


## Social media usage in industrial markets: An examination of technopark companies in Turkey

### Sosyal medyanın endüstriyel pazarlarda kullanımı: Türkiye'deki teknopark firmaları üzerine bir inceleme

Duygu Aydın Ünal<sup>1</sup> 

#### Abstract

This study examines the extent to which companies operating within the technology park, ranked in the top 3 in Turkey according to the performance index, utilise social media marketing. The research explores the level of their engagement, the platforms they leverage, and their relative activity across these platforms. Furthermore, a profile has been delineated specifically for companies in technology-intensive industrial markets. Out of the 1121 companies accessed on their websites, it was observed that 55% of them had added redirects to their social media accounts. Among the 615 companies with accessible social media accounts, it was noted that 102 of them had profiles on Facebook, Instagram, Linked In, YouTube, and X. On the other hand, it has been found that the percentages of companies sharing content on their social media accounts at least one year ago are noteworthy (Among firms using YouTube 33.3%, Facebook 5.9%, and X 33.7%). This study offers perspectives for academic circles and practitioners through analyses of the involvement levels of firms operating in a business-to-business context in social media marketing and the platforms they utilise.

**Keywords:** Social Media Marketing, B2B, Techno Park

**Jel Codes:** M10, M30, M31

#### Öz

Bu çalışmada performans endeksine göre Türkiye'nin ilk 3 sıradada yer alan teknoparkı altında faaliyet gösteren firmaların sosyal medya pazarlamasını ne düzeyde kullandıkları, hangi mecralardan faydalandıkları ve hangilerinde daha aktif oldukları araştırılmış ve teknoloji yoğun endüstriyel pazarlardaki firmalar için bir profil çıkarılmıştır. Web sitesine ulaşılan 1121 firmanın %55'inin sitelerinde sosyal medya hesaplarına yönlendirme ekledikleri görülmüştür. Sosyal medya hesaplarına erişilen 615 firma içinde 102 tanesinin Facebook, Instagram, LinkedIn, Youtube ve X hesaplarının her birinin bulunduğu görülmüştür. Firmaların kullandıkları sosyal medya hesaplarında ne derece aktif oldukları incelendiğinde ise Instagram kullanıcıların %83,3, X kullanıcıların %82,3 ve YouTube kullanıcıların ise %54,7 oranında yüksek derecede aktif oldukları gözlenmiştir. Öte yandan en son bir yıl önce ilgili sosyal medya hesaplarından paylaşım yapan firmaların oranlarının da azımsanmayacak kadar çok olduğu bulunmuştur (YouTube kullanıcıların %33,3'ü, Facebook kullanıcıların %5,9'u, X kullanıcıların %33,7'si). Bu araştırma, işletmeden işletmeye faaliyet gösteren firmaların, sosyal medya pazarlamasına dâhil olma düzeyleri ve kullandıkları mecralara dair yapılan analizler sonucunda, hem akademik çevreler için hem de uygulamacılar için önemli bakış açıları sunmaktadır.

**Anahtar Kelimeler:** Sosyal Medya Pazarlaması, B2B, Teknopark

**JEL Kodları:** M10, M30, M31

<sup>1</sup> Assistant Professor, Akdeniz University, Antalya, Türkiye,

[duyguaydin@akdeniz.edu.tr](mailto:duyguaydin@akdeniz.edu.tr)

ORCID: 0000-0001-7566-0933

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## Introduction

Social media platforms significantly contribute to businesses in terms of marketing and especially advertising strategies (Okazaki and Taylor 2013; Saxena and Khanna 2013). It is a recognized fact that businesses must have a presence on social media to showcase their existence in the virtual world, and this applies not only to commercial enterprises but also to non-profit organizations and government institutions (Kaplan and Haenlein 2010).

Social media is increasingly occupying a more prominent space in the lives of individual users. Worldwide, social media users have reached 4.9 billion, with an average daily time spent on social media being 145 minutes per person (Wong, 2023). These statistics indicate that social media has become integral to daily life. Consequently, businesses leverage social media channels and strategies to reach consumers. Social media marketing is crucial for businesses as it allows them to deliver marketing activities to consumers with less effort and cost, emphasizing its importance in efficiently reaching consumers.

The social media-based interaction between consumers and businesses is not entirely under the control of managers. In this regard, social media marketing differentiates itself from traditional marketing activities. The hybrid nature of social media allows it to offer multiple media formats and utilize various transmission platforms (Mangold and Faulds 2009). While businesses focus on introducing their brand in new channels through social media marketing, customers can observe, approve, and monitor other customers' experiences regarding the product/brand. Evaluating others' comments lets customers learn about the brand's reputation (Jara, Parra, and Skarmeta, 2014).

For business-to-business (B2B) activities, reaching stakeholders through social media platforms has become increasingly important. Social media platforms provide opportunities for businesses to enhance their communication skills and encourage engagement with innovative technologies (Cartwright, Liu, and Raddats 2021). For B2B activities, merely having a social media account is not sufficient. It is equally essential for the business to actively and purposefully manage this account. Businesses should keep their social media profiles up to date. Some studies express that content should be shared and planned, and different social media accounts should be used and coordinated (Aichner and Jacob 2015; Andersson and Wikström 2017; Dwivedi, Kapoor, and Chen 2015). Research on the utilization of social media by technoparks is scarce, and not all of them specifically focus on companies' social media marketing activities. For example, Babu, Hareendrakumar Vr, and Subramoniam (2020) examine the impact of social media on work performance by creating value at work. The study is addressed with data obtained from IT professionals at a leading technopark in South India. Another study by Mussi, Angeloni, and Avila Faraco (2014) aims to propose a framework for a digital social network designed to support knowledge transfer for innovation among companies located in a Technology Park in Brazil. Ubeda et al.'s (2013) study is the sole examination focusing on companies' social media marketing activities within technoparks. In parallel with the international literature, a limited number of studies on using technoparks and social media were conducted in Turkey. These have predominantly centred on the technoparks rather than directly addressing the companies operating within them. These studies reveal the number of posts and likes on the official social media accounts of Istanbul Technopark and another study that investigates the social media platform used by technoparks during the Covid-19 pandemic, examining the dialogical communication elements present in their posts (Aydoğan 2021; Gezginci and Maral 2019).

It is observed that there is a lack of studies in the literature providing detailed data on which social media platforms companies under Turkish technoparks predominantly utilize, the frequency and currency of their usage, and the levels of interaction. To address this gap, the primary objective of this study is to conduct a content analysis on how companies operating under three technology parks in Turkey utilize social media platforms, determining their activity level and platform usage frequency. The aim is to establish social media platform usage profiles for companies in industrial markets. The current study takes a comprehensive approach by analyzing all businesses under the three major technoparks in Turkey and is more extensively oriented towards companies' social media marketing in terms of its scope and findings. This research endeavours to provide valuable insights into the strategies and interactions of companies in industrial markets regarding social media marketing, an area that has been relatively less explored.

The study has been designed as follows: the subsequent section will focus on social media marketing and examine various social media platforms. The succeeding heading will address the use of social media platforms in industrial markets. Subsequently, the methodology will be explained in the research

section, leading to the presentation of findings. Then, the study will conclude with results and discussion.

## **Social media marketing**

In 1979, Tom Truscott and Jim Ellis established a global discussion system, enabling Internet users to send public messages, although they did not fully create what we recognize as today's social media. Nevertheless, they became influential figures connecting people worldwide. The closest precursor to the social media we use today began with establishing a social networking site called "Open Diary." This development rapidly evolved from weblogs to blogs. In 2003, social networking sites like MySpace and, in 2004, Facebook emerged as pioneers in these advancements. Subsequently, the term "social media" has developed and garnered attention with increasing momentum today (Kaplan and Haenlein 2009). In the late 1990s, efforts referred to as "Internet Marketing" were later discussed under the umbrella of "Electronic Marketing," and today, they are encompassed within the scope of "Digital Marketing" (Durkin 2013). While social media is technology-based, it constitutes an ecosystem beyond the technological dimension. Here, the most crucial concept is interconnectedness. Accordingly, social media encompasses everything existing in the network-based digital environment. These include elements with potential interaction, such as content, behaviour, information, people, and organizations (Appel et al., 2020).

Businesses can benefit from social media and thus interaction in contacting users and following the activities of competitors. The rapid dissemination of information in social media requires fast communication between businesses and users. The prompt resolution of issues especially provides an advantage for the business by preventing the spread of potential negativity that may arise in case of delayed solutions. While businesses monitor the behaviour of social media users, they also encourage users to interact with other users. The critical issue at this point is to quickly get involved in the process and correct the problem when a negative situation occurs for the business in these interactions (Choi and Thoeni 2016).

As one of the important new media technologies that facilitate interaction, social media also offers opportunities to strengthen the business's competitive position, such as developing content with the user's participation. Businesses can establish a relationship with customers through social media and develop it to create value for themselves and their customers. In these respects, social media emerges as a business tool for business marketing (Chen, Harncharnchai, and Saeheaw 2021). Examining the changes in marketing over time, we can observe that the Industrial Revolution played a crucial role in creating an artificial environment characterized by factories and cities. Thus, the initial marketing activities to sell the emerging products begin. Subsequently, the increase in production has brought customer focus to the forefront. After a while, with the growing importance of environmental issues and sustainability, value-based marketing has emerged. As the Internet has become more and more present in all areas of life, customers have started to care more about and need the opinions of others. In this process, participatory marketing has become the agenda with smartphones and tablets. Social media marketing, which emerged with these developments, brings together the benefits of both social networks and the Internet in the marketing focus and encourages the voluntary participation of consumers in the process (Jara, Parra, and Skarmeta 2014). Social media has evolved as a low-cost information exchange platform that enables consumers, businesses, governments, and other organizations to learn, educate, share, and market for various purposes. Social media marketing, on the other hand, possesses a structure that provides important foundations for achieving marketing objectives through electronic word-of-mouth communication. The increasing popularity of internet and mobile technologies, which introduce new ways of communication, has highlighted issues such as consumer experiences and loyalty, creating a new field in marketing (Dwivedi, Kapoor, and Chen 2015).

## **Social media platforms**

Social media channels provide benefits at different points regarding consumer use and marketing purposes. Different social media channels provide different benefits in producing brand-related content for consumers and businesses. These channels have also become important intermediaries in businesses' decision-making processes (Choi, Chan, and Yue 2017). While these channels have similar characteristics regarding basic function, each has its strengths. For example, while Facebook's use as a relationship network is at the forefront, X (formerly Twitter) serves as a social broadcasting organ (Arora et al. 2019).

Founded in 2006, the social media outlet X has 368 million monthly active users worldwide (Statista 2023). X is a platform that is actively used not only by individuals but also by political figures, public institutions or private businesses. In fact, for a considerable time, it has functioned as a news media

where people share their opinions and follow official news channels (Aswani et al. 2017). The instantaneous posts shared on this platform allow businesses or individuals to reach audiences directly and quickly, as they are not subject to pre-screening or a follow system before sharing. Although it does not involve any difficulty in terms of use, it is a medium that requires more labour and knowledge about media literacy (Vergeer 2015).

Various studies examine how businesses can use channel X or what benefits it can provide. For example, Jansen et al. (2009) state that customers tend to use communication technologies as a source of information when making purchasing decisions and that channel X may offer new opportunities for electronic word-of-mouth communication. On the other hand, it is stated that this medium is also used by the tourism and accommodation industry for purposes such as promotion, distribution and marketing research (Leung et al. 2013).

Globally, the Facebook platform, with a total of 2.9 billion active monthly users, is the most popular social media (Statista, 2023b). The results of studies investigating social media marketing through the Facebook platform also exhibit similarities with the studies mentioned above. In one of these studies, it is observed that marketing hotel services through Facebook increases the likelihood of word-of-mouth communication and the intention to make reservations at the hotel (Leung and Baloglu 2015). According to the results of a study investigating whether Facebook usage impacts businesses' sales, businesses using Facebook tend to have higher sales than those that do not use it. Additionally, businesses can increase sales by enhancing Facebook interactions (Zhou et al. 2015). The findings of the research also indicate that businesses can enhance their marketing strategies by utilizing social media channels such as Facebook (Varinli and Bayazicioğlu 2016).

Instagram, another social media channel, has approximately 2.35 billion monthly active users (2023); various studies examining the effects of Instagram in marketing share valuable results. One of them analysed the Instagram pages of fashion brands and concluded that businesses operating in this field should avoid long campaign tags that will take place for a short time but continue to use tags that offer lifestyle clues and that it is useful to collaborate with influencers with a large audience (Jones and Lee 2022). Another study, which states that the use of Instagram to promote tourist destinations yields useful results, states that this medium helps to generate interest in the destination, especially by allowing user-generated content (Fatanti and Suyadnya 2015). Another study states that when businesses create content using Instagram's "story" feature, it will attract more attention from the millennial audience. This study also revealed that millennials find the content sincerer and reliable according to how the stories are told.

LinkedIn, which introduces itself as the largest professional social media channel with more than 950 million members in more than 20 countries worldwide, defines its vision as follows; "bringing the world's professionals together to make them more productive and successful" (Anon, 2023). LinkedIn is important for the current research as it is a social media platform believed to be frequently used by businesses in this study. In a study analysing the extent to which businesses in the Eurozone use LinkedIn and how they manage it, it was found that the majority (79%) of the businesses in the study used the site, but few businesses used it for marketing purposes (Bonsón and Bednárová 2013). A study that deals with the interaction of B2B customers on LinkedIn stated that followers can be considered potential qualified customers, so it will be useful and easy to communicate with followers. It shows that website visits and post types of LinkedIn followers will positively affect sales revenue (Mora Cortez, Johnston, and Ghosh Dastidar, 2023).

Another social media platform, YouTube, was established in 2005 to allow ordinary individuals to share "home videos" for entertainment (Horsh, 2023). The viewer audiences on channels created on YouTube can offer various benefits for businesses. For instance, sponsorship can be provided in exchange for a fee paid per specific number of views, product marketing can be achieved through a video created specifically for a brand, or businesses can send their products to YouTube content creators to have them share product reviews (Wu, 2016).

### **Industrial markets and social media marketing**

Social media marketing strategy is "the set of tools and actions by which a business or organisation expects to achieve its marketing objectives and meet the needs of its target market using social media tools" (Ananda, Hernández-García, and Lamberti 2016). Individuals, groups and organisations must acquire new skills to attract and engage audiences through social media. Firms that want to communicate with their users and stakeholders should develop active listening efforts (Macnamara 2013).

The use of social media by businesses in industrial markets is still rapidly growing, and it can be argued that its impact has not received sufficient attention in terms of marketing activities (Cartwright, Liu, and Raddats 2021; Mehmet and Clarke 2016). Holland & Naudé (2004) recommended shifting from a transaction-focused to a relationship-focused approach in industrial markets. Rather than favouring one approach over the other, they proposed viewing this transition as a matter of managing information processing in relationships. Thus, they emphasized the importance of marketing as an information-processing process. When businesses engaged in business-to-business activities use social media marketing strategies by planning them correctly, there is no possibility of failure or lack of benefit to the company (Chirumalla, Oghazi, and Parida 2018). A firm implementing successful social media strategies creates value for its stakeholders and fosters a dynamic atmosphere within the industry, fostering the development of ideas and the transmission of knowledge (Brennan and Croft 2012). Effective use of social networks at the firm level allows the business to respond to strong foreign markets with a significant competitive advantage. However, the active involvement and support of the top management in all processes is a crucial factor on the path to success when achieving this (Martins et al. 2016).

Not all social media platforms are equally important for businesses. Websites that provide product reviews, social networks, and blogs serve as learning tools for businesses based on customer experiences. Microblogs or corporate social networks, on the other hand, provide a suitable foundation for sharing job postings. Video-sharing platforms and business networks are also popular platforms businesses show more interest in Table 1 includes the importance levels of these platforms for businesses (Aichner and Jacob 2015).

**Table 1:** Importance of Social Media for Different Corporate Functions

Types of social media	Corporate Function					
	R&D	Marketing	Customer Services	Sales	HR	Organisation
Blogs (The Huffington Post Boing Boing etc.)						
Business networks (LinkedIn etc.)						
Collaborative Projects (Wikipedia etc.)						
Enterprise social networks (Socialcast etc.)						
Forums (Gaia Online etc.)						
Microblogs (X etc.)						
Photo Sharing (Flickr etc.)						
Product/Service Review (Amazon etc.)						
Social Bookmarking (Delicious etc.)						
Social Gaming (World of Warcraft etc.)						
Social Networks (Facebook etc.)						
Video Sharing (YouTube etc.)						
Virtual Worlds (Second Life etc.)						

Importance: (empty) none or almost none; low; medium; high; very high

Source: Aichner & Jacob, 2015

Businesses operating in technology-focused sectors actively benefit from social media strategies. A limited number of studies have conducted social media research through technology companies established to provide services in the industrial field. Accordingly, due to the rapidly changing nature of the technology market, it is emphasized that the design and implementation of marketing strategies are challenging. The industry has a unique structure attributed to factors such as the relatively higher market uncertainty, the emergence of new technologies, the short lifespan of products, and frequent changes in market segment definitions for these reasons (Beard and Easingwood 1992). In high-tech markets, especially due to the perceived high risk for buyers and sellers, trust and loyalty play a crucial role in supplier-customer relationships. Actively managing supplier-customer relationships to provide information flow and build trust and loyalty is particularly important to navigate these dynamics (De Ruyter, Moorman, and Lemmink 2001).

## Research methodology

There is insufficient information on the preference and use of social media platforms at the firm level. This situation raises the question of whether firms have the right knowledge and perception about using these technologies beneficially for their business and how to measure their impact. In this context, establishing a profile of how companies in industrial markets use social media platforms would be a significant finding. Based on the information found in existing literature, this research seeks to develop a profile of companies operating within Technoparks in Turkey. The main focus is identifying the social media platforms these companies use and actively participate in.

Science and technoparks were first established in Silicon Valley in 1951 as part of Stanford University and attracted attention with their new institutional and organisational structures and unique formation without geographical boundaries, which affected the entire economic and cultural structure. These organisations, which were new at the time, facilitated the processes for different actors to work together and transfer knowledge and technology (Bellavista and Sanz 2009; Poonjan and Tanner 2020). Silicon Valley, often regarded as the world's first science park, was originally established to draw businesses and research and development (R&D) facilities near the university. With the rapid emergence of mutually beneficial industry-academia cooperation, Silicon Valley became a high-tech industry cluster and paved the way for the rapid growth of technoparks worldwide (Nahm 2000).

Technology parks support regional development and offer services for its enhancement. The fundamental basis is the expectation that technological innovation will emerge from scientific research. These parks will facilitate the commercialization and sustainability of basic science in universities (Hansson, Husted, and Vestergaard, 2005). Another important aspect of technology parks is that companies must strengthen innovation and knowledge-based processes to gain a competitive advantage. The high cost and risk associated with obtaining innovation have increasingly emphasized the importance of research and development (R&D) collaboration (Montoro-Sánchez, Ortiz-de-Urbina-Criado, and Mora-Valentín 2011). The International Association of Science Parks and Innovation Spaces (2023), which aims to create a global network of science parks and innovation spaces, defines technoparks as follows; "A science park is an organisation managed by expert professionals whose main purpose is to promote a culture of innovation and increase the wealth of its community by enhancing the competitiveness of associated businesses and knowledge-based institutions" (IASP 2023). This research aims to establish a profile regarding companies' use of social media platforms in industrial markets, a relatively less explored area. Technology parks were thought to offer opportunities in areas such as new product development, regional industry development, or addressing unemployment issues. At the core of these expectations was the belief that science and technology could contribute to the strengthening of technology companies, fostering economic growth. Particularly, the rapid developments in communication technologies and biotechnology during the 1990s further fueled this belief (Autio and Klofsten 1998; Hansson et al. 2005).

In Turkey, there are 88 technology development zones in operation and 13 technology development zones with ongoing infrastructure works. According to the Ministry of Industry's performance index ranking, the top three technoparks are Ankara (Cyberpark) Technology Development Zone, METU Teknokent Technology Development Zone and Yıldız Technical University Technology Development Zone. Within the scope of the research, between 1-15 August 2023, the companies under these three major technoparks were transferred to the Excel worksheet one by one by entering the home pages of the technoparks. If there is a link to the web page of the relevant company on the page where the companies under Teknopark are listed, the company's page was accessed through that link. If there is no such link or if the link does not work, the name of the company was typed into the search engine, and the company address was checked by entering the web page that is thought to be relevant, and it was understood whether the correct web page was reached.

Then, whether the company's web page linked to its social media accounts was checked. During this process, the top and bottom menus of the main page, as well as the contact title, were clicked, and it was checked whether this information was available there. Social media accounts were accessed by clicking the social media links on the companies' web pages. This step provided access to the company's corporate social media accounts. In this way, the risk of including a wrong social media account in the research was eliminated. If the company did not add a redirect to its web page, it was assumed it did not have a social media account. Otherwise, since there would be a risk of including community accounts that may have been opened on behalf of the company in the research, the method was carried out in this way. The other steps followed while analysing social media accounts by content analysis are as follows;

- If the company has a Facebook account, how many followers it has and the date of the last post,
- If the company has an Instagram account, how many followers it has, how many posts it has and the date of last post,
- If the company has a LinkedIn account, how many followers it has,
- If the company has X account, how many followers, how many posts it has, and the date of the last post,
- If the company has a YouTube account, it was noted how many followers it has, how many videos it has shared and the date of the last post.

Among the 1140 companies examined under three technoparks, it was determined that the sub-business lines of the same company were directed to the same web page, and one was included in the research to avoid repetition. After the excluded companies, data analysis was carried out on the remaining 1121 companies. The coding process is carried out separately by a second coder. Inter-coder reliability was assessed using Krippendorff's Alpha, and the value exceeded .81 for each variable. In summary, the coding system demonstrated strong inter-coder reliability.

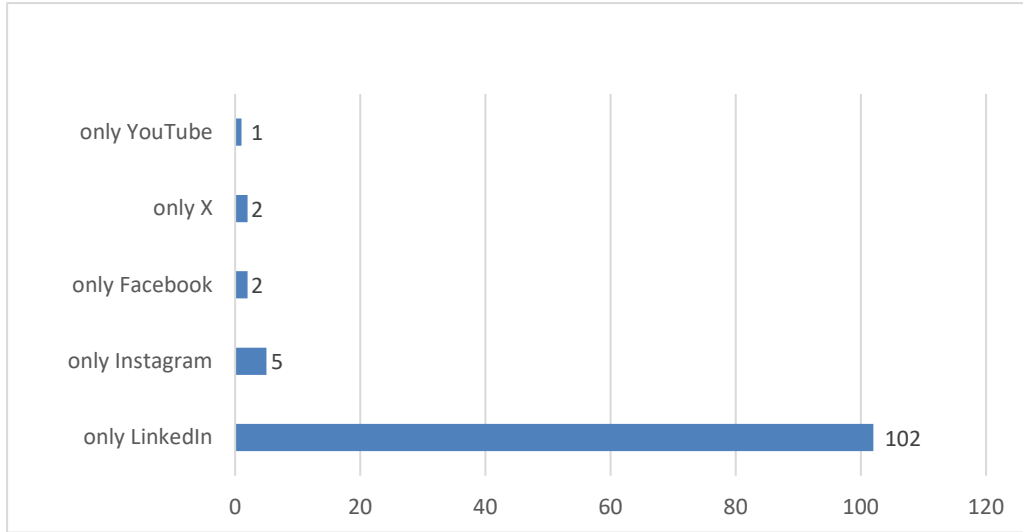
## Findings

Of the 1121 companies that constitute the research data set, 178 do not have a web page. Although 38 have web pages, these pages cannot be opened. Although 243 have web pages, there is no information about social media accounts on these pages. Of the remaining 662 companies, 47 have links to social media accounts on their web pages, but these links are not opened (Table 2). As a result, the number of companies whose web pages and social media accounts were accessed from there was 615. In the following research steps, we will continue with the 615 companies whose social media accounts were accessed.

**Table 2.** Basic Information on Access to Companies' Websites and Social Media Accounts

Access status of the website and social media accounts	Number of firms	Percentage
No website	178	%16
The web page does not open	38	%3
The web page exists but does not contain a redirect	243	%22
There is a redirection, but it does not open	47	%4
There is redirection, and it opens	615	%55

It has been observed that the web pages of the analysed companies are most frequently directed to Facebook, Instagram, LinkedIn, X and YouTube. The number of companies with more than one account in these five social media platforms is 102. One hundred twelve companies were found to use only one social media account actively, and as seen in Figure 1, LinkedIn is the most commonly used platform among companies with a single social media account.



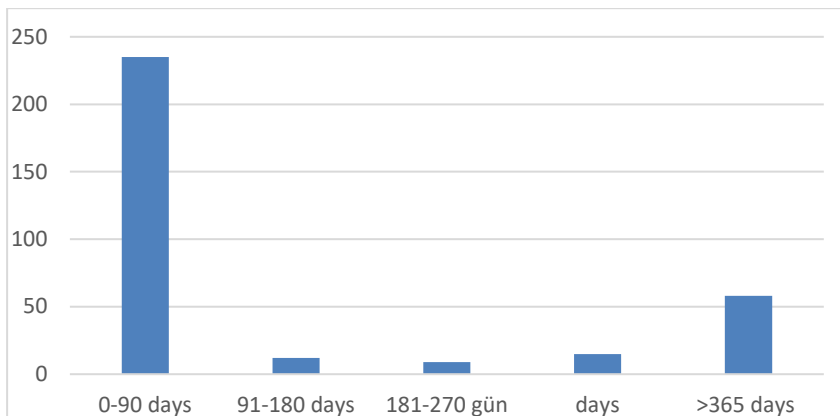
**Figure 1:** Social Media Usage of Companies with a Single Social Media Account

The classification of (Ubeda et al. 2013) was used to see how actively firms use their social media accounts. Accordingly, if a firm has between 1 and 10 posts on its social media account, it is stated that it exhibits a low activity level. If it has between 11 and 25 posts, it is stated to exhibit a medium level of activity; if it has more than 25 posts, it is stated to exhibit a high level of activity. During the analysis, the number of companies' posts on Instagram, X and YouTube channels were coded and then classified according to the specified groups. Accordingly, it can be seen that 83% of the companies using Instagram, 82% of the companies using Facebook, and 54% of the companies using YouTube manage their pages at a high level of activity (Table 3).

**Table 3:** Levels of Activity on Companies' Social Media Accounts

	Instagram (%)	X (%)	Youtube (%)
Low-level activity	9,4	11,0	22,6
Medium-level activity	7,3	6,7	22,6
High-level activity	83,3	82,3	54,7
Total	100	100	100

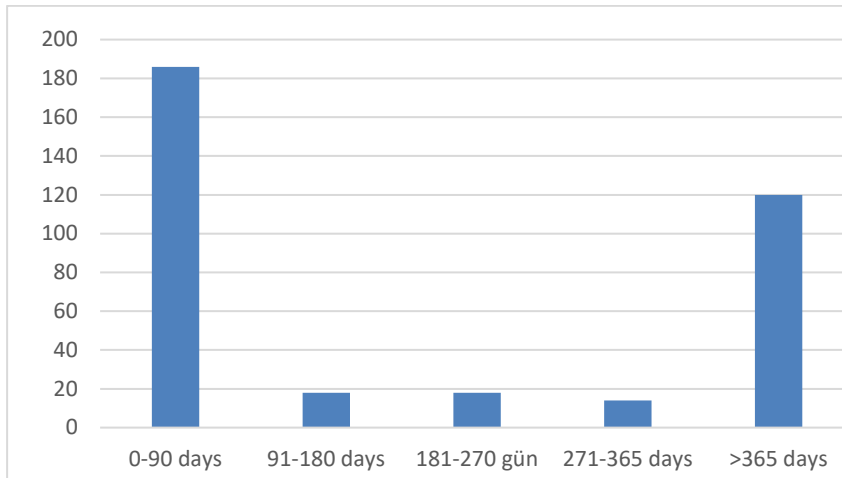
Within the scope of the research, coding was carried out between 1 and 15 August 2023, and the coding process took 15 days. Based on the end date of coding, the number of days ago the companies last posted on their social media accounts was analysed. Among the 348 companies identified as using Instagram, 17 do not have any posts, although they have an account, and two cannot access the post details because they are hidden accounts. When these are excluded, it is determined that the number of companies that have posted on this social media platform in the last 3 months among 329 companies is 235 (Figure 2). It was determined that 67% of the companies that used Instagram accounts in the last 3 months shared their posts within the last 1 month.



**Figure 2:** Timeframe of the Last Use of Instagram by Companies

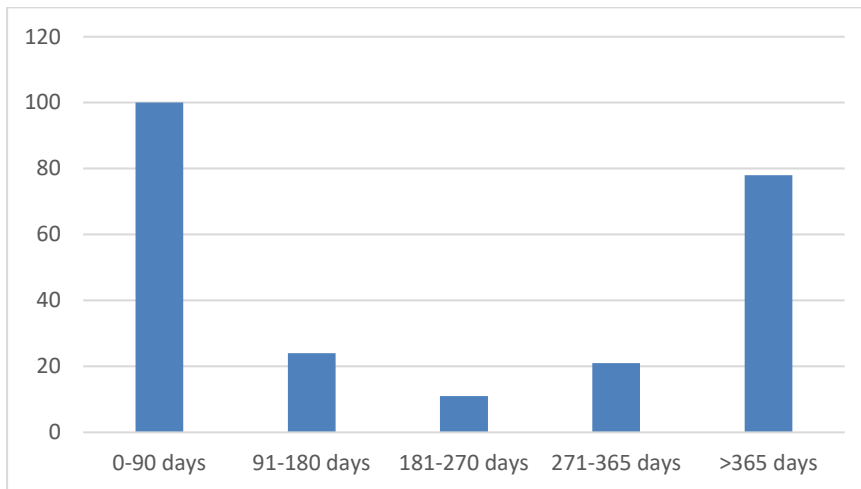


It was observed that 26 of 382 companies using the X had social media accounts but did not make any posts, and these were excluded from the analysis. When the last posts of the remaining 356 companies are analysed based on quarterly groups, it is seen that 186 companies have used this platform in the last three months, and 120 companies last used this platform one year ago (Figure 3). It is seen that 48% of these 186 companies have shared at least one post in the last month.



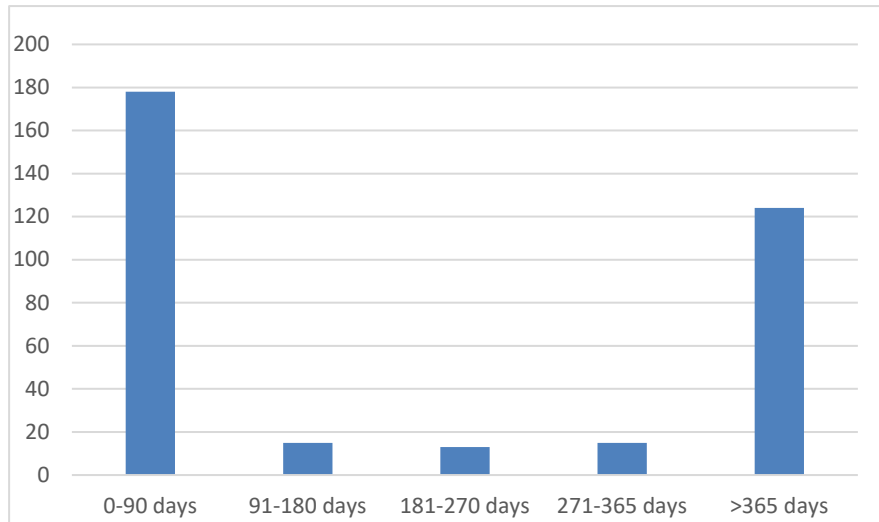
**Figure 3:** The Period When Companies Last Used the X Platform

Of the 240 companies with YouTube social media accounts, six accounts with a YouTube presence but did not share videos were excluded from the analysis. Among the 234 firms sharing content on this platform, it was determined that 100 firms shared content within the last three months, while 78 firms shared their latest video a year or more ago (Figure 4). Among the 100 firms utilizing the YouTube platform in the last three months, 30 were observed to have made at least one share in the last month.



**Figure 4:** Periods When Companies Last Used the YouTube Platform

Among the 353 companies with Facebook accounts, eight that had an account but did not post were excluded from the analysis, and 178 of the remaining 345 companies were found to have posted within the last three months (Figure 5). The number of companies that last used their Facebook accounts one year ago is 124. When the companies that shared a post in the last three months were analysed, it was determined that 47% made at least one post from their Facebook accounts in the last month.



**Figure 5:** Periods When Companies Last Used the Facebook Platform

During the research process, it was observed that some companies had social media accounts on Github, Medium, Pinterest, Discord, Vimeo, TikTok, and Steam and directed traffic to these accounts. However, since the total percentage of companies with these accounts was 7%, they were not subjected to a separate analysis. Thirteen companies utilize blogs as the Medium platform, commonly employed as a blog or hosting their private blog sites.

## Conclusion and discussion

Through content analysis, this study revealed the social media visibility and activity levels of companies operating under technoparks. Although there are many studies in the literature on examining the social media accounts of consumer-oriented businesses with content analysis (Parsons 2013; Peruta and Shields 2018; Shen and Bissell 2013; Vassallo et al. 2018), the number of studies revealing the current status of the social media accounts of business-to-business firms is quite low (Aydoğan 2021; Gezginci and Maral 2019; Ubeda et al. 2013). Therefore, this research, conducted on companies operating in the technology sector, holds importance as one of the few studies that shed light on the use of social media marketing in industrial markets. Technoparks were established to encourage innovation and provide cooperation between firms. Therefore, it may be useful to see how the companies within the scope of technoparks use their social media accounts to understand their tendencies towards communication and cooperation. Another important aspect of the research is that it can provide an overview of the social media marketing strategies of these companies operating in competitive environments.

Of the examined companies in the research, 55% provide a link from their websites to their social media accounts. The number of companies without a website whose website does not open or cannot be accessed through the website to their social media accounts is not negligible. Especially considering that these companies are predominantly involved in technology-related activities, their absence from social media platforms, which have become a necessity of the age, is noteworthy.

It can be said that the examined 615 companies actively use social media platforms. For companies operating in the high-tech market, engaging in information sharing helps to reduce perceived risk, create emotional attachment, and establish customer trust (De Ruyter, Moorman and Lemmink, 2001). In this context, the effective and precise execution of social media marketing by companies, coupled with appropriate content, could prove highly beneficial.

Firms operating in the B2B sector that aim to build loyal customers can engage with stakeholders through content creation. This way, they can enhance their business processes by establishing strong communication with customers and internal stakeholders (Cartwright, Liu, and Raddats 2021). The research results showed that out of the 615 companies, 102 had all the social media accounts included in the analysis. When examining the degree of activity on social media accounts based on the number of posts, it was found that they were highly active on Instagram at 83.3%, on X at 82.3%, and on YouTube at 54.7%. While these rates are quite satisfactory, examining the most recent posts reveals that the content lacks timeliness. It was observed that Instagram is the most popular social media platform companies use. Among the companies using YouTube, 33.3% of them, 35.9% of companies using Facebook, and 33.7% of companies using X have made posts on these platforms more than a year ago. As a result of this research, it was found that 615 businesses actively use at least one of the social media accounts among the 1121 businesses analysed. However, Kietzmann et al. (2011) emphasise that having

a presence on social media is very important for businesses to maintain their networks today. In the study results, the extent to which businesses are up-to-date in the social media accounts they use was found. As stated in the study by Chirumalla et al. (2018), businesses need to have social media accounts and use them up-to-date. The results of the analyses in this study on the extent to which the companies have up-to-date accounts based on platforms provide a general view of the enterprises located in techno-cities. If businesses adopt a relationship marketing approach, social media can strengthen their activities (Ananda et al. 2016). Drawing on both the literature in the B2B domain and the practitioners' observations, it can be said that the use of social media in the industrial sector lags significantly behind its use in consumer markets (Habibi et al. 2015). The selection of social media platforms by businesses can vary depending on the benefits offered by the platforms. YouTube, for instance, can benefit B2B market customers as it allows businesses to showcase how products or processes work through videos, enabling the creation of tangible content. Blogs, identified as used by only 12 firms in this study, can also provide detailed information about businesses, offering rich content for existing and potential customers (Andersson and Wikström 2017). Especially through platforms like LinkedIn, YouTube, X, and blogs, designing programs such as sales training, offering online solutions to product issues, demonstrating how products are assembled, or providing content on how repairs for products are done can be beneficial for businesses adopting digital marketing strategies (Pandey, Nayal, and Rathore 2020).

As in every study, the current study also has limitations. Firstly, the fact that only three technoparks were selected among the technoparks in Turkey can be considered a limitation. Another limitation is that only technology-oriented firms in industrial markets are included in the study.

A broader picture can be presented in future studies by including different industrial businesses and the current research focusing on technology companies. Analyzing the content companies share can also provide valuable insights into content richness, engagement, and reach. A comparative analysis of social media usage among technology companies in different countries or regions can enhance academic knowledge. Also, exploring how cultural, regulatory, and market factors impact social media engagement and whether there are universal trends or variations will be studied. Longitudinal studies to track the evolution of social media practices among technology-oriented firms may be investigated. That would be revealed by examining how companies' strategies change over time, considering technological advancements, consumer behaviour shifts, and social media platform updates.

The study identifies Instagram, X, and YouTube as the most actively used social media platforms by the examined companies. While the activity rates are satisfactory, the content's timeliness is noted as an area for improvement. As indicated by (Choi and Thoeni 2016), companies should proactively respond to user demands through social media, enabling them to address issues swiftly and prevent the spread of negative impacts. Managers should focus on creating current and relevant content across all platforms, with special attention to Instagram, the most current platform. Cartwright, Liu, and Raddats (2021) also emphasize the importance of creating the most suitable content on social media and involving employees in the social media strategy. Managers in the B2B sector should recognize this gap and work towards overcoming industry-specific challenges. Tailoring content to showcase product processes through videos and providing detailed information on blogs can be effective strategies to bridge this gap.

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## References

- Aichner, Thomas, and Frank Jacob. 2015. 'Measuring the Degree of Corporate Social Media Use'. *International Journal of Market Research* 57(2):257-76. doi: 10.2501/IJMR-2015-018.
- Ananda, Artha Sejati, Ángel Hernández-García, and Lucio Lamberti. 2016. 'N-REL: A Comprehensive Framework of Social Media Marketing Strategic Actions for Marketing Organizations'. *Journal of Innovation & Knowledge* 1(3):170-80. doi: 10.1016/j.jik.2016.01.003.
- Andersson, Svante, and Niclas Wikström. 2017. 'Why and How Are Social Media Used in a B2B Context, and Which Stakeholders Are Involved?' *Journal of Business & Industrial Marketing* 32(8):1098-1108. doi: 10.1108/JBIM-07-2016-0148.
- Anon. 2023. 'LinkedIn'. Retrieved (<https://about.linkedin.com/>). Access date: 5.10.2023
- Appel, Gil, Lauren Grewal, Rhonda Hadi, and Andrew T. Stephen. 2020. 'The Future of Social Media in Marketing'. *Journal of the Academy of Marketing Science* 48(1):79-95. doi: 10.1007/s11747-019-00695-1.
- Arora, Anuja, Shivam Bansal, Chandrashekar Kandpal, Reema Aswani, and Yogesh Dwivedi. 2019. 'Measuring Social Media Influencer Index- Insights from Facebook, Twitter and Instagram'. *Journal of Retailing and Consumer Services* 49:86-101. doi: 10.1016/j.jretconser.2019.03.012.
- Aswani, Reema, S. P. Ghrrera, Arpan Kumar Kar, and Satish Chandra. 2017. 'Identifying Buzz in Social Media: A Hybrid Approach Using Artificial Bee Colony and k-Nearest Neighbors for Outlier Detection'. *Social Network Analysis and Mining* 7(1):38. doi: 10.1007/s13278-017-0461-2.
- Autio, Erkko, and Magnus Klofsten. 1998. 'A Comparative Study of Two European Business Incubators'.
- Aydoğan, Hediye. 2021. 'Dialogic Communication During Covid-19 Pandemic: An Analysis on Technoparks' Social Media Usage in Turkey'. *Connectist: Istanbul University Journal of Communication Sciences* 0(60):1-26. doi: 10.26650/CONNECTIST2021-000126.
- Babu, Srishti, Hareendrakumar Vr, and Suresh Subramoniam. 2020. 'Impact of Social Media on Work Performance at a Technopark in India'. *Metamorphosis: A Journal of Management Research* 19(1):59-71. doi: 10.1177/0972622520962949.
- Beard, Charles, and Chris Easingwood. 1992. 'Sources of Competitive Advantage in the Marketing of Tehcnology-Intensive Products and Processes'. *European Journal of Marketing* 26(12):5-18.
- Bellavista, Joan, and Luis Sanz. 2009. 'Science and Technology Parks: Habitats of Innovation: Introduction to Special Section'. *Science and Public Policy* 36(7):499-510. doi: 10.3152/030234209X465543.
- Bonsón, Enrique, and Michaela Bednárová. 2013. 'Corporate LinkedIn Practices of Eurozone Companies'. *Online Information Review* 37(6):969-84. doi: 10.1108/OIR-09-2012-0159.
- Brennan, Ross, and Robin Croft. 2012. 'The Use of Social Media in B2B Marketing and Branding: An Exploratory Study'. *Journal of Customer Behaviour* 11(2):101-15. doi: 10.1362/147539212X13420906144552.
- Cartwright, Severina, Hongfei Liu, and Chris Raddats. 2021. 'Strategic Use of Social Media within Business-to-Business (B2B) Marketing: A Systematic Literature Review'. *Industrial Marketing Management* 97:35-58. doi: 10.1016/j.indmarman.2021.06.005.
- Chen, Yuehan, Atichart Harncharnchai, and Teeraporn Saeheaw. 2021. 'Current and Future Direction of Social Media Marketing in SMEs: A Systematic Literature Review'. Pp. 144-49 in 2021 IEEE International Conference on e-Business Engineering (ICEBE). Guangzhou, China: IEEE.
- Chirumalla, Koteswar, Pejvak Oghazi, and Vinit Parida. 2018. 'Social Media Engagement Strategy: Investigation of Marketing and R&D Interfaces in Manufacturing Industry'. *Industrial Marketing Management* 74:138-49. doi: 10.1016/j.indmarman.2017.10.001.
- Choi, Tsan-Ming, Hing Kai Chan, and Xiaohang Yue. 2017. 'Recent Development in Big Data Analytics for Business Operations and Risk Management'. *IEEE Transactions on Cybernetics* 47(1):81-92. doi: 10.1109/TCYB.2015.2507599.
- Choi, Youngtae, and Andrew Thoeni. 2016. 'Social Media: Is This the New Organizational Stepchild?' *European Business Review* 28(1):21-38. doi: 10.1108/EBR-05-2015-0048.

- Daniel Ruby. 2023. 'Instagram Monthly Active Users'. 78 Instagram Statistics Of 2023 (Users & Trends). Retrieved (<https://www.demandsage.com/instagram-statistics/#:~:text=There%20are%20currently%20over%202.35,users%20access%20Instagram%20every%20month.>).
- De Ruyter, Ko, Luci Moorman, and Jos Lemmink. 2001. 'Antecedents of Commitment and Trust in Customer-Supplier Relationships in High Technology Markets'. *Industrial Marketing Management* 30(3):271-86. doi: 10.1016/S0019-8501(99)00091-7.
- Durkin, Mark. 2013. 'Tweet Me Cruel: Perspectives on Battling Digital Marketing Myopia1'. *The Marketing Review* 13(1):51-63. doi: 10.1362/146934713X13590250137781.
- Dwivedi, Yogesh K., Kawaljeet Kaur Kapoor, and Hsin Chen. 2015. 'Social Media Marketing and Advertising'. *The Marketing Review* 15(3):289-309. doi: 10.1362/146934715X14441363377999.
- Fatanti, Megasari Noer, and I. Wayan Suyadnya. 2015. 'Beyond User Gaze: How Instagram Creates Tourism Destination Brand?' *Procedia - Social and Behavioral Sciences* 211:1089-95. doi: 10.1016/j.sbspro.2015.11.145.
- Gezginci, Gamze, and Taylan Maral. 2019. 'Bir Pazarlama Aracı Olarak Sosyal Medya: "İstanbul Teknokent" Örneği'. *Turan-Sam Uluslararası Bilimsel Hakemli Dergisi* 11(41).
- Habibi, Fatemeh, Caroline Anne Hamilton, Michael John Valos, and Michael Callaghan. 2015. 'E-Marketing Orientation and Social Media Implementation in B2B Marketing'. *European Business Review* 27(6):638-55. doi: 10.1108/EBR-03-2015-0026.
- Hansson, Finn, Kenneth Husted, and Jakob Vestergaard. 2005. 'Second Generation Science Parks: From Structural Holes Jockeys to Social Capital Catalysts of the Knowledge Society'. *Technovation* 25(9):1039-49. doi: 10.1016/j.technovation.2004.03.003.
- Holland, Christopher P., and Pete Naudé. 2004. 'The Metamorphosis of Marketing into an Information-handling Problem'. *Journal of Business & Industrial Marketing* 19(3):167-77. doi: 10.1108/08858620410531306.
- Horsh, William L. 2023. YouTube. Retrieved (<https://www.britannica.com/topic/YouTube>).
- IASP. 2023. 'IASP - International Association of Science Parks and Areas of Innovation'. Retrieved (<https://www.iasp.ws/our-industry/definitions>).
- Jansen, Bernard J., Mimi Zhang, Kate Sobel, and Abdur Chowdury. 2009. 'Twitter Power: Tweets as Electronic Word of Mouth'. *Journal of the American Society for Information Science and Technology* 60(11):2169-88. doi: 10.1002/asi.21149.
- Jara, Antonio J., María Concepción Parra, and Antonio F. Skarmeta. 2014. 'Participative Marketing: Extending Social Media Marketing through the Identification and Interaction Capabilities from the Internet of Things'. *Personal and Ubiquitous Computing* 18(4):997-1011. doi: 10.1007/s00779-013-0714-7.
- Jones, Alexis Renee, and Seung-Eun (Joy) Lee. 2022. 'Factors Influencing Engagement in Fashion Brands' Instagram Posts'. *Fashion Practice* 14(1):99-123. doi: 10.1080/17569370.2021.1938820.
- Kaplan, Andreas M., and Michael Haenlein. 2009. 'The Fairyland of Second Life: Virtual Social Worlds and How to Use Them'. *Business Horizons* 52(6):563-72. doi: 10.1016/j.bushor.2009.07.002.
- Kaplan, Andreas M., and Michael Haenlein. 2010. 'Users of the World, Unite! The Challenges and Opportunities of Social Media'. *Business Horizons* 53(1):59-68. doi: 10.1016/j.bushor.2009.09.003.
- Kietzmann, Jan H., Kristopher Hermkens, Ian P. McCarthy, and Bruno S. Silvestre. 2011. 'Social Media? Get Serious! Understanding the Functional Building Blocks of Social Media'. *Business Horizons* 54(3):241-51. doi: 10.1016/j.bushor.2011.01.005.
- Leung, Daniel, Rob Law, Hubert Van Hoof, and Dimitrios Buhalis. 2013. 'Social Media in Tourism and Hospitality: A Literature Review'. *Journal of Travel & Tourism Marketing* 30(1-2):3-22. doi: 10.1080/10548408.2013.750919.
- Leung, Xi Yu, and Seyhmus Baloglu. 2015. 'Hotel Facebook Marketing: An Integrated Model' edited by D. John Bowen, Dr Seyhmus Baloglu. *Worldwide Hospitality and Tourism Themes* 7(3):266-82. doi: 10.1108/WHATT-03-2015-0011.

- Macnamara, Jim. 2013. 'Beyond Voice: Audience-Making and the Work and Architecture of Listening as New Media Literacies'. *Continuum* 27(1):160-75. doi: 10.1080/10304312.2013.736950.
- Mangold, W. Glynn, and David J. Faulds. 2009. 'Social Media: The New Hybrid Element of the Promotion Mix'. *Business Horizons* 52(4):357-65. doi: 10.1016/j.bushor.2009.03.002.
- Martins, José, Ramiro Gonçalves, Tiago Oliveira, Manuel Cota, and Frederico Branco. 2016. 'Understanding the Determinants of Social Network Sites Adoption at Firm Level: A Mixed Methodology Approach'. *Electronic Commerce Research and Applications* 18:10-26. doi: 10.1016/j.elerap.2016.05.002.
- Mehmet, Mehmet I., and Rodney J. Clarke. 2016. 'B2B Social Media Semantics: Analysing Multimodal Online Meanings in Marketing Conversations'. *Industrial Marketing Management* 54:92-106. doi: 10.1016/j.indmarman.2015.12.006.
- Montoro-Sánchez, Angeles, Marta Ortiz-de-Urbina-Criado, and Eva M. Mora-Valentín. 2011. 'Effects of Knowledge Spillovers on Innovation and Collaboration in Science and Technology Parks' edited by G. Martín-de Castro. *Journal of Knowledge Management* 15(6):948-70. doi: 10.1108/13673271111179307.
- Mora Cortez, Roberto, Wesley J. Johnston, and Ayan Ghosh Dastidar. 2023. 'Managing the Content of LinkedIn Posts: Influence on B2B Customer Engagement and Sales?' *Journal of Business Research* 155:113388. doi: 10.1016/j.jbusres.2022.113388.
- Mussi, Clarissa, Maria Terezinha Angeloni, and Rafael Avila Faraco. 2014. 'Social Networks and Knowledge Transfer in Technological Park Companies in Brazil'. *Journal of Technology Management & Innovation* 9(2):172-86. doi: 10.4067/S0718-27242014000200013.
- Nahm, Kee-Bom. 2000. 'The Evolution of Science Parks and Metropolitan Development'. *International Journal of Urban Sciences* 4(1):81-95. doi: 10.1080/12265934.2000.9693465.
- Okazaki, Shintaro, and Charles R. Taylor. 2013. 'Social Media and International Advertising: Theoretical Challenges and Future Directions' edited by J. Whitelock. *International Marketing Review* 30(1):56-71. doi: 10.1108/02651331311298573.
- Pandey, Neeraj, Preeti Nayal, and Abhijeet Singh Rathore. 2020. 'Digital Marketing for B2B Organizations: Structured Literature Review and Future Research Directions'. *Journal of Business & Industrial Marketing* 35(7):1191-1204. doi: 10.1108/JBIM-06-2019-0283.
- Parsons, Amy. 2013. 'USING SOCIAL MEDIA TO REACH CONSUMERS: A CONTENT ANALYSIS OF OFFICIAL FACEBOOK'. *Academy of Marketing Studies Journal*.
- Peruta, Adam, and Alison B. Shields. 2018. 'Marketing Your University on Social Media: A Content Analysis of Facebook Post Types and Formats'. *Journal of Marketing for Higher Education* 28(2):175-91. doi: 10.1080/08841241.2018.1442896.
- Poonjan, Amonpat, and Anne Nygaard Tanner. 2020. 'The Role of Regional Contextual Factors for Science and Technology Parks: A Conceptual Framework'. *European Planning Studies* 28(2):400-420. doi: 10.1080/09654313.2019.1679093.
- Saxena, Anant, and Uday Khanna. 2013. 'Advertising on Social Network Sites: A Structural Equation Modelling Approach'. *Vision: The Journal of Business Perspective* 17(1):17-25. doi: 10.1177/0972262912469560.
- Shen, Bin, and Kimberly Bissell. 2013. 'Social Media, Social Me: A Content Analysis of Beauty Companies' Use of Facebook in Marketing and Branding'. *Journal of Promotion Management* 19(5):629-51. doi: 10.1080/10496491.2013.829160.
- Statista. 2023. 'Statista'. Retrieved (<https://www.statista.com/topics/737/twitter/#:~:text=In%202023%2C%20there%20are%20an,%20the%20platform's%20user%20base.>). Access date: 20.10.23
- Statista(b). 2023. 'Statista(b)'. Retrieved (<https://www.statista.com/statistics/346167/facebook-global-dau/#:~:text=Facebook%3A%20number%20of%20daily%20active%20users%20worldwide%202011%2D2023&text=During%20the%20third%20quarter%20of,increase%20on%20the%20previous%20quarter.>). Access date: 20.10.23
- Ubeda, Joan E., Clara Gieure, Carlos de-la-Cruz, and Olga Sastre. 2013. 'Communication in New Technology Based-firms'. *Management Decision* 51(3):615-28. doi: 10.1108/00251741311309689.

- Varinli, İnci, and Nur Başıyazıcıoğlu. 2016. 'Facebook'ta Pazarlama Uygulamalarına Yönelik Tüketici Tutumlarının Path Analizi İle İncelenmesi'. 16(1):109-19.
- Vassallo, Amy Jo, Bridget Kelly, Lelin Zhang, Zhiyong Wang, Sarah Young, and Becky Freeman. 2018. 'Junk Food Marketing on Instagram: Content Analysis'. JMIR Public Health and Surveillance 4(2):e54. doi: 10.2196/publichealth.9594.
- Vergeer, Maurice. 2015. 'Twitter and Political Campaigning'. Sociology Compass 9(9):745-60. doi: 10.1111/soc4.12294.
- Wong, Belle. 2023. 'Top Social Media Statistics And Trends Of 2023'. Top Social Media Statistics And Trends Of 2023. Retrieved (<https://www.forbes.com/advisor/business/social-media-statistics/#source>).
- Wu, Katrina. n.d. 'YouTube Marketing: Legality of Sponsorship and Endorsement in Advertising'.
- Zhou, Mi, Zhilei Qiao, Xuan Zhang, Qianzhou Du, Alan Wang, and Weiguo Fan. 2015. 'Do Facebook Activities Increase Sales?'