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CIRCULAR FASHION – CONSUMERS' ATTITUDES IN CROSS-NATIONAL STUDY: POLAND AND CANADA

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Abstract:

The limits of the present linear economy model (take-make-waste) are well illustrated by the textile and clothing sector, one of the most indispensable consumer goods industries. Although a huge increase in the number of publications on the circular economy can be observed, the number of papers analyzing consumers' attitudes and behavior toward circular fashion, especially the ones comparing consumers from different regions, is still limited. The article aimed to assess consumers' attitudes toward circular fashion and draw a cross country comparison in this respect. The research focused on the three pillars of the latest EU Sustainable Product Policy Framework, i.e., designing sustainable products, empowering consumers, and circularity in production processes. An online survey and convenience sampling were used to collect valid responses from two countries (i.e., Canada and Poland) with different cultures, levels of economic development, and approaches to environmental and social issues. The results showed that significant differences between the countries emerged to a greater extent regarding consumers' attitudes toward environmental labels for fashion products and sustainable buying behavior. The Polish respondents perceived the need for such labels to a greater extent. The Canadian ones, on the other hand, turned out to be more willing to choose sustainable clothing and reduce consumption. The differences between the countries were much less conspicuous as regards circular cues and circularity in fashion production processes. They appeared only in the case of clothing durability and the impact of production processes on air quality. Those aspects turned out to be more important for Polish respondents.

Keywords:

Circular fashion, consumer, attitude, behavior, production processes, environmental labels, clothing, textiles, circular economy

1. Introduction

The importance of the transition toward a more circular economy (CE) has been recognized at global, regional, and national levels. Nevertheless, there have been noticeable differences in the approaches to CE issues in different regions and countries.

In March 2020, the European Commission adopted a new Circular Economy Action Plan for a Cleaner and More Competitive Europe [1]. The plan constitutes one of the main blocks of the European Green Deal, Europe's new agenda for sustainable growth. It introduces a new sustainable product policy framework presenting initiatives along the entire life cycle of products, targeting such as their design, promoting CE processes, and fostering sustainable consumption. It is worth stressing that this time the plan focuses on specific sectors that are assumed to use most resources and whose potential for circularity is particularly high. One of the sectors specified in the new action plan is textiles and clothing.

Over the last few years, it has been made apparent that the linear economy model (take-make-waste) underlying the fashion sector is approaching its end. Several intertwined trends have brought the sector to this point: fast fashion, overconsumption with its throwaway attitude, shorter lifespan of clothing, the rise of the global population and middle class, and the fall of clothing prices [2]. These trends could lead to an increase in the demand for relatively inexpensive clothing products and conventional fibers as well as contribute to an excessive amount of low-grade textile waste, shortage of landfill capacity, and higher disposal costs [3]. The shift from the linear to the circular model requires knowledge, awareness, and engagement of all market participants: manufacturers, technology and product designers, and consumers. However, consumers will assume a special role in the transformation; the speed and success of the necessary changes will depend significantly on their attitudes and behavior.

Most of the literature on the CE seems to have focused on the production part and explored circular business models [4–6], aspects of supply chain management [7–9], and/or circular product design [10–12].

An extensive body of research on the CE dealing with consumption has primarily concentrated on identifying factors that motivate or impede the consumption of circular solutions [13].

There is still a very limited number of comparative analyses that have been undertaken between different countries. The current paper is intended to close this research gap. Our research objectives have been formulated as follows:

- To assess consumers' attitudes toward circular fashion in three key areas forming the pillars of the latest EU Sustainable Product Policy Framework, i.e., designing sustainable products, empowering consumers through product labels, and circularity in production processes.

- To assess differences in consumers' attitudes in two culturally divergent countries on their distinct levels of economic development and different approaches to environmental and social issues, namely Poland and Canada.

2. Literature review

2.1. Circular fashion – regulatory frameworks in Canada and Poland

Canada is the second-largest country in the world in terms of the area, rich in natural resources. However, urbanization and agriculture exert pressure on its natural resources. It has made remarkable strides since 2000 in dissociating economic growth from air pollution, energy consumption, and greenhouse emissions. It nonetheless continues to be one of the most energy- and carbon-intensive economies in the OECD, where further advancement in transforming to a green low-carbon economy is needed [14] and which will need to respond to shifts in market demands driven by the international CE [15]. Over the last 6 years, global absorption of the CE and Canada's capacity for intensification of efforts have been increased [16]. The discussion about the CE in Canada has been eclipsed by the domestic focus on climate change and green growth agenda. Yet these two strategies have important common objectives: they both prioritize a decarbonized economy, economic growth, forward-thinking, and leading-edge technologies [15].

Currently, a growing number of companies are experimenting with novel circular business models, different approaches to achieve a more CE are being studied at universities, and policymakers are working at all levels of governments. The Government of Canada has pushed for extended producer responsibility (EPR) schemes, in which Canada is playing a leading role internationally. Selected provinces and local governments have begun to implement broader CE strategies since 2018. Examples of the Canadian government's programmes and initiatives are presented in Table 1:

On average, 70 new apparel items are bought annually by each Canadian, contributing to the 12 million tons of annual textile waste that ended up at the dumping grounds of North America [22]. Table 2 shows that the Canadian local and central authorities paid heed to the problem as apparel waste reduction initiatives are present in most of the programmes concerning the CE that have been introduced in Canada.

Poland has experienced tremendous economic growth since it acceded to the European Union in 2004, which has enabled the improvement of living standards and environmental performance. According to the OECD 2015 report [23], due to the financial support with an influx of large EU funds, Poland has made remarkable progress in strengthening its environmental policies and institutions. However, Poland still relies greatly on its coal-mining industry, and thus its economy continues to be one of the most resource-/CO2-intensive in the OECD. Consequently, it is strongly recommended in the report that Poland should specify far-sighted goals and intensify its efforts to move toward a sustainable economy. Poland has already made considerable strides in transposing EU environmental legislation, but it is still facing new implementation challenges arising from the European Commission's Circular Economy regulations. The first step was the adoption of the Circular Economy Action Plan in 2015, followed by the set-up of a related stakeholder platform in 2017. In January 2018, the European Commission adopted a new package of deliverables that included additional initiatives [24], encompassing an EU strategy for plastics, a communication on how to address the complex interplay between chemical, product, and waste legislation, a report on critical raw materials, and a framework to monitor progress toward a CE. The latest initiative is the aforementioned Circular Economy Action Plan for a Cleaner and More Competitive Europe. It "'provides a future-oriented agenda for achieving a cleaner and more competitive Europe in co-creation with economic actors, consumers, citizens, and civil society organizations' [1]. The plan focuses on specific sectors, which is unprecedented. In order to respond to the CE challenges for the fashion industry, the document mentions the European Commission plan to propose a comprehensive EU Strategy for Textiles, based on inputs from the industry and other stakeholders. The strategy is aimed to strengthen industrial competitiveness and innovation in the sector, boost the EU market for sustainable and circular textiles, including the market for textile reuse, address fast fashion problems, and develop new business models. This can be achieved by a comprehensive set of measures including:

- 'applying the new sustainable product framework as set out in the section concerning textiles, including the development of eco-design measures to ensure that textile products are fit for circularity, ensuring the uptake of secondary raw materials, tackling the presence of hazardous chemicals, and empowering business and private consumers to choose sustainable textiles and have easy access to reuse and repair services,

- improving the *business* and *regulatory environment* for sustainable and circular textiles in the EU, in particular by providing incentives and support to *product-as-service models*, *circular materials*, and *production processes*, and increasing transparency through international cooperation,

- providing guidance to achieve high levels of separate collection of textile waste, which member states have to ensure *by 2025*,

Table 1. CE programmes and initiatives in Canada

Program	Year	Description
Action plan for EPR by the Canadian Council for Ministers of the Environment [17]	2009	Canada-wide – federal, provincial, and territorial plan mandating coordinated and harmonized EPR action on priority products over two phases: 1. Printed paper and packaging (priority area), mercury-containing light bulbs, electronics, household hazardous and special waste, and automotive products by 2015. 2. Construction and demolition waste, furniture, textiles, carpeting, appliances, and ozone-depleting substances by 2017
Resource Recovery and Circular Economy Act, 2016 [18]	2016	In implementing the Act, Ontario will consider end-of-life materials as resources rather than waste, which will result in fewer raw materials being used and the production of long-lasting and reusable goods. Through regulations, the government will establish outcome-based requirements that producers will have to meet, such as reduction, reuse and recycling targets, service standards, and promotion and education requirements.
Strategy for a waste-free Ontario: Building the CE [19] by the Ministry of the Environment and Climate Change	2017	Canada's first provincial CE strategy includes 15 specific actions to build up the province's CE and help to reduce greenhouse gas emissions from landfills. It addresses all sources of waste and focuses attention not just on residential waste managed by municipalities but the waste generated by the ICI sectors. Clothing and textiles are mentioned in the document as a group of products providing particular opportunities, where linkages among waste generators, waste managers, and non-governmental organizations can facilitate great progress toward reducing the volume of waste managed by municipalities and the ICI sectors that should be designed through regulations made under the Resource Recovery and Circular Economy Act, 2016
Zero waste 2040 [20] by the city of Vancouver	2018	A long-term strategic vision for Vancouver to achieve zero waste by 2040: Conserving resources. Preventing wastes of all types, including wasted food at all points between farm and table. Composting inedible food or converting it into fuel. Repair and maintenance of products and materials to extend their lives. Sharing, reusing, and refurbishing products and materials before recycling them. The document includes a section "Develop an Apparel Waste Reduction Strategy" that will involve consultation with stakeholders and the public to identify how the city can support the reduced generation of apparel waste and increased diversion from disposal as well as continued collaboration with Metro Vancouver.
Canada-wide action plan on zero plastic waste [21] by the Canadian Council of Ministers of the Environment	2019	The plan aims to reduce the harmful environmental impacts of plastic waste through greater prevention, collection, and value recovery to achieve a more circular plastics economy. It is released in two phases. Phase 1 focuses on product design, single-use plastics, collection systems, recycling capacity, and domestic markets. Phase 2 focuses on preventing plastic pollution in oceans, inland lakes, and waterways, advancing science to monitor the impacts of plastics pollution within the environment, consumer awareness, clean-up, and taking global action.

CE, circular economy, EPR, extended producer responsibility, ICI, industrial, commercial, and institutional.

- boosting the sorting, reuse, and recycling of textiles, including through innovation, encouraging industrial applications, and regulatory measures such as EPR'[1].

Since the economies of the EU member states are different, the EU Environment Council proposed that member states should develop national programmes and regulations for the transition to CE according to the guidance of the European Commission.

In 2015, the Polish Minister for Economic Development set up a multi-stakeholder group with an intention to develop a CE roadmap. In January 2018, the roadmap for transformation toward a CE was opened for public consultation. The final version of the document was adopted by the resolution of the council of ministers on September 10, 2019. The roadmap covers four main strategic areas: sustainable industrial production, sustainable consumption, bio-economy, and new business models. It is the main strategic document, introducing a set of instruments, designed to create conditions for the implementation of a new economic model in Poland. The new EU regulations on textiles and clothing will be introduced in Poland shortly.

Table 2. Cross country comparison in the studies on consumer attitudes and behavior toward a circular fashion

Authors/year	Country/sample	Focus of study	Cross-country comparison	Differences between countries
Henninger C., Bürklin, N. and Niinimäki, K. (2019) [32]	UK, Finland, and Germany qualitative approach in-depth semi-structured interviews	Collaborative consumption phenomenon through swap-shops	Yes	Yes
Han, S. L., Henninger, C., Blanco-Velo, J., Apeagyei, P. and Tyler, D. J. (2017) [35]	UK quantitative approach, online survey questionnaire	Consumer attitudes and behaviors and their impact upon a CE fashion system: conclusions for effective fashion communication	No	–
Constanza B. (2012) [26]	Females located in Australia and Chile, quantitative approach, snowball sampling procedure	Antecedents of sustainable clothing disposal behavior: donating to charities and giving away to family and friends	Yes	Yes
Weber, S., Lynes, J. and Young, S. B. (2017) [29]	Ontario, Canada, qualitative approach, online survey	Consumer attitudes toward fashion and their disposal methods (resell, swap, take-back, donation, and disposal)	No	–
Gwozdz, W., Nielsen, K. S. and Müller, T. (2017) [30]	Germany, Poland, Sweden, the United States, quantitative approach, online survey	Purchase behavior, openness to alternative business models (leasing or clothing libraries), willingness to pay for clothing made more environmentally friendly fabrics	Yes	Yes
Camacho-Otero, J., Pettersen, I. N. and Boks, C. (2020) [33]	Columbia qualitative approach based on semi-structured interviews	Clothe swapping from a social practice perspective	No	–
Diddi, S. and Yan, R.-N. (2019) [36]	The U.S. an intercept survey approach	Consumer perceptions related to clothing repair and community mending events	No	–
Gręboszc-Krawczyk, M. and Siuda, D. (2019) [37]	Poland, France, and Spain young consumers: students at the local universities.	Attitudes of young consumers in Europe towards recycling campaigns of clothing companies	No	–
Machado, M., Almeida, S., Bollick, L. and Bragagnolo, G. (2019) [38]	Brazil qualitative approach: ethnographic and in-depth interviews	The role of consumer motivation in the context of the CE through the reuse of fashion products: second-hand fashion market	No	–
Koszewska, M, (2019([39]	Poland quantitative approach: online survey	Determinants of consumer behavior in selected areas relevant to CE: proclivity for consumerism, dealing with used products, and unneeded garments	No	–

CE, circular economy.

2.2. Consumers' attitudes and behaviors toward circular fashion

Clothing and textiles are one of the largest categories of consumer goods in the world, therefore the transition from a linear to a CE in the fashion industry requires strong consumer commitment.

The conclusions of the review papers on the CE suggest that too little attention has been paid on how consumption and consumers would affect or be affected by the CE [13, 25]. At the same time, the growing number of studies conducted in recent years confirms that the interest in exploring the relationship between consumption and the CE has been increasing. The studies available are based solely on the selected aspects of behavior, e.g., disposal practices [26–29], purchasing

behaviour [30, 31], collaborative consumption [32, 33], and new business models [34].

Most of the recent research on the CE and circular solutions dealing with consumption has primarily focused on identifying factors that motivate or hinder the consumption of circular solutions [13]. However, more insights are needed regarding demographic and cultural factors and their role in the process of accepting and adopting circular products and solutions [34, 40, 41].

Only a few of the existing studies on circular fashion consumption included cross-country comparison. Although those studies did not focus on in-depth analyses of differences between countries, they showed that such differences did indeed exist and the cultural aspects might play a significant role (Table 2).

Therefore, we decided to analyze the differences in consumer attitudes toward circular fashion in two culturally divergent countries on levels of economic development and different approaches to environmental and social issues, namely Poland and Canada. While choosing aspects to be included in the analyses, we considered those that had been left out in the existing research and at the same time formed the pillars of the latest EU sustainable product policy framework, i.e., designing sustainable products, empowering consumers through product labels, and circularity in production processes. That allowed us to formulate the following hypotheses:

H1: There are significant differences between Polish and Canadian consumer attitudes toward circular cues for fashion products.

H2: There are significant differences between Polish and Canadian consumer attitudes toward eco-labels for fashion products.

H3: There are significant differences between Polish and Canadian consumer attitudes toward circularity in production processes in the fashion industry.

According to the research from 2010 that aimed to compare consumer attitudes toward responsible consumption in Poland and the United Kingdom, the greatest differences between these two countries were observed through their behavior of requiring the strongest activity and conscious involvement of consumers such as intentional purchases of "'socially responsible products'" or avoiding a product based on a company's conduct. Polish consumers rated much less favourably than British consumers in both 1999 and 2010. Therefore, it would be interesting to compare Polish and Canadian respondents in this area. That allowed us to formulate the last hypothesis:

H4: There are significant differences between Polish and Canadian consumer responsible purchase behavior of fashion products.

3. Data and methods

To assess and compare consumer attitudes toward selected aspects of the CE in the fashion industry between the countries, an online survey was used in Poland and Canada. The two countries differ in terms of the level of economic development, culture, and approaches to environmental and social issues. Poland, representing Central Europe but rooted in the post-communist regime. In 2018, its status was reclassified from an emerging economy to a developed country and now it is the eighth largest economy in the European Union that largely accepts materialistic values and in the last years it has been catching up with the North American lifestyle. Canada, on the other hand, has enjoyed the status of a developed country for quite a long time. It was also selected because of its cultural and political dissimilarity from Central and Eastern Europe. The data were primarily collected by convenience sampling with the aid of acquaintances and friends in Poland and Canada. The socio-demographic characteristics of the respondents are presented in Table 3.

To measure attitudes toward clothing ecolabels, a modified and extended version of D'Souza [42] questionnaire item measures were used with a 5-point Likert scale. To measure attitudes toward circular cues for fashion products and circularity in production processes, selected items from Rahman and Koszewska [43] sustainable and non-sustainable apparel cues measurement were applied. The selection of items was based on the EU sustainable product policy framework. Respondents were asked to rate the relative significance of each circular cue based on a 5-point Likert type scale (from 1 = strongly disagree/unimportant to 5 = strongly agree/very important).

Cronbach's alpha scores reached an acceptable level of reliability ranging from 0.693 to 0.899 (Table 4).

Cronbach α was computed to test reliability to ensure the quality of the measurement.

Table 3. Socio-demographic characteristics of the respondents

	Canada	**Poland**
Gender		
Female	64.30%	63.20%
Male	35.70%	36.80%
Age (years)		
18–24	20.80%	43.10%
25–34	28.00%	22.20%
35–44	20.00%	29.90%
45–54	20.00%	3.50%
>55	11.20%	1.40%
No. of respondents	126	288

Table 4. Questionnaire items and measurement instrument

Category/construct	Answer categories	**Scale**	**Cronbach's alpha**	**Leads from the sustainable product policy framework**
Circular cues for fashion products	Importance of the following factors for purchasing decision for clothing: Q1: Garment Life (possibility to repair/reuse/dispose) Q2: Recycling (possibility to recycle) Q3: Durability Q4: Certified eco-friendly label	5-point Likert-type scale	0.713	Sustainable product design: selected aspects: - improving product durability, reusability, upgradability, and reparability - increasing recycled content in products - enabling remanufacturing and high-quality recycling
Eco-labels for fashion products	Q1: I believe that environmental information on the product label is important Q2: I generally believe in the environmental information on the product label Q3: I believe environmental certification can be helpful for buyers Q4: I believe that there is a need for environmental certification of fashion related products Q5: I understand the concept of environmental certification	5-point Likert-type scale	0.693	Empowering consumers: - setting minimum requirements for sustainability labels/logos - proposing that companies substantiate their environmental claims using Product and Organization Environmental Footprint methods and integrate them into the EU Ecolabel. - include more systematically durability, recyclability, and recycled content in the EU Ecolabel criteria
Circularity in production processes	Importance of the following factors for purchasing decision for clothing: Q1: Reduced water use in production processes Q2: impact of production processes on air quality Q3: Reduced energy use in production processes	5-point Likert-type scale	0.899	Circularity in production processes: promoting circularity in industrial processes in the context of the review of the Industrial Emissions Directive

Additionally, to verify H4 and compare the consumer responsible purchasing behavior, we asked them how much they agreed with the following statements:

Q1: When I have a choice between two equivalent clothing items, I purchase the one less harmful to others and the environment.

Q2: I would avoid buying clothing items if it had potentially harmful environmental effects.

Q3: I would be willing to reduce my consumption to help protect the environment.

In addition, in this case, the Cronbach's alpha scores were considered 'good', reaching the value of 0.792.

To determine whether there were statistically significant differences between consumer attitudes in the two analyzed countries, the Mann–Whitney *U* test, a nonparametric test, was used.

The research process and methods are summarized in Figure 1.

4. Results and discussion

In the case of circular cues for fashion products, the Mann–Whitney U test showed that generally there were no significant differences between the two countries. The aspects such as garment reparability, reusability or a lack thereof (disposability), recyclability, and environmental performance certified with an ecolabel are of moderate importance for consumers from both countries (mean score, where: 1 – very unimportant; 5 – very important, from 3.11 to 3.72 – see Table 5). Additionally, these cues were rated much lower than other aspects such as comfort, fit, style, price, and workmanship quality [44]. The only exception that received higher scores compared with other

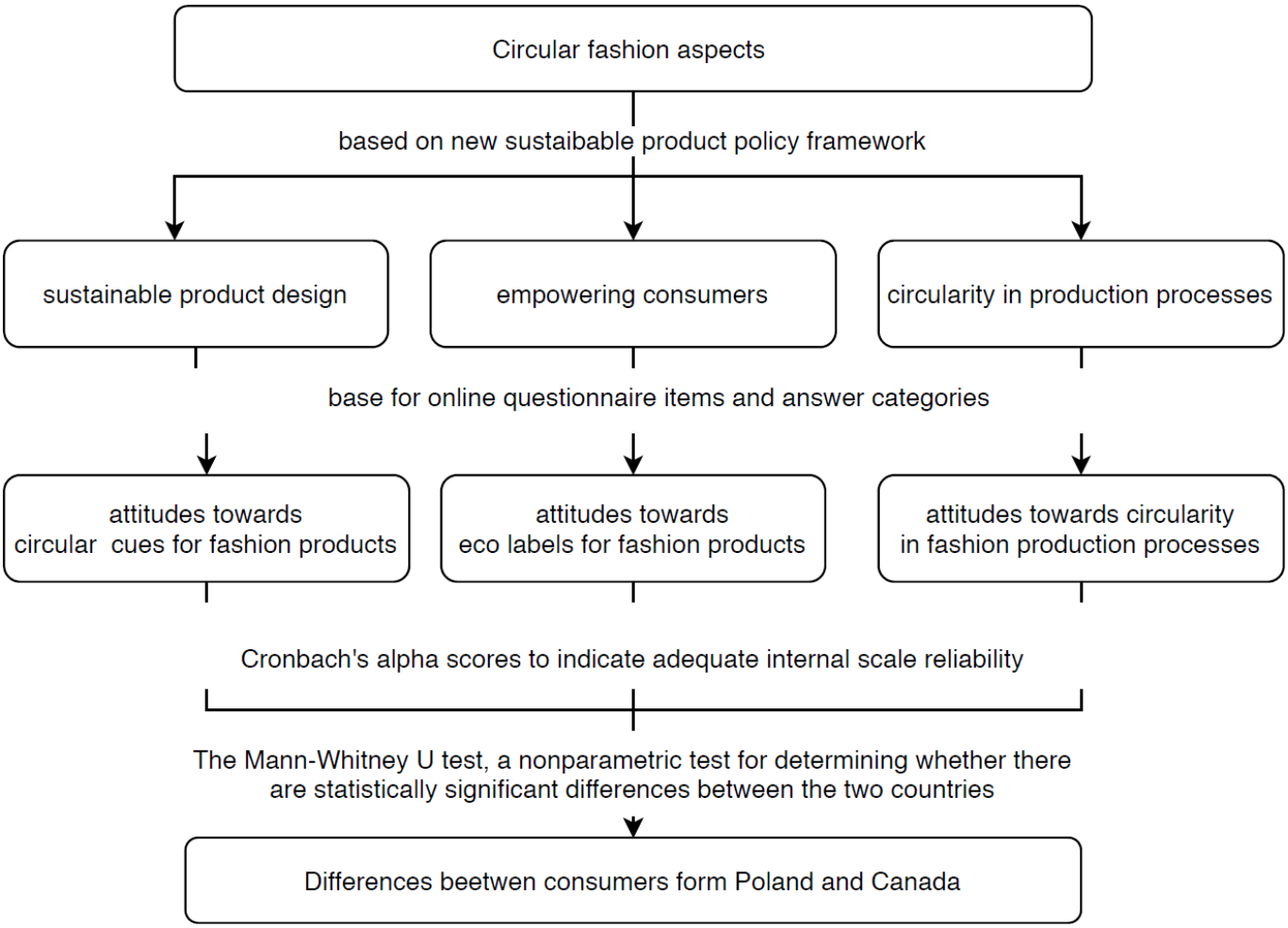

Figure 1. Research framework and methods.

CE cues in both countries and at the same time turned out to be more important for the Polish respondents was durability. Durability, although crucial in the CE model, seems to be associated primarily with economic benefits by consumers. Therefore, H1 was not supported.

The differences between the two countries were much more visible in consumer attitudes toward environmental labels. Statistically significant differences were confirmed for all statements except for the very general one: "'I believe that environmental information on the product label is important'." However, the mean score, in this case, shows that the Polish respondents agreed with this statement slightly more than the Canadian ones. According to the results, the Polish consumers tended to believe more strongly that environmental certification could be useful for buyers and that there was a need for environmental certification of apparel products. They also declared a stronger conviction of having understood the concept of environmental certification. At the same time, the respondents from Poland seemed to have less confidence and less trust in environmental information on product labels than Canadians. Based on these results, H2 was supported.

The last of the analyzed circular fashion aspects referred to consumer attitudes toward circular production processes. In this case, statistically significant differences occurred only for the impact of fashion production processes on air pollution. This aspect was more important to Polish buyers compared with Canadians. The two others: reduced water and energy use, was of moderate importance for purchasing decision for clothing in both countries (see Table 5). With these findings, H3 was only partially supported, as statistically significant differences were noted for one out of three statements.

According to the latest Ipsos Global Advisor report [45], one of the top environmental issues for Poles is air pollution. Almost 50% of the Polish citizens believe it to be one of the three most important environmental issues facing Poland today that should receive the greatest attention from local leaders. By comparison, only 23% of Canadians regarded air pollution as one of the top environmental concerns. Interestingly, the respondents from the two countries were consistent in their opinions on the importance of water pollution: 22% of the Canadians and 20% of the Poles ranked it in the top three aspects, according to the same research. This may suggest that general attitudes toward different environmental issues impinge in a significant way on attitudes toward environmental aspects of fashion production processes.

The last hypothesis referred to purchasing behavior. The test results revealed that there were statistically significant differences between the countries for all analyzed aspects. The Canadian consumers turned out to be more willing to choose clothing items that are less harmful to others and the

Table 5. Differences in consumers' attitudes toward a circular fashion

	Consumer attitudes -questionnaire items	Country	N	M	SD	Mean rank	Mann–Whitney *U* test	Asymptotic statistical significance *p*
Circular cues for fashion products	Garment life (repairability/ reusability/disposability)	Poland	288	3.52	1.15	203.58	17,016.0	0.291
		Canada	126	3.72	0.900	216.45		
	Recycling (recyclability)	Poland	288	3.58	1.201	213.50	16,417.0	0.109
		Canada	126	3.49	0.944	193.79		
	Durability	Poland	288	4.49	0.652	226.82	12,579.5	0.000*
		Canada	126	4.10	0.731	163.34		
	Certified eco-friendly label	Poland	288	3.13	1.129	209.12	17,677.0	0.661
		Canada	126	3.11	0.772	203.79		
Environmental labels for fashion products	I believe that environmental information on the product label is important	Poland	288	4.23	0.905	212.89	16,592.0	0.133
		Canada	126	4.15	0.801	195.18		
	I generally believe the environmental information on the product label	Poland	288	3.43	0.989	195.58	14,710.500	0.001*
		Canada	126	3.80	0.738	234.75		
	I believe environmental certification can be helpful for buyers	Poland	288	4.01	1.026	216.28	15,614.000	0.015*
		Canada	126	3.90	0.757	187.42		
	I believe that there is a need for environmental certification of fashion related products	Poland	288	4.45	0.905	228.51	12,093.500	0.000*
		Canada	126	4.04	0.794	159.48		
	I understand the concept of environmental certification	Poland	288	3.99	1.003	226.17	12,766.500	0.000*
		Canada	126	3.49	0.978	164.82		
Circularity in production processes	Reduced water use in production processes	Poland	288	3.37	1.248	208.10	17,972.500	0.874
		Canada	126	3.11	0.772	206.14		
	Impact of production processes on air quality	Poland	288	3.73	1.202	219.25	14,761.000	0.002*
		Canada	126	3.52	0.855	180.65		
	Reduced energy use in production processes	Poland	288	3.53	1.183	211.44	17,008.000	0.288
		Canada	126	3.52	0.846	198.48		
Consumers' behaviors	Preference to purchase clothing items less harmful to the environment	Poland	288	3.64	1.193	199.27	15,775.000	0.027*
		Canada	126	3.96	0.958	226.30		
	Avoidance of buying clothing items with potentially harmful environmental effects	Poland	288	3.28	1.266	190.28	15,202.500	0.006*
		Canada	126	3.90	0.824	246.86		
	The tendency to reduce consumption to help protect the environment	Poland	288	3.60	1.231	197.29	15,202.500	0.006*
		Canada	126	4.03	0.809	230.85		

*$p < 0.05$.

environment and to avoid buying clothing items that have potentially harmful environmental effects. They were also more willing to reduce their consumption to help protect the environment than the Polish participants. This finding provides support for H4. Thus, it is reasonable to conclude that the "'green purchasing attitude-behavior gap'" widely described in the literature and manifested in the fact that sustainability attitudes rarely translate into green buying behavior [46–49] is more patent in the case of fashion buyers from Poland.

5. Conclusions

In terms of circular cues for fashion products and circularity in production processes, the results indicated that there were no significant differences between the two analyzed countries in general. The aspects, such as garment repairability, reusability or disposability, recyclability, environmental performance certification with an ecolabel, reduced energy and water use were found to be of moderate importance to the consumers from both countries.

However, there were two exceptions: durability of clothing and the impact of production processes on air quality. These two aspects were significantly more important for the Polish than the Canadian counterparts. Durability was also considered as the most important aspect affecting consumer purchasing decisions in both countries. This suggests that despite the cultural and economic differences between the countries, the purchasing criteria play the most effective way in the context of the CE will be those referring to purely economic benefits for the users.

Statistically significant differences between the countries emerged in the case of the attitudes toward the third analyzed aspect: environmental labels for fashion products.

The Polish consumers strongly believed that there was a need for environmental certification for apparel products and that it could be useful for buyers. At the same time, they had less confidence and less trust in environmental information. The Polish government and fashion producers operating in the Polish market should focus their efforts on building trust and confidence, especially in the face of necessity to include durability, recyclability, and recycled content in the EU Ecolabel criteria.

Canadian consumers, on the other hand, turned out to be more willing to choose clothing items less harmful to the environment, avoid buying those with potentially harmful environmental effects, and reduce their consumption to help protect the environment. The "'green purchasing attitude–behavior gap'" appears to be more evident in the case of Poland.

The results of this study showed significant similarities and differences in attitudes toward selected aspects of circular fashion in Poland and Canada. This information should enable multi-national fashion producers and retailers to gain a better understanding of fashion buyer behavior in the context of the CE, as well as to apply the current knowledge while introducing new business models and strategies in different markets.

Limitations and future research

The study has some limitations. First, it was based on a convenience sample, making the findings unlikely to represent the larger populations of Poland and Canada. Moreover, the results should not be generalized to other developed or developing markets with different demographics such as population size, age cohorts, or ethnic groups. Second, the research considered fashion products, therefore, the findings may not be valid for other consumer product groups. Third, the current study focused only on assessing the differences in Polish and Canadian consumers' attitudes toward circular fashion, further considerations including other countries and relations between the analyzed variables/constructs are recommended. The authors plan to compare the results from Poland and Canada to India as well as to access attitudes toward different aspects of the CE. All in all, the current study can broaden our knowledge and hopefully encourage the purchase intention of more sustainable fashion products to reduce overconsumption and negative environmental impacts.

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