

THE CIRCULAR ECONOMY PUBLIC DISCOURSE THROUGH ONLINE MEDIA ANALYSIS

Daniela STAICU

Bucharest University of Economic Studies

6, Piata Romana, Bucharest, R)

daniela.staicu@fabiz.ase.ro

Abstract

In January 2019, the Romanian Government released the content of the National Waste Management Plan and started the implementation of the activities included in the plan as a step towards transitioning to the circular economy. The communication of activities related to the transition to the circular economy displayed in the public arena was of interest for the researcher, and the measuring of its dimensions was possible through the analysis of what is being done, by who, where, and how. Using online media content analysis, the researcher analyzed how the transition from the linear to the circular economy in the textile and clothing sector, in particular, is reflected in the online media by highlighting which concepts are frequently communicated and who are the voices doing the communication. Looking at the public discourse over time allows for a systematic yet nuanced understanding of how the transition to a circular economy is being communicated. Data collection was performed using Google Alerts, a content change detection and notification service which sends emails to the user when it finds new results such as web pages, newspaper articles, or scientific research that match the user's search terms. The study analyzed 109 online articles published in the Romanian language between February 12 and March 12, 2019. Seven concepts associated with the circular economy were suggested by prior literature review and consequently, these were analyzed: The National Waste Management Plan, waste prevention, selective waste collection, waste recycling, trends in the textile and clothing sector, the circular economy, entrepreneurs in the textile and clothing sector. The findings revealed that most of the communication was done in the local media, in articles of two paragraphs length, and focused mostly on trends in the textile and clothing sector, followed by waste prevention activities and references about the National Waste Management Plan at large. Most of the communication represents the point of view of the public authorities, followed by private entities represented by companies and non-governmental associations. The results are intended to provide information to national decision-making bodies, and local authorities in creating a functional communication plan for the transition to the circular economy by understanding how this is currently reflected in the online media, which concepts and voices are lacking from the public discourse and consequently where to make amends to ensure messages and channels which can reach all stakeholders connected to the circular economy.

Keywords

Circular economy; the textile and clothing sector; public discourse; online communication; transition to the circular economy; waste prevention.

Introduction

The transition towards a circular economy offers an opportunity to reduce Europe's environmental footprint through measures of diminishing raw material consumption and reducing waste generation (The European Commission, 2015). For this to happen, it is necessary to develop a long-term vision for the circular economy, to set clear achievable objectives, and to determine which actions are necessary to turn this vision into reality connected to environmental and social well-being (The European Commission, 2018; The Council of the European Union, 2018), Ellen MacArthur

Foundation, 2017; Whicher et al., 2017; The European Commission, 2013). In the perspective of the urgent need for change, the circular business models are gaining traction, which has led to the creation of bi-directional policy actions: throughout the life cycle of a product and at disposal (The European Commission, 2018; European Commission, 2017).

The progressive introduction of the circular economy in policies in the past ten years determined the European Union, and the Member States to create policies with a strong focus on increasing recycling rates, reducing landfilling, and creating new markets dedicated to secondary raw materials. Under the current European policies, the business models are shifting to become a potential solution for serious long-term global problems, related to the chaotic use of the resources, as well as the uncontrolled production of waste and disposal practices (Henninger et al., 2017; Scheffer, 2012). Textile waste is relatively small in terms of weight as compared to other waste streams, but it has a large impact on human health and the environment (Sandin & Peters, 2018; Koszewska, 2018; James & Lings, 2018; Stengg, 2001). The shift from a linear to a circular model in the textile and clothing sector is associated with the need to implement innovative business models, but the adoption of circular business strategies at the national level in the industry has been scarce (Thorisdottir & Johannsdottir, 2019; Fraccascia et al., 2019; Hall et al., 2010).

The literature about the circular economy in the textile and clothing sector is flourishing, and more and more business models for particular industries are investigated although there is no standardized circular economy roadmap (Thorisdottir & Johannsdottir, 2019). However, this is not the case in Romania, who only recently adopted a National Waste Management Plan. In this plan, the textile and clothing sector waste is ignored and no actions are forecasted to prevent or deal with this type of waste through thousands of pages of literature predict large quantities of textile waste to be discarded in the following years (Institutul pentru Cercetări în Economie Circulară și Mediu Ernest Lupan, 2019).

The objective of this research was to understand the context in which the transition to the circular economy activities are developing in Romania after the adoption of the national waste management program through analyzing the conversations about the textile and clothing sector in the transition to the circular economy portrayed in the online media in Romania right after the adoption of the national strategy.

To achieve the objective, the researcher chose to employ the content analysis research method, a qualitative research method, with the main focus on online content analysis. Content analysis is concerned with “who says what through which channel to whom with what effect” (Lasswell, 1948). Compared to other methods of analysis, in content analysis data derives from communicative practices (Saraisky, 2016). Therefore, content analysis is most widely used to collect and analyze data to understand the meanings assigned to a topic within a given context (Krippendorff, 1989 in Saraisky, 2016).

Methodology

Seen as trying to uncover the reality as it is, the content analysis does not describe literally the content, but rather highlights patterns and trends, and proceeds from an

understanding that meaning can be counted and coded using a prior coding scheme and codebook which allows the researcher to map patterns and meaning of the content analyzed (Lowe, 2004). To this purpose, a variety of types of content may be used for analysis, ranging from any type of printed materials such as newspapers, magazines, letters, books, testimony, governmental publications, or other sources such as films, radio broadcasts, television programming, podcasts (Saraisky, 2016).

Media are acknowledged to play a key role in interpreting and disseminating ideas about public policy and are crucial to setting the political agenda by selecting which topics are reported on and how these are covered (McCombs & Shaw, 1974; Gamson & Modigliani, 1989). Therefore, media analysis is an important form of content analysis.

Media analysis is an economical form of data collection because the data are available online or through subscription services for the academic researcher (Saraisky, 2016). Media define public problems through how issues are organized and understood in the public arena, a concept known as framing (Benford & Snow, 2000), and through the actors who have legitimacy and power and who are given a voice, an action known as gaining standing (Ferree et al., 2002 in Amenta, 2017).

Monitoring and collecting of the online articles were performed between February 12 and March 12, 2019. This period was selected because it follows the adoption of the National Waste Management Plan and publication in the Official Monitor of Romania on January 5, 2019. A number of 109 online articles were analyzed according to the process described in figure 1. Each article was given an identification code from 1 to 109 and introduced into a matrix.

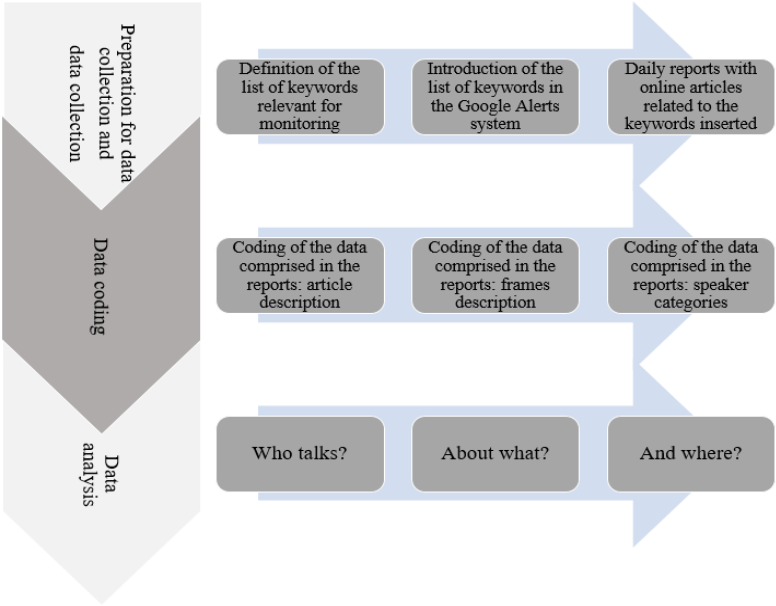


Figure 1. The process of collecting and analyzing the data available in the online media outlets

Source: Author's processing

The data included in the articles was coded on three levels: article description, framing, and speakers. The findings first describe the three levels followed by the relationships between these three levels. A prior review of the research undertaken on the circular economy related to the textile and clothing sector informed the construction of the coding scheme (figure 2).

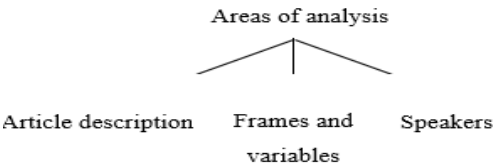


Figure 2. Coding scheme for content analysis employed in the research
Source: Author’s processing

To minimize research bias, categories were developed fully for each element of the coding scheme before the coding of data commenced (figure 3) by performing a literature review and a preliminary reading of a sample of texts to capture important variables before the codebook is finalized (Neuendorf, 2002). The coding categories proposed here are not exhaustive and represent the researcher’s perspective given the prior literature review.

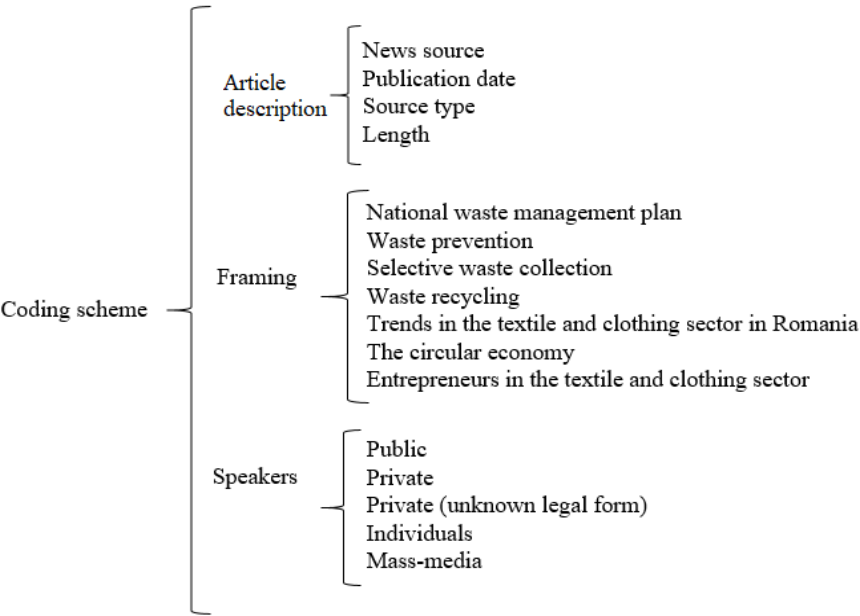


Figure 3. Coding scheme with variables listed
Source: Author’s processing

Three aspects of the code sheet media analysis are described below: article descriptive categories, framing categories, and standing categories. The coding process linked theory to operationalization and underscored the quantity and quality of information media can provide about the national context of the textile and clothing sector in Romania in transitioning to the circular economy (Saraisky, 2016).

The first section of the codebooks gathers descriptive information about each online media outlet article (figure 3). For each of the three categories, variables were defined and coded. The article description is connected to presenting the features of the articles analyzed. In this case, the researcher looked first at the source of the article, divided into two categories: local or national (table 1). In the category “local” were included media outlets which by name or by content are targeting the local community, whereas in the “national” category was included media outlets which by name and content have national reach. In terms of the length of the articles analyzed, three dimensions were defined after a preliminary reading of a sample of texts related to the topic (Table 1).

Table 1. Codebook for article description categories

Category	Variable	Code
News source	Local	1
	National	2
Publication date	February 12, 2019	1
	March 12, 2019	2
	Under 150 words (2 paragraphs)	1
Length	150 - 500 words (1 page)	2
	More than 500 words	3

Source: Author's processing

Next, to proceed to the analysis of the content of each article, the researcher developed a two-level-coding scheme based on the concepts of framing and standing to help focus and deepen the analysis. Framing represents how issues are organized and understood in the public arena and it is done through frames that are organizing ideas, words, images, and themes used to describe and structure information (Chong & Druckman, 2007). Standing refers to a group being treated as an actor with voice, not as an object being discussed by others (Ferree et al., 2002 in Amenta, 2017). In this research, standing is described by the word “speakers”.

Each article was coded for framing and speakers (table 2). A prior literature review of research on the circular economy related to the textile and clothing sector and a preliminary reading of a sample of the text were performed to capture important variables for developing codebooks (table 2). The codebook for framing categories comprises seven categories and 27 variables.

Table 2. Codebook for framing categories

Frame	Variable	Code
National waste management plan (NWMP)	No mentions about the NWMP	0
	Actions are undertaken to implement the NWMP	1
	No mentions about textile waste prevention actions	0
Waste prevention	Textiles reuse events	1
	Second-hand clothing	2
	Textiles repair	3

Selective waste collection	No mentions about waste collection measures	0
	Textiles collection measures are undertaken	1
Waste recycling	No mentions about textiles recycling measures	0
	Textiles recycling measures are undertaken	1
Trends in the textile and clothing sector in Romania	Need for lohn plants workers	1
	Need for textile plant workers in Romania	2
	Need for textile plant workers abroad	3
	Low-paid jobs in the textile sector	4
	High-paid jobs in the textile sector	5
	Textile crafts promotion	6
	Textile plant closure	7
	Clothing retailers opening stores	8
	Internships in textile plants in Romania	9
	Clothing shopping multiple times a month	10
	Textile courses	11
	Promotion of products made with organic fibers	12
	Promotion of small tailor shops/plants	13
The circular economy	No action undertaken for the transition	0
	Projects related to the transition	1
Entrepreneurs	No mention of entrepreneurs in the textile and clothing sector	0
	Mentions about entrepreneurs in the textile and clothing sector	1

Source: Author's processing

In terms of speakers, five categories were identified: public entities (institutions or companies), private (legal form: company or NGO), private (unknown legal form because the content does not mention if the entity is a company or an NGO), individuals or the mass-media. All the content is indeed reaching the audience through mass-media or media outlets, but there are instances when the speaker is only the media, and the actors in the content do not get a voice through an opinion or a quote (table 3).

Table 3. Codebook for speaker categories

Category	Speaker sub-category	Code
Public	Public authority or Public company	1
	Companies	2
Private	NGO's	3
		4
Private unknown legal form		5
Individuals		6
Mass-media		

Source: Author's processing

The two-levels of analysis allowed for a thorough understanding of how often the sustainability-oriented innovators in the T&C sector were represented in the frames, by looking at the “entrepreneurs in the T&C” and the speakers’ categories by looking at the voice of the “private entities” (both known and unknown legal forms).

Data collection was performed using Google Alerts, a content change detection and notification service, offered by the search engine company Google. The service sends emails to the user when it finds new results such as web pages, newspaper articles, blogs, or scientific research that match the user’s search terms (Wikipedia, 2019). A list of seven categories of keywords resulted from prior literature review (figure 6) and a previous consultation of a few media outlets, was introduced in the Google Alerts system.

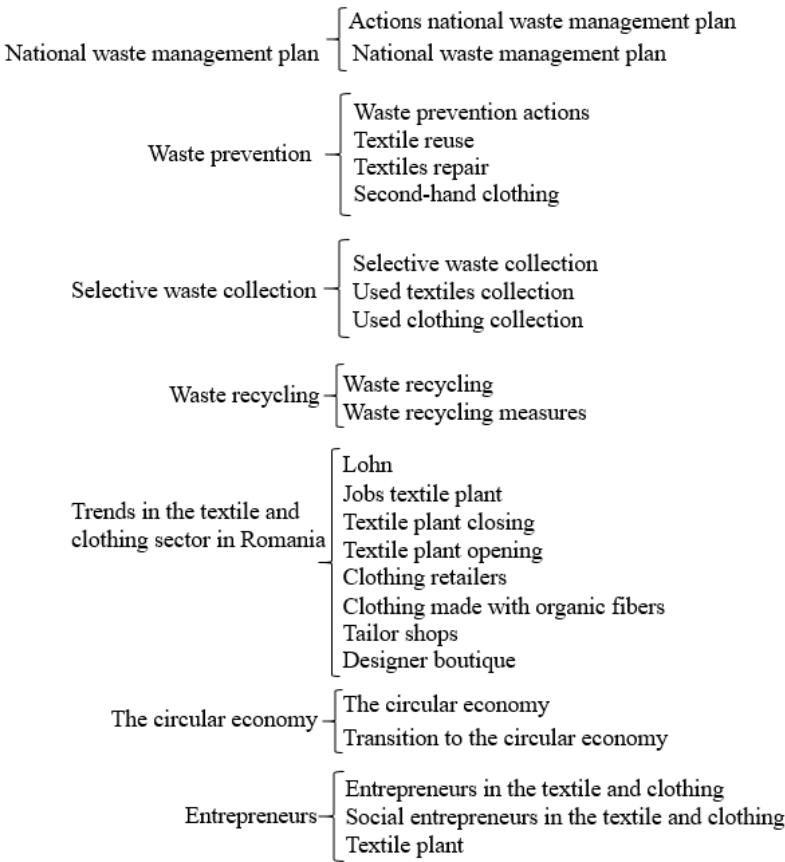


Figure 6. Keywords employed in the online content analysis
Source: Author's processing

Analysis and discussion

The monitoring of the online articles was performed during February 12 and March 12, 2019. This period selected for monitoring is considered to be rich in actions related to the circular economy given that it follows the adoption and the publication in the Official

Monitor of Romania of the National Waste Management Plan on January 5th, 2019. From that moment on, all public authorities responsible for implementing the NWMP were supposed to organize local actions with various stakeholders relevant to the subject and facilitate the implementation of the actions mentioned in the NWMP.

A sample of 109 online articles was analyzed. Out of the 28 days monitored in the period specified, only in 21 of the 28 days the research returned online articles relevant to the research topics. The data included in the articles was coded on three levels: article description, framing, and speakers. The findings first describe the three levels followed by the relationships between these three levels.

Description of the articles in the sample

The information about the article description provides a wealth of important data, before even looking at the content of the article. These data showed which news outlets are publishing articles about the textile and clothing sector in the transition to the circular economy, allowing to observe how much attention the subject is gaining in the public arena and where is being distributed (Figure 7).

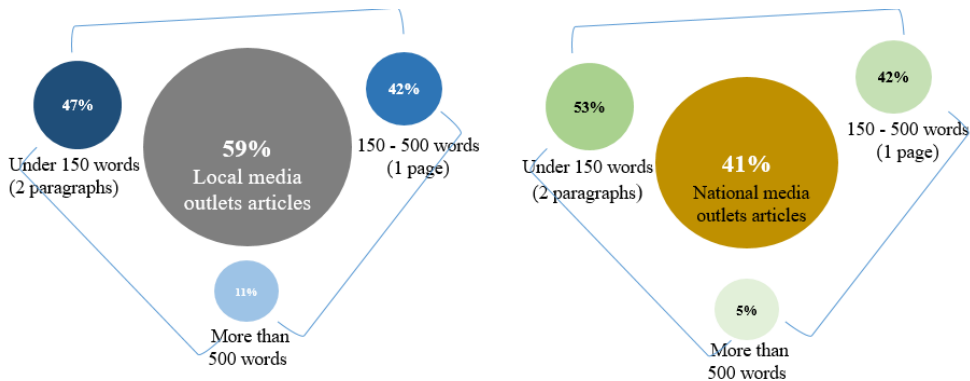


Figure 7. Articles' description according to variables defined

Source: Author's processing

Most of the articles collected were distributed in the local media (59%) with a length of up to 150 words (47%), followed by articles up to 500 words (42%). In the national media, the distribution of such articles is scarce and the length of such articles was up to 150 words (53%), followed by up to 500 words (42%).

Moving to the analysis of the articles' content, the researcher developed a two-level coding scheme based on the concepts of framing and speakers to help deepen the analysis. Each article in the sample was coded and analyzed for framing and then analyzed for the speakers' variables, as it is discussed in detail below.

Article level-analysis

Previous literature and pre-coding review had suggested seven frames that were prominently used to understand the transition of the textile and clothing sector to the circular economy. The researcher developed twenty-seven variables across the seven categories to measure the strength of the various frames (figure 8).

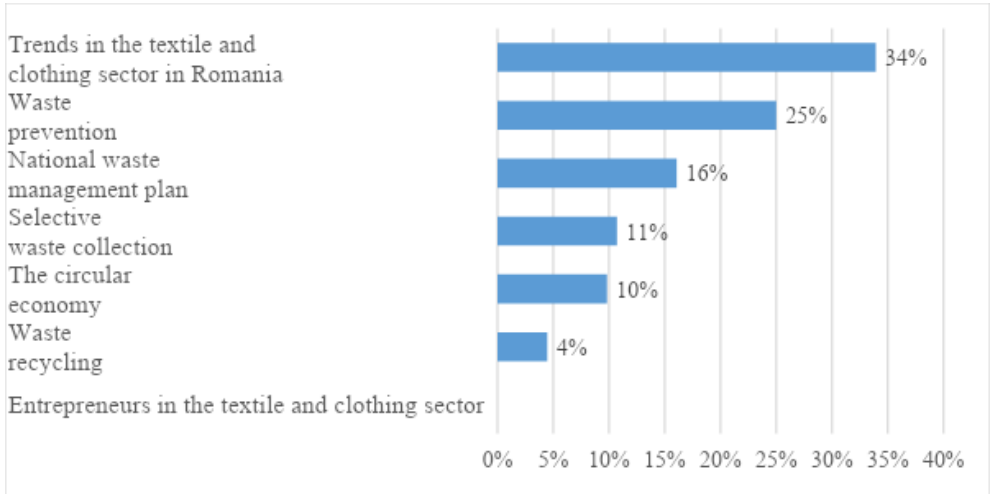


Figure 8. Frequency of the frames in the news sources

Source: Author's processing

Most articles (34%) approach topics related to trends in the textile and clothing sector in Romania, followed by waste prevention (24%) and about the national waste management plan (16%). No mentions in the articles about the entrepreneurs in the textile and clothing sector and some attention is paid to waste recycling (8%).

When dividing the distribution of frames by type of news source, the results showed that in the local media the most frequent frames employed were “trends in the textile and clothing sector” (29%), followed by “The national waste management plan” (27%) and “selective waste collection plan” (17%) as seen in figure 9.

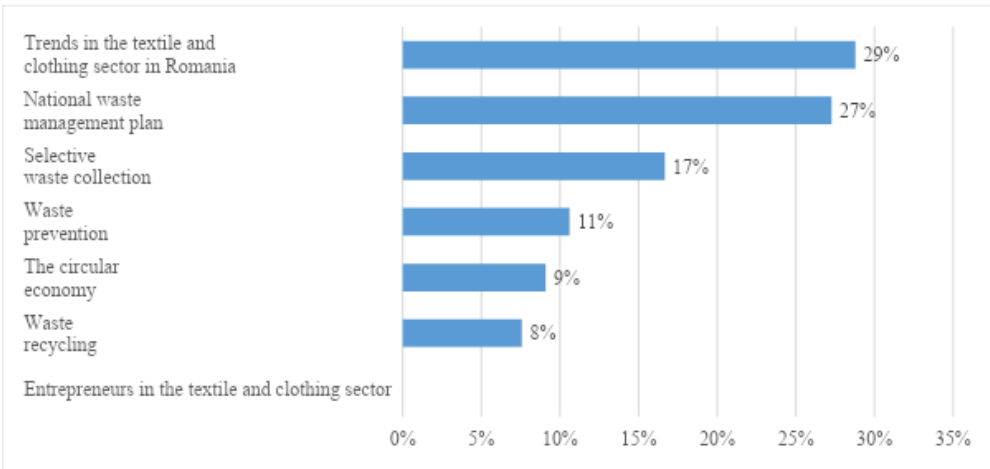


Figure 9. Frames in the local news sources

Source: Author's processing

Whereas in the national media, the most discussed frames were: “waste prevention” (47%), and “trends in the textile and clothing sector” (41%) as shown in figure 10.

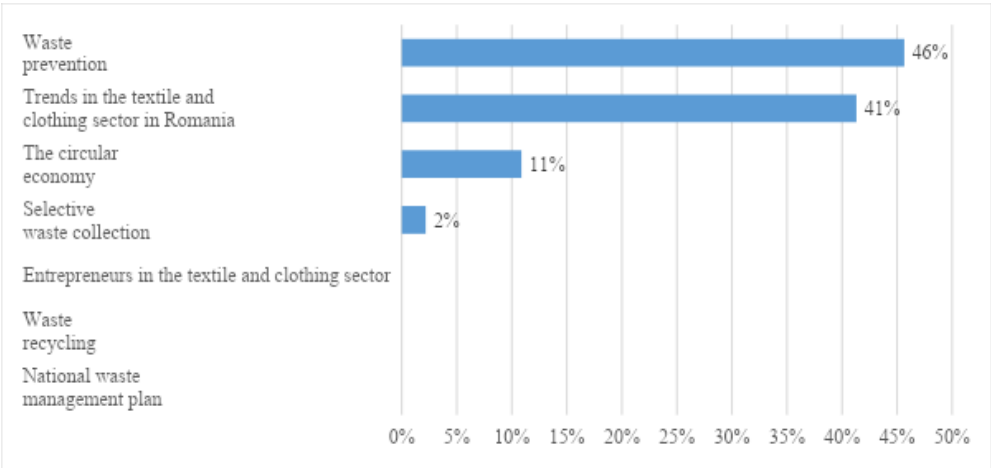


Figure 10. Frames in the national news sources
Source: Author's processing

If we compare the framing in the two types of news sources, we observe that “waste prevention”, “trends in the T&C sector”, “the circular economy”, “selective waste collection” are present in discussions in both the national and local media outlets, whereas “the entrepreneurs in the T&C sector” are absent in discussions in both news sources (figure 11).

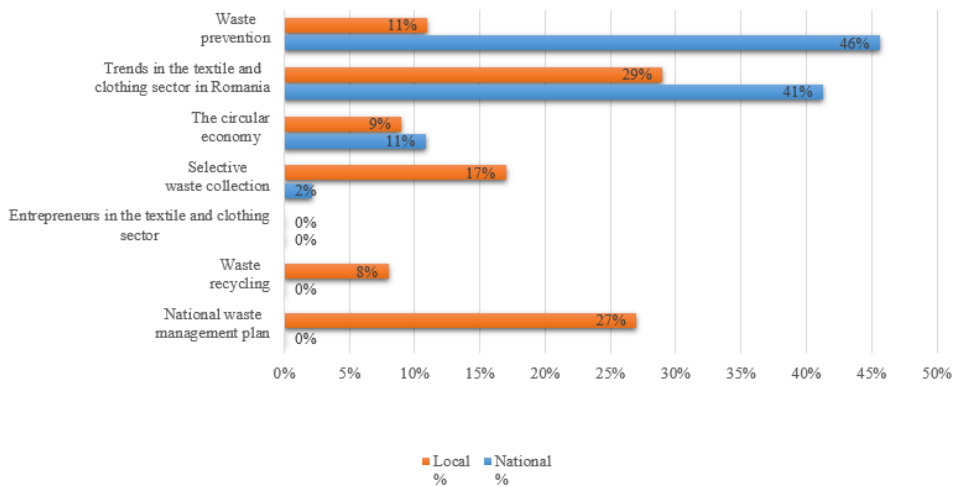


Figure 11. Frames analysis divided into news sources
Source: Author's processing

Frame-analysis by variables

For two of the seven frames, multiple variables were defined related to trends in the T&C sector and waste management actions. For the trends in T&C, a number of 13 variables was defined from the previous literature review and (figure 12).

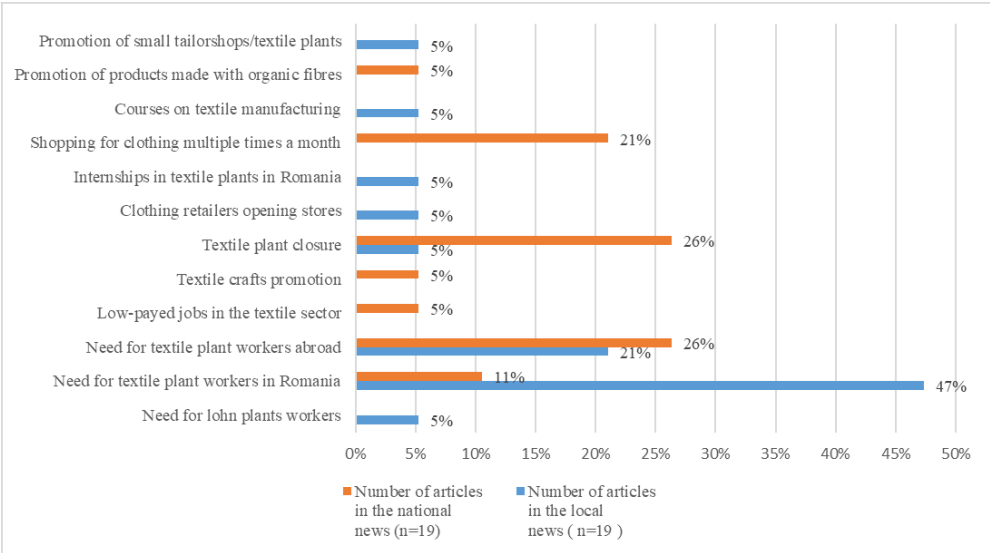


Figure 12. Analysis of the trends in the textiles and clothing sector frame by variables (n=13)

Source: Author's processing

In the local news, the most frequent topics related to trends the T&C sector discussed in the online media were: “the need for textile workers in Romania” (47%), followed by “the need for textile workers abroad” (21%). While in the national news, the most frequent topics were related to “the need for textile workers abroad” (26%), “the closure of textile plants” (26%), and “the trend of shopping for clothing multiple times in a month” (21%).

Three variables were defined for the waste management frame (Table 4).

Table 4. Analysis of the waste management frame by variables

Waste prevention variables	Number of articles in the total observations related to Waste Prevention (n = 28)
Second-hand clothing from abroad	61%
Textiles reuse events	36%
Textiles repair	4%

Source: Author's processing

The most frequent in the online media was “second-hand clothing from abroad” (61%). Mentions about textiles repair accounted for 4% of the total number of articles mentioning waste management (Table 4).

In the local news, the most frequent topic related to waste management is “second-hand clothing from abroad” (86%) followed by “textiles repair” (14%). No mention however about “textiles reuse events”. In the national news (figure 4.8.), 52% of the mentions about waste management concern “second-hand clothing from abroad” (52%) followed by “textile reuse events” (48%).

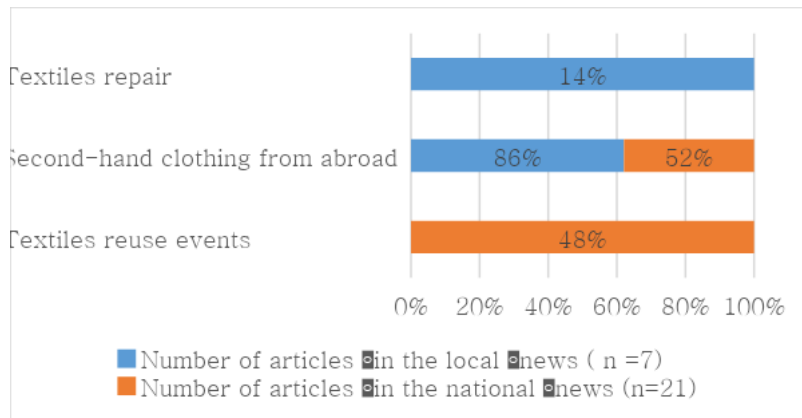


Figure 13. Waste management frame analysis by variables and news source (n=28)

Source: Author's processing

Speaker-level analysis

The researcher explored the notion of standing, that is, which actors are given a voice in the public debate (Saraisky, 2016). To understand which actors have a voice in the discussions about the main topic, the researcher coded every actor and every speech act in each article. Speech acts included not only speech that is quoted directly, in quotations, in the articles, but also paraphrases or comments from people or reports included in the article.

A prior literature review of research on the circular economy related to the textile and clothing sector helped identify the speaker's' categorized into five main groups, and then each speech act was coded for the type of news source where they appeared mentioned. The most vocal category of speakers (table 5) is the public institutions and companies (45%), followed by private stakeholders represented by companies and NGOs represented by 28 companies and 7 NGOs (32%), out of which NGOs represent 20% of this category.

Table 5. Speakers' categories and the frequency in the total number of observations

Speakers' categories	No. of recorded articles mentioning a specific category of speaker	% of total of 109 observations
Public (institutions and companies)	49	45%
Private (Companies, NGOs)	35	32%
Mass-media	12	11%
Private (unknown legal form)	11	10%
Individuals	2	2%

Source: Author's processing

Proceeding to the analysis of speakers by categories of frames (figure 14.), the researcher noticed that the most diversity of speakers is encountered in discussions

about the NWMP. However, no speakers are discussing about to the entrepreneurs in the T&C.

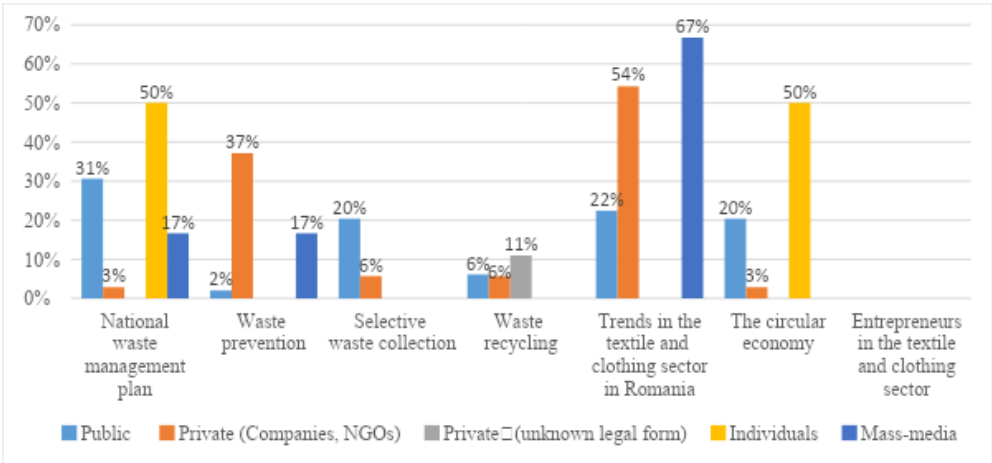


Figure 14. Speakers' categories divided into frames
Source: Author's processing

In the local media outlets, the most prominent voice belonged to the public institutions (86%), whereas in the national media the voices were represented by private entities for which we do not know the legal form (100%), followed by journalists (83%).

The frame related to trends in the T&C has 13 variables, and out of these 13, eight appear multiple times in the discussion (Figure 15).

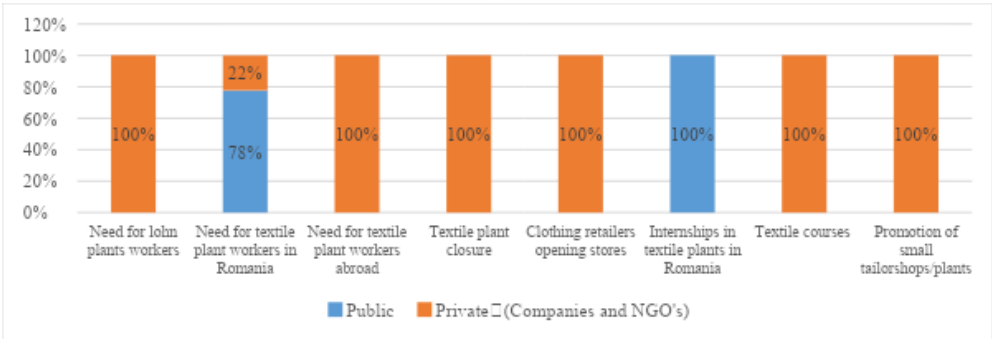


Figure 15. Variables related to trends in the T&C by categories of speakers
Source: Author's processing

While public authorities and companies are the voice discussing “internships in the textile plants in Romania” (100%) and about “the need for textile plant workers in Romania” (78%), the private sector through companies and NGOs brings in the public arena subjects such as “textile plants closing” (100%), “the need for textile plant workers abroad” (100%), “the need for local lohn plants workers” (100%), “clothing retailers opening stores” (100%), “promotion on textile courses (100%)”, and “small tailor shops or plants” (100%). The frame of “the circular economy” is discussed by public authorities (91%) and only one case of a private speaker was reported, an NGO. In 60%

of articles related to waste recycling the main speaker is a public institution or company, and the remaining 40% of cases a private stakeholder, company, or NGO, all placed in the local news (figure 16).

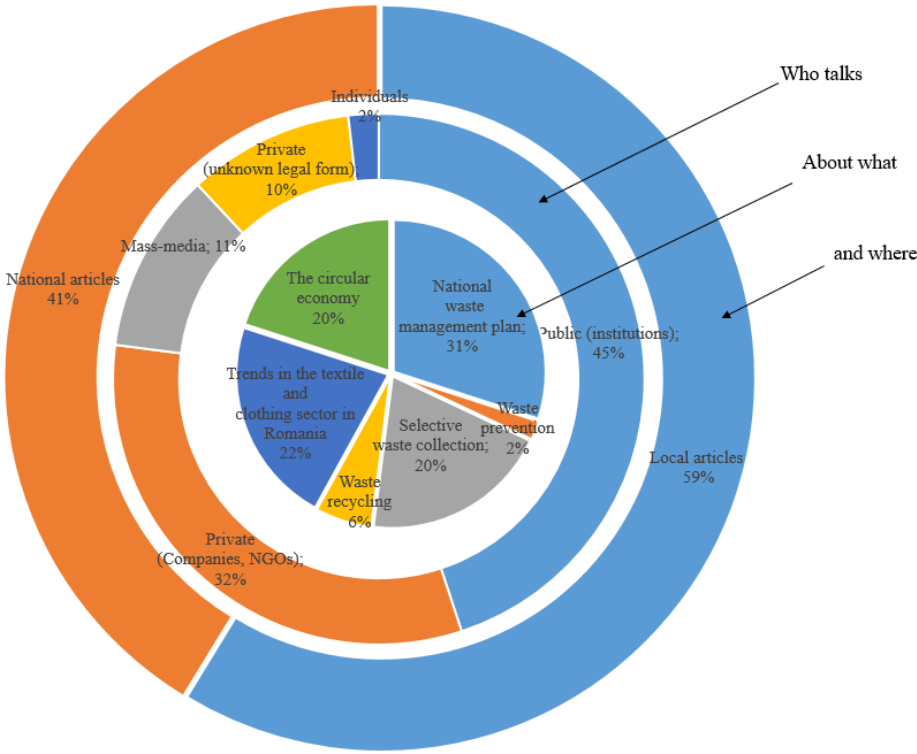


Figure 16. A snapshot on “who talks about what and where” related the T&C sector in the transition to the circular economy
Source: Author’s processing

Analyzing the snapshot of the discussion related the T&C sector in the transition to the circular economy in the online national media (figure 17), the researcher notices that three of the seven frames are not approached in national media: “the national waste management plan”, “waste recycling”, and “entrepreneurs in the textile and clothing sector”. In terms of speakers the most vocal voices in the national media are “private speakers” for which the legal form is not mentioned in the text. We do not have the information if these are companies or NGOs. At the other end, the least present voices are public institutions and companies (14%).

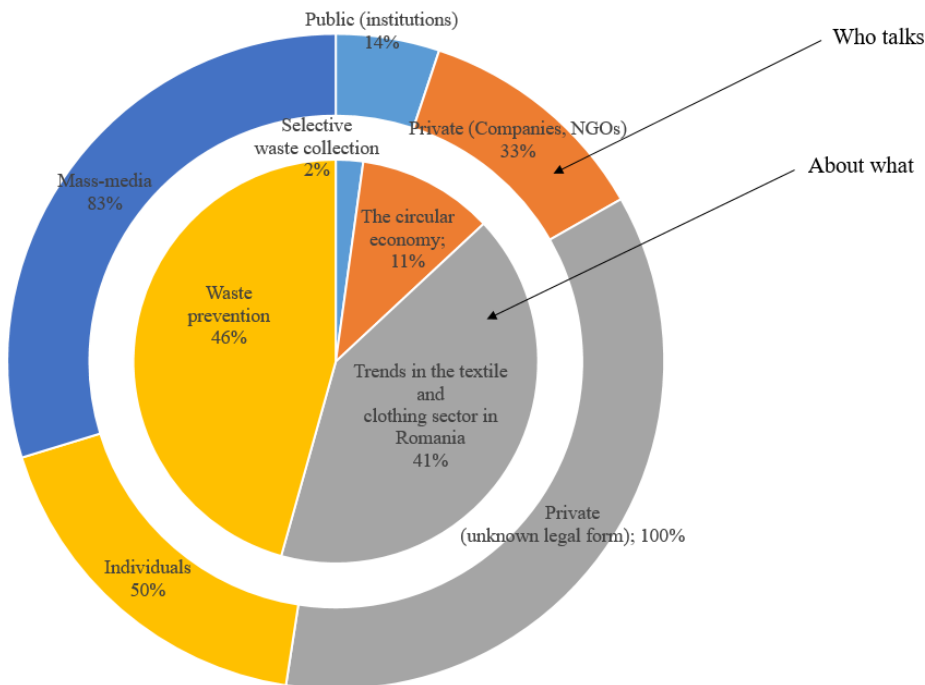


Figure 18. A snapshot on “who talks about what” related the T&C sector in the transition to the circular economy in the online national media
Source: Author’s processing

In a nutshell, in the national media outlets, private stakeholders, mass-media and individuals are discussing “waste prevention”, “trends in the T&C”, “the circular economy”, and “selective waste collection” (Figure 18).

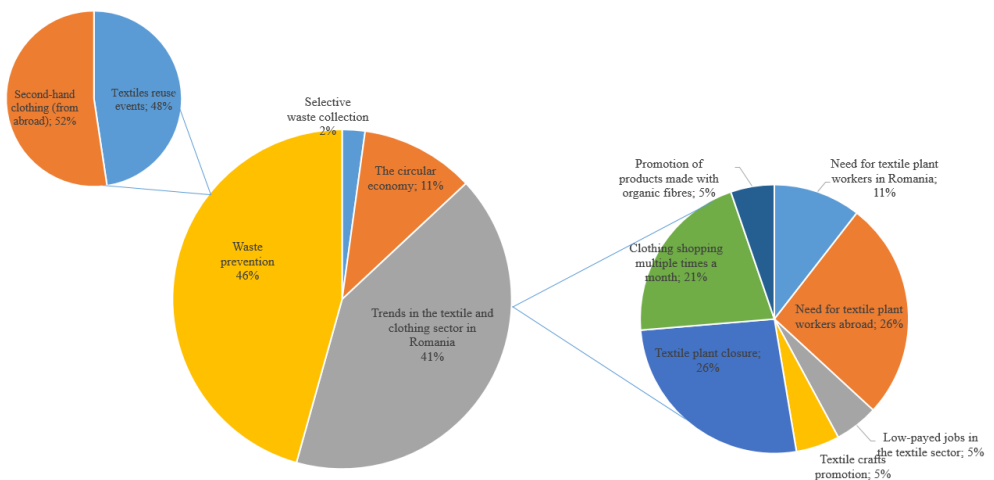


Figure 19. A snapshot on “who talks about what” related the T&C sector in the transition to the circular economy in the online national media by frames’ variables
Source: Author’s processing

Analyzing the discussion related to the T&C sector in the transition to the circular economy in the online local media (Figure 19 and Figure 20), the researcher notices that six of the seven frames are present in the public local arena. The only frame missing is the one related to “entrepreneurs in the T&C”. In terms of speakers, the most vocal voices in the national media are the “public” institutions (86%).

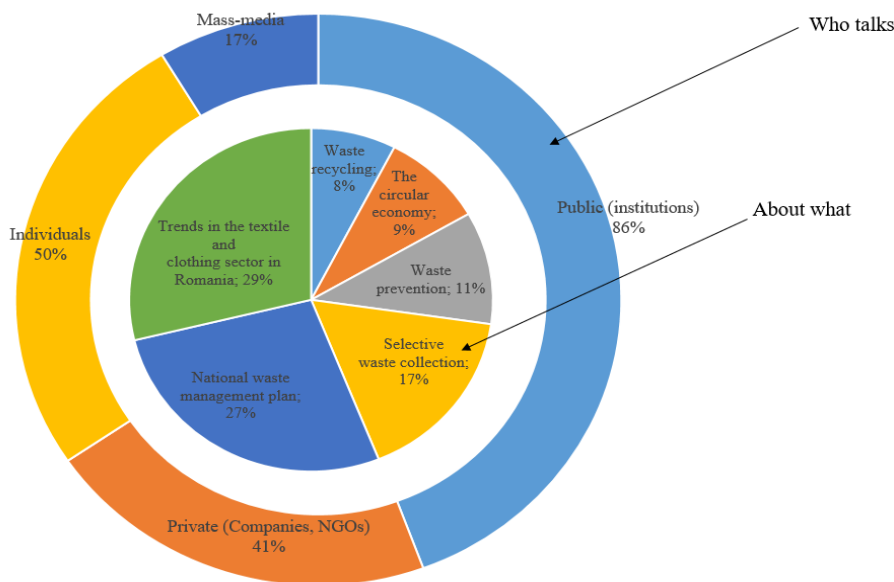


Figure 20. A snapshot on “who talks about what” related the T&C sector in the transition to the circular economy in the online local media
Source: Author’s processing

In the local media outlets, the public institutions have the most vocal voice and the topics for discussion are varying, ranging from “trends in the T&C”, “the national waste management plan”, “selective waste collection”, “waste prevention”, “the circular economy”, “waste recycling” (Figures 21 and 22).

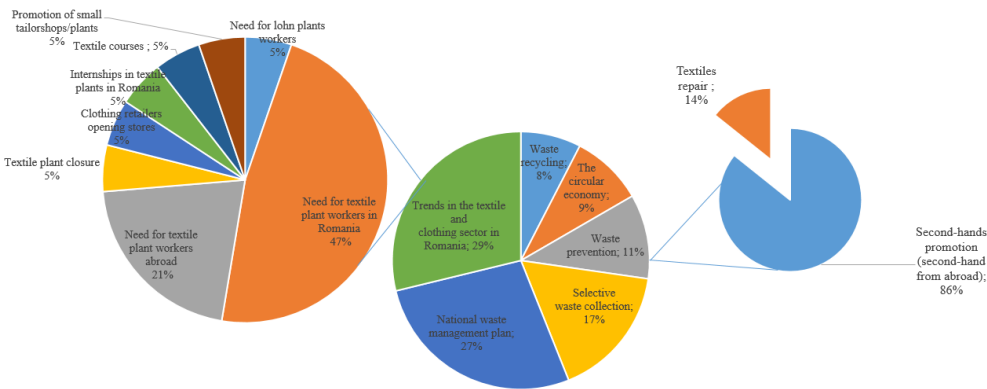


Figure 21. A snapshot on “who talks about what” related the T&C sector in the transition to the circular economy in the online local media
Source: Author’s processing

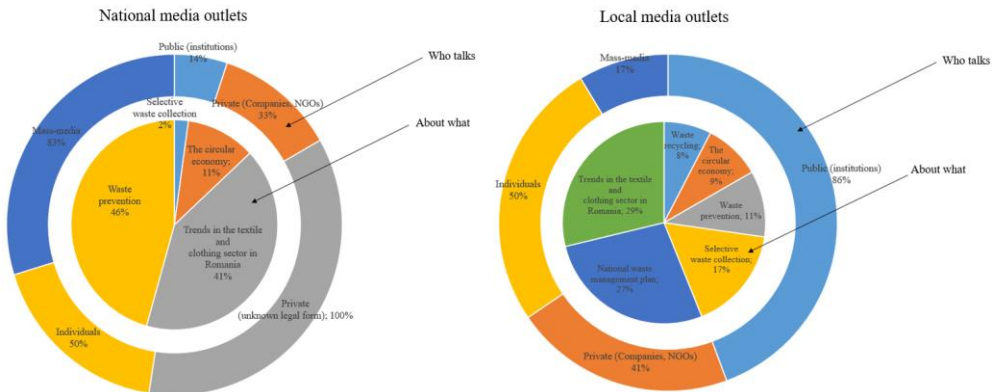


Figure 22. A snapshot on “who talks about what” related the T&C sector in the transition to the circular economy in the online national and local media: a comparison

Source: Author's processing

Discussions about the entrepreneurs in the T&C are not present in online content, neither in the local or national online media. The speakers are different according to news sources. In the local news, a variety of topics are approached and the length of the articles is under 150 words (2 paragraphs) or up to 500 words (about one page). Little attention is paid to the circular economy topic (9% or 11%), whereas the highest frequency of discussions is related to trends in T&C (41% or 29%).

Conclusions and recommendations

This research analyzes thoroughly the context into which the transition to the circular economy is happening in Romania, focusing on the conversation happening in the online media in Romania about circular economy activities developed after the adoption of the national waste management plan. It is important to understand what the conversations in the public space are about, who is initiating these conversations, and who are the speakers to correctly position activities in the public conversation.

Online media content analysis provides a fascinating window into the conversation in the public arena about the textile and clothing sector elements on the transition to the circular economy: patterns and stakeholders. Some of the most interesting findings were unexpected and might have otherwise gone unnoticed if one was simply an interested reader of only reports and papers about the phenomenon. The findings revealed that most of the communication was done in the local media, in articles of two paragraphs length, and focused mostly on trends in the textile and clothing sector, followed by waste prevention activities and references about the National Waste Management Plan at large. Most of the communication represents the point of view of the public authorities, followed by private entities represented by companies and non-governmental associations.

Further research needs to be conducted on the online media conversation about circular economy topics at various time frames to properly understand the context at a specific

point in time and launch actions that are in accordance with what is being discussed in the public space.

The results are intended to provide information to national decision-making bodies, and local authorities in creating a functional communication plan for the transition to the circular economy by understanding how this is currently reflected in the online media, which concepts and voices are lacking from the public discourse and consequently where to make amends in order to ensure messages and channels which can reach all stakeholders connected to the circular economy.

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