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FACTORS INFLUENCING REACH AND ENGAGEMENT ON TIKTOK
BASED ON THE EXAMPLE OF ESTONIAN COMPANIES

Bachelor Thesis

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I have written this Bachelor Thesis independently. Any ideas or data taken from other authors or other sources have been fully referenced.

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Introduction

Marketing is always evolving and what is in one day, may be out the next. This is the never-ending struggle of marketers – staying on top of the most popular platforms, trends and movements, in order to create the most value for the company as possible. And in a sense, TikTok encapsulates that struggle perfectly, with it being the mecca for hundreds of new trends, endless content and an algorithm that remains a mystery to many, forcing to take risks and think outside of the box.

Does not matter if one loves or hates the video-streaming platform, as a marketer it might be the only option to start creating content on the site, with TikTok was the fastest growing social media platform according to Digital Marketing Institute (Battisby, 2021).

TikTok is an opportunity for brands to make themselves seen and more importantly, memorable. The only requirements for content creation are creativity, having something to film with and a little bit of luck. It can be argued that the latter is the most important part to hopefully have your video pushed by TikTok's algorithm to be seen my millions.

While TikTok marketing might sound interesting, it can also be difficult to figure out what differentiates a well-performing video from a low-performing one. Previous works about TikTok provide insights into which variables and features play into a video performing well. For example, videos with hashtags and on-screen text, such as subtitles or graphics are associated with higher engagement (Li, Guan, Hammond, & Berrey, 2021; Samuel, Tang, & Basch, 2022). Videos without spoken language and with dance tend to perform better, as well as videos that featured people in them (Li, Guan, Hammond, & Berrey, 2021). Additionally, emotional and informational videos were found to have a positive effect on engagement (Li, Guan, Hammond, & Berrey, 2021).

One of the biggest differentiators among other platforms is video quality. Video quality does not seems to play a role in the success of TikTok videos (Collie & Wilson-Barnao, 2020; Barta, Belanche, Fernandez, & Flavian, 2022; Su, Baker, Doyle, & Yan, 2020). In fact, humorous and authentic content is found to have a positive effect on user enjoyment on TikTok (Su, Baker, Doyle, & Yan, 2020; Barta, Belanche, Fernandez, & Flavian, 2022).

However, most of the previous studies focus on a very narrow topic and not on businesses. Additionally, to the best of author's knowledge, there are no current research done using Estonian companies as an example, creating a research gap in the topic. Also, as

the author has helped to develop TikTok channels and created content for different businesses, it is also of author's personal interest to see what works best on TikTok.

The aim of this paper is to find out which factors have an effect on video reach and engagement based on Estonian organisations' videos on TikTok.

To achieve the aim, the author will:

- introduce the background of social media TikTok marketing;
- analyse previous works about TikTok, as well as other social media platforms' content performance;
- set the hypotheses for testing which features have an effect on performance;
- collect data from Estonian businesses TikTok accounts;
- use regression analysis to determine which features affect performance on TikTok;
- provide a list of features that influence Estonian businesses' TikTok video performance.

In the first part of this thesis, the theoretical framework of social media marketing is brought out, putting the main focus on TikTok marketing. Different key performance indicators are introduced, and social media platforms are compared based on these indicators. Previous works about marketing on TikTok are analysed, including factors which have influenced performance. Using previous works as a basis, hypotheses for current work are set.

In the second part, the empirical analysis is conducted. Data and methodology are introduced, including data collection and analysis methods, as well as descriptive statistics of data. The study conducts quantitative analysis of 400 TikTok videos from the accounts of 40 Estonian organisations. Dependent and independent variables used are also brought out and described. Independent variables are tested for dependent variables and regression models are created and analysed. In the end, the author gives recommendations for marketing on TikTok and discusses further research possibilities.

Finally, the author would like to thank her supervisors Junior Lecturer Tanel Mehine and Lector Helen Poltimäe for their guidance throughout this thesis.

Keywords: TikTok, social media, marketing, engagement, reach

1. TikTok as a marketing channel and its factors affecting performance

1.1. Social media and TikTok in marketing

In the first subchapter, overview of social media definitions and social media as a marketing tool is given, along with different performance metrics. TikTok as a platform is introduced and metrics such as user base and engagement are discussed and compared with other popular platforms.

In 2004, when MySpace was launched, begun a new era of internet, as it marked the beginning of modern social media. Everything started to become faster, more convenient and it shaped how people find friends, partners, information. (Ortiz-Ospina, 2019)

Social media can be defined in various ways. In Table 1, five different definitions are brought out.

Table 1

Different definitions of social media

Source	Definition
Cambridge Dictionary (n.d.)	“Social media – websites and computer programs that allow people to communicate and share information on the internet using a computer or a mobile phone.”
Merriam-Webster Dictionary (n.d.)	“Social media - forms of electronic communication (such as websites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other content (such as videos).”
Durgam, 2018, p. 2	“Social media simply refers to communication/publication platforms which are generated and sustained by the interpersonal interaction of individuals through the specific medium or tool.”
Kaplan & Haenlein, 2010, p. 61	“A group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content.”
Carr & Hayes, 2014, p. 49	“Internet-based, disentrained, and persistent channels of masspersonal communication facilitating perceptions of interactions among users, deriving value primarily from user generated content.”

Source: Cambridge Dictionary, n.d.; Merriam-Webster Dictionary, n.d.; Durgam, 2018; Kaplan & Haenlein, 2010; Carr & Hayes, 2014

Cambridge Dictionary (n.d.) and Merriam-Webster Dictionary (n.d.) definitions are the only ones that do not explicitly mention interactions as part of social media. While Merriam-Webster’s mentions sharing information and other content, it does not imply multi-way interactions as part of it, which other definitions do. Durgam (2018), Kaplan and Haenlein (2010) and (2014) all mention social media as a place where to exchange content

and interact with other users. Interestingly, Durgam (2018) does not mention social media as part of internet, which all other ones bring out as one of the central parts of social media.

Currently, social media is an integral part of marketing. Social media provides marketers the opportunity of two-way interaction, as also brought out in some of the definitions of social media, that influences positive customer perception of a company, helping to develop loyal customer relationships in a way no other marketing method allows, as discussed by Tuten & Solomon (2018), Fujita, Harrigan, Soutar, Roy & Roy (2020) and Ferm & Thaichon (2021).

Tuten & Solomon (2018) mention Facebook, Twitter, Instagram, and YouTube as examples of popular social media platforms used by marketers. It comes as no surprise, as Facebook, Twitter and Youtube have been around for more than a decade (Ortiz-Ospina, 2019) and have had time to gain favouritism among marketers.

To measure marketing activities' success on social media, key performance indicators are used. Key performance indicators are metrics that help marketers to see the effect of their work and measure the fulfilment of goals (Ghahremani-Nahr & Nozari, 2021). The most popular indicators are brought out in Figure 1.

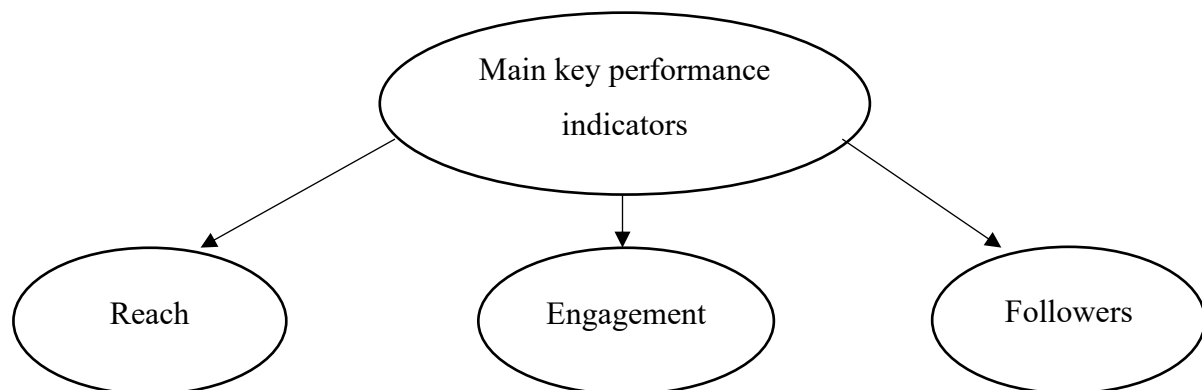


Figure 1. Main key performance indicators in social media marketing.

Source: Compiled by author based on Neiger, et al., 2012; Keegan & Rowley, 2017; Vyas, et al., 2020; Backley, Wade, Easter, Samuel, & Parchem, 2022; Podobnik, 2013; Ghahremani-Nahr & Nozari, 2021.

The main indicators are reach, engagement (Neiger, et al., 2012; Keegan & Rowley, 2017; Vyas, et al., 2020; Backley, Wade, Easter, Samuel, & Parchem, 2022), number of followers and the change of them over time (Podobnik, 2013; Ghahremani-Nahr & Nozari, 2021).

Engagement on social media is created by users going through different emotions, which cause them to have higher involvement with the consumed content (Voorveld, van

Noort, Muntinga, & Bronner, 2018; Di Gangi & Wasko, 2016) and is foremost created by positive emotions, satisfaction, and trust (de Oliviera Santini, et al., 2020). Engagement is considered to be the act of consuming, liking, commenting or sharing (Syrdal & Briggs, 2018; Dolan, Conduit, Frethey-Bentham, Fahy, & Goodman, 2019; Jaakonmäki, Müller, & vom Brocke, 2017).

Reach is the number of times a particular piece of content on social media is seen and it is also used in measuring engagement rate (Rahim, Ibrahim, Salim, & Ariffin, 2019; York, 2020; Indeed, 2022; SocialBee, n.d.). To measure engagement rate, actions such as liking, commenting and others are weighted against reach (Rahim, Ibrahim, Salim, & Ariffin, 2019; York, 2020; Indeed, 2022; SocialBee, n.d.) or page followers/likes. For Instagram, Arman and Sidik (2019) consider engagement rate as the relationship between likes, comments and followers, as did Yost, Shang, and Qi (2021) for Instagram, as well as for Facebook and Twitter. However, Rahim, Ibrahim, Salim and Ariffin (2019) considered engagement rate on Facebook to be the relationship between interactions and post reach.

In recent years, a newcomer with the name of TikTok has entered the social media landscape. TikTok is a video platform that allows users to make videos up to three minutes long and an algorithm that makes videos go viral overnight and is widely regarded as a teenagers' dance app (Cooper-Castello, 2022). TikTok was first launched in 2016 in China by ByteDance, and it held the name Douyin. Around the same time, an app called Musically was popular in Europe, which was acquired by ByteDance at the end of 2017. Acquiring Musically meant acquiring their whole userbase and combining it with Douyin catapulted the massive growth of the app. (D'Souza, 2022)

TikTok has since grown in record speed, reaching 1 billion monthly users in September of 2021, which means TikTok achieved this in 5 years (TikTok, 2021). For comparison, it took Facebook almost 9 years to reach that benchmark (Buchholz, 2021), although it can be argued that because of how much the internet has changed over the years, it is expected that Facebook would have needed more time for similar numbers. Nevertheless, only one app has managed to achieve TikTok-like growth (4.9 years, instead of TikTok's 5.1 years), which is Facebook Messenger (Buchholz, 2021). This success can be attributed to Facebook having a strong userbase beforehand and users being forced to download the app in order to use the messaging functionality on their mobile phone (Buchholz, 2021).

For marketers to get the most out of a social media platform, they need to know who uses the platform (Kilian & McManus, 2015). In Table 2, user age demographic statistics are brought out for TikTok, Facebook, Instagram and Twitter. The author decided to retrieve user

demographic statistics from the key findings of the app reports made by Business of Apps, as the reports covered all platforms, thus providing the most equal ground for analysis. It is important to note that the percentages may differ depending on the source.

Table 2

User age demographics of TikTok, Facebook, Instagram and Twitter.

Platform	Age	Percentage
TikTok	10-19	28
	20-29	35
	30-39	18
	40-49	16.3
	50+	2.7
Facebook	13-17	5.9
	18-24	23.8
	25-34	31.6
	35-44	16.9
	45-54	10.5
	55-64	6.4
	65+	4.9
Instagram	13-17	13-17
	18-24	18-24
	25-34	25-34
	35-44	35-44
	45-54	45-54
	55-64	55-64
	65+	65+
Twitter	13-17	7.8
	18-24	25.2
	25-34	26.6
	35-44	28.4
	45+	12

Source: Curry, D., Cooper, J., Iqbal, M., 2021, as referenced in Iqbal, M. 2023

It can be seen that while under 30-year-olds make up the biggest share of TikTok's users, the difference among user groups isn't as steep as it is for other platforms. This proposes an opportunity for many companies to reach their desired target.

Table 3 shows the gender demographics of the platforms, providing input for companies for whom the gender of their target audience is defined.

Table 3

User gender demographics of TikTok, Facebook, Instagram, and Twitter.

Gender	TikTok	Facebook	Instagram	Twitter
Male	40	43.2	49.2	68.5
Female	57	56.8	50.8	31.5
Other	3	-	-	-

Source: Curry, D., Cooper, J., Iqbal, M., 2021, as referenced in Iqbal, M. 2023

As seen from the table, TikTok manages to compete with Facebook and Twitter with gender distribution. While TikTok is a bit more skewed towards female users, it still has a substantial male user base. Twitter is the only one of analysed platforms that is noticeably dominated by male users.

TikTok has a fast-paced structure, making it easy to spend hours of the app without even noticing. According to different sources, the average daily time spent on TikTok ranges from over 50 minutes (Yaqub, 2022) to over 90 minutes (Chan, 2022) – nevertheless, giving a lot of potential screen time for businesses to have their content seen.

Although it's not only a dance app, dancing is one of the most popular content types on TikTok, landing on number two with the tag #dance used almost 200 billion times (Statista, 2022). The first place held by entertainment videos, with over 530 billion hashtag uses (Statista, 2022). Other popular content types include pranks, fitness, do-it-yourself videos, beauty, fashion, and many others that have far lower hashtag uses – although even those exceed billions of uses (Statista, 2022). The author deems it important to note that a video can have several hashtags, so one video can fall under dancing content type, as well as entertainment.

Regarding key performance indicators, reach, engagements, and followers are popular ways how to track performance in TikTok (Russel, et al., 2021; Zheng, Mulligan, & Scott, 2021). Currently, paid advertisement is not yet available on TikTok in Estonia (TikTok, n.a.), which means that companies must rely on organic impressions. While this might mean a smaller reach or engagement, organic impressions are considered much more influential and credible, as suggested by Tuten & Solomon (2018) and Aydin (2020). Additionally, customer engagement on social media has been found to have a positive influence on brand perception (de Vries & Carlson, 2014). Combined with TikTok's personalised algorithm that has the ability to make videos popular even without a follower base, as noted in Business Insider (Nguyen, 2023), Forbes (Greenwald, 2021) and Hootsuite (Newberry, 2022), TikTok can pose as a low-cost and effective marketing platform. Generally, good TikTok engagement is considered to be around 4%-18% (Adobe Express, 2022; Macready, 2022).

Table 4 shows benchmarks - engagement rate, reach and followers - as estimates based on different pages and marketing blog, such as Social Insider, Hootsuite, Insider Intelligence, and others. For Twitter, the most recent follower growth data comes from 2017. Overall, this provides a general overview of estimated numbers based on the most recent data available.

Table 4

Estimated engagement rate, reach and follower growth rate for TikTok, Facebook, Instagram and Twitter

	TikTok	Facebook	Instagram	Twitter
Engagement rate	5.96%	0.20%	0.90%	0.05%
Reach	17.6%	8.6%	3.51 %	5.8% of 13+ population*
Followers	2.5-6.3%	<0-0.52%	1.69%	0.22-0.76%

Note: *based on advertised media

Source: Cucu, 2022; Bridges, 2022; Cucu, 2022; Beveridge, 2022; Insider Intelligence, 2022; Newberry, 2022; Macready, 2022; Dixon, 2017.

TikTok mostly outperforms all other compared platforms, especially for engagement rate, where the difference in engagements is around 6 times bigger for Instagram and over 100 times bigger than for Twitter. Follower growth follows similar patterns across platforms. While post reach doesn't show as drastic numbers, it's still significantly bigger than for other platforms. Here, it is necessary to note that these numbers are estimations and may largely differ between industries, as well as data collection method.

1.2. Previous research about performance on TikTok in marketing context

The second subchapter introduces previous works done about TikTok, as well as other social media, while mainly focusing on the performance of different social media parameters. In the scope of TikTok marketing, previous works conducted on the topic mostly research the effect of marketing tactics on engagement, reach and followers as the metrics for measuring marketing activity performance.

According to Collie and Wilson-Barnao (2020), "TikTok needs to be understood as a particular architecture of digital labor," and it is important for creatives to understand TikTok's algorithm. It was also brought out that on TikTok, the videos are meant as short creative bursts, rather than professional videos like for example in YouTube (Collie & Wilson-Barnao, 2020). This was also mentioned by Barta, Belanche, Fernandez and Flavian (2022), Su, Baker, Doyle and Yan (2020), and is attributed as part of the reason for success of Ryanair, one of the most successful brand accounts on TikTok (Corcoran, 2021).

Li, Guan, Hammond and Berrey (2021) researched COVID-19 communications on TikTok, identifying that videos that were posted by World Health Organization (WHO) gained a bigger number of engagements than videos posted by other accounts. Number of hashtags were also in correlation with higher number of likes, but not in a significant positive correlation with comments or shares. Videos with subtitles and videos without spoken

language (meaning text or mimics etc. was used in the video) received higher engagement than videos without subtitles and with spoken language. Dance videos and videos with people in it were more likely to be shared and videos with emotional content were more likely to be commented on. (Li, Guan, Hammond, & Berrey, 2021)

According to Barta, Belanche, Fernandez and Flavian (2022), who researched influencer marketing on TikTok, original and fun content performed the best, as can be seen from Appendix A. Originality influenced users to follow the account, made users trust the account owner and contributed to users enjoying the video and having a good time. The latter two effects were also seen with humorous content. As also supported by Collie and Wilson-Barnao (2020), quality did not have direct on neither the user enjoying the video, nor trusting the opinions of the poster. (Barta, Belanche, Fernandez, & Flavian, 2022)

Surprisingly, large posting volume had a negative effect on the user enjoyment (Barta, Belanche, Fernandez, & Flavian, 2022). However, Akbari, Jastacia, Setiawan and Ningsih (2022) found that larger posting volume (at least once a day) brought the highest engagement, which can suggest that posting frequency and its effect on engagement and enjoyment might depend on the industry and subject of videos.

Su, Baker, Doyle and Yan (2020) studied the use of TikTok by athletes during COVID-19 and found that authentic, playful, and performative content was the most engaging. Making funny and candid videos showed to improve the authenticity of athlete's brand and make them relatable, as videos showed the "human" side of studied athletes and were not as polished as usual videos posted to other platforms, as supported by Barta, Belanche, Fernandez, and Flavian (2022).

On the topic of weight loss, videos that featured a graphic or a visual received the highest number comments, likes and forwards. Additionally, informational videos had a big influence on the number of comments and likes. (Samuel, Tang, & Basch, 2022)

In Table 5, all indicators that were chosen to study the effect of different marketing tactics on the performance of TikTok videos in analysed works are depicted. To better understand the types of variables used in previous works, the author has divided the factors into four subgroups based on the contents. The subgroups are following: caption-related indicators, text- and sound-related indicators, content- and volume-related indicators and people-related factors.

Table 5

Variables studied in previous works about TikTok

Indicators	Su, Baker, Doyle, Yan (2020)	Li, Guan, Hammond, Berrey (2021)	Barta, Belanche, Fernandez and Flavian (2022)	Akbari, Jastacia, Setiawan and Ningsih (2022)	Samuel, Tang, Basch (2022)
Caption-related factors					
Subtitles	No	Yes	No	No	No
Captions	No	Yes	No	No	No
Hashtags	No	Yes	No	No	No
Text- and sound-related factors					
Subtitles	No	Yes	No	No	No
Spoken language	No	Yes	No	No	No
Graphics	No	No	No	No	Yes
Content- and volume-related factors					
Frequency	Yes	Yes	Yes	Yes	No
Video length	No	Yes	No	No	No
Content- and theme related	Yes	Yes	Yes	Yes	Yes
Originality	Yes	No	Yes	No	No
Quality	No	No	Yes	No	No
People-related factors					
Presenter	No	No	No	No	Yes

Source: Su, Baker, Doyle, & Yan, 2020; Li, Guan, Hammond, & Berrey, 2021; Barta, Belanche, Fernandez, & Flavian, 2022; Akbari, Jastacia, Setiawan, & Ningsih, 2022; Samuel, Tang, & Basch, 2022.

All featured papers include a content or theme-related indicators to their study, which depend on the topic on the study. Most paper include frequency of posts and two take originality of content into account as well. Less popular indicators are the existence of subtitles, hashtags, captions, spoken language, video length, existence of graphics like text on screen or graphs, quality and presenter related factors, such as the presence or nature of people in video.

Based on the analysis done on Twitter, tweets under 140 characters perform better than tweets that have 140-280 characters, suggesting shorter texts have higher quality (Gligorić, Anderson, & West, 2018). This is also supported by Tafesse and Wood (2023), who found that influencer who post longer photo captions have lower fan engagement. However, for Facebook posts about marine organism imagery, length of caption did not have

a significant effect on user engagement, suggesting caption length does not play a role in the virality of scientific posts (McClain, 2019).

Moreover, an analysis of Humans on New York Facebook blog-like posts showed that longer posts had more shares. The length of the caption did not have a significant influence on the amount of likes the post. (Wang, Kim, Xiao, & Jung, 2017)

Gkikas, Tzafilkou, Theodoridis, Garmpis and Gkikas (2022) found that on Facebook, the most engaging text length is around 321-580 characters, while the least engaging is 0-160 characters. This contradicts with the findings of Gligorić, Anderson, & West (2018) and somewhat contradicts with Tafesse and Wood (2023), as the latter authors have not mentioned an exact length of text.

Emojis are a big part of our everyday communication on social media. Wang, Cheng, Li and Liang (2023) studied the use of emojis in digital communication of tourism and hospitality businesses and found that posts containing emojis brought along a higher engagement. However, there are also conflicting results. Ko, Kim and Kim (2022) grouped emojis into emotional and informational emojis and discovered that educational emojis had a negative influence on engagement, while emotional emojis had a positive effect. However, the excessive use of emotional emojis produced a negative effect on engagement (Ko, Kim, & Kim, 2022).

Hashtags are associated with higher engagement, as found by Gkikas, Tzafilkou, Theodoridis, Garmpis and Gkikas (2022) and Yost, Zhang and Qi (2021). This is also supported by Schultz (2017), who mentions that compared to hyperactive links that direct the user away from the social platform, hashtags are also hyperactive, but allow the user to stay on the same platform, which has a positive effect on the number of likes and comments.

The effect of human faces on visuals has been studied by Li and Xie (2020), showing that on Twitter, the presence of people, specifically faces, on pictures had a positive effect on engagement, although it was not seen it Instagram. Similarly, mentioning other accounts showed to increase engagement (Li & Xie, 2020). A study done by Jaakonmäki, Müller and vom Brocke (2017) also suggests that visuals with people help generate engagement. Additionally, Li and McCrary (2022) found that during Covid time in the United States, Instagram pictures featuring a group of people generated more likes than pictures with no or a few people.

On-screen captioning for videos has also shown positive effects on form and meaning recognition, as well as clip association (Montero Perez, Peters, Clarebout, & Desmet, 2014). However, Dong, Xie, Xi and Liao (2022) have found that subtitles on short-term videos had a

negative effect on comments and shares and no effect on likes. As for on-screen text that was not subtitles, Hahn (2021) found that exhibiting sports statistics on-screen had a positive effect on credibility, as well as user enjoyment.

It is safe to say that TikTok has quickly found its place among the social media platforms' hall of fame and has piqued the curiosity of many companies already. It seems that being authentic, getting rid of the corporate tone of voice, making videos accessible by adding subtitles and moderate posting frequency are the main factors that will bring success on the platform.

1.3. Research hypotheses for further testing based on previous works

In this subchapter, the hypotheses used for further testing are formed. As there are few works studying factors affecting reach on social media, the author has decided to approach the subjects like Concalves, *et al.* (2015) and test all factors affecting engagement based on previous literature for reach as well.

The author has previously divided the hypotheses into four different groups: caption-related indicators, text- and sound-related indicators, people-related indicators, and content- and volume-related indicators. All the indicators are tested with engagement and reach being the dependent variables. In the parameters of this work, engagement is the sum of all interactions, meaning likes, comments, saves, and shares, divided by reach (the amount of time a specific video has been watched).

Caption-related indicators focus on the presence and length of caption and hashtags, as well as the content of it where it concerns emojis.

The work of Gligorić, Anderson, and West (2018) and Tafesse and Wood (2023) found that shorter texts in captions work better. This was contradicted by Gkikas, Tzafilkou, Theodoridis, Garmpis, and Gkikas (2022) and Wang, Kim, Xiao, and Jung (2017) who found that longer texts had higher engagement, with the second study finding longer texts had a significant effect on shares. Additionally, McClain (2019) found that caption length does not have any significance at all. To see whether the length or just the presence of a caption has an effect, the following research hypotheses are set:

H1_a: The presence of a caption has an effect on engagement components.

H1_b: The presence of a caption has an effect on reach.

H2_a: Length of caption in characters has an effect on engagement components.

H2_b: Length of caption in characters has an effect on reach.

Wang, Cheng, Li and Liang (2023) found that using emojis had a positive effect on engagement, however, Ko, Kim and Kim (2022) found that excessive use of emojis can have the opposite effect. The following hypotheses are set:

H3_a: Presence of emojis in a caption has an effect on engagement components.

H3_b: Presence of emojis in a caption has an effect on reach.

Li, Guan, Hammond and Berrey (2021) mentioned that a higher number of hashtags were in correlation with higher number of likes, although it did not have an effect on comments and shares. This is also proved by Gkikas, Tzafilkou, Theodoridis, Garmpis and Gkikas (2022), Yost, Zhang and Qi (2021) and Schultz (2017). To test this, the author has decided to, in addition to number of hashtags, to see whether just the presence of hashtags has an effect and the length of them in characters to test all aspects of hashtags in captions. This is to be able to study factors more thoroughly. The following hypotheses are set:

H4_a: The presence of hashtags has an effect on engagement components.

H4_b: The presence of hashtags has an effect on reach.

H5_a: Number of hashtags has an effect on engagement components.

H5_b: Number of hashtags has an effect on reach.

H6_a: Length of hashtags in characters has an effect on engagement components.

H6_b: Length of hashtags in characters has an effect on reach.

To account for the effect of caption with hashtags together, we test the following hypotheses:

H7_a: Total length of caption and hashtags in characters has an effect on engagement components.

H7_b: Total length of caption and hashtags in characters has an effect on reach.

Indicators related to text and sounds include variables like text on screen, subtitles, spoken language and the use of music in videos.

Hahn (2021) found that on-screen text that was not subtitles, had a positive effect on user enjoyment, which could translate to positive effect on engagement (de Oliveira Santini, et al., 2020). The following hypotheses are set:

H8_a: Text on screen has an effect on engagement components.

H8_b: Text on screen has an effect on reach.

Videos with subtitles had a higher engagement rate, as found by Li, Guan, Hammond, and Berrey (2021). However, Dong, Xie, Xi and Liao (2022) found that subtitles had a

negative effect on comments and shares, while having no effect on likes. Based on this, the following hypotheses are created:

H9_a: Subtitles in videos have an effect on engagement components.

H9_b: Subtitles in videos have an effect on reach.

Videos without spoken language were found to have higher engagement compared to videos with spoken language (Li, Guan, Hammond, & Berrey, 2021). To test this, we will see whether spoken language or, oftentimes alternatively, music have an effect on engagement and reach and the following hypotheses are set:

H10_a: Spoken language has an effect on engagement components.

H10_b: Spoken language has an effect on reach.

H11_a: Music in videos has an effect on engagement components.

H11_b: Music in videos has an effect on reach.

Indicators related to people in videos concern the presence and the amount of people in videos, as well as whether any of those people is an influencer. Here it is important to note that the decisions on who is considered to be an influencer are based on the author's subjective decisions.

Li, Guan, Hammond and Berrey (2021) found that videos with people in them had more shares. Similar results were found by Li and Xie (2020), Jaakonmäki, Müller and vom Brocke (2017) and Li and McCrary (2022). In this work, the effect of people, the amount of people and the presence of an influencer are tested and following hypotheses are created:

H12_a: People in videos have an effect on engagement components.

H12_b: People in videos have an effect on reach.

H13_a: Number of people in videos has an effect on engagement components.

H13_b: Number of people in videos has an effect on reach.

H14_a: Influencer in videos has an effect on engagement components.

H14_b: Influencer in videos has an effect on reach.

Content and volume related indicators include variables like educational content, originality, employer branding content and posting volume.

Samuel, Tang, and Basch (2022) found that informational had a positive effect on the number of comments and likes. In this work, the effect of educational videos, rather than only informational, is tested. The following hypotheses are set:

H15_a: Educational videos have an effect on engagement components.

H15_b: Educational videos have an effect on reach.

Engagement on social media has been found to have positive influences on brand perception (de Vries & Carlson, 2014). With the following hypotheses, the author wants to test whether employer branding activities also have the opposite effect of driving performance on social media.

H16_a: Employer branding related topics have an effect on engagement components.

H16_b: Employer branding related topics have an effect on reach.

Original content has been found to perform the best in terms of hedonic experience and intent to follow (Barta, Belanche, Fernandez, & Flavian, 2022) and authentic, playful and performative content is related to higher engagement (Su, Baker, Doyle, & Yan, 2020). Based on de Oliveira Santini et al. (2020), engagement with content is brought on by positive emotions. As many previous uses of a TikTok sound indicates a video idea is not original, the following hypotheses are set:

H17_a: Video originality has an effect on engagement components.

H17_b: Video originality has an effect on reach.

H18_a: Amount of previous uses by users of a sound used in video has an effect on engagement components.

H18_b: Amount of previous uses by users of a sound used in video has an effect on reach.

H19_a: Sound type has an effect on engagement components.

H19_b: Sound type has an effect on reach.

Regarding posting volume, there have been contradicting findings. Based on Barta, Belanche, Fernandez, and Flavian (2022), higher posting volume had a negative effect on user enjoyment and thus, could affect engagement (de Oliveira Santini, et al., 2020). However, Akbari, Jastacia, Setiawan and Ningsih (2022) found that higher posting volume brought higher engagement. To test this, the following hypotheses are set:

H20_a: Posting volume has an effect on engagement components.

H20_b: Posting volume has an effect on reach.

Additionally, the effect of amount of followers will be analysed. Positive emotions bring along the intention to follow (Barta, Belanche, Fernandez, & Flavian, 2022) and positive emotions also encourage engagement (de Oliveira Santini, et al., 2020). To see whether followers have an effect on engagement and reach, the following hypotheses are set:

H21_a: Number of followers has an effect on engagement components.

H21_b: Number of followers has an effect on reach.

Due to personal interest, the author has decided to research how video length affects performance. As TikTok is a short-video platform, the author wants to know whether videos affect performance.

H22_a: Video length has an effect on engagement components.

H22_b: Video length has an effect on reach.

These hypotheses are derived based on previous works analysed in the theoretical part of this work. The author will use learnings from the previous works to determine which factors have an effect on reach and engagement components, such as likes, comments, saves and shares, on TikTok. Based on literature, the author should collect information of TikTok videos and create a regression model. This will determine the factors that have an effect on TikTok video performance and the author will analyse and interpret the results in marketing context.

2. Factors affecting performance on TikTok

2.1. Introduction of methodology and data

In this part, the methodology and data of the research at hand is introduced more thoroughly. Methodology relies on previous studies, with focus on finding what effect different variables can have on reach and engagement rate.

The author has collected information from 10 latest videos of 40 different TikTok accounts by Estonian companies. Following constraints on the accounts chosen are set: the account needs to be in Estonian, be > 1 month old, have > 15 videos and the latest video must be posted in the last 30 days. If the video is posted less than 24 hours ago at the time of collecting data, it will not be counted as a part of the 10 videos. The data was collected between 18.02-30.03.2023,

The accounts were chosen randomly using snowball sampling-like method, where accounts were found either through recommended accounts of different organisation accounts or through videos on the author's feed.

Mentioned limitations were chosen to ensure that accounts have had sufficient time to grow and create steady content, while also ensuring that the account is still active. The limitation that no videos posted less than a day ago will not be in the sample ensures that all videos have had enough time to circulate on the platform.

The specific amount of TikTok accounts and videos was chosen to have big enough sample size to be able to draw statistically significant conclusions from, while still having all the accounts fit into the requirements. Based on previous works, this is also sufficient sample size to draw conclusions from.

There no requirements set for the size of the company. Due to advertising on TikTok not yet being available to accounts created in Estonia, bigger companies do not have an obvious advantage. The only advantage is that bigger companies might have more human resource to allocate to TikTok marketing, but as TikTok marketing can be done with very little time expense, author deems it not significant enough.

To ensure stability of data, engagement actions (likes, comments, saves and shares) are divided by video reach to receive a rate that is shown as a percent. This ensures videos that have been up for less time do not distort the data. For reach, the videos chosen have been uploaded 7-14 days prior to data collection. While this limits the sample size, it is necessary to keep data consistent.

The author has decided to include indicators based on previous works analysed in chapter 1.2 and 1.3. All featured variables are shown in Table 6.

Table 6

All variables used in analysis

Variable	Type	Contents
Reach	DV	Amount of views a video has received.
Like rate	DV	Amount of likes a video has received.
Comment rate	DV	Amount of comments a video has received.
Save rate	DV	Number of times a video has been saved.
Share rate	DV	Number of times a video has been shared.
Frequency	IV	On average, how often a video is posted (in days).
Followers	IV	How many followers an account has.
Presence of caption	IV	Whether a video has a caption that is not a hashtag.
Caption length	IV	How many characters does a caption have.
Presence of hashtags	IV	Whether a video has hashtags.
Number of hashtags	IV	How many captions a video has.
Length of hashtags	IV	How many characters the captions are.
Total length of caption and hashtags	IV	Total length of caption and hashtags together in characters.
Presence of emojis	IV	Whether a caption or hastags contains emojis
Subtitles	IV	Whether a video has an approximately exact transcription of the text spoken
Text on screen	IV	Whether a video has any text or graphics on screen that are not subtitles
Spoken language	IV	Whether there is a person talking in the video
Voiceover	IV	Whether a video has a voiceover
Educational	IV	Whether a video has educational value, e.g shares objective facts that might not be common knowledge
Employer branding	IV	Whether a video has recognisable employer branding themes
Original	IV	Whether a video uses a sound or is completely original.
Sound uses	IV	How many times the features sound-bite or a piece of music has been used by other creators
Sound type	IV	Whether using music, sound with spoken alnquage or sound with neither has an effect
Presence of humans	IV	Whether there are humans present in videos
Amount of people	IV	How many people are in the videos
Presence of an influencer	IV	Whether a video includes an influences

Note: DV – dependent variable; IV – independent variable

Source: compiled by the author based on Li, Guan, Hammond, and Berrey (2021), Su, Baker, Doyle, & Yan (2020), Barta, Belanche, Fernandez, & Flavian (2022) and Samuel, Tang, & Basch (2022), Gligorić, Anderson, & West (2018), Tafesse & Wood (2023), McClain (2019), Wang, Kim, Xiao, & Jung (2017) Gkikas, Tzafilkou, Theodoridis, Garmpis, & Gkikas (2022), Li & Xie (2020), Jaakonmäki, Müller, & vom Brocke (2017), Li & McCrary (2022), Montero Perez, Peters, Clarebout, & Desmet, (2014), Dong, Xie, Xi, & Liao (2022) and Hahn (2021).

Reach on TikTok is considered as the number of times a video has been viewed. This means that it is not about unique people who have seen the video, but all total views, even if a user watched the video several times. Engagement components or likes, comments, saves and shares are taken as a rate of reach to ensure stability of data. This means that video likes are divided by video reach to get like rate, showing us how many likes a video gets per 100 views. The same method is used for comments, saves and shares as well. All independent variables are tested separately for like rate, comment rate, save rate and share rate as dependent variables. As almost all previous works looked at engagement components separately, this was also decided for this work. All independent variables (except frequency) are also tested for reach. Frequency is left out due to data being collected during a small window of time and in this case, frequency would potentially not accurately describe reality. SPSS is used to perform regression analysis, like was done by Su, Baker, Doyle, & Yan (2020). 1 video is completely left out of the analysis due to it having no engagements.

Organisations used in the study are: @rimieesti, @selver_ee, @laulutantsupidu, @minukodukontor, @swedbankeestis, @pokebowl_eeesti, @bubblyboba_ee, @kukupesa_ee, @cvonlineestonia, @devtailor_software, @seksuaaltervis.ee, @sportlandeesti, @olearyseesti, @iizikindlustusmaakler, @tallinnofficial, @ohtuleht_ee, @tallink_eeesti, @cinamon_eeesti, @kuulsaal, @nopri_talu, @tele2_eeesti, @meigipidu, @beliefeesti, @mobipunkt, @hragency_estonia, @200tiktokis, @kanal2ohtu, @kfc_eeesti, @vikingline_eeesti, @kookerstreetcafe, @peetripizza.ee, @myhitseesti, @raadio2, @koristushullud.ee, @raadioskyplus, @tartushooters, @estonian.wildlife, @postimees_ee, @rahvaraamat, @mobire_ee.

To understand the values of the data used in this thesis, descriptive statistics are brought out in the next tables. Following Table 7 includes descriptive statistics of reach data.

Table 7

Descriptive statistics for reach

Type	Variable	Minimum	Maximum	Mean	Standard Deviation
DV	Reach	106	90 600	12 318.33	17 958.10
IV	Followers	176	29 500	7397.16	8792.98
IV	Number of hashtags	1	19	5.03	4.07
IV	Length of hashtags	4	175	50.41	35.96
IV	Length of caption	6	257	59.83	47.57
IV	Total length of caption and hashtags	22	274	103.76	51.17
IV	Video length	5	225	25.67	30.17
IV	Amount of people	1	12	2.53	2.67

IV	Sound uses	83	9 700 000	786 074.75	1 930 471.11
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Source: compiled by author

The average reach for all videos of accounts is 9152.66 views, however, the average of videos in the chosen timeframe is 12 318.33, showing that excluding more recently posted videos that likely have a smaller reach has an effect on average. Overall, 8 videos had reach higher or equal to 50000, belonging to @devtailor_software, @iizikindlustusmaakler, @tallinnoofficial, @ohtuleht.ee, @nopri_talu, @kanal2ohtu, and @raadioskyplus. On average, the videos have 522.95 likes, 33 comments, 43.35 saves and 73.27 shares. The average number of all engagements (likes, comments, saves, shares) for all accounts is 670.56, with two videos having over 10000 total engagements, belonging to @ohtuleht.ee and @kanal2ohtu. The author has decided to not bring out lower values for reach and engagements, as they are expressed here as an absolute number, not as a percentage, meaning more recently posted videos have just not yet had enough time to gain as many engagements or views.

The following Table 8 illustrates the descriptive statistics for engagement rate.

Table 8

Descriptive statistics for engagement rate

Type	Variable	Minimum	Maximum	Mean	Standard Deviation
DV	Like rate	2	11400	522.95	970.61
DV	Comment rate	0	3161	33	203.73
DV	Save rate	0	1299	42.35	111.72
DV	Share rate	0	3886	73.27	336.43
IV	Frequency	0.3	21.2	4.28	4.11
IV	Followers	176	11400	521.95	970.61
IV	Number of hashtags	1	19	4.47	3.23
IV	Length of hashtags	4	175	48.90	31.44
IV	Length of caption	1	330	63.98	52.88
IV	Total length of caption and hashtags	7	372	107.3	57.32
IV	Video length	5	110	22.50	19.36
IV	Amount of people	1	12	2.52	2.66
IV	Sound uses	2	9 900 000	720 733.96	1 601 676.65

Source: compiled by author

Because variability in data is big, as seen from Table 7 and Table 8, there is a high likelihood for heteroskedasticity in data. To prevent this, all numerical variables were transformed using logarithm.

The average engagement rate for all accounts based on all impressions divided by all views is 6.66%, with good engagement rate considered to be 4%-18% (Adobe Express, 2022; Macready, 2022). Author has decided to calculate engagement based on reach, rather than number of followers, as this method depicts the performance of videos posted more recently more accurately.

The highest average engagement belongs to @beliefeesti at 13.98%, although a giveaway post is included in the average. Without a giveaway post included, the engagement rate is 12.7%, which can still be considered good level of engagement. The next highest engagement rate belongs to @bubblyboba_ee at 13.03% and does not include a giveaway post. Engagement rates can be seen from Figure 2.

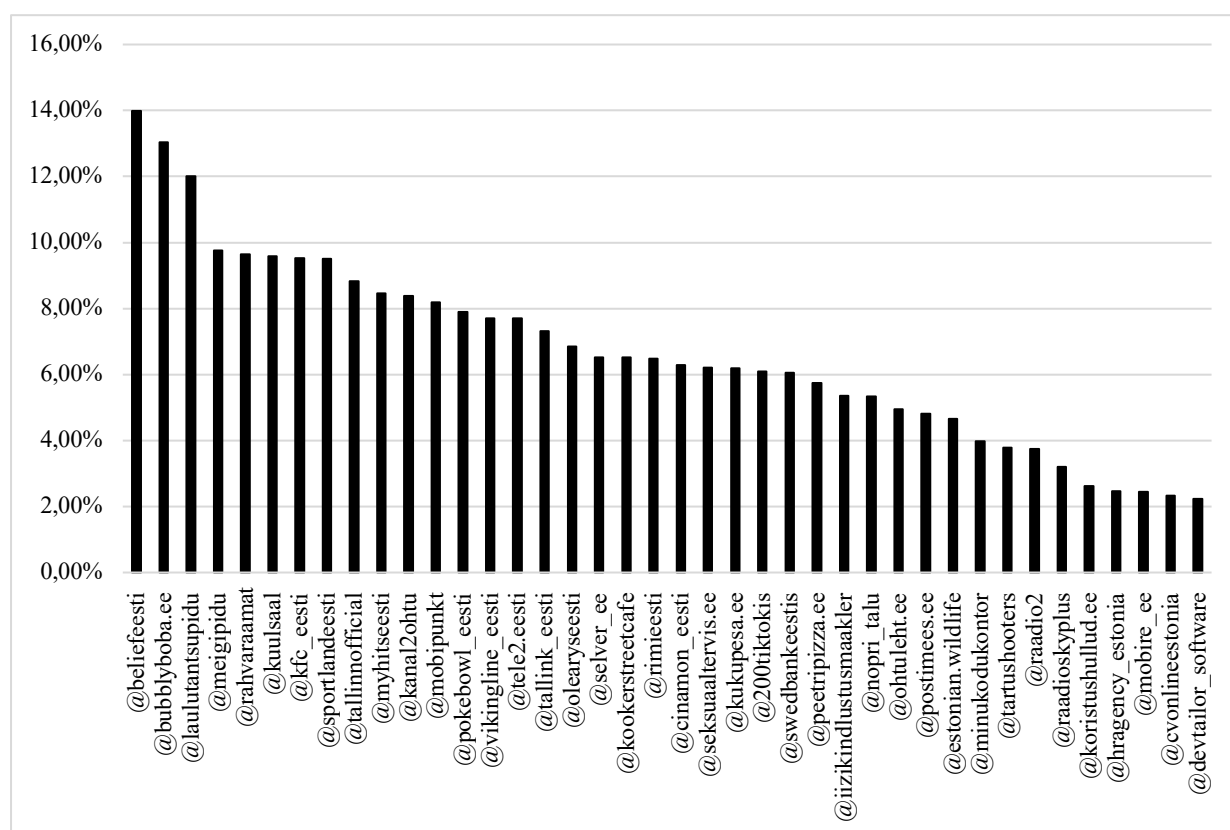


Figure 2. Engagement rate by organization

Source: compiled by author

None of the account averages are over 18%, however, 5 posts have managed to gain an engagement rate of over 18%. Two posts are from @beliefeesti with an engagement rate of 20.36% and 25.49%, with the latter being a giveaway post. Other posts belong to @kuulsaal at 21.98%, @kanal2ohtu at 19.77% and @200tiktokis at 19.08% with none of them being giveaway posts. Ten videos with the highest engagement are shown in Figure 3.

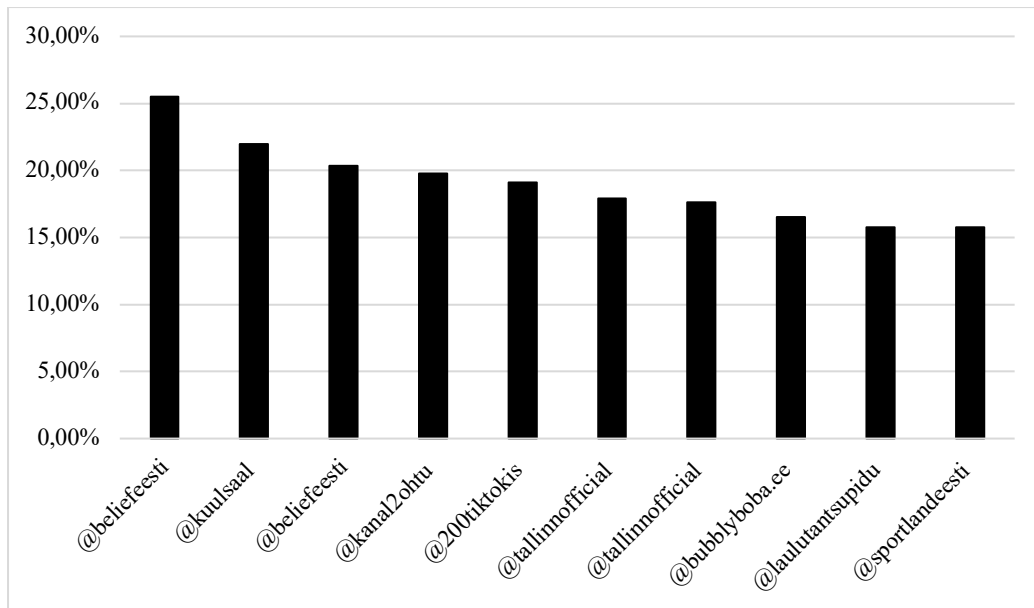


Figure 3. Videos with the highest engagement rates.

Source: compiled by author

Nine organizations had an account average engagement rate lower than 4%: @devtailor_software (2.24%), @mobire_ee (2.25%), @cvonlineestonia (2.33%), @hragencyestonia (2.46%), @koristushullud (2.61%), @raadioskyplus (3.20%), @raadio2 (3.74%), @tartushooters (3.78%) and @minukondukontor (3.97%). Overall, 119 videos had an engagement rate lower than 4%. In Figure 4, ten videos with the lowest engagement rates are shown.

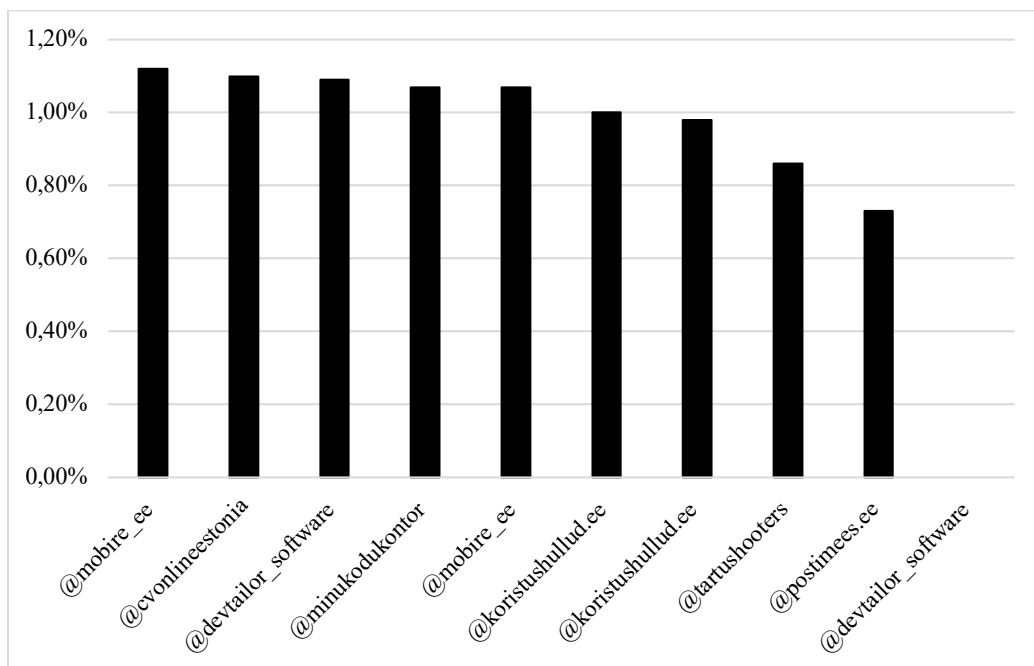


Figure 4. Videos with the lowest engagement rates,

Source: compiled by author

The average number of followers is 521.95. 17 accounts had less than 3000 followers, with two of those having under 1000 followers (@hragency_estonia and @mobire_ee). 17 accounts had between 3000-10000 followers and 6 accounts had more than 10000 followers (@myhitseesti, @kanal2ohtu, @nopri_talu, @ohtuleht.ee, @sportlandesti, @bubblyboba_ee). Interestingly, perceivably bigger brands do not necessarily seem to have more followers and smaller brands less, rather it's more depended on the individual account and its activities. In figure 5, account followers are shown.

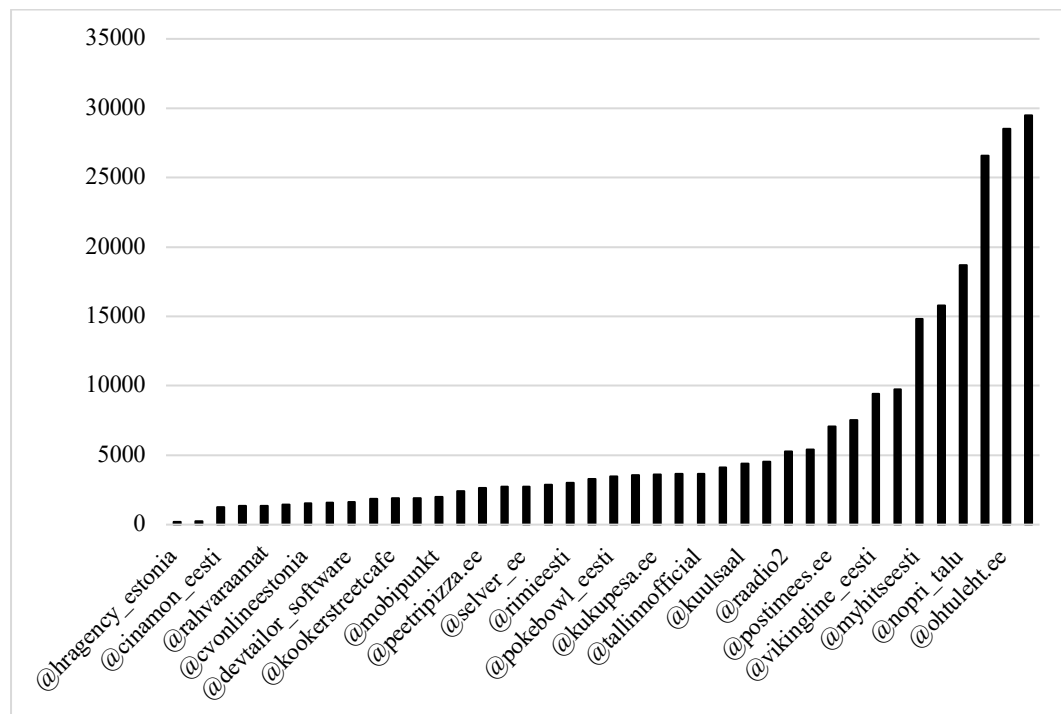


Figure 5. Number of followers on chosen organizations' TikTok accounts.

Source: compiled by author

On average, a video is posted by studied accounts every 4.27 days, with median value being 2.7 days and mode 2.2 days. The highest posting frequency is 0.3 (@postimees.ee) and the least frequent is 21.2 (@hragency_estonia).

Out of the 400 videos studied, 395 or 98.75% of them had some sort of caption. 94.7% of the videos containing a caption had a text caption (text other than hashtags), 95.2% had hashtags and the average total caption length is 42.10. The average number of hashtags is 4.28.

Out of all captioned videos, 75.4% of captions had emojis present. 74.8% of all videos had some sort of text or graphic on screen that were not subtitles and 15.5% of videos had subtitles. However, it is important to note that text on screen and subtitles we're not mutually exclusive and could exist on one video at the same time.

79.75% of videos had people in it and out of those videos, 108 or 33.9% of those videos include an influencer (based on the subjective classification of the author). The average number of people in videos is 2.01. 31.8% of videos included spoken language and 5.3% had voiceover. 62.5% of videos had music in it and 21.5% of videos had other type of sound in it. 71 videos or 17.75% had no background music or other sounds in them.

Overall, it seems that most studied TikTok account have a relatively good performance on TikTok, as over a half of the accounts had over 4% engagement rate. In the following subchapters, the reasons for this good performance are tested.

2.2. Analysis of factors affecting performance on TikTok

In this subchapter, the regression models are created and analysed. Based on models, previously set hypotheses are accepted or rejected and reasons for the results are discussed. Finally, recommendations to marketers are given and further research is discussed.

As a smaller data set was used for reach in order to ensure that more recently posted videos with smaller reach do not distort the data, as it is not possible to show reach as a rate, the valid data entries for reach and engagement components are brought out separately in Appendix B.

Overall, not many entries were missing for reach data. 97 videos fit into the timeframe chosen to analyse video reach, which can be considered a smaller sample size, however, it is close to 100, so we will accept it. Sound uses had the most number of missing values due copyright law, and some videos not using sound-bites. Videos were removed due to copyright law due to organisations having posted a video using a sound-bite or music made by someone else, but uploaded it as their own, thus not giving accurate representation of the performance of the sound.

Similarly to reach, the least amount of valid data entries in data used in engagement components' models is for sound uses due to copyright. This also has a noticeable effect for originality variable. As not all videos had a caption or used hashtags, there are also some missing values for these variables.

For determining which factors affect video reach on TikTok, multiple regression analysis was conducted. Included in Appendix C are histogram, P-P plot and the scatterplot for the final model, indicating normal distribution of data and residuals, as well as homoscedasticity of data. Appendix C also includes the correlation coefficients and standard residuals for the current model for significant variables.

As the reach model is based on a smaller sample size, some variables did not have enough variability. Because of that, the author decided not to include the following variables:

presence of caption, presence of hashtags and voiceover. Table 9 depicts variables used in the analysis for reach model.

Table 9

Independent variables used in reach model

Variable	Included/Not included
Frequency	Not included
Followers	Included
Presence of caption	Not included
Caption length	Included
Presence of hashtags	Not included
Number of hashtags	Included
Length of hashtags	Included
Total length of caption and hashtags	Included
Presence of emojis	Included
Subtitles	Included
Text on screen	Included
Spoken language	Included
Voiceover	Not included
Educational	Included
Employer branding	Included
Original	Included
Sound uses	Included
Sound type	Included
Presence of humans	Included
Amount of people	Included
Presence of an influencer	Included

Source: author's calculations

All other variables were included in reach model, except frequency, presence of caption, presence of hashtags, and voiceover. Table 10 shows the model for reach on TikTok and which factors have a statistically significant effect on reach.

Table 10

Model for Reach

Model	Unstandardized B	Sig.
(Constant)	2.157	<0.001
Followers	0.392	0.003
Video length	0.580	0.004
Caption length	-0.397	0.033
R	R ²	Sig.
0.473	0.224	<0.001

Source: author's calculations

R² value of 0.224 shows that the variables in the model explain 22.4% of the variance in dependent variable, in this case reach. Based on the sig-value, we can see that our model is significant on 95% confidence level.

Table 11 shows all hypotheses set in this work that were tested for reach and whether they are accepted or rejected based on the current model.

Table 11

Results for hypotheses based on Reach model

Hypotheses	Result
H1 _b : The presence of a caption has an effect on reach.	Rejected
H2 _b : Length of caption in characters has an effect on reach.	Accepted
H3 _b : Presence of emojis in a caption has an effect on reach.	Rejected
H5 _b : Number of hashtags has an effect on reach.	Rejected
H6 _b : Length of hashtags in characters has an effect on reach.	Rejected
H7 _b : Total length of caption and hashtags in characters has an effect on reach.	Rejected
H8 _b : Text on screen has an effect on reach.	Rejected
H9 _b : Subtitles in videos have an effect on reach.	Rejected
H10 _b : Spoken language has an effect on reach.	Rejected
H11 _b : Music in videos has an effect on reach.	Rejected
H12 _b : People in videos have an effect on reach.	Rejected
H13 _b : Number of people in videos have an effect on reach.	Rejected
H14 _b : Influencer in videos has an effect on reach.	Rejected
H15 _b : Educational videos have an effect on reach.	Rejected
H16 _b : Employer branding related topics have an effect on reach.	Rejected
H17 _b : Video originality has an effect on reach.	Rejected
H18 _b : Amount of previous uses by users of a sound used in video has an effect on reach.	Rejected
H19 _b : Sound type has an effect on reach.	Rejected
H21 _b : Number of followers have an effect on reach.	Accepted
H22 _b : Video length has an effect on reach.	Accepted

Source: author's calculations

From the model we can see that number of followers have an effect on reach. If the number of followers goes up, reach also goes up. Barta, Belanche, Fernandez, and Flavian (2022) found that hedonic experience supported the intent to follow. This implies that people who follow an account enjoy the content posted and as engagement is brought on by positive emotions (de Oliviera Santini, et al., 2020), followers are also more likely to engage with the content.

If a video is longer, it is also likely to have higher reach. It can hint that longer videos generate more emotional involvement, which could lead to users enjoying the video more and engaging with it more. This can also have a positive effect on engagement rate, however, this will be seen in engagement rate components' models.

Caption length, however, had a negative effect on reach. If a caption is longer, a video is likely to have smaller reach. This could indicate that users mainly focus on the video and do not enjoy longer text captions, which could affect reach.

As engagement on TikTok consists of several variables, such as likes, comments, saves, and shares, the author has tested each component separately. All of these are taken in relationship with reach, creating a rate. Appendixes D-G include the histograms, P-P plots and scatterplots based on logarithmic data for the final models of likes, comments, saves and shares, showing normal distribution of data and residuals and homoscedasticity of data. Correlation and standard residual statistics for the model for statistically significant variables are included in Appendixes D-G.

The following Table 12 shows the effects on independent variables on engagement rate component variables. All variables mentioned in Table 6 were included in the analysis.

Table 12

Effects of chosen variables on engagement rate components: like rate, comment rate, save rate, and share rate

Model	Unstandardized B	Sig.
Likes		
(Constant)	-0.592	<0.001
Frequency	0.185	<0.001
Followers	0.287	<0.001
Video length	0.149	0.005
R	R ²	Sig
0.411	0.169	<0.001
Comments		
(Constant)	-1.075	0.003
Followers	0.387	<0.001
Sound uses	0.085	0.013
Spoken language	0.473	0.001
R	R ²	Sig
0.483	0.233	<0.001
Saves		
(Constant)	-1.292	<0.001
Followers	0.130	0.004
Video length	0.358	<0.001
Employer branding	-0.174	0.025
People	-0.170	0.002
R	R ²	Sig
0.400	0.160	<0.001
Shares		
(Constant)	-0.429	<0.001
People	-0.273	0.003
Original	0.276	<0.001
R	R ²	Sig
0.241	0.058	<0.001

Source: Author's calculations

Variables “number of hashtags”, “length of hashtags”, “music” and “sound with spoken language” had a VIF over 10, indicating a collinear relationship with some other variables. These variables were removed from the model.

We can see that the strongest correlation between independent variables and a dependent variable is with comments and the weakest is with shares. In fact, the correlation between variables is very weak with shares. Same applies to R^2 value. The variables explain the biggest part of dependent variable with comments (23.3%) and the smallest with shares (5.8%). Likes have a moderate correlation with independent variables and the variables explain 16.9% of dependent variable. Saves are only just slightly below likes in that aspect, with also a moderate correlation and variables explaining 16.0% of the dependent variable. All of the models are statistically significant at 95% confidence level. Table 13 shows the hypotheses that were either accepted or rejected based on the final models for engagement components.

Table 13

Hypotheses and results based on the models of likes, comments, saves and shares

H1 _a : The presence of a caption has an effect on engagement components.	Rejected
H2 _a : Length of caption in characters has an effect on engagement components.	Rejected
H3 _a : Presence of emojis in a caption has an effect on engagement components.	Rejected
H4 _a : The presence of hashtags has an effect on engagement components.	Rejected
H5 _a : Number of hashtags has an effect on engagement components.	Rejected
H6 _a : Length of hashtags in characters has an effect on engagement components.	Rejected
H7 _a : Total length of caption and hashtags in characters has an effect on engagement components.	Rejected
H8 _a : Text on screen has an effect on engagement components..	Rejected
H9 _a : Subtitles in videos have an effect on engagement components.	Rejected
H10 _a : Spoken language has an effect on engagement components.	Accepted
H11 _a : Music in videos has an effect on engagement components.	Rejected
H12 _a : People in videos have an effect on engagement components.	Accepted
H13 _a : Number of people in videos has an effect on engagement components.	Rejected
H14 _a : Influencer in videos has an effect on engagement components.	Rejected
H15 _a : Educational videos have an effect on engagement components.	Rejected
H16 _a : Employer branding related topics have an effect on engagement components.	Accepted
H17 _a : Video originality has an effect on engagement components.	Accepted
H18 _a : Amount of previous uses by users of a sound used in video has an effect on engagement components.	Accepted

H19 _a : Sound type has an effect on engagement components.	Rejected
H20 _a : Posting volume has an effect on engagement components.	Accepted
H21 _a : Number of followers has an effect on engagement components.	Accepted
H22 _a : Video length has an effect on engagement components.	Accepted

Source: author's calculations

Based on the model we can see that for likes, frequency of posting plays a role, however, it has no significant effect on comments, saves and shares. This supports the findings of Barta, Belanche, Fernandez, and Flavian (2022) and opposes the findings of Akbari, Jastacia, Setiawan, and Ningsih (2022).

The number of followers an account has is significant for all dependent variables except shares. Based on de Oliviera Santini, *et al.* (2020) we know that engagement is brought on by positive emotions and according to Barta, Belanche, Fernandez, & Flavian (2022) positive emotions also bring along the intent to follow. Current result show that followers and engagement is also related, which was expected. Followers are likely to have more positive emotions toward the content, thus also engaging with the videos more.

Video length had a positive effect on likes and saves, as well as reach, while having no effect on comments and shares. As it could be argued that commenting and sharing take the most energy from the user out of all the engagement actions, it would make sense that longer videos make the user more emotionally invested and thus would be more likely to comment and share a video. However, instead it seems that longer videos may be tiring, while still emotionally engaging, thus resulting more in engagement activities that take less energy.

The number of times a sound-bite has been previously used by creators has a slight positive effect on comments, which could be related to the finding that longer videos do not result in more comments. If videos use popular sounds, the content is likely to be trend-based and predictable, thus could be less taxing emotionally. However, video originality has a bigger positive effect on shares, which was also noted by Su, Baker, Doyle, & Yan (2020). Based on this, the author would recommend putting effort into creating original videos and not only relying on trends, while still posting trend-based content as well, creating a good balance between these video types.

Spoken language in videos has a positive effect on comments, and although spoken language is usually associated with people being present in videos, people have a negative effect on saves and shares. This is directly opposite to Li, Guan, Hammond and Berrey (2021) who revealed that videos with people in them were shared more. Presence of people

that depict the organization's name, however, this also seems counterintuitive, as it does not let users discover the video through other similar videos, rather the account already has to be familiar. The author suggests marketers to use hashtags that are related to the topic in the video, but not too direct (like organization's name) or too general (like the most popular hashtags shown here).

Text on screen and subtitles also didn't have any significant effect on video performance. It could be due to the fact that while videos in English are viewed by a broad group of people, including non-native speakers, it has a bigger effect on comprehension, as mentioned by Montero Perez, Peters, Clarebout, and Desmet (2014). Videos in Estonian, however, are likely to be viewed by a smaller percentage of non-native speakers compared to videos in English, meaning that the effect of text on screen or subtitles is smaller. Nevertheless, the author still recommends adding subtitles and keywords to videos, as it makes videos more accessible to the disabled community, especially to people whose hearing is impaired.

Influencers had no effect on reach or engagement variables, which was not expected by the author. This could mean that including influencers in videos or having an influencer oversee TikTok marketing has no visible perks. This does not mean that influencers shouldn't be used. It means that there may be no ground for preferring an influencer to run a brand TikTok account and this should not be the main ground for decision-making, however, it must be studied further to conclusively say that.

Emojis in captions did not have any effect on engagement or reach, however, long captions had a negative effect on reach, which is in line with findings by The work of Gligorić, Anderson, and West (2018) and Tafesse and Wood (2023). This could indicate that text on TikTok is not as important, and more effort should be put into visual side. The author recommends marketers to keep captions shorter and to the point and instead conveying everything important in the video.

Due to the parameters of current work, posting frequency needs to be further researched using a larger sample size, as well as to find the optimal posting frequency, as this was not found in this work. Similarly, optimal video length also needs further research to understand how long a video should be to get the best results.

Based on the discussion regarding findings, further studies need to be conducted regarding hashtags as well. As it is currently unclear why hashtags had no effect on performance, it needs to be understood whether even hashtags should be used and if yes, which ones should they be, considering that right now, hashtags are not working as assumed.

As people in videos had a negative effect on performance, while spoken language had a positive effect, it needs to be studied to see why these seemingly similar factors had opposite effects on performance.

Additionally, video content needs to be studied more thoroughly. Currently, content-based factors such as educational and employer branding themed videos either had no effect or had a small negative effect on performance. Video emotionality, topics, visual compositions, and other such factors were not studied in current work, opening up opportunities for coming research.

To understand the full effect of different factors on reach, a larger sample needs to be used in further studies. In current work, the sample for reach was significantly smaller than for engagement components.

Overall, the factors that had a positive effect on reach and engagement were higher number of followers, spoken language, and original videos. Also, sparser posting frequency, longer videos, and small positive effect was seen when using popular TikTok sounds as well. People in videos, long captions, and employer branding related videos negative effect on video performance.

As current models all explain less than 25% of the variance in performance, a further quantitative and qualitative content analyses need to be constructed to understand which additional factors affect video performance on TikTok.

Conclusion

TikTok is one of the fastest growing social media platforms, in addition to being relatively new on the market compared to several other popular platforms. Despite its popularity, few studies have been conducted about marketing on TikTok. To author's best knowledge, no works have been conducted on TikTok marketing from Estonian brand's perspective, which the current work strives to do. The aim of this thesis is to find out which factors influence video reach and engagement to improve performance of Estonian organisations' videos on TikTok.

The theoretical part of this study focuses on introducing social media itself and as a marketing tool, while introducing TikTok among platforms used for marketing. Different definitions of social media are analysed and compared, finding that the overarching theme of social media seems to be that it is a place to exchange content and interact with other users in a virtual setting. Social media key performance indicators are discussed and engagement and engagement rate as a relationship between reach or followers is introduced. Engagement and engagement rate as integral metrics of social media performance and the cause of engagement is brought out and discussed.

Theoretical part of this work also includes overview of TikTok, including it being one of the fastest-growing social media platforms. The platform is compared with competitors like Facebook, Instagram, and Twitter. It is seen that TikTok seems to be more evenly spread between different age groups compared to other platforms, while also significantly outperforming in terms of engagement rate, reach and follower growth, providing a good ecosystem for marketers.

Previous works about TikTok focus on TikTok as a vessel of creativity, where the main focus is on humorous, lighthearted and unpolished videos, and not on professional videos. Different factors influencing performance on TikTok are brought out from previous studies such as number of hashtags, subtitles, videos with people in it, originality of content, and graphics. Additionally, spoken language, video quality, effects of people in videos, caption length, and emojis were introduced by reviewing works about TikTok and other social media platforms.

For this thesis, data from 10 latest videos of 40 Estonian organisations was collected. Studied dependent variables were reach, total engagements, likes, comments, saves and shares. Studied independent variables were posting frequency, followers, presence of caption, caption length, presence of hashtags, number of hashtags, length of hashtags, total length of caption and hashtags, presence of emojis, subtitles, text on screen, voiceover, educational,

employer branding, trend-based, presence of humans, amount of people, and presence of an influencer. Multiple regression analysis was conducted in SPSS to determine the independent variables that have an effect on the dependent variables. The resulting models explained 28.8% of the variance in reach, 26.4% in overall engagement, 24.8% in likes, 19.5% in comments, 18.6% in saves and 7.6% in shares.

Higher amount of followers and longer videos had a positive effect on video reach, while having longer captions had a negative effect on reach. For total engagement components, sparser posting frequency, number of followers, video length, voiceover, using popular TikTok videos and spoken language had a positive effect. Presence of people in videos and employer branding had a negative effect on engagement.

Based on findings, the author recommends marketers to focus on building a strong follower base and experimenting with longer videos. It could be beneficial to find a balance between original content, as well as creating trend-based videos. Additionally, the author recommends marketers to try out different platforms for employer branding activities, as this had a negative effect on engagement on TikTok. While hashtags and any sort of text on screen had no effect on performance, the author still recommends using them. With hashtags, it is important to discover which hashtags are valuable for the organizations, as too broad or too specific hashtags seem to not bring results. Regarding text on screen and subtitles, while it had no effect, the author recommends using them for inclusivity purposes.

Overall, further studies are necessary to understand the full variance in reach and engagement. The author recommends both qualitative and quantitative studies with a large enough sample size to understand the dependent variables further.

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Appendixes

Appendix A

Significance of different parameters on user behaviour on TikTok

Table 14. *Parameters and their significance on user behaviour on TikTok.*

Hypothesis	Beta-coefficient	Relationship	Result
H1a	0.221*	Originality -> Intention to follow account	Supported
H1b	0.170**	Originality -> Intention to follow advice	Supported
H2a	0.312**	Originality -> Hedonic experience	Supported
H2b	0.530***	Originality -> Opinion leadership	Supported
H3a	0.209*	Quality -> Hedonic experience	Supported
H3b	0.105n.s	Quality -> Opinion leadership	Not supported
H4a	-0.158*	Quantity -> Hedonic experience	Not supported†
H4b	-0.011n.s	Quantity -> Opinion leadership	Not supported
H5a	-0.158*	Humor -> Hedonic experience	Supported
H5b	-0.011n.s	Humor -> Opinion leadership	Supported
H6a	0.243***	Hedonic experience -> Intention to follow account	Supported
H6b	0.012n.s	Hedonic experience -> Intention to follow advice	Not supported
H6c	0.516***	Hedonic experience -> Opinion leadership	Supported
H7a	0.146n.s	Opinion leadership -> Intention to follow account	Not supported
H7b	0.230**	Opinion leadership -> Intention to follow advice	Supported

Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$; n.s not significant; †very significant negative effect, as opposed to predictions.

Source: (Barta, Belanche, Fernandez, & Flavian, 2022)

Appendix B. Number of valid data entries

Table 15

Number of valid data entries for reach

Variable for reach	Valid entries
Views	97
Followers	97
Length of caption	89
Number of hashtags	94
Length of hashtags	94
Total length of caption and hashtags	97
Video length	97
Number of people	72
Sound uses	56
Presence of caption	97
Emojis	97
Presence of hashtags	97
Text on screen	97
Spoken language	97
Voiceover	97
Subtitles	97
Educational	97
Influencer	97
People	97
Employer branding	97
Originality	96
Music	97
Sound with spoken language	97

Source: compiled by author

Table 16

Number of valid data entries for engagement components

Variables for engagement components	Valid
Likes	399
Comments	399
Saves	399
Shares	399
Frequency	40 (out of 40)
Followers	399
Length of caption	374
Number of hashtags	375
Length of hashtags	375
Total length of caption and hashtags	390
Video length	389
Number of people	317
Sound uses	243
Presence of caption	399
Emojis	399
Presence of hashtags	399
Text on screen	399
Spoken language	399

Voiceover	399
Subtitles	399
Educational	399
Influencer	399
People	399
Employer branding	399
Originality	328
Music	398
Sound with spoken language	398

Source: compiled by author

Appendix C. Histogram, P-P plot, scatterplot, correlations and standard residuals for reach.

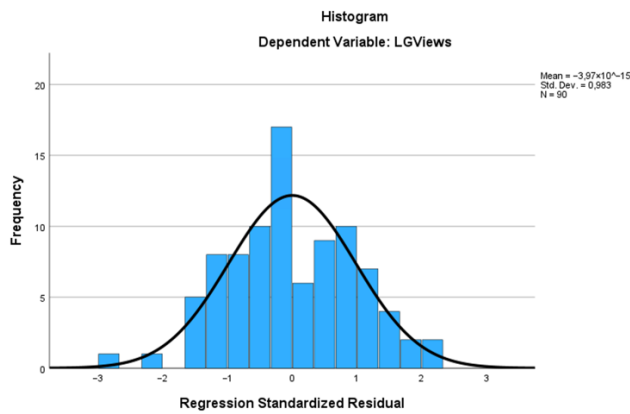


Figure 7. Histogram for views, showing normal distribution.
Source: author’s calculations

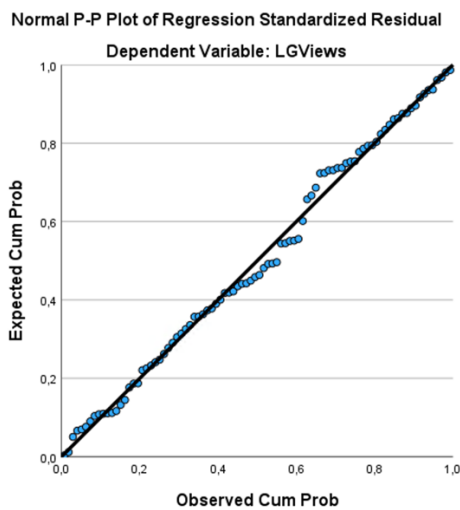


Figure 8. P-P plot for views, showing normal distribution of standardised residuals
Source: author’s calculations

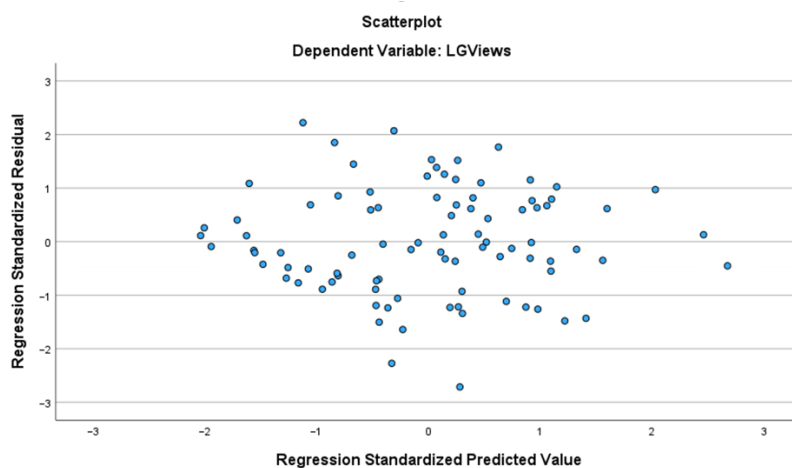


Figure 9. Scatterplot for reach, showing homoscedasticity of data.
Source: author’s calculations

Table 17

Correlations of statistically significant variables for reach model

Correlations

		LGViews	LGFollowers	LGVideoLength	LGCapLength
Pearson Correlation	LGViews	1,000	,343	,325	-,140
	LGFollowers	,343	1,000	,229	,082
	LGVideoLength	,325	,229	1,000	,154
	LGCapLength	-,140	,082	,154	1,000

Source: author's calculations

Table 18

Residuals statistics for reach

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2,9623	4,5278	3,6396	,33233	90
Residual	-1,70722	1,39739	,00000	,61840	90
Std. Predicted Value	-2,038	2,673	,000	1,000	90
Std. Residual	-2,714	2,221	,000	,983	90

Source: author's calculations

Appendix D. Histogram, P-P plot, scatterplot, correlations and standard residuals for like rate

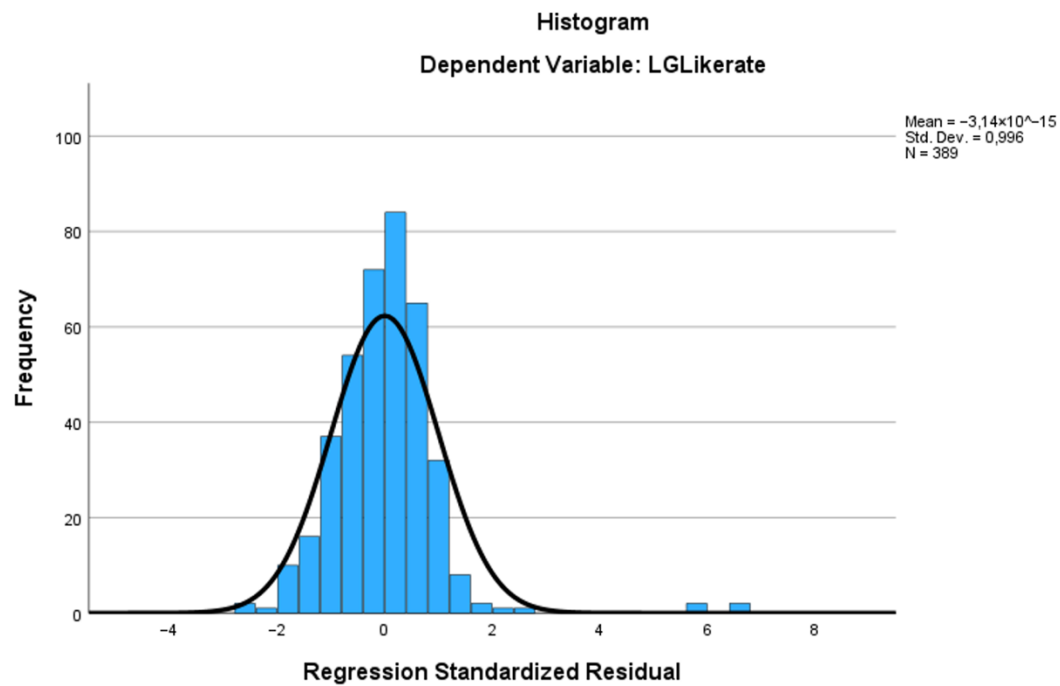


Figure 10. Histogram for like rate, showing normal distribution of data.
Source: author's calculations

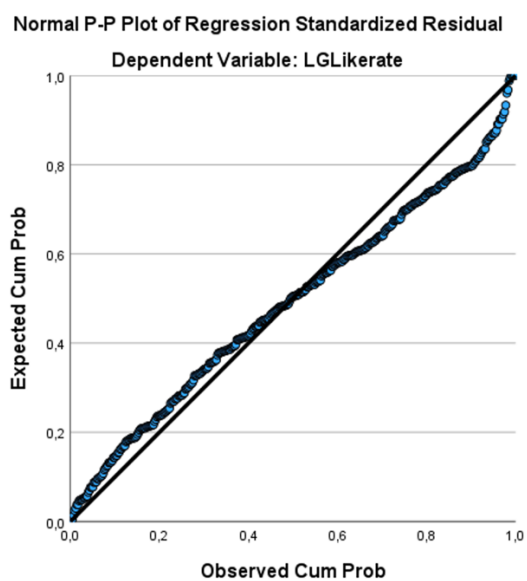


Figure 11. P-P plot for like rate, showing normal distribution of residuals.
Source: author's calculations

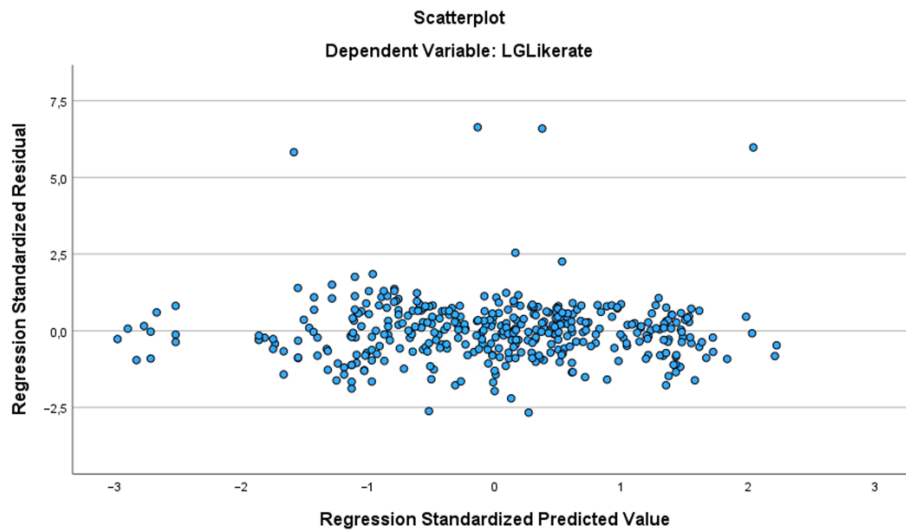


Figure 12. Scatterplot for like rate, showing homoscedasticity of data.

Source: author's calculations

Table 19

Correlations of statistically significant variables for like rate.

		Correlations			
		LGLikerate	LGFrequency	LGFollowers	LGVideoLength
Pearson Correlation	LGLikerate	1,000	,065	,340	,196
	LGFrequency	,065	1,000	-,329	-,001
	LGFollowers	,340	-,329	1,000	,164
	LGVideoLength	,196	-,001	,164	1,000

Source: author's calculations

Table 20

Residual statistics for like rate.

Residuals Statistics^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	,2627	1,0195	,6963	,14555	389
Residual	-,86570	2,15241	,00000	,32315	389
Std. Predicted Value	-2,979	2,221	,000	1,000	389
Std. Residual	-2,669	6,635	,000	,996	389

Source: author's calculations

Appendix E. Histogram, P-P plot, scatterplot, correlations and standard residuals for comment rate

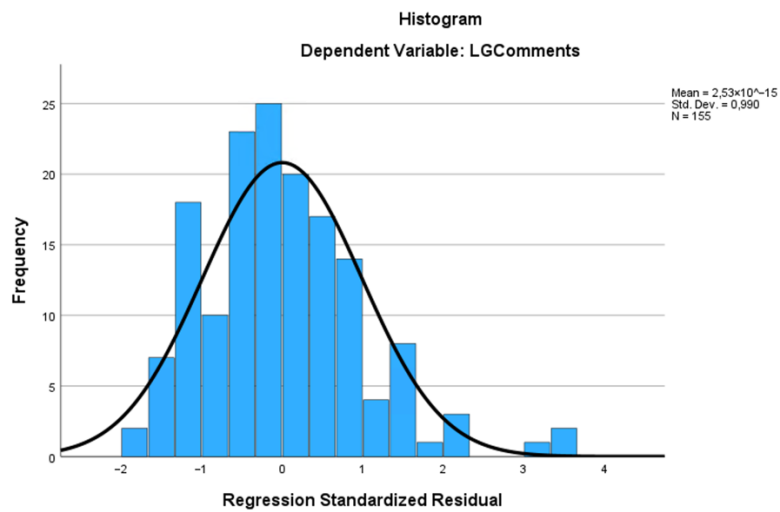


Figure 13. Histogram for comment rate, showing normal distribution.
Source: author's calculations

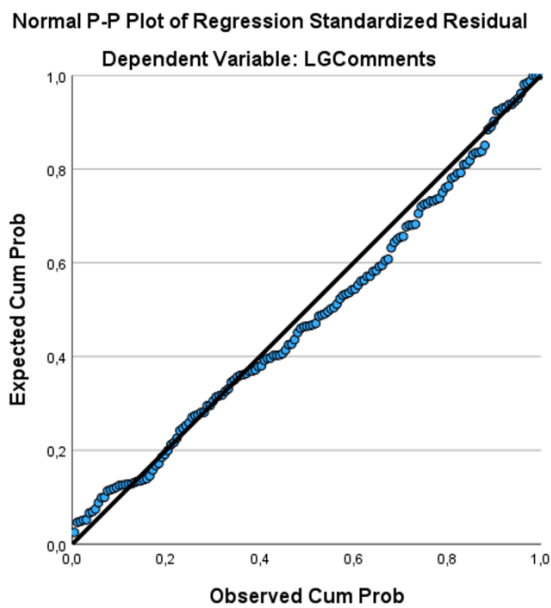


Figure 14. P-P plot for comment rate, showing normal distribution of residuals.
Source: author's calculations

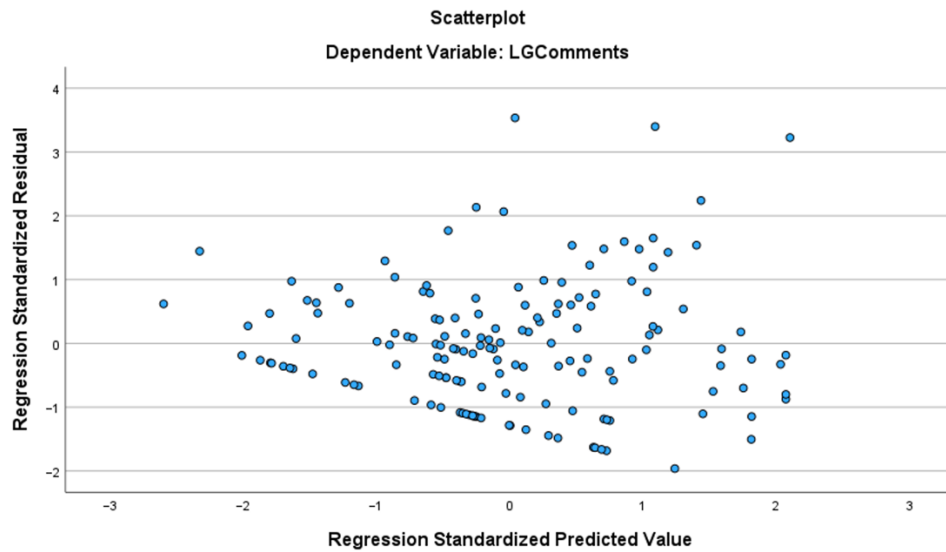


Figure 15. Scatterplot for comment rate, showing homoscedasticity of data.
Source: author’s calculations

Table 21
Correlations of statistically significant variables for comment rate.

Correlations

		LGComments	LGFollowers	LGNrSounduses	Spoken language
Pearson Correlation	LGComments	1,000	,350	,285	,311
	LGFollowers	,350	1,000	,145	,088
	LGNrSounduses	,285	,145	1,000	,232
	Spoken language	,311	,088	,232	1,000

Source: author’s calculations

Table 22
Residual statistics for comment rate.

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-,0817	1,5052	,7953	,33769	155
Residual	-1,21347	2,18564	,00000	,61239	155
Std. Predicted Value	-2,597	2,102	,000	1,000	155
Std. Residual	-1,962	3,534	,000	,990	155

Source: author’s calculations

Appendix F. Histogram, P-P plot, scatterplot, correlations and standard residuals for save rate

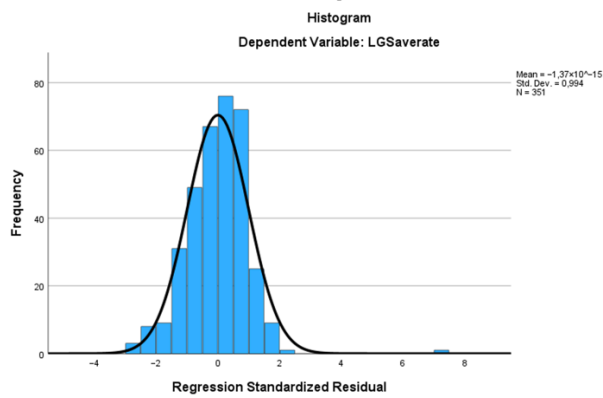


Figure 16. Histogram for save rate, showing normal distribution.
Source: author's calculations

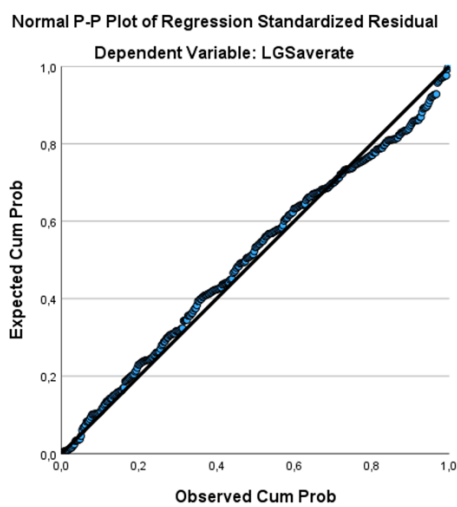


Figure 17. P-P plot for save rate, showing normal distribution of residuals.
Source: author's calculations

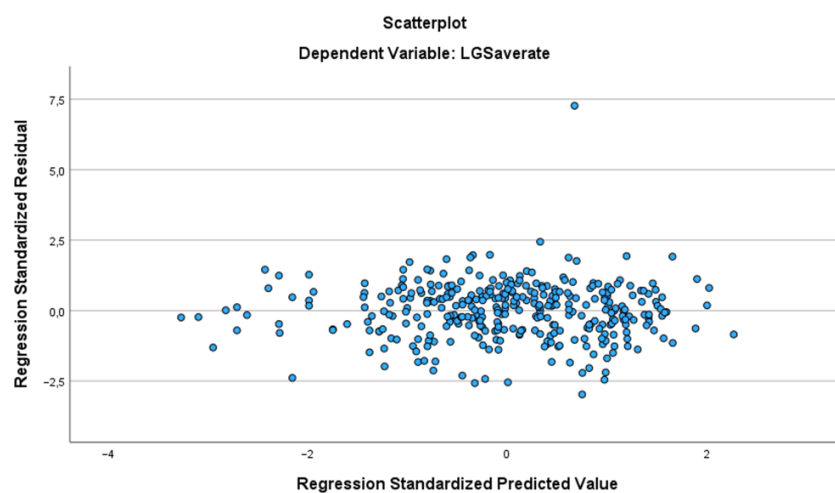


Figure 18. Scatterplot for save rate, showing homoscedasticity of data.
Source: author's calculations

Table 23

Correlations of statistically significant variables for save rate.

		LGSaverate	LGFollowers	LGVideolength	Employer branding	People
Pearson Correlation	LGSaverate	1,000	,238	,283	-,205	-,123
	LGFollowers	,238	1,000	,150	-,366	,018
	LGVideolength	,283	,150	1,000	-,052	,157
	Employer branding	-,205	-,366	-,052	1,000	,088
	People	-,123	,018	,157	,088	1,000

Source: author's calculations

Table 24

Residual statistics for save rate.

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-1,0761	-,1713	-,5419	,16316	351
Residual	-1,11933	2,73511	,00000	,37412	351
Std. Predicted Value	-3,274	2,271	,000	1,000	351
Std. Residual	-2,975	7,269	,000	,994	351

Source: author's calculations

Appendix G. Histogram, P-P plot, scatterplot, correlations and standard residuals for share rate

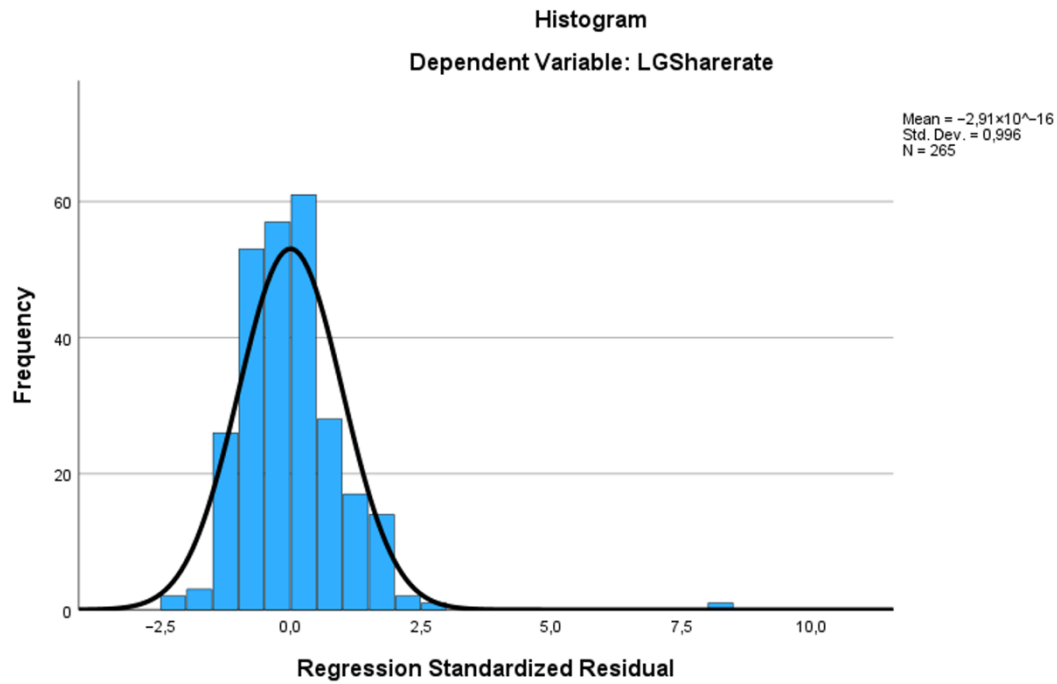


Figure 19. Histogram for share rate, showing normal distribution.
Source: author's calculations

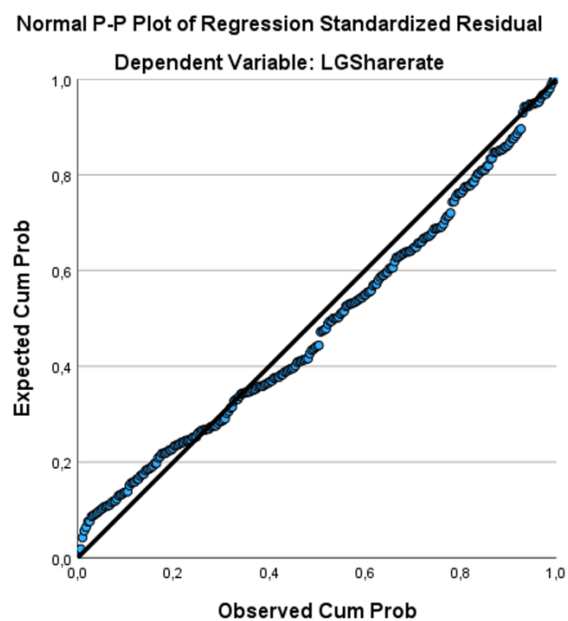


Figure 20. P-P plot for share rate, showing normal distribution of residuals.
Source: author's calculations

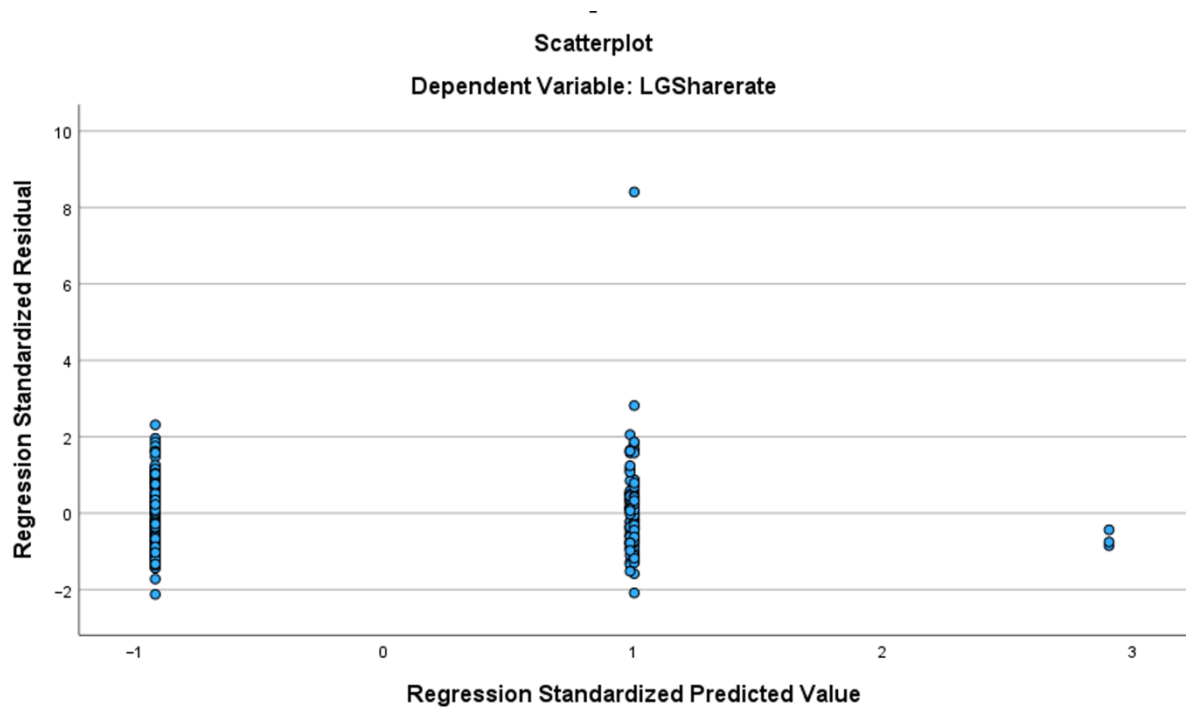


Figure 21. Scatterplot for share rate.
Source: author’s calculations

Table 25
Correlations of statistically significant variables for share rate.

Correlations

		LGSharerate	Original	People
Pearson Correlation	LGSharerate	1,000	,161	-,134
	Original	,161	1,000	,249
	People	-,134	,249	1,000

Source: author’s calculations

Table 26
Residual statistics for share rate.

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-,7020	-,1533	-,5704	,14350	265
Residual	-1,23164	4,86774	,00000	,57693	265
Std. Predicted Value	-,917	2,907	,000	1,000	265
Std. Residual	-2,127	8,405	,000	,996	265

Source: author’s calculations

Resüme

Bakalaureusetöö “Muutujad, mis mõjutavad levikut ja kaasatust TikTakis eesti ettevõtete näitel” uurib faktoreid, mis avaldavad mõju video levikule, ehk vaatamiste arvule, ja kaasatusele, st. meeldimiste, kommentaaride, salvestamiste ja jagamiste arvule. TikTok on üks kiiremini kasvavatest sotsiaalmeediaplattformidest, pakkudes võimalust turundajatele luua uusi puutepunkte klientidega ja tõsta brändi tuntust.

TikTok ületab teisi sotsiaalmeediaplatforme mitmete sotsiaalmeedia mõõdikute poolest. TikToki kasutajad on vanuse poolest ühtlasemalt jaotunud, kui Facebooki, Instagrami või Twitteri kasutajaskond. Lisaks ületab TikTok teisi platforme jälgijate arvu kasvu, kaasatuse ja ulatusega.

Töös uuriti kümmet hiljutisemat videot neljakümnele Eesti ettevõttelt ja organisatsioonilt. Uuritavad muutujad olid postitamise sagedus, jälgijate arv, pealkirja olemasolu, pealkirja pikkus, teemaviidete olemasolu, teemaviidete arv, teemaviidete pikkus, pealkirja ja teemaviidete kogupikkus, emotikonide olemasolu, subtiitrite olemasolu, tekst ekraanil, räägitav tekst, häälkõne olemasolu, hariv sisuga video, tööandja brändingut sisaldav video, heliklipi kasutamiste arv, heliklippide olemus inimeste olemasolu, inimeste arv, mõjusiku olemasolu. Muutujaid uuriti kasutades regressioonianalüüsi statistikaprogrammis SPSS.

Töö tulemustest selgub, et video ulatust mõjutavad positiivselt jälgijate arv ja pikemad videos. Pealkirja pikkus mõjutab ulatust negatiivselt. Üldisele kaasatusele avaldavad positiivset mõju järgmised faktorid: harvem postitamise sagedus, jälgijate arv, video pikkus, häälkõne, räägitavat teksti sisaldavate heliklippide olemasolu, ja originaalsus, ent vähesel määral ka siiski populaarsete heliklippide kasutamine. Inimeste kohalolu videos ja tööandja brändingut sisaldavad videod mõjusid kaasatusele negatiivselt.

Töö tulemustest sõltuvalt soovib autor TikTakis turundades pöörata tähelepanu jälgijate arvu kasvatamisele ja lisaks trendidega kaasaminemisele ka loomingu- ning originaalse sisu tootmisele. On vaja koostada lisauurimusi mõistmaks, et mõista põhjapanevalt millest sõltub levik ja kaasatus TikTakis.

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