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IMPRESSION MANAGEMENT AND SOCIAL MEDIA USE AS SUCCESS FACTORS FOR CROWDFUNDING: A COMPARISON BETWEEN PROJECTS FROM GERMANY AND THE USA

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Synopsis:

Crowdfunding is an alternative form of financing, which allows capital-seeking entrepreneurs to fund their efforts and put their projects into practice. The success of crowdfunding campaigns is determined by mobilizing as many investors as possible. This paper presents an empirical study on success factors of crowdfunding by focusing on social media usage and impression management techniques. The results will be compared between entrepreneurs from Germany and the USA.

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Abstract

Crowdfunding is an alternative form of financing, which allows capital-seeking entrepreneurs to fund their efforts and put their projects into practice. The success of crowdfunding campaigns is determined by mobilizing as many investors as possible. This paper presents an empirical study on success factors of crowdfunding by focusing on social media usage and impression management techniques. Furthermore, the results will be compared between entrepreneurs from Germany and the USA. This study utilized a sample of 1,500 crowdfunding projects from Kickstarter. The main finding is that both factors have a positive impact on crowdfunding success. Successful projects showed more traffic on social media sites and applied impression management techniques to a greater extent than the failed projects did. Finally, there are slight differences between entrepreneurs from Germany and the USA regarding their social media platform choices.

1. Introduction

Crowdfunding is an alternative form of financing, which allows for funding new ventures. There are no limitations regarding type and size of the undertaking as projects from various areas and with different funding goals can be supported. Some entrepreneurial endeavors are for profit, whereas others are non-profit projects, usually of social nature [26]. A characteristic feature is that funds get raised through many investors on dedicated crowdfunding platforms, e.g. Kickstarter or Indiegogo. Capital-seeking entrepreneurs have to pitch their projects on these platforms with the goal of motivating as many people as possible to engage in the funding process. The entirety of people who financially contribute to the funding is described as the crowd [1]. In return for the funding, the crowd usually gets offered future products or equities as acknowledgment [26].

Crowdfunding is a million dollar business. In some cases, entrepreneurs succeeded with their projects with outstanding donation amounts, which shows the potential of this financing form. The most successfully funded project on Kickstarter is a smartwatch called Pebble that raised over $20 million. The second biggest project that has been funded with over $13 million is a multifunctional cooler called the coolest, which has, i.a., an integrated blender and a Bluetooth speaker [29].

There is no doubt that the prerequisite of crowdfunding success is a convincing concept [31]. Nevertheless, other factors might affect the outcome of crowdfunding projects in a positive sense as well. For instance, capital-seeking entrepreneurs can make an effort to pitch their projects in a convincing way, e.g. by emphasizing their concept to be innovative. The way how entrepreneurs present their projects will convey a certain impression to the crowd, which might contribute to the decision of potential investors to engage in the funding. Social media use might also affect crowdfunding success. The act of advertising can raise awareness of the crowdfunding campaigns through the electronic word-of-mouth (eWOM) communication and increase the projects' chances of going viral and reaching more investors.

Consequently, we hypothesize that social media use and impression management have a positive effect on the outcome of a crowdfunding campaign. To verify this assumption, we conduct an empirical study based on project pitches from the platform Kickstarter. The projects are analyzed with regard to their textual and visual presentation. The social media analysis includes the services Facebook and

Twitter and the data we retrieve is limited to the time period in which the respective crowdfunding project was ongoing. Furthermore, we compare crowdfunding projects from Germany and the USA in order to assess potential origin-dependent differences.

This investigation aims to contribute to existing research on crowdfunding and its success factors by providing a versatile perspective including social media activity and impression management, and factoring in the origin of the entrepreneurs. We formulate three research questions: (1) Does social media use have a positive effect on crowdfunding success? (2) Does impression management have a positive effect on crowdfunding success? (3) Are there any origin-dependent differences?

2. Theoretical background

A convincing and thoughtful concept is probably the most important aspect for a successful crowdfunding campaign. However, a project's success might be further supported by impression management and electronic word-of-mouth. Therefore, a deeper insight will be given regarding these two aspects. Finally, the current state of research underlining the importance and impact of both factors on crowdfunding will be presented.

2.1. Impression management

First impressions count – an idiomatic phrase which implies the importance of self-representation in many different contexts. For example, on the Internet an actor may try to reach out to as many people as possible and make a good impression to gain a certain prominence [12]. During application processes and job interviews, an actor tries to stand out from other applicants and sell his/her skills, also here the first impression is of upmost importance [14].

A key characteristic of first impressions is that judgements are made within a limited time frame, sometimes even in a split second, and will most likely be uphold. This phenomenon is called the "halo effect" and is a perception error, where people might make incorrect estimates about further characteristics of an actor based on the first impression they got of him. Thus, a certain behavior pattern is being generalized and extrapolated to further characteristics, which might lead to a cognitive bias [12].

The basic principles of impression management have been coined by Erving Goffman [9] who explained that people take certain roles in social interactions and apply them depending on who they interact with. Thus, impression management describes a process of controlling the impressions of an actor in order to manipulate one's image that is projected to others, resulting in influencing the perception they have formed [4;33].

Impression management might be crucial for crowdfunding since the entrepreneurs rely completely on their investors, the crowd. Therefore, it is important to make a good impression and convince the crowd with a promising concept. There are several impression management techniques, however, four of them will be in focus of this study as they were already mentioned in the context of crowdfunding [19,20]: positiveness, exemplification, innovativeness and supplication [11;13;22;32].

Positive speech comprises promoting behaviors that represent an actor as competent and successful, which increases the chances of being rewarded [24]. This is especially important when entrepreneurs are not well-known, meaning they are confronted with other competitors and have to assert themselves [32]. *Exemplification* describes a behavior that can be used with the purpose of projecting social responsibility and moral worthiness. Parhankangas and Ehrlich [32] state that such behavior emphasizes sociality as well as morality, which has been confirmed to convey a positive image by showing engagement in more than just the call of duty [3]. *Supplicating behavior* puts an actor intentionally into a weaker position, which conveys vulnerability and an image of being in need of aid from others [13]. This act lets entrepreneurs appear weak so that potential investors might feel obliged to support them due to social responsibility [32]. The promotion of *innovation* might be used by actors to appear interesting because of presenting oneself as unique. Parhankangas and Ehrlich [32] also refer this behavior to crowdfunding and

explain that entrepreneurs thereby take an appealing position for investors as they are trying to access new markets.

2.2 Social media activity

One important factor influencing crowdfunding success is very likely the awareness about the project. The more people are aware of a project, the more likely it might get funded, because of its greater reach.

Social media became a common medium indispensable from internet usage and an integral part of our everyday life, [16]. There is a wide range of different social media platforms and each has different audiences and target groups. For instance, there are platforms for the general masses such as Facebook, networking services for business like LinkedIn, artistic platforms like DeviantArt and many more [18].

It might be a good idea to show presence on different social media platforms and, thus, reach more people. This is reinforced by Kaplan and Haenlein [16], who say that using different platforms is a rewarding approach in the long run. This increases chances of incorporating a large number of users on different social media platforms, which is a foundation for forming a community. The members of this community play a special role as so-called prosumers. This term has been coined by Alvin Toffler [36] who described them as people that are both, consumers and producers, at the same time. Providing input or giving one's opinion on social media, which is generating buzz by implication, is especially crucial for recommendation marketing. The significance of buzz becomes clear when taking regional successful projects into account that went viral all over the world, e.g. Harry Potter and Teletubbies (United Kingdom) or Pokémon (Japan) [7]. According to Dye [7], buzz is to be defined as a customer driven hype, meaning not only to reach a lot of people via social media, but also to animate them to talk about a product or service.

Furthermore, buzz is strongly related to eWOM and a prerequisite for it. This term shall be understood as an exchange of views or opinions that takes place in the internet between two parties, who are, for instance, consumers of a specific product. This exchange can be either negative, positive or neutral and may lead to a certain decision, such as a future product purchase [6].

eWOM has a big advantage over the classical word-of-mouth communication where people interact and exchange experiences face to face. This advantage has emerged due to the increasing digitalization and the resulting changes that our society has undergone. Now, with digital communication channels people can connect with each other and communicate worldwide with ease at any time [35].

Due to the digitalization, people also changed their behavior in terms of where and how they access information. Nowadays, whenever anyone wants to learn about a product or service, the internet is most likely the first choice for seeking information. Dellarocas [5] states that the internet provides an opportunity to reach different audiences at very low costs and, at the same time, allows people to contribute their personal thoughts, reactions and opinions to a community. In comparison to classical marketing strategies and campaigns by official brands, the user communication in social media is more powerful due to impartiality of communicating parties. Goldsmith [10] explains that social communication is powerful because people trust others more than marketers, who usually do not act out of personal interest, but rather for economic reasons.

2.3 Factors influencing crowdfunding success

There are several studies in the field of either social media or impression management that confirm a positive effect on crowdfunding success. Thies, Wessel, and Benlian [36] investigated more than 6,000 crowdfunding projects on Indiegogo (reward-based crowdfunding) with respect to the effect of social buzz. Two types of social activities have been measured, shares on Facebook and tweets on Twitter. The authors found out that both had a positive effect on the outcome of a project. They estimated the effect to be higher for Facebook. A follow-up study focused on the same social buzz factors, but with regard to donation-based crowdfunding, and could also confirm this positive effect [27].

Another study focused on projects from a leading Chinese crowdfunding platform and the relation between a platform-internal like count and the number of online reviews of projects [2]. In total, the dataset consisted of approx. 1,000 projects. The study showed that both factors significantly contribute to crowdfunding success.

Lu, Xie, Kong, and Yu [20] investigated the reach of crowdfunding campaigns on Twitter by counting the number of tweets where people stated to have backed a specific project. The authors found a strong correlation of promotion activities and crowdfunding success.

Fietkiewicz, Hoffmann and Lins [8] set up a versatile study by taking diverse social media platforms into account, namely Facebook, YouTube and LinkedIn. The effect of those platforms has been measured by Facebook profile page likes and YouTube video clicks of the crowdfunding project and the number of contacts of the involved entrepreneurs on LinkedIn. The study showed that a right interplay between several platforms may have a positive influence on the crowdfunding outcome.

The positive effect of Facebook page likes on the number of backers and the fundraising goal has been confirmed by Moisseyev [25]. The author monitored crowdfunding campaigns from Kickstarter and measured the number of profile likes immediately after the funding process has finished.

Besides the fact that social media seems to affect the outcome of crowdfunding projects in a positive way, several studies deal with crowdfunding success depending on use of impression management. A broadly diversified study regarding language use within project description texts has been conducted by Mitra and Gilbert [23]. Based on over 45,000 projects, the authors built up an order of priority that ranks the most commonly used phrases within successfully and unsuccessfully funded projects. Upon classifying these phrases into various categories, the study allows to make meaningful statements about language use in project pitches. For example, reciprocal language as in stating to give something back (e.g. rewards) in return for funding the project, was found to affect crowdfunding success in a positive way.

Lins, Fietkiewicz, and Lutz [19;20] took a similar approach with the purpose of measuring to what extent impression management affects the outcome of crowdfunding campaigns. Several impression management behaviors have been taken into consideration, whereby each behavior is represented by an appropriate word list. These have been aligned with the description texts of approximately 250 projects from Kickstarter and word matches have been counted. This study points out that positive language and language promoting innovativeness of entrepreneurs' ideas have a positive influence on the likelihood of crowdfunding success. This effect was examined with regard to reaching the funding goal as well as motivating more backers.

The importance of the investor communication can be confirmed in equity-based crowdfunding on the basis of a qualitative study by Moritz, Block, and Lutz [28] as well. Semi-structured interviews with investors and representatives of new ventures led to the realization how important the investor communication is to reduce information asymmetries among each other and to convey a positive image of oneself. This way, the decision-making process of investors can be positively influenced and encouraged.

In conclusion, it can be stated that engaging in social media as well as making use of impression management may affect crowdfunding success in a positive way. In doing so, this can allow entrepreneurs to appear trustworthy and to portray a convincing impression motivating people to engage in crowdfunding as investors at best.

3. Methods

3.1 Data crawling

As studies always extrapolate from a subset of data to the whole, creating a realistic scenario is indispensable to make meaningful statements about any evaluation. Therefore, strategic considerations about the applied methods preceded the data collection. For this study, Kickstarter turned out to be the best platform for crawling crowdfunding projects as it is internationally positioned and currently the best-known and most active one [30]. Until now, Kickstarter raised nearly $4 billion, spread across over

140,000 successfully founded projects [17]. Due to its size and functionality, it could be ensured that a sufficient amount of projects along with crucial metadata could be obtained.

All in all, 1,500 projects from the most active and successful categories have been collected based on a statistics by Kickstarter [17]. These categories are: Music, Film/Video, Publishing, Games and Art. For each category 300 projects (150 US-American, 150 German) were retrieved to establish a comparable basis for entrepreneurs with different origins.

Statistics on Kickstarter [17] show different overall success rates of projects for each category. Therefore, the relation of successful to failed projects has been considered during data collection in order to represent the exact nature and funding behavior for each category. After having defined the distribution of projects in terms of categories, origin and the general case numbers, the process of crawling itself followed. This has been done automated by using the programming language Python and Beautiful Soup, which is a web scraping library for extracting content from HTML files. Upon having crawled the project links, all relevant data (incl. project description, outcome, category, title, runtime, and social media profiles) could be extracted.

3.2 Impression management analysis

For the analysis of the applied impression management word lists in English were used, each one representing a specific technique. In a further step, occurrences of these words have been counted within the description texts of the projects. In addition, the use of images in the description texts was considered as well. The word lists were used for the four categories of impression management: *positiveness, exemplification, innovativeness* and *supplication*. They are based on the studies of Henry [11] concerning the factors *positiveness* and *supplication*, on Michalisin [22] for *innovativeness* and Jones and Pittman [13] as well as Parhankangas and Ehrlich [31], for *exemplification*.

Although all investigated projects were in English, there might be differences in language use between German and US-American entrepreneurs. Kachru [15] emphasizes that even if non-native speaker feel like they can express themselves best in English, there are still differences in contrast to native speakers. This fact is also confirmed by Seidlhofer [34], who states that a non-native speaker cannot be a member of native speakers' community, no matter how much time goes by.

3.3 Social media data collection

For the study, Twitter and Facebook data was retrieved. The identification of Twitter and Facebook accounts of a project preceded the traffic analysis on each profile page. Either this information has already been provided by the entrepreneurs themselves within their project description or it had to be done manually by searching for the project title on Twitter and Facebook as well as using Google.

Upon identifying all relevant social media profiles, the investigation of the ongoing traffic during the runtime of a project on Twitter and Facebook could be carried out. The narrowing of the runtime is a critical factor because only the traffic during the funding process of a project was supposed to be investigated.

The relevant traffic data of Twitter and Facebook has been collected automated by using Tweepy, a library for accessing the Twitter API, and Facebook's Graph API, which is a tool for extracting predefined query data from the platform. With regard to both social networking services, the following KPI's have been taken into account: *tweets*, f*avorites*, *retweets* for Twitter, and *posts*, *posting likes*, *user comment traffic* and *overall comment traffic* (traffic of users as well as of entrepreneurs themselves) for Facebook.

3.3 Statistical analysis

Three different tests have been used for data evaluation. Two of them are hypothesis tests for investigating group differences, the chi-square test for homogeneity (in order to evaluate whether successful projects have more social media profiles than failed projects) and the independent-samples t-test (in order to measure the traffic on social media profiles of crowdfunding projects as well for the analysis of the impression management). Finally, the binomial logistic regression has been carried out. It is used for making predictions about an observation falling into one of two categories, in this case the success or failure of a crowdfunding campaign. For this study a model has been set up that included both investigated aspects, social media activity and impression management. Social media is incorporated in the model with a Boolean coding of Twitter and Facebook and impression management along with the use of images on a continuous scale. This allows for a direct comparison in terms of which of these two aspects has a greater effect on the outcome of a project. In addition, outliers have been removed by using the interquartile range.

The collected data has been viewed from two different perspectives. First, the whole sample including 1,500 projects has been analyzed. Second, the projects have been grouped by their origin in order to discover possible differences between German and US-American Projects.

4. Results

4.1 Social media profiles

In this paragraph the results of the chi-square test for homogeneity regarding the overall numbers of Facebook and Twitter profiles that could be identified are being presented. Out of 1,500 projects, 295 Twitter and 525 Facebook accounts could be identified for both successful and failed projects. The majority of crowdfunding projects that hold a Twitter and/or Facebook profile have succeeded. Twitter profiles are spread with a share of 62.4% and Facebook profiles with 57% in favor of successful projects. Most crowdfunding campaigns that have failed did not have a social media profile on Facebook or Twitter.

As group differences between successful and unsuccessful projects are indicated by the distribution (Table 1 and 2), statistical tests support this assumption. The chi-square test is statistically significant for both social media services (Sig. < 0.001). The phi-coefficient concerning Twitter is 0.247 and for Facebook 0.284. Therefore, both indicate a small effect size regarding group difference. The odds ratio for successful projects in terms of having a Twitter profile page is 3.49. This means that a crowdfunding project that maintains a Twitter page is 3.49 times more likely to succeed. Facebook shows a slightly lower value as the odds ratio is 3.402.

Table 1. Contingency table of Twitter accounts and the success of a crowdfunding project (overall results).

			Twitter		Total
			False	True	
Successful project	**False**	Count	817	111	928
		Expected Count	745.5	182.5	928.0
		% within Twitter	67.8%	37.6%	61.9%
	True	Count	388	184	572
		Expected Count	459.5	112.5	572.0
		% within Twitter	32.2%	62.4%	38.1%
Total			1205	295	1500

Table 2. Contingency table of Facebook accounts and the success of a crowdfunding project (overall results).

			Facebook		Total
			False	True	
Successful project	**False**	Count	702	226	928
		Expected Count	603.2	324.8	928.0
		% within Twitter	72.0%	43.0%	61.9%
	True	Count	273	299	572
		Expected Count	371.8	200.2	572.0
		% within Twitter	28.0%	57.0%	38.1%
Total			975	525	1500

When regarding the data grouped by country (Table 3 and 4), the data of Facebook profile distribution shows rather similar results for both origins with only small deviations. In general, the majority of profile pages is assigned to successful projects rather than to failed ones. Also, the majority of US-American and German projects that failed did not have a Twitter and/or Facebook profile.

Table 3. Contingency table of Twitter accounts and the success of a crowdfunding project (origin-dependent differences).

Project Origin				**Twitter**		**Total**
				False	True	
Germany	**Successful project**	**False**	Count	415	49	464
			Expected Count	387.9	76.1	464.0
			% within Twitter	66.2%	39.8%	61.9%
		True	Count	212	74	286
			Expected Count	239.1	46.9	286.0
			% within Twitter	33.8%	60.2%	38.1%
USA	**Successful project**	**False**	Count	402	62	464
			Expected Count	357.6	106.4	464.0
			% within Twitter	69.6%	36.0%	61.9%
		True	Count	176	110	286
			Expected Count	220.4	65.6	286.0
			% within Twitter	30.4%	64.0%	38.1%

This group difference is statistically supported in favor of successful projects for both origins (Sig. < 0.001). The phi coefficient tests show that the group difference in terms of Facebook profiles has a stronger effect size for German projects (0.265) and US-American projects (0.304) than in terms of Twitter profiles (German: 0.201; US-American: 0.29). Therefore, all effect sizes show small to medium associations to successful projects. Furthermore, the odds ratios for successful projects regarding projects from the USA with social media profile is higher compared to projects from Germany. The highest odds ratios (4.052) could be identified for Twitter profiles from the USA, meaning that a crowdfunding project from the USA that has a Twitter profile is 4.052 times more likely to succeed.

Table 4. Contingency table of Facebook accounts and the success of a crowdfunding project (origin-dependent differences).

Project Origin				Facebook		Total
				False	True	
Germany	**Successful project**	**False**	Count	345	119	464
			Expected Count	298.8	165.2	464.0
			% within Facebook	71.4%	44.6%	61.9%
		True	Count	138	148	286
			Expected Count	184.2	101.8	286.0
			% within Facebook	28.6%	55.4%	38.1%
USA	**Successful project**	**False**	Count	357	107	464
			Expected Count	304.4	159.6	464.0
			% within Facebook	72.6%	41.5%	61.9%
		True	Count	135	151	286
			Expected Count	187.6	98.4	286.0
			% within Facebook	27.4%	58.5%	38.1%

4.2 Social media traffic and impression management data

The usage of impression management techniques and of social media was analyzed with the help of an independent-samples t-test. Table 5 shows the traffic analysis regarding the Twitter data for the whole sample. At first sight it can be stated that group differences are noticeable in favor of successful projects for each factor. The largest difference can be seen for *favorites* as the mean for successful projects is about four times higher (11.9) than the mean for failed projects (3.44). *Retweets* make up the second largest difference as the mean for successful projects is around three times higher (13.88) than the one of failed projects (4.43). The mean of Twitter *posts* from successful projects is 45.4, while the one of failed projects is 30.51. Thus, projects that have succeeded posted on average 1.5 times more than failed projects did. These group differences are statistically supported for each factor (Sig. < 0.018).

Table 5. Twitter traffic analysis for whole sample.

Factor	Success	N	Mean	SD
Posts	False	108	30.51	45.85
	True	172	45.40	58.35
Favorites	False	93	3.44	6.28
	True	163	11.90	20.1
Retweets	False	98	4.43	8.22
	True	164	13.88	22.53

The outcomes for Facebook indicate similar tendencies (Table 6). The largest difference between successful and failed projects can be found for *posting likes*. Altogether, the mean of successful projects is around 142.7, while the mean for failed projects is 26.02, thus there is a ratio of 1 to 5 in favor of successful projects. The mean of *comments* (failed projects: 5.36; successful projects: 18.83) and the overall *posting traffic* (failed projects: 11.16; successful projects: 31.45) is at a ratio of around 1 to 3, also in favor of successful projects. According to the data, successful projects posted twice as many posts (19.93) when compared to unsuccessful ones (8.73). These group differences for Facebook data are statistically significant as well (Sig. < 0.001).

Table 6. Facebook traffic analysis for whole sample.

Factor	Success	N	Mean	SD
Posts	False	214	8.73	11.24
	True	283	19.93	18.74
Posting likes	False	200	26.02	42.52
	True	267	142.7	180.14
Comments	False	120	5.36	6.89
	True	200	18.83	22.03
Posting traffic	False	225	11.16	14.23
	True	299	31.45	29.57

The results regarding the impression management data are shown in table 7. The highest impact of impression management can be found for *positiveness* followed by *images*. Concerning the factor *positiveness*, successful projects averagely use twice as many words (10) as failed projects do (5). The mean of image use within a description of a project is around 6 for successful projects, while unsuccessful projects use 2 images on average. There are only marginal differences regarding the other factors as the mean is either below 1 (*exemplification* and *innovativeness*) or the difference of the value between successful and failed projects is less than 1 (*supplication*). The t-tests for the impression management data is statistically significant for all factors (Sig. < 0.002).

Table 7. Impression management application for whole sample.

Factor	Success	N	Mean	SD
Positiveness	False	887	5.20	5.43
	True	543	10.24	8.77
Exemplification	False	928	.33	.93
	True	572	.58	1.30
Innovativeness	False	928	.41	1.26
	True	572	.61	1.22
Supplication	False	868	1.11	1.32
	True	545	1.82	1.99
Images	False	861	2.09	3.67
	True	536	6.13	8.40

The following analysis regarded country-dependent differences. Table 8 summarizes the results for Twitter. The mean of each factor for projects from Germany and the USA is higher for successful projects. It is conspicuous that the difference in the mean regarding Twitter *posts* differ between German and US-American projects. While the mean of failed projects from Germany is 21.29, the mean of US-American projects is almost twice as high (37.88). The mean of successful German projects is 51.71 and, thus, bigger than for unsuccessful projects by a factor of more than 2. The mean for successful US-American projects is just slightly higher (41.17) than the one of failed projects. Twitter *favorites* and *retweets* differ marginally from each other. Successful projects from Germany have on average around four more favorites (Germany: 14.68; USA: 10.33) and seven more retweets (Germany: 18.02; USA: 11.23). Overall, group differences in favor of successful projects can be recognized for these factors apart from Twitter *posts* by US-American projects. With the exception of the latter, the means for successful projects are fundamentally higher by a factor of around 2 to almost 5 (see Twitter *retweets* from

Germany). Aside from Twitter *posts* from the USA, every group difference has statistical evidence (Sig. < 0.002).

Table 8. Twitter traffic analysis by country.

	Factor	Success	N	Mean	SD
Germany	*Posts*	False	48	21.29	35.27
		True	69	51.71	65.18
	Favorites	False	43	3.79	6.74
		True	59	14.68	23.80
	Retweets	False	45	4.38	8.55
		True	64	18.02	27.19
USA	*Posts*	False	60	37.88	51.93
		True	103	41.17	53.20
	Favorites	False	50	3.14	5.91
		True	104	10.33	17.59
	Retweets	False	53	4.47	8.02
		True	100	11.23	18.64

The data for traffic on Facebook shows a similar distribution for each factor among successful and failed projects (Table 9). Successful projects from Germany as well as from the USA post twice the amount (approx. 20) as failed projects do (approx. 10). For projects from the USA and Germany, successful projects have on average 3 to 4 times more comment traffic than failed projects and in total around 3 times more posting traffic overall. Successful projects from the USA tend to have a little less posting likes on average (132) than projects from Germany (155). The group differences are statistically significant for each factor (Sig. < 0.001).

Table 9. Facebook traffic analysis by country.

	Factor	Success	N	Mean	SD
Germany	*Posts*	False	111	9.41	11.25
		True	141	20.09	17.97
	Posting likes	False	103	30.85	45.79
		True	124	155.02	190.69
	Comments	False	77	5.42	6.94
		True	115	17.63	22.39
	Posting traffic	False	118	12.38	14.70
		True	148	32.84	30.34
USA	*Posts*	False	103	8.01	11.25
		True	142	19.77	19.54
	Posting likes	False	97	20.88	38.32
		True	143	132.03	170.42
	Comments	False	43	5.26	6.88
		True	85	20.44	21.56
	Posting traffic	False	107	9.82	13.64
		True	151	30.09	28.84

Table 10 includes the results of the impression management analysis. The data for *positiveness* and *images* shows a noticeable difference between successful and failed projects for both origins. Successful projects from the USA use 11 words from the category *positiveness*, while German projects use 9 words

on average. Failed projects averagely use around half this amount (Germany: 4; USA: 5). The distribution regarding the use of images is similar for projects from the USA and Germany. Successful projects use on average 5 to 6 images, while failed ones use 1 or 2. The means of the three other behaviors (*exemplification*, *innovativeness* and *supplication*) show only a slight and not striking difference between successful and unsuccessful projects. The t-tests for the factors *Positiveness* and *Images* are statistically significant for projects from the USA and Germany (Sig. < 0.001).

Table 10. Impression management application by country.

	Factor	Success	N	Mean	SD
Germany	*Positiveness*	False	440	4.59	5.37
		True	274	9.25	8.35
	Exemplification	False	464	.31	1.06
		True	286	.41	1.02
	Innovativeness	False	464	.46	1.55
		True	286	.64	1.22
	Supplication	False	434	.98	1.25
		True	273	1.63	1.87
	Images	False	417	2.53	3.94
		True	266	6.29	8.33
USA	*Positiveness*	False	447	5.80	5.43
		True	269	11.25	9.08
	Exemplification	False	464	.35	.78
		True	286	.76	1.52
	Innovativeness	False	464	.37	.86
		True	286	.59	1.21
	Supplication	False	434	1.23	1.37
		True	272	2.00	2.10
	Images	False	444	1.68	3.35
		True	270	5.96	8.48

4.3 Prediction Model

In the following, the results of the regression analyses will be presented. The dependent variable (Boolean) describes the success or failure of a project. The independent variables include data from social media (existence of a profile) and impression management covering different techniques in order to make a predictive statement about the outcome of a crowdfunding project. Overall, 1,324 out of 1,500 projects are considered in the prediction model due to outlier removal.

The logistic regression model concerning the whole sample is statistically significant (Sig. < 0.001). This model explains 28% of the variance in the dependent variable. Upon assuming every project to fail, without taking any independent variable into account, 61.3% of all cases would have been classified correctly. By considering the independent variables, this model classifies 72.1% of all cases correctly. Projects that were not successful have been predicted to fail with 85.3% accuracy. Table 11 shows the impact of the independent variables on to the model. Apart from the impression management factors *innovativeness* and *supplication*, every other variable in the equation is statistically significant (Sig. < 0.012) and has increasing odds on the projects to succeed. The highest odds ratio can be found for *Facebook*. Hence, a crowdfunding project that has a Facebook profile will more likely succeed by a factor of 2.316. Having a Twitter profile will increase the odds of a project to succeed by 1.831. The factors

positiveness, *exemplification* and *images* show smaller odds ratios than the factors of social media, but they still have a positive impact (between 1.083 and 1.184) on crowdfunding success.

Table 11. Logistic regression predicting likelihood of crowdfunding success based on social media activity and impression management.

	B	SE	Wald	*df*	*p*	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
Twitter	,605	,197	9,461	1	,002	1,831	1,245	2,693
Facebook	,840	,160	27,571	1	,000	2,316	1,693	3,169
Positiveness	,082	,013	40,750	1	,000	1,085	1,058	1,113
Exemplification	,169	,067	6,252	1	,012	1,184	1,037	1,351
Innovativeness	-,052	,056	,864	1	,353	,949	,850	1,060
Supplication	-,013	,049	,067	1	,796	,988	,898	1,086
Images	,080	,013	36,584	1	,000	1,083	1,055	1,111
Constant	-1,713	,110	241,088	1	,000	,180		

Table 2. Logistic regression predicting likelihood of crowdfunding success based on social media activity and impression management.

		B	S.E.	Wald	*df*	*p*	Odds Ratio	95% CI for Odds Ratio	
								Lower	Upper
Germany	Twitter	,628	,295	4,522	1	,033	1,873	1,050	3,341
	Facebook	,754	,215	12,272	1	,000	2,126	1,394	3,242
	Positiveness	,090	,019	23,776	1	,000	1,095	1,056	1,135
	Exemplification	,087	,094	,853	1	,356	1,091	,907	1,313
	Innovativeness	-,062	,070	,767	1	,381	,940	,819	1,079
	Supplication	-,055	,074	,559	1	,455	,946	,819	1,094
	Images	,071	,017	16,921	1	,000	1,074	1,038	1,111
	Constant	-1,529	,145	111,023	1	,000	,217		
USA	Twitter	,611	,275	4,941	1	,026	1,842	1,075	3,157
	Facebook	,928	,242	14,754	1	,000	2,530	1,575	4,062
	Positiveness	,076	,019	17,031	1	,000	1,079	1,041	1,119
	Exemplification	,266	,100	7,095	1	,008	1,305	1,073	1,588
	Innovativeness	-,022	,101	,049	1	,825	,978	,803	1,191
	Supplication	,036	,066	,296	1	,586	1,037	,911	1,180
	Images	,086	,021	17,317	1	,000	1,090	1,047	1,136
	Constant	-1,947	,172	128,459	1	,000	,143		

Regarding the prediction models by country (Table 12), both are statistically significant (Sig. < 0.001). For the USA, the model explains a slightly higher variance (31.7%) than for Germany (25.2%). Without taking any independent variable into account, predicting every project to fail would result in a correct classification in 60.7% of all cases for Germany and in 61.8% of all cases for the USA. Both models work better in terms of predicting projects to fail rather than to succeed. On first sight, every variable that is statistically significant for one model is also significant for the other, with one exception. The factor *exemplification* is only statistically significant for the US-American model (Sig. < 0.008). The variables *innovativeness* and *supplication* are not statistically significant for either model. *Twitter* and *Facebook*

contribute the most to the predictive capacity of both models as these two variables have the highest odds ratios. Concerning the model for Germany, a project is more likely to succeed when it has a Twitter profile (factor of 1.873) and when it has a Facebook profile (factor of 2.126). Regarding the US-American model, the odds ratios for Twitter are almost the same as for Germany (1.842), but those for Facebook are higher (2.53).

5. Conclusion and Outlook

The goal of this study was to find out if the usage of social media and impression management techniques affects crowdfunding success in a positive way. All evaluations are based on quantitative analyses, concluded from a dataset of 1,500 projects on Kickstarter. The focus has been laid on investigating the social networks Twitter and Facebook regarding to what extent they had been used during the funding period of each project. The usage of impression management has been measured by investigating the project descriptions.

In general, the research shows a positive effect of social media and impression management on crowdfunding success. The evaluations show that capital-seeking entrepreneurs who specifically set up profile pages of their projects on Twitter and Facebook are more likely to succeed. It is striking that Facebook seems to have a bigger influence as more profiles could be identified for this platform. This coincides with the fact that Facebook is currently the biggest social network on the internet and thus offers the best chances of reaching as many people as possible on a single platform. Nevertheless, using Twitter solely or as an addition to Facebook will most likely increase the reach of a project because these platforms address different audiences.

The traffic analyses on Twitter and Facebook mirror the fact that successful projects hold on average more social media profiles than failed projects do. The results show that successful entrepreneurs use these platforms significantly more frequently. It is notable that Twitter, although it is used less than Facebook, shows more traffic in terms of postings by the entrepreneurs.

Regarding the evaluation of impression management, it is conspicuous that three out of five factors (*exemplification*, *innovativeness* and *supplication*) are rather negligible, as differences between successful and failed projects are very low or nonexistent. The low values for *innovativeness* might be caused by limitation to most popular categories that did not include the category Technology/IT (which would be more appropriate for promoting innovation). The factors *positiveness* and *images* stand out and affect crowdfunding success in a positive way. This could be an indication for the crowd that entrepreneurs who pitched their project have intensively dealt with their idea and made an effort to present it in a good and convincing manner. This way of presenting a crowdfunding project instead of a superficial pitch that is not vivid and well-illustrated could lead to a rather positive reception by the crowd.

Regarding differences between Germany and the USA, the distribution of social media profiles regarding successful and failed projects is almost identical. The overall number of Facebook profiles that could be identified does not differ between the two origins. This does not apply for Twitter as more profiles could be identified for US-American projects. The reason for this could be the fact that Twitter is most popular in the USA. If German entrepreneurs decide to set up a profile for their crowdfunding campaign on Twitter, it is important to actively use it. Projects that have succeeded show more than twice the number of tweets than failed projects do. The group differences within US-American projects barely show any deviations as successful projects tweeted in general to the same extent as failed projects did. With regard to the use of impression management, there is no crucial difference noticeable as the factors *positiveness* and *images* show only small deviations.

In the future, it would be interesting to investigate other crowdfunding models as this study focused only on reward-based crowdfunding platform Kickstarter. Furthermore, this was a cross-category study with data from the five biggest categories (Music, Film/Video, Publishing, Games, Art). The inclusion of further categories as well as investigation of category-dependent differences in regard to the impact that

social media activity and impression management may have on a crowdfunding project's success is also an interesting aspect to investigate.

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