then the citizens of other three Visegrad countries.

As far as sustainable products are concerned the influence of the so called perceived consumer effectiveness PCE is attributed a grave importance. The PCE is understood as a measure of the subject’s judgment in the ability of individual consumers to affect environmental resource problems [2]. A significant impact of PCE on sustainable consumption was also confirmed in the literature [3,4]. The concept of perceived marketplace influence - PMI is similar to PCE in nature, however, rather than solely looking at whether someone feels their actions are individually making a difference in environmental problems, it captures an individual's belief that their actions are actively influencing the behaviour of other marketplace actors – consumers or organizations [5]. The survey prompted consumers with four statements to see how strongly they believe they can make a difference in solving environmental problems and influence other consumers or companies. The results showed that generally Polish consumers had a slightly stronger feeling that they can influence other members of their community, companies’ performance and the solution of environmental problems than the citizens of other V4 countries.

We also asked the consumers how often, if at all, they undertook concrete actions. Three of the questions related to the before purchase phrase: looking for information, avoiding the purchase of unethical products and buying sustainable products. The remaining five questions concerned the post purchase behaviour: rationalization of the laundry process, and proceeding with used products: repairing them, passing and swapping, segregating and composting. Despite some differences between particular countries generally we could conclude that V4 consumers are more active in the after purchase phrase and also in those activities that do not require a lot of knowledge and engagement but additionally can bring some economic reward. We could say that the most frequent activities, were those activities that we could call “every day practices”, that are well known, do not require additional knowledge or engagement. More engaging activities, like making compost with the food waste at home turned out to be far less popular among V4 consumers.
Another important aim of the survey was to identify the main barriers to introducing more sustainable consumption patterns and therefore development of “eco market”. Despite those differences we could conclude that in all V4 countries the most important barriers were: insufficient availability of sustainable products, too high price of sustainable products and lack of confidence in eco-labels, in different order, depending on the country. The least important barrier, in all countries, turned out to be unsatisfactory attractiveness of sustainable products. Additionally, a high percentage of neutral/uncertain answers “neither agree nor disagree” given to questions relating to sustainable options/products may suggest that respondents in all countries were somehow confused about the terms “environmentally friendly” and “harmful” products.

It was also important to see to what extend Visegrad consumers manifest unreasonably high consumption level known as consumerism. The results indicate that despite some differences between countries a large majority of V4 respondents manifests a rather non-consumerist attitude, declaring that they buy things only when they really need them, that they rather not shop just for the pleasure of shopping, that they do not frequently buy things that they hardly use, and that they buy things only when they really need them. However, this may arise not so much from a conscious opposition to consumerism but rather from economic limitations.

2.2. Supply, legal framework – differences and similarities across V4 countries

In this part of the project we tried to to answer the question: “How could the existing niche markets for sustainable products be extended to mass markets?” Important aspects in this area are ethics and social attitudes, manifested to a large extent on trust, social and human capital. One of the key factors shaping the attitudes and social capital of a country is trust. It applies to the relationships between individual human beings, between companies being represented by them, as well as between sectors and communities. According to the European Social Survey (ESS) [6], in terms of the general level of trust all V4 countries occupy the last four places among the European countries. V4 respondents think that people in their countries mostly look out for themselves and are not helpful, most people can not be trusted and most people try to get advantage of others rather then to be fair.

Another of the analyzed indicators was the the “resource productivity”, which is calculated by dividing GDP (gross domestic product) deflated by DMC (domestic material consumption), is used to monitor the relationship between resource use and economic growth. Improving resource productivity and ensuring a sustainable resource and materials management building on the principle of the 3Rs (reduce, reuse, recycle) is a central element of green growth policies. It helps to improve the environment by reducing the amount of resources that the economy requires and diminishing the associated environmental impacts, and sustains economic growth by securing adequate supplies of materials and improving competitiveness [7]. The Eurostat data shows that values of resource productivity (measured in purchasing power standards [PPS] per kg) are lowest in Poland. However, we could conclude that resource productivity generally is not high in Visegrad Region [8].

Another important indicator is eco-innovation index, which refers to the development of new or significantly improved products (goods and services) or organisational practices that reduce the use of natural resources and decrease the release of harmful substances throughout the entire life cycle. It plays an important role in addressing environmental challenges without compromising economic and social objectives. Besides its environmental benefits, eco-innovation brings new products to the market, contributing to economic activity and job creation [9]. The EU eco-innovation index shows how well individual Member States perform in eco-innovation compared with the EU average. The only V4 country that in 2015 had the European Eco-Innovation Scoreboard at the level of the EU average was the Czech Republic. The country with the lowest score in almost all years during the period 2010-2015 was Poland.

In the EU the top priority is to prevent and minimize waste. It is followed by treatment methods, such as reuse and recycling, energy recovery through incineration and, lastly, disposal in the form of landflling [9]. Since recycling and composting reduce the amount of waste that needs to be disposed of and reduce demand for raw materials, leading to the reduction in primary resource extraction, those
ways of waste treating are assumed to be most environmentally friendly and therefore desirable. Analysis the Eurostat data on total waste recycled in the EU-28 in 2012 showed that Poland recycled over 50% and Czech Republic almost 50% of its total waste. Lower percentage can be observed in the case of Slovakia (37%) and Hungary (36%). However, we can consider whether the total waste indicator is the best one in the analyses of the general trend in waste generation and comparative analyses. A more rational indicator seems to be landfill rate of waste, excluding major mineral wastes. Looking at this indicator, we can see that Poland, together with the Czech Republic, is slightly below the EU average, with 30% landfill rate of waste. It is a much better result than in the case of the other two V4 countries, Slovakia and Hungary.

Another important area that we analyzed was environmental certification and labelling. One of the voluntary European implemented to encourage different organizations (companies, plants, institutions, etc.) to keep improving their environmental performance is the Eco-management and Audit Scheme (EMAS). The Eurostat data showed that the number of EMAS-registered organisations and sites across the European countries is highly differentiated. All V4 countries lag far behind the EU leaders, which are Germany, with 1991 sites, Italy, with 1771 sites and Greece, with 1292 sites. However, we can notice that Poland has made big progress when it comes to the number of organisations and sites with eco-management and audit scheme (EMAS). There was a sharp rise of the organisations and sites with EMAS in Poland in the last few years (an increase form 33 sites in 2012 to 122 in 2015). That makes Poland the indisputable leader among the V4 countries [8].

The ISO 14000 environmental management standards aim to help organizations minimize the way in which their operations (processes, etc.) negatively affect the environment (i.e. cause adverse changes to air, water, or land), comply with applicable laws, regulations, and other environmentally oriented requirements, and continually improve in the above. According to Eurostat data, all V4 countries, again, stay behind the EU leaders when it comes to the ISO 14001 certified companies. This time, unlike the EMAS registration, the indisputable V4 leader is the Czech Republic, with 6629 companies. Poland ranks third, just behind Hungary, with 1793 companies [8].

The EU Ecolabel is a voluntary scheme established in 1992 to encourage businesses to market products and services that are more sustainable. The Ecolabel helps to promote and identify products and services that have a reduced environmental impact throughout their life cycle, from the extraction of raw material through to production, use and disposal. According to Eurostat data in 2016 the largest number of EU Eco label licences was awarded in France (26%), Italy (18%), and Germany (12%). The V4 countries again lag far behind the EU leaders. However, we can observe an upward trend in all V4 countries except Slovakia. The number of Ecolabel licences has increased gradually since 2005 [8].

3. Conclusions for textile and clothing sector
Based on the survey results we could conclude that despite the declared environmental sensitivity, consumers in V4 countries still do not have enough knowledge allowing them to reach more rational decisions, make conscious choices and exhibit more sustainable behaviours. Therefore, it is desirable to introduce system solutions in education, taking into account the issues related to sustainable development in textile and clothing industry starting from pre-school education. Despite some differences between particular countries, the V4 consumers are more active in the after purchase phrase and also in the activities that do not require a lot of knowledge and engagement but can additionally bring some economic reward. The increased activity of the NGOs and the media in raising environmental knowledge and awareness in the field of textile and clothing as well as in shaping the public opinion in V4 countries is necessary.

According to survey results, the biggest barriers to sustainable consumption for V4 consumers were: insufficient availability of the sustainable products, too high price and lack of confidence in eco-labels. The least important barrier turned out to be unsatisfactory attractiveness of sustainable products. The government and, primarily, enterprises should therefore focus on expanding distribution channels, enhancing the visibility of sustainable options in the stores, introducing better differentiation strategies and creating incentives to buy sustainable products. Continuous education in this area is
necessary to build consumer confidence. Effectiveness of those activities depends on consistency, transparency and fairness of actions and declarations. Additionally, success, growth and profits in textile industry in the Europe must be grounded in two critical components: excellence in life cycle performance and sustainability coupled with disruptive innovation in the transformational process; hence creating new green space in textiles.

Important factors that stimulate the implementation of eco-innovations in the V4 countries are the legal requirements and expected changes in EU legislation (environmental regulations that already exist, as well as these expected in the future). Furthermore, relatively low level of social trust in the V4 companies, indicates the need for further education and training in order to build skills to implement ethical values and attitudes. It is necessary to create space and mechanisms to increase the exchange of practices and to build confidence and trust throughout the clothing supply chain.

In the V4 countries still the decisive motivation for more sustainable behaviour are economic stimuli [10]. Despite some differences between countries, national initiatives and regulations in the area of sustainability are a direct consequence of the implementation of mandatory EU targets on environmental protection and combating climate change. The necessity to meet these regulations is often the primary, if not the only, factor motivating consumers and businesses to change their behaviour.

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