The Impact of Music on the Effectiveness of Facebook ads

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Abstract: Facebook is the most popular social media platform in Poland. As a result, it is often used in advertising campaigns by various types of organizations. The effectiveness of these campaigns depends on many factors, including advertising creation. Video ads are dynamic and may contain music. Music in advertising can be aimed at audience attention, persuasion, user interest and sales. Music influences the emotions of the audience, and these are an important factor in making a purchase decision. It can also increase the rememberability of an ad. Its beat is important, as well as content matching. On the other hand, social media audiences may not play music in ads, which often happens when quickly browsing applications such as Facebook, especially on mobile devices. The lack of background music in the video can therefore also make a difference. The aim of the article is to determine the impact of music on the effectiveness of Facebook ads. As a research method the test of four advertising campaigns was used. The video ads differed only in the background music (the remaining settings and the creation of the ads were identical): the first had no musical background, the second had rock music timed with the video beat, the third - the same rock music not timed with the video beat, and the fourth one had a calm music as background music, less suited to the content (the video required rather dynamic music). It has been hypothesized that music or the lack of it in the video ad, its type and timing (or not) with the beat of the ad's video have an impact on the effectiveness of the Facebook ads. It affects, among others on the reach metric, impressions, post engagement, number of clicks on the ad, cost of clicks, click rate, video plays and video plays costs.

Keywords: music, advertising, social media, Facebook ads, ads effectiveness

1. Introduction

Facebook Ads Manager is currently one of the most popular digital advertising management tool next to Google Ads. The effectiveness of a scheduled advertising campaign is influenced by many factors. In the case of a video advertisement, one of them may be background music or the lack of it, its type and timing (or not) with the beat of the ad's video.

The aim of the article is to determine the impact of music on the effectiveness of Facebook ads. As a research method the test of four advertising campaigns was used.

The article consists of three parts. The first part discusses music as a Facebook ads effectiveness factor. The second part presents methodology of the test of four advertising campaigns. The last part is about research results.

2. Music as a Facebook ads effectiveness factor

In recent years, many publications have appeared on digital advertising (Barnes 2002, Cheng et al. 2009, Truong et al. 2010, Chi 2011, FLoSi et al. 2013, McStay 2016, Ha 2017, Ma & Du 2018, Hudders et al. 2019, Lee & Cho 2020). Many authors have raised the issue of advertising in social media (Ertemel & Ammoura 2016, Alhabash et al. 2017, Jung 2017, Alalwan 2018, Voorveld et al. 2018).) and its effectiveness (Leung et al. 2015, Frandsen et al. 2016, Kuo et al. 2021). This research mainly concerned Facebook advertising (He et al. 2014, Chen 2015, Dehghani & Tumer 2015, Frandsen et al. 2016, Joshi & Kalia2017, Tran 2017, Hamouda 2018, Silva et al. 2020, Kuo et al. 2021).

Advertising with the use of Facebook Ads Manager (tool for setting ads on Facebook, Instagram, Messenger and Facebook partner applications, the so-called Audience Network; it's an all-in-one tool for creating ads, managing when and where they'll run, and tracking how ad campaigns are performing) brings many benefits, including (see Joshi & Kalia2017):

- Ability to reach a wide audience (in Poland in January 2022, 24.9 million users were registered on Facebook, 54% of which were women, Instagram had 11.3 million users at that time, 57% of which were women; age of users of both social network was varied from 13 to 65+ (see Social media users in Poland 2022);
- Ability to reach B2C and B2B audience;
- Ability to operate on a global scale;
- Ease of setting up an advertising campaign (the tool is easy to use);

- Small amounts are enough to set up the advertisement;
- Possibility to arrange advertisements in various forms (video, graphics, links),
- Possibility to choose various advertising targets (Choose the Right Objective 2022):
- Awareness (Brand awareness, Reach) - objectives that generate interest in product or service.
- Consideration (Traffic, Engagement, App installs, Video views, Lead generation, Messages) - Objectives that get people to think about business and seek more information,
- Conversions (Conversions, Catalog sales, Store traffic) - Objectives that encourage people interested in business to buy or use product or service.

Many factors influence the effectiveness of advertising on Facebook. These include, among others:

- Advertising goal (this is the main element determining the ad settings and its results),
- The scope of the target group (it can be wide or narrow, which affects the costs of advertising; the target group can be specified in terms of gender, age, location and other demographics issues, interests and behaviors),
- Budget (daily or lifetime) - a daily budget is the average one will spend every day; a lifetime budget is the maximum one will spend during the lifetime of ad set,
- Schedule - it is worth planning an advertisement on the days and times when the target group is more likely to see the advertisement; it may depend on upcoming occasional events, e.g. weather (in nice weather, social media is less often used), season (e.g. in summer holidays users are less inclined to use Facebook), sudden political and social events (e.g. during nationwide strikes and demonstrations in social media there is a lot of information noise and then it is better not to plan any ad campaign), planned large advertising campaigns of competitors (then it is better to postpone ours for another time, etc.),
- Ad placements (location on various applications/websites, e.g. Facebook, Instagram, Messenger and Audience network - Facebook partner applications and in various places on these applications/websites, e.g. News Feed, Facebook right column, Stories, In-stream, etc.),
- Optimization for ad delivery – possibility to choose the event one want to optimize for in ad set (i.e. landing page views, link clicks, daily unique reach, impressions),
- Ad creative – media (video, graphics), text and destination for an ad (landing page).

As part of the ad creative, one can set up a video ad. These types of advertisements are relatively more attractive to the audience due to their dynamics (they can focus attention better while browsing an application or website). The video may contain music. There has been a lot of research on the role of music in traditional advertising and its impact on consumer decisions (see Gorn 1982, Alpert et al. 2005, Allan 2006). However, there is a lack of research into what it looks like in digital environment, on social media, especially on Facebook. It seems that music may also determine the effectiveness of the Facebook Ads. This is the subject of this article's research.

3. Methodology

The aim of the research is to determine the impact of music on the effectiveness of video Facebook ads.
The following research questions were formulated:

- What is the range, impressions, post engagement and frequency of the video Facebook ads that differ only in the music or the lack of it, timed or not to the beat of the video, matched or not to the dynamics of the video?
- What are the cost metrics (i.e. clicks, CPC, CTR, CPM, cost per result) of the video Facebook ads that differ only in the music or the lack of it, timed or not to the beat of the video, matched or not to the dynamics of the video?
- What are the video plays metrics (i.e. ThruPlays, Video plays at 25% / 50% / 75% / 95% / 100%, video average play time) of the video Facebook ads that differ only in the music or the lack of it, timed or not to the beat of the video, matched or not to the dynamics of the video?
- What are the video plays cost metrics (i.e. cost per ThruPlay, Cost per 2-second continous video play, cost per video plays) of the video Facebook ads that differ only in the music or the lack of it, timed or not to the beat of the video, matched or not to the dynamics of the video?

It has been hypothesized that music or the lack of it in the ad, its type and timing (or not) with the beat of the ad's video have an impact on the effectiveness of the video Facebook ads. It affects, among others on the reach metric, impressions, post engagement, number of clicks on the ad, cost of clicks, click rate, video plays and video plays costs.

As a research method the test of four advertising campaigns was used. The Facebook Ads Manager was used as the research tool.

Four ads were tested, each with the same settings and the same creation (form, content, appearance). The advertisements were in the form of video. Their content concerned the field of study (encouraged to undertake postgraduate studies in the field of "Marketing and creative advertising" from October at the Institute of Law and Economics of the Pedagogical University in Krakow). The video consisted of several slides with dynamic inscriptions advertising the studio (e.g. "Professional staff of practitioners", "Friendly atmosphere", etc.) and photos (see Figure 1). Content of the ads was in Polish. It should be emphasized that it was legible and understandable also without music sound.

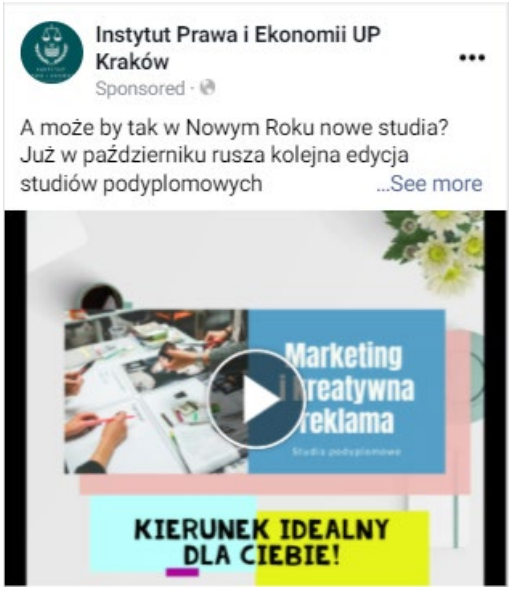

Figure 1: View of the tested ad on Facebook

Source: own.

The advertisements differed only in the music (or lack of it). The first ad was without music. The second commercial featured rock music timed with the beat of the video. The same rock music was used in the third ad, but was not timed with the beat of the video. The last one was with calm music synchronized with the rhythm of the video.

Settings of all four ad campaigns were as follows.

Ad objective was “Engagement”. By setting this goal one can find people who will be more likely to engage with one’s business online, or take desired actions on one’s ad, page or send a message. In case of scheduled ads goal “Engagement” means that system found people who were more likely to view ad video.

As engagement type were set video views and as a conversion location (where the customer action will take place) was the ad.

Daily budget was 10 PLN.

All advertising campaigns started on Feb 10, 2022 and ended on Feb 15, 2022.

Custom Audiences settings of all ad campaigns were:

- Location: Poland, Kraków (all within 80 km), Lesser Poland Voivodeship,
- Age 23 – 40,
- All genders.
- Education level: Associate degree or Master's degree.

The above settings of the target group result from the fact that the ads concerned postgraduate studies at the University of Krakow.

Regarding the placement of the ads, the automatic method was selected which is recommended by Facebook. Automatic placements means that Facebook's delivery system allocated ads set's budget across multiple placements based on where they're likely to perform best. Ads could appear in various places on Facebook, Instagram, Messenger and Audience Network (applications cooperating with Facebook).

As an optimization for ad delivery “ThruPlay” was chosen. This option affects who sees ads to get the desired outcome. It means that ads were shown to the people most likely to played the video in the scheduled ads.

According to the settings, one was charged for each ad’s video impression. For many optimization goals, one has paid each time an ad was served (known as an impression).

Delivery type was standard. Standard delivery uses pacing to one’s spend. Pacing keeps from spending one’s budget too quickly and is the recommended and preferred option for most advertisers.

The metrics used in the analysis are described below.

1. Results metrics:

Results - The number of times an ad achieved an outcome, based on the objective and settings one selected (ThruPlays).
Result rate - The percentage of results one received out of all the views of an ad.
Reach - The number of people who saw an ad at least once. Reach is different from impressions, which may include multiple views of an ad by the same people.
Impressions - The number of times an ad was on screen.
Frequency - The average number of times each person saw an ad.
Post Engagement - sum of the number: post shares, post reactions, post saves, post comment, page likes, post interactions, 3-seconds video plays, photo views, link clicks.
Clicks (all) - The number of clicks on an ad.

2. Cost metrics:

CPC (All) - The average cost for each click (all).
CTR (all) - The percentage of times people saw your ad and performed a click (all).
CPM (cost per 1,000 impressions) - The average cost for 1,000 impressions.
Cost per result - The average cost per result from your ads.

3. Video plays metrics:

ThruPlays - The number of times a video was played to completion, or for at least 15 seconds.
Video plays at 25% - The number of times a video was played at 25% of its length, including plays that skipped to this point.
Video plays at 50% - The number of times a video was played at 50% of its length, including plays that skipped to this point.
Video plays at 75% - The number of times a video was played at 75% of its length, including plays that skipped to this point.
Video plays at 95% - The number of times a video was played at 95% of its length, including plays that skipped to this point.
Video plays at 100% - The number of times a video was played at 100% of its length, including plays that skipped to this point.
Video average play time - The average time a video was played, including any time spent replaying the video for a single impression.
Unique 2-second continuous video plays - The number of people who performed a 2-second continuous video view.
3-second video plays - The number of times a video played for at least 3 seconds, or for nearly its total length if it's shorter than 3 seconds. For each impression of a video, Facebook count video views separately and exclude any time spent replaying the video.

4. Video plays cost metrics:

Cost per ThruPlay - The average cost for each ThruPlay.
Cost per 2-second continuous video play - The average cost for each 2-second continuous video view.
Cost per 3-second video plays - The average cost for each 3-second video play.

4. Findings

Below are the results of the test of the above-described four ads set in the Facebook Ads Manager that differ only in the music or the lack of it, timed or not to the beat of the video, matched or not to the dynamics of the video, marked as follows:
WM - Ad without music
RTM - Ad with rock music timed with the beat of the video
RNTM - Ad with rock music not timed with the beat of the video
CM - Ad with calm music timed with the beat of the video

4.1 What is the range, impressions, post engagement and frequency of the video Facebook ads that differ only in the music or the lack of it, timed or not to the beat of the video, matched or not to the dynamics of the video?

Results of the test ad campaigns are presented in Table 1.

Table 1: Results of the test ad campaigns

Type of ad	Results (ThruPlays)	Result rate [%]	Reach	Impressions	Post engagement	Frequency
WM	308	21.36	1,042	1,442	499	1.38
RTM	256	33.95	575	754	346	1.31
RNTM	287	37.37	575	768	400	1.34
CM	282	39.89	520	707	366	1.36

Source: own.

The research showed that ad without music had almost twice the reach (1,042 recipients) than ad with music. The advertisement with calm music (less suited to dynamic video and audience) had the smallest reach - 520, while ad with rock music - 575 (it did not matter whether the music was timed to the beat of video or not). It was noted that advertising without music also had twice as many impressions (1,442 audience), while video with calm music had the smallest number (707 audience). The ad with rock music timed to the beat of video - 754 and not timed - 768. The average number of times each person saw all ads was similar and ranged from 1.31 (rock ad timed to the video's beat) to 1.38 (without music ad).

Despite almost twice as much reach and impressions, the ad without music achieved slightly higher results than the other ads (308 ThruPlays, while the others - from 256 (RTM) to 287 (RNTM)). Interestingly, the result rate for music advertising was almost two times lower (21.36%) than the ad with quiet music (39.89), which achieved the highest rate. The largest post engagement was generated by an ad without music (499), but this indicator was not significantly higher than the other ads (RNTM - 400, RTM - 346).

4.2 What are the cost metrics (i.e. clicks, CPC, CTR, CPM, cost per result) of the video Facebook ads that differ only in the music or the lack of it, timed or not to the beat of the video, matched or not to the dynamics of the video?

Cost metrics of the test ad campaigns are presented in Table 2.

Table 2: Cost metrics of the test ad campaigns

Type of ad	Clicks (all)	CPC (All) [PLN]	CTR (All) [%]	CPM (cost per 1,000 impressions) [PLN]	Cost per result (Cost per ThruPlay) [PLN]
WM	2	13.94	0.14	19.33	0.09
RSM	1	17.51	0.13	23.22	0.07
RNSM	3	5.88	0.39	22.98	0.06
CM	-	-	-	25.12	0.06

Source: own.

The calm music ad did not generate any clicks, so one cannot calculate CPC and CTR for it. The remaining ads had a very small number of clicks (from 1 for RSM, CTR - 0.39, to 3 for RNSM, CTR - 0.39). The lowest average cost of clicks was achieved in the case of an ad featuring rock music not timed to the beat of video (PLN 5.88), and the highest - with rock music timed to the beat of video (PLN 17.51). Advertising without music had a CPC of PLN 13.94, which is also quite high. The highest CPM was in the case of advertising with calm music - PLN 25.12, and the lowest in the case of advertising without music - PLN 19.33. The worst cost-benefit ratio was achieved in the case of advertising without music (PLN 0.09), and the best in the case of RNSM and CM (PLN 0.06).

4.3 What are the video plays metrics (i.e. ThruPlays, Video plays at 25% / 50% / 75% / 95% / 100%, video average play time) of the video Facebook ads that differ only in the music or the lack of it, timed or not to the beat of the video, matched or not to the dynamics of the video?

Video plays of the test ad campaigns are presented in Table 3.

Table 3: Video plays metrics of the test ad campaigns

Type of ad	ThruPlays	Video plays at 25%	Video plays at 50%	Video plays at 75%	Video plays at 95%	Video plays at 100%	Video average play time
WM	308	441	354	327	318	291	00:06
RSM	256	321	286	267	256	255	00:08
RNSM	287	369	321	303	286	262	00:09
CM	282	339	307	292	278	255	00:14

Source: own.

Ad without music had the most: video plays at 25% (441, while other commercials ranged from 321 (RSM) to 369 (RNSM)), video plays at 50% (354, while other commercials ranged from 286 (RSM) to 321 (RNSM)), video plays at 75% (327 while remaining ads from 267 (RSM) to 303 (RNSM)), video plays at 95% (318, while other ads from 256 (RSM) to 286 (RNSM)) and video plays at 100% (291 while the remaining commercials from 255 (RSM and CM) to 262 (RNSM)). This means that ad without music was viewed the longest by the audience compared to other advertisements. However, the video average play time was the highest in the case of advertising with calm music (14 seconds), and the lowest in the case of advertising without music (6 seconds).

4.4 What are the video plays cost metrics (i.e. cost per ThruPlay, Cost per 2-second continous video play, cost per video plays) of the video Facebook ads that differ only in the music or the lack of it, timed or not to the beat of the video, matched or not to the dynamics of the video?

Video plays cost of the test ad campaigns are presented in Table 4.

Table 4: Video plays cost metrics of the test ad campaigns

Type of ad	ThruPlays	Unique 2-second video plays	3-second video plays	Cost per ThruPlay [PLN]	Cost per 2-second continuous video play [PLN]	Cost per 3-second video plays [PLN]
WM	308	352	499	0.09	0.06	0.06
RSM	256	233	346	0.07	0.05	0.05
RNSM	287	252	400	0.06	0.05	0.04
CM	282	244	366	0.06	0.05	0.05

Source: own.

Despite the fact that ad without music was watched the longest compared to the other tested campaigns, also in terms of unique 2-second video plays and 3-second video plays indicators, it fared the best, the costs of video reproductions were the highest. As mentioned earlier, the cost per ThruPlay indicator was PLN 0.09, while for other ads from PLN 0.06 (RNSM, CM) to PLN 0.07 (RSM), the cost per 2-second continuous video play indicator was PLN 0.06, while for other ads - PLN 0.05, and cost per 3-second video plays - PLN 0.06, while for other ads from PLN 0.04 (RNSM) to PLN 0.05 (RSM, CM).

5. Conclusion

The results of the research conducted lead to interesting conclusions. Facebook video ad without music reaches almost twice as many audience, and generates almost twice as many impressions. This should be explained by the fact that many users, especially of mobile devices, browse social media in places where they cannot listen

to the sound, because it could disturb people from the environment (e.g. on the bus, at school, at the university, in the queue to the checkout in the store, etc.). Therefore, they will be less willing to play video commercials with music. Note that video ads on Facebook and Instagram play automatically while browsing. In the situation described above, if the video is with sound, more often we deal with exit action (interrupting video playback), which causes a decrease in scoring of the advertisement (the algorithm perceives it as less interesting), which in turn makes such an advertisement more expensive (therefore in the case of advertising without music, we have the lowest CPM). However, video plays cost metrics (including ThruPlays 'cost of obtaining an outcome, i.e. ThruPlays' cost in the case of advertisements without music, is slightly higher than the costs of other advertisements. This may be due to the fact that ad with audio - although less watched for the reasons mentioned above - is more attractive to audience.

The type of music also matters. Calm music ad had the highest result rate with the highest cost per thousand impressions. It also had the highest video average play time. It seems that it was the most effective ad compared to the others in terms of cost-to-goal ratio (ThruPlays).

Timing to the beat of ad's video also seems to have an impact on ad performance in terms of click cost and click percentage (ad not timed to the beat of video ad had better results). In general, however, the differences in the RNSM and RNSM results are so ambiguous and similar that more tests would have to be performed to determine whether RNSM ad is actually more effective.

The hypothesis was confirmed that music or the lack of it in the ad, its type and timing (or not) with the beat of the ad’s video have an impact on the effectiveness of the Facebook ads. It affects, among others on the reach metric, impressions, post engagement, number of clicks on the ad, cost of clicks, click rate, video plays and video plays costs.

Based on the research results obtained, it is worth presenting recommendations for organizations that plan Facebook Ads campaigns in the form of video:

- If goal of an video ad is to have the highest reach or impressions as possible, one should keep ad without music sound for better results;
- If, presumably, the target group often cannot play the sound of video music (e.g. young mothers putting their children to sleep, students during classes, etc.), it is better to prepare an ad without music sound;
- Message of an video ad should always be understandable without sound (if necessary, the video should have subtitles);
- As part of the A / B tests, it is worth checking two types of music - calm and dynamic, because depending on the advertising goals, results may differ. The same goes for timing to the beat of video.

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