

The Impact of Social Media on the Sustainability of Fashion Industry Marketing

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Abstract: In the second decade of the 21st century, there were significant changes in the strategies for implementing marketing campaigns. The fashion industry quickly accepted and improved the ways of conducting marketing campaigns. The market requires quick-changing trends, which is evident both in the rapid production of clothing items and in new marketing campaigns. Customers eager for interactivity and viewing trends at a time that suits them, often view fashion novelties on social media. The desire for the representation of fashion brands on as many social network applications as possible greatly contributes to increasing the impact of reducing the quality of the environment. Users need large amounts of energy to browse new trends. Posts of trendy fashion items are often shared in groups or circles of friends, increasing the energy needed. Systems for storing media content require a large amount of energy needed to store data from social media and to cool the system. All the above contributes to the emission of greenhouse gases and the reduction of non-renewable energy sources because unfortunately, renewable energy sources are not yet sufficient for all the listed needs. In research, the habits of respondents related to the use of social media related to fashion items are studied. In addition to the aforementioned, knowledge related to the awareness and knowledge of respondents regarding the influence of social media on the sustainability of marketing drips of the fashion industry was collected. The mentioned topic is not close to the respondents, although most of the respondents were undergraduate graphic design students who may participate in marketing campaigns in the future.

Keywords: fashion industry; marketing; social media; sustainability

1 INTRODUCTION

There are many ways of digital marketing campaigns in the fashion industry, some of the most common and effective ones are content marketing, social media, PPC (Pay-Per-Click) advertising, SEO (Search Engine Optimization), email marketing, influencer marketing, affiliate marketing, video marketing and others [1, 2]. The most successful campaigns often combine several different tactics to achieve maximum effect. [3] Campaign planning aims to ensure alignment with goals, target audience and budget. Social media community is created (such as Facebook, Twitter, Instagram, LinkedIn, etc.) to promote fashion brands, collections and products and communicate with consumers [4-6].

In marketing campaigns with fashion content, the visual component of the advertised products is important because the fashion industry is based on visuality, therefore high-quality and attractive visual content is an indispensable part of campaigns. The elements of the campaign therefore often contain photos and videos showing clothes, and fashion accessories presented by famous models or influencers. In addition to the visual elements of the campaign, a story or text message that expresses values, brand style and lifestyle is important, which can stimulate an emotional connection with customers [7, 8]. Everything mentioned should be expressed originally and creatively, which will further highlight the campaign on social media. Often unconventional approaches can attract attention and set a brand apart from the competition. Followers can play a role in the campaign and be encouraged to share photos of themselves wearing clothes from the collection, further strengthening the brand's social media presence [9]. It should be emphasized that cooperation with influencers can expand the brand's visibility and increase engagement with the target audience [10-12]. All of the above certainly contribute to the quality of the marketing campaigns of a certain fashion brand, but every visual, and textual content, as well as

additional content, contributes to an increase in energy consumption.

Social media use data centres to store data, which are mostly supplied with electricity from the public grid [13, 14]. To increase their sustainability and possibly reduce their costs, more and more data centres are maximizing the use of renewable energy sources. To optimize energy consumption, data centres can use sophisticated energy management technologies [15, 16]. Optimization of total energy consumption. System cooling, server load management and the use of energy-efficient equipment can be implemented at multiple business levels. System cooling represents a significant contribution to energy consumption because servers generate heat that disrupts the optimal conditions for server operation [17, 18]. Efficient cooling systems and locating data centres in geographically colder areas can contribute to reducing energy consumption and reducing greenhouse gas emissions [19].

Virtualization can contribute to server load optimization by running multiple virtual machines on a single physical server. In this way, the servers are used at their full capacity, reducing the need for additional physical servers. Consolidation can connect more applications or services to fewer servers, which can contribute to reducing energy consumption and overall costs [20]. Another way of optimization is the load balancing service, which distributes the load balance between several servers to ensure optimal use of resources and prevent overloading of individual servers [21]. This method of optimization can also contribute to reducing the risk of service failure. Automatic server scaling enables dynamic increase or decrease of server resources according to real needs, thus reducing unnecessary consumption of resources [22, 23].

The optimum organization of data on the server can contribute to reducing energy consumption. The caching technique stores frequently used data in fast memory to speed up access to that data, which reduces server load due to

infrequent access to long-term data sources. Prioritizing between different applications reduces the load on less important tasks [24].

In addition to optimizing server performance, applications can be optimized, which can significantly contribute to reducing server load and energy consumption. Optimization usually involves optimizing databases, reducing unnecessary queries, or optimizing algorithms. By combining the mentioned methods depending on your specific needs and data centre environment [25]. It is important to regularly monitor performance and optimize resource management to achieve the best results.

Knowing how to increase energy consumption when creating content on social media and further improving the energy consumption of data centres can significantly influence the reduction of greenhouse gas emissions. The conscience and habits of social media users can additionally contribute to the goal of optimising energy consumption with good marketing results and interesting promotional content [26]. Habits and subject knowledge were investigated in this research to promote the sustainability of textile industry marketing on social media.

2 METHODOLOGY

In this paper, scientific literature and research related to fashion marketing campaigns on social media were followed. The literature search was unbiased and included books, journals and internet data. The key search terms were marketing campaigns, energy consumption, social media, opportunities to reduce energy consumption when publishing marketing content and data centre operations, behavioural styles of individuals on social media and carbon footprint.

In addition to reviewing the literature, survey research was conducted in the period from June 1 to June 30, 2023. The survey research was conducted using Google Forms, and the questions in the survey were composed in such a way that the respondents were offered answers. The survey consisted of two parts. The first part of the survey was aimed at finding out the socio-anthropological data of the respondents. By looking at the mentioned data, patterns of behaviour of different ages, educational or other groups of respondents can be observed. The second part of the survey research consisted of questions that provided information about the respondents' knowledge related to the knowledge of terms related to the sustainability of fashion marketing on social media.

121 respondents participated in the survey. Most of the respondents belonged to the age group of 18 to 23 years (82.6 %) and had a high school education (74.4 %). In the survey is a large representation of the mentioned age group is included in the survey, because the special emphasis of the research was to be placed on the knowledge of sustainable design topics of undergraduate graphic design students. Other respondents were classified into age groups where the age of the respondents increased in intervals of 5 years and the oldest age group consisted of respondents who were over 64 years old. The representation of respondents in the mentioned age groups is equal (about 3.3 %), except in the age group from 58 to 63 years (0.8 %), while the level of

education differs. 12.4 %, 5 % and 8.3 % of respondents have undergraduate, and graduate education and a doctorate in science. It is evident from the results that the rest of the respondents have mostly undergraduate education.

3 RESULTS AND DISCUSSION

Fashion campaigns are spreading to more and more social media to reach as many interested customers or collaborators as possible. Every social media application consumes energy for data storage in databases, and database operation, and the user consumes energy when viewing and possibly sharing data related to the fashion campaign. By understanding the habits of the respondents, it is possible to gain insight into the justification for using different applications to achieve better marketing results. Most respondents, 94.2 %, stated that they visit social media several times a day, so according to this statement, the success of campaigns published in the mentioned manner can be assumed. Most respondents find time in the day and want to visit social media. Most respondents (64.5 %) spend two or more hours a day on social media. Some respondents, 5 % of them, spend as much as 6 hours a day. The obtained results additionally emphasize the importance of conducting campaigns on social media, but on the other hand, they emphasize the importance of a sustainable way of conducting campaigns to reduce greenhouse gases. To compare with trends in the world, the data obtained from the survey was used to calculate the average time that an individual spends on social network applications. The research data obtained are 7.46 % less than those obtained on the Global Web Index from July 2021 and amount to 2 hours and 13 minutes. [27] As the data obtained in the research related to respondents in the Republic of Croatia, it can be concluded that habits differ from country to country, but that the differences are not significant. Countries with more inhabitants have residents who probably have more acquaintances, friends and followers with whom they can share promotional materials or socialize through social media, which can result in spending more time on applications.

When the opinion on the most viewed content on social networks is examined, it can be seen that fashion is not the most viewed content, but music and humour (Fig. 1). Fashion content is most represented in the 3rd, 4th and 8th grades. These results show that the interest in fashion is average. The reasons for such answers can be found in the fact that a certain part of the respondents likes fashion and content related to it, but the average customer needs to be more interested in viewing fashion content on social networks. Such results are not correlated with the increase in sales of fast fashion in e-commerce and its increase in sales in the world fashion market, which could indicate that the influence of social media in Croatia is not yet significant. The global market of fast fashion in 2022 was about 60.50 billion USD in 2022, and it is predicted to grow by 2030 to about 179.50 billion USD [27]. Fast fashion is usually associated with cheap and popular clothing items that must reach the commercial market as quickly as possible. Such fashion is often associated with excessive consumerism, which was further emphasized by the introduction of the e-commerce sector, which enabled easier access to fast fashion. The

aforementioned contributes to an additional increase in the carbon footprint. E-stores have brought clothing closer to customers with the availability of benefits that meet customer requirements, such as ease of return or exchange policies, door-to-door delivery, and more. The well-known European fashion house from Spain increased its sales by 68.3 % between 2019 and 2020 [27]. One of the reasons for this success is certainly the quarantine of the population caused by the COVID-19 disease. Recently, fast fashion companies have based their sales growth on the strategy of using the consumer bases of large online sales platforms. In the aforementioned partnership, the benefit has sellers of fast fashion and online sales platforms too. Such cooperation was concluded in August 2023 between the Forever 21 fast fashion chain and the Shein online platform, which has around 150 million customers [28].

Although the respondents were offered options for longer periods, the respondents posted a maximum of two

hours a day on social media (Fig. 2). When studying which social media are represented in the selection of respondents in 2 hours in Fig. 2, it can be seen that TikTok and Pinterest have the largest number of respondents (6 and 3 respondents), YouTube and Instagram have the same number of respondents, i.e. 2 respondents, and Twitter (1 respondent). The presented results show that the respondents do not visit social media in large numbers or for long periods. This question brings out the fact that most respondents do not visit social media related to fashion content for more than 15 minutes a day, and the majority of respondents stated that they do not visit them daily. When creating fashion drips, this fact must certainly be considered to modernize the content of the campaigns and attract a larger number of followers, that is, to look at which social applications have the most attendance. Removing fashion content that does not have a high attendance rate, contributed to the reduction of energy consumption.

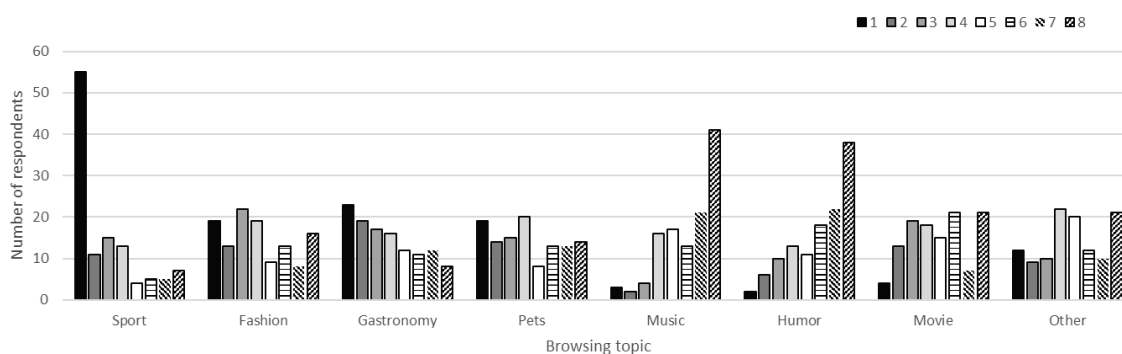


Figure 1 Respondent's statement about reviewed topics on social media (1 is the least frequent, and 8 is the most frequent)

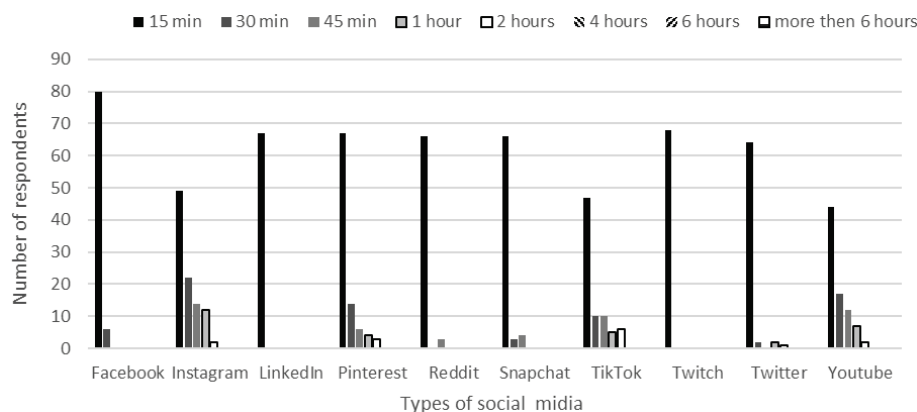


Figure 2 Respondents' statements about daily time spent on social media applications for browsing clothes (1 is the least frequent, and 10 is the most frequent)

In the study, respondents' habits were studied to examine the justification for creating a fashion campaign on social media. Surprisingly, only 5 % of respondents stated that they browse social media with fashion content, and only 1.7 % of respondents stated that they additionally use filters to view fashion-related content. The obtained results indicate that the respondents' habits do not justify the selection of fashion campaigns on social media. This conclusion is supported by the fact that 38.7 % of respondents choose clothes in a store and 29.4 % on websites. The results show that 68.1 % of respondents should apply other methods of fashion drips. Of course, there is always a group of potential customers who

are not significantly connected to campaigns, in this survey 20.2 % of respondents cherish their style and are not interested in trends, and 5 % of respondents believe that they are up to date with trends. A good fashion campaign should attract this group of respondents who are not interested or think they are not interested, and campaigns reach them.

Regardless of the respondents' low interest in social media applications, the respondents were pleased with their advantage when presenting fashion clothing products. As many as 44.3 % of respondents stated that they have a better insight into the actual appearance of clothes on a person through social media. The obtained results indicate that the

respondents accessed social media to view other content and that in the meantime they did not change their habits related to fashion browsing content, but that they are aware of the benefits of social media. This statement is supported by the fact that an additional 25.2 % of respondents stated that e-commerce websites are not sufficiently interactive, and 10.4 % of them would like a musical background in the video material. This is a total of 79.9 % of the respondents, which could indicate that campaigns on social media still have room for promotion, they just need to use new ways of gaining an audience.

When creating promotional fashion content on social media applications, it is important to balance the sustainability of the promotion with the maximization of the effects of the promotion, a good selection of the most used applications, removing content from applications where such content is not followed, choosing a desirable and interactive look without using unnecessary effects. Such a task is difficult to perform, especially with little connection to the impact of promotion on the respondents' social media, especially those who could participate in the creation of promotional materials in the future (graphic design students). This is confirmed by the results of the research because 23.1 % of the respondents do not think that social media posts affect their carbon footprint. The obtained result could be influenced by educating students in higher years of study on ways to reduce the consumption of energy when designing promotional materials. The population should be involved in education to acquire sustainable habits.

When respondents were asked to choose the possible options that contribute the most to increasing energy consumption, it can be noted that the answers given were quite different (Fig. 3). Time and effects received the largest

number of highest marks. It must be emphasized that time as an element of the presentation received the highest number of lowest ratings from the respondents. The mentioned elements of posts on social media significantly affect energy consumption. The recording time should certainly be reduced to the smallest possible extent while respecting the transparency of the presented product. The effects certainly attract the attention of the observer, but the simplicity of the presentation usually goes with elegance. Background colours and dimensions were selected by the respondents as the elements that have the least impact on energy consumption. Usually, the background colour is white to best emphasize the cuts and colours of the textile products. It is known that the white colour contributes the most to energy consumption. The size of the record should be formed so that the product is easily visible on all screens.

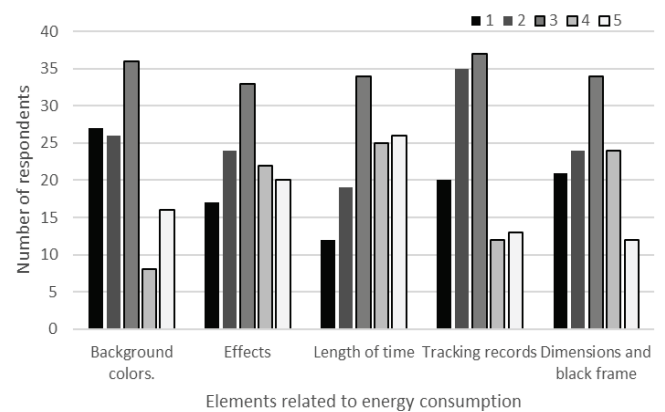


Figure 3 Respondent's statements about elements related to energy consumption on social media applications for browsing clothes (1 is the least frequent, and 5 is the most frequent)

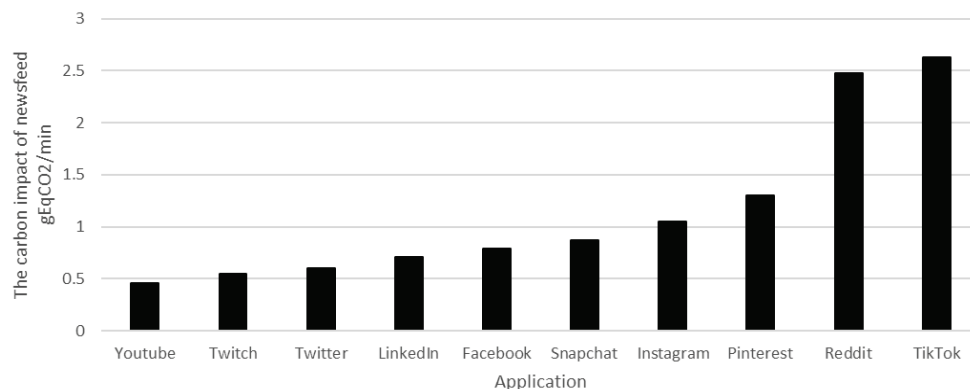


Figure 4 The carbon impact of the newsfeed on applications [27]

Research has confirmed that the impact of applications on the carbon footprint is significantly different. TikTok has more than five times the carbon footprint contribution of YouTube (Fig. 4) [29]. According to the Global Web Index, the average carbon impact in 10 measured applications in a time of 1 minute is 1.15 gEqCO₂. In our research, it was determined that an individual spends 2 hours and 13 minutes a day on social media, which would mean that the respondents emit an average of 152.95 gEqCO₂ per day. Knowing the effect of applications on the carbon footprint, it

is possible to create a campaign that is more sustainable with the same marketing effect.

According to the study by N. Lövehagen and al., carbon footprint emissions differ when using devices that can be used to view social networks smartphones (6 in display) 78 MT CO₂e, tablets (11 in display, no keyboard) 21 MT CO₂e, Laptop PCs (14 in display) 58 MT CO₂e, desktop PCs (no all-in-one desktops) 22 MT CO₂e and PC displays (25 in display) 50 MT of CO₂e [30]. The study shows that smartphone emissions are like PCs, while laptop emissions are

significantly lower. If the data were more available to the wider population, there is a possibility that it would influence their lifestyle and contribute to the reduction of the carbon footprint.

The increasing influence of social media is starting to affect some individuals in a way that they don't want to be part of the consumer who owns mass fashion products. Such thinking is probably fueled by the growing trend of consumers refraining from repeating items of clothing or fearing they will become irrelevant. This thinking could become a new trend. It can contribute to the development of the trend by lowering the prices of slow fashion, which is often of better quality and less common among the population, which could contribute to the individualization of clothing, or by adopting the habit of reducing the number of clothing items purchased, which contributes to reducing the carbon footprint. According to recent reports, the fast fashion industry contributes nearly 10.1 % of all annual carbon emissions, making it one of the biggest polluters of the environment [27].

4 CONCLUSION

Given the diversity of social media, fashion brands often use different platforms to be successful in different parts of the target audience. For example, Instagram is popular for visually presenting collections and collaborating with influencers, while LinkedIn can be useful for connecting with a professional audience in the fashion industry. Monitoring social media analytics can give a good insight into the success of the campaign and enable fashion brands to identify good and bad parts of the campaign to eliminate the types of posts on less successful parts of the campaign. Such a sustainable responsible policy can contribute to the reduction of the carbon footprint with the same marketing results.

Knowing the contribution to the carbon footprint of individual elements in social media posts can greatly reduce the emission of greenhouse gases caused by the use of non-renewable energy sources. In addition, the habits of social network followers can further reduce the carbon footprint. From the conducted survey, it is evident that few respondents are familiar with the negative impact of social networks on the environment. Acquaintance of followers with applications that have a larger carbon footprint can encourage certain applications to increase sustainability or reduce their carbon footprint. It is evident from the results of carbon equivalent emissions that applications offering the same types of content have significantly different levels of emissaries. Similarly, followers can by boycotting applications that are not sustainable encourage applications to invest in increasing sustainability. By monitoring the statistics of campaign success, it is possible to focus campaign announcements on more visited social network applications and on increasing the interactivity of e-commerce websites to reduce announcements on less visited social network applications. In the mentioned way, the promotional material located on the servers will be reduced. Influencers can additionally contribute to increasing sustainability if they make their posts clear, short and

interesting without unnecessary effects. The use of a black background on posts could be part of new sustainable campaigns that will make followers aware of the importance of sustainability. An active approach to monitoring the success of promotional campaigns with new and innovative announcements can attract customers.

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