

Seducing the crowd: An LDA literature review on language in crowdfunding

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ABSTRACT

Objective: As crowdfunding continues to gain traction worldwide as an alternative financing method for entrepreneurs and social initiatives, the language used in campaign communications has become a critical factor influencing funding outcomes. Therefore, understanding how linguistic elements affect backer engagement and campaign success constitutes an increasingly important research area. This article aims to identify the dominant themes and emerging trends in academic research concerning the role of language in crowdfunding. We applied latent Dirichlet allocation (LDA) to systematically explore how scholars have investigated linguistic features in crowdfunding-related studies and how this area has evolved.

Research Design & Methods: We applied an LDA topic model to the dynamically growing body of literature on the aspects of language in crowdfunding campaigns to identify the key research topics and find the most current avenues of further research. It is a stochastic-based approach. Therefore, it fits well with the analysis of short blocks of text such as article abstracts. We considered 143 papers from Scopus published on the topic since 2013 to identify the key trends in the contemporary research on language in crowdfunding.

Findings: We identified seven key topics, including: (1) language in crowdfunding success, (2) entrepreneurial narratives, (3) emotional language in social/medical campaigns, (4) gender in crowdfunding, (5) branding and linguistic strategies, (6) values in crowdfunding, and (7) ethical considerations. The analysis shows temporal shifts in topic prevalence, highlighting growing interest in interdisciplinary themes such as gender and values, while general or ethical-focused research has declined over time.

Implications & Recommendations: The study revealed a shift from basic linguistic metrics to more detailed explorations of identity, ethics, and emotional appeal. It recommends that fundraisers and platforms tailor communication strategies to match backer expectations and influence persuasive narratives. Crowdfunding platforms may enhance user support by integrating language analysis tools and offering narrative-building guidance.

Contribution & Value Added: This is the first known study to apply LDA topic modelling to academic literature on language use in crowdfunding. It provides a structured, data-driven mapping of the field's development and offers insights into how language shapes crowdfunding outcomes. It contributes to both the crowdfunding literature and interdisciplinary research, linking linguistics, psychology, marketing and finance, underlining the international applicability of these findings.

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INTRODUCTION

Crowdfunding is a form of community financing, where supporters contribute relatively small amounts in exchange for recognition, reward, or a share in the company. It enables entrepreneurs, communities, and individuals to raise capital for commercial, social, or charitable initiatives outside

traditional financial systems, leveraging digital platforms to engage backers to fund projects (Short *et al.*, 2017). Crowdfunding encompasses various fundraising models, the core of them being: crowdlending, donation, reward, and equity crowdfunding (Belleflamme *et al.*, 2014; Mollick, 2014). Shneor *et al.* (2020) further distinguish investment (lending and equity) and non-investment financing (reward and donation) crowdfunding.

Of particular interest in crowdfunding research are the success factors of crowdfunding campaigns. While scholars have widely studied financial and structural factors like campaign duration and funding goals (Adamska-Mieruszewska *et al.*, 2021; Koch & Siering, 2015, 2019; Zhang *et al.*, 2023, 2024), growing attention is now on how language influences backers' support (Zhao & Ryu, 2020). Fundraisers not only present proposals but also use strategic language to craft a vision and engage potential backers. Prior studies have shown that emotional language, credibility markers and narrative framing can significantly impact a campaign's success (Al-Qershi *et al.*, 2022; Lagazio & Querci, 2018; Shneor & Vik, 2020). Luo and Luo (2017) conceptualised fundraisers as storytellers, highlighting the importance of crafting compelling narratives to attract funding. Campaigns that emphasise shared values, identity, and social connection perform better than those relying on rational financial arguments (Pinkow, 2023; Serwaah, 2022). While prior research has explored the role of language in crowdfunding success, most studies focus on individual linguistic variables (*e.g.*, sentiment, credibility markers) rather than taking a topic-based approach. This raises an important question: How has academic research on crowdfunding language evolved, and what are the dominant themes and emerging trends in this field?

To address this question, we applied latent Dirichlet allocation (LDA) topic modelling to conduct a structured literature review on crowdfunding language research to investigate the role of language in crowdfunding campaigns. Specifically, we explored prevalent topics related to language in crowdfunding campaigns, analysed their evolution over time, tracked shifts in scholarly focus, and highlighted emerging areas of interest for future research. Our study offers a structured view of how linguistic research in crowdfunding has evolved, identifying key trends and highlighting emerging interdisciplinary themes such as gender and ethical considerations.

We chose LDA for its ability to uncover latent themes in unstructured text, particularly suitable for abstracts where manual identification of patterns would be challenging (Jelodar *et al.*, 2019). It is a more objective, data-driven alternative to traditional reviews. Scholars have applied LDA in crowdfunding studies (Jiang *et al.*, 2020; Rejeb *et al.*, 2024). However, to the best of our knowledge, none of them was related to language and project descriptions. For completeness, we also considered alternative topic modelling techniques, including non-negative matrix factorisation (NMF), BERTopic, and dynamic topic modelling (DTM). Ultimately, we selected LDA as the most suitable method given our research objectives and dataset characteristics. Notably, LDA is a widely validated probabilistic model for medium-sized text corpora and has demonstrated strong performance with short texts such as article abstracts (Jelodar *et al.*, 2019). In contrast to newer approaches like BERTopic or DTM that require larger corpora or impose complex temporal structures, LDA provides a transparent and interpretable approach well-aligned with our goal of mapping the major themes in this emerging literature.

The contribution of this study lies in its application of LDA topic modelling to capture the nature of the evolving research on language in crowdfunding campaigns. A systematic analysis of a body of research articles allowed us to identify seven distinct topics related to language in crowdfunding, with a particular emphasis on sentiment, style, and values. Notably, our findings revealed a significant increase in the prevalence of research exploring gender in crowdfunding (Topic 4) and values in crowdfunding (Topic 6) in recent years, suggesting a growing interest in interdisciplinary and qualitative approaches to understanding the linguistic aspects of crowdfunding.

The structure of the article is as follows. We briefly examine recent crowdfunding research, focusing on the success factors and linguistic theories in the following section. Next, we provide a thorough explanation of the research methodology, including the literature search approach and criteria employed to determine the optimal number of topics. We then present findings and discuss results. Finally, we outline the limitations of our study and provide concluding remarks.

LITERATURE REVIEW

A central focus in crowdfunding research is identifying the factors that determine the success of campaigns, particularly whether a campaign meets or exceeds its fundraising goal. Since crowdfunding relies on small contributions, an ambitious financial goal poses the challenge of attracting a sufficient number of backers and has been shown to negatively affect success rates (Koch & Siering, 2015, 2019; Mollick, 2014; Zhang *et al.*, 2023; 2024). Additional success factors include campaign duration, the value of rewards (Zhao & Ryu, 2020), visual content, the category of the project, updates, and external media coverage (Al-Qershi *et al.*, 2022; Lagazio & Querci, 2018; Liu *et al.*, 2023; Shneor & Vik, 2020).

Studies also consider the perspectives of key stakeholders, i.e., backers, platforms, and fundraisers (Liu *et al.*, 2023; Shneor & Vik, 2020). For backers, the number of supporters, as well as their experience, age, and gender, influence outcomes (Adamska-Mieruszewska *et al.*, 2021; Mollick, 2014; Liu *et al.*, 2023). Platform-related success factors include user base size, proportion of returning backers, reputation, operational longevity, and the use of project endorsements (Shneor & Vik, 2020; Liu *et al.*, 2023). Fundraiser-related factors encompass experience, reputation (Pinkow, 2023), educational background (Mollick, 2014), team size (Lagazio & Querci, 2018), and personal networks (Koch & Siering, 2019). Demographics such as gender, location, age, and ethnicity also play a role (Liu *et al.*, 2023; Mollick, 2014; Shneor & Vik, 2020).

Beyond raising funds, crowdfunding facilitates outreach to potential clients, media, investors, and business partners (De Crescenzo *et al.*, 2022; Tosatto *et al.*, 2022). Therefore, communication with the broader community is vital. Fundraisers must present compelling narratives to attract support. Luo and Luo (2017) liken them to storytellers whose persuasive communication, through campaign descriptions, risk sections, or video pitches, can shape outcomes. Following Jakobson's (1960) model of communication, the fundraiser (sender) delivers a message (campaign content) to backers (receivers) via a specific platform (channel) using persuasive language (code) within a given context (the campaign cause). The pragmatics of this interaction, including the fundraiser's intention (illocutionary force) and its effect on the audience (perlocutionary effect), are key to understanding persuasive strategies (Austin *et al.*, 1977; Searle & Vanderveken, 1985).

Although numerous linguistic theories could enrich this field, their application in crowdfunding studies remains limited. Research has primarily drawn on persuasion-related models such as the elaboration likelihood model (ELM), signalling theory (Spence, 1974), and language expectancy theory. Peng *et al.* (2022) found that credibility-enhancing language correlates positively with success, while expressions of uncertainty or negative sentiment reduce it. They also noted that simpler, low-complexity language weakens campaign performance. Allison *et al.* (2024) argue that genre is not the only relevant factor; social and political context also shape outcomes. In developing countries, microlending campaigns gain traction more quickly when they avoid highlighting personal achievements or innovation. Instead, narratives that focus on present struggles and invoke blame tend to evoke a warm-glow effect (Andreoni, 1990), encouraging faster contributions. These findings align with Bollaert *et al.* (2020), Koh *et al.* (2020), and Patel *et al.* (2021), who stress the complex role of entrepreneur visibility.

However, there exists contradictory evidence. Gafni *et al.* (2021) and Patel *et al.* (2021) show that self-referencing and even narcissistic cues can enhance trust and campaign performance. In another content-based study, Allison *et al.* (2017) applied and extended the ELM framework through a simulated crowdfunding experiment. They found that experienced investors respond better to rational, issue-based arguments in high-goal campaigns, while peripheral cues, such as appeals to group identity, are more effective for attracting novice funders in lower-goal campaigns.

Despite the growing sophistication of methods in crowdfunding discourse studies, the integration of linguistic theory remains an area with definite potential for further exploration. While foundational models like the ELM and signalling theory have proven useful in explaining persuasive mechanisms, more recent approaches, such as cognitive linguistics, critical discourse analysis, and deictic shift theory, offer broader possibilities to analyse the relations between language, identity, and engagement. Research synthesising conceptual metaphor theory with discourse and narrative analysis (*e.g.*, Hart, 2019) reveals

how metaphors not only frame information but also shape collective perceptions and emotional alignment. These insights are particularly relevant in multilingual and multicultural contexts, where metaphor use reflects not just stylistic preference but also deeper socio-cognitive schemas.

Furthermore, recent studies demonstrate a turn toward multimodal and culturally sensitive analyses that go beyond purely textual features. For instance, Rama *et al.* (2022) show how visual and textual combinations vary in persuasiveness across cultural dimensions, with high-individualism societies responding more positively to narrative-driven, image-supported appeals. Similarly, Shneur *et al.* (2022) find that the success of campaigns hinges on whether audiences come from high- or low-trust societies, which affects their responsiveness to central (textual) or peripheral (visual, social media) cues. These findings emphasise the necessity of considering both cultural variation and the evolving norms of platform-specific communication. As crowdfunding increasingly leverages integrated media consisting of video, speech, gesture, and visuals, future linguistic research must adapt its scope and tools accordingly. While we did not focus on producing a comprehensive synthesis of multimodal or ethnographic perspectives, our acknowledgement of these studies nonetheless aimed to reflect their growing significance in the field.

RESEARCH METHODOLOGY

Natural language processing (NLP) focuses on enabling machines to understand, analyse, and generate human language (Khurana *et al.*, 2023). It encompasses techniques like entity recognition, sentiment analysis, and text classification, and plays a key role in information retrieval systems, including document retrieval and question answering (Li, 2015). Notably, NLP models aim to capture semantics, syntax, and language structure. With the exponential growth of scientific literature, traditional literature reviews are increasingly difficult, driving demand for advanced NLP tools (Kang *et al.*, 2020).

Topic modelling, a key NLP and machine learning technique, automatically uncovers hidden themes in large text corpora by clustering frequently co-occurring words (Albalawi *et al.*, 2020). Researchers widely apply it in fields such as text mining, social media analysis, and information retrieval to extract meaning from unstructured data (Blei *et al.*, 2003; Chauhan & Shah, 2022; Jelodar *et al.*, 2019; Petterson *et al.*, 2010). Kherwa and Bansal (2019) categorise topic modelling methods into probabilistic and non-probabilistic models, further divided into supervised and unsupervised approaches, using either bag-of-words or word-sequence techniques.

Among these, LDA is particularly relevant. It represents each document as a mixture of topics, with each topic characterised by a distribution over words (Chauhan & Shah, 2022). Due to its probabilistic nature, LDA is well-suited for short texts like abstracts. It assumes a two-step document generation process: selecting topic distributions for a document, then generating words based on those topics. Words with the highest probability in each topic reveal the dominant themes. Both document-topic and topic-word distributions are governed by Dirichlet priors (Jelodar *et al.*, 2019). In LDA, visible data (words) serve to infer hidden variables (topics and their presence in documents), producing a thematic structure across the corpus. Posterior estimates of these hidden variables enable tasks like information retrieval and document exploration. This process is grounded in a probabilistic generative model, where the observed texts are assumed to result from an underlying thematic process (Blei & Lafferty, 2009).

In the model, a word w is an element of a dictionary $\{1, \dots, v\}$, a document is represented with a sequence of N words and each word (w_1, \dots, w_n) , $w_n \in \{1, \dots, v\}$. A corpus D is a collection of M documents. Given several k topics, the process for a document d is as follows (Kherwa & Bansal, 2019):

1. Sample a K -vector θ_d from the Dirichlet distribution $p(\theta | \alpha)$, where θ_d is the topic mixture proportion of document d .
2. For $i = 1 \dots N_d$, sample word w_i in the d from the document special multinomial distribution $p(w_n | \theta_d, \beta)$ where α is a K -vector of Dirichlet parameter, and $p(\theta | \alpha)$ is given as follows:

$$p(\theta | \alpha) = \frac{\Gamma(\sum_{i=1}^k \alpha_i)}{\prod_{i=1}^k \Gamma(\alpha_i)} \theta_1^{\alpha_1 - 1} \dots \theta_k^{\alpha_k - 1} \quad (1)$$

Here, β is a $K * V$ matrix of word probability, where $\beta_{ij} = p(w_j = 1 | z_i = 1)$, $i = 0, 1, \dots, k$; $j = 0, 1, \dots, v$.

We conducted all of the analysis in R 4.3.2. using the LDAShiny package and a set of standard data redaction packages. We follow a four-step process suggested by De la Hoz-M *et al.* (2021):

1. Preprocessing – document term matrix.
2. Number of topics inference – 4 criteria.
3. LDA Model.
4. Postprocessing.

To identify relevant studies, we ran a Scopus search using the terms ‘crowdfunding’ and ‘language.’ We selected Scopus as the primary database due to its comprehensive coverage of peer-reviewed publications across multiple disciplines, ensuring high-quality and relevant data. This way, we obtained a dataset of 143 articles, including their title, authorship, keywords, and abstracts. After the preliminary check, 121 articles remained in the database. We preprocessed the dataset, selecting the titles of the papers as the IDs, the abstracts as the document vectors to be analysed and the publishing years as the time factor. We operated using sequences of up to three contiguous words, diagrams and trigrams. While it is possible to only work with individual words, the specifics of social science databases are that many terms include multiple words, *e.g.* ‘crowdfunding campaign’ or ‘successfully funded.’ In the next step, we prepared the document term matrix (DTM). We disregarded stemming and assumed a standard sparsity of 0.995 (De la Hoz-M *et al.*, 2021). Figure 1 shows the initial graphical output of the DTM (the bar plot of the most frequent terms).

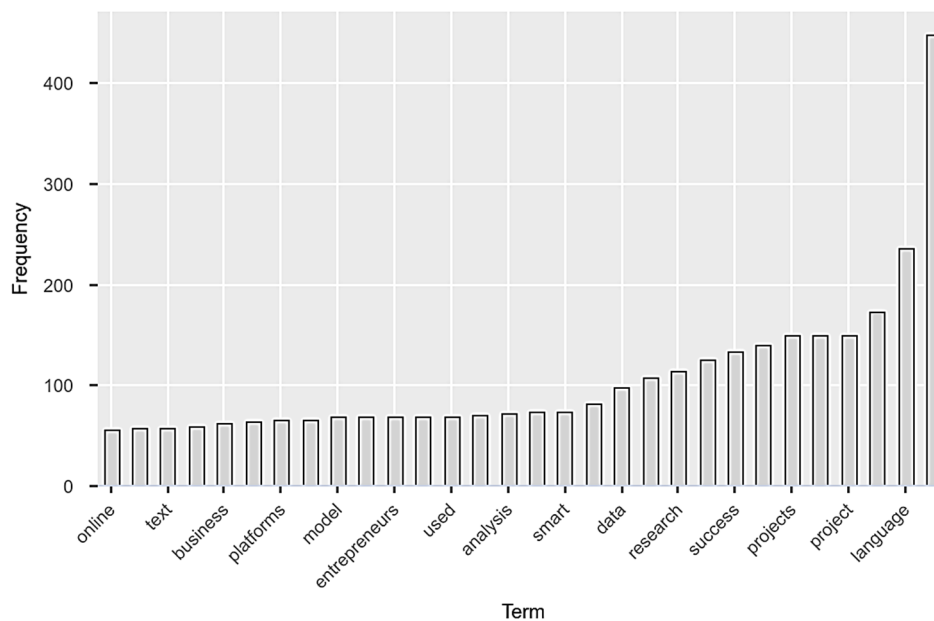


Figure 1. The frequency of prevalent terms in the document term matrix

Source: own elaboration.

Notably, LDA utilises the relationships between words and hidden semantic subjects in a set of documents. Hence, as the accuracy of the generated results relies heavily on the inference process of the model, the parameter k (representing the number of topics) of the algorithm is of utmost importance and should be predetermined. Theoretically, a high quantity of topics would result in too narrow subjects, whereas a low quantity would encompass vast and diverse themes (Sbalchiero & Eder, 2020).

We used four criteria to identify the optimal number of topics: coherence (Figure 2), 4-metrics (Figure 3), perplexity (Figure 4), and harmonic mean (Figure 5). For Gibbs sampling, we assume 1000 interactions with a burn-in of 100 to avoid the pollution of the wrong distribution. We assumed the hyperparameter α to be 1. We analyse from 2 to 30 potential topics with a step of 2, additionally reviewing 35, 40, 45, and 50 potential topics.

To determine the optimal number of topics for the LDA model, we tested a range of values for k using four standard metrics: coherence, 4-metrics, perplexity and harmonic mean. As shown in Figures 215, the coherence and perplexity measures indicated that a 7-topic solution offers a good trade-off between granularity and interpretability. While the Griffiths criterion suggests a higher number of topics, we prioritised thematic clarity as lying in line with our research goal. To identify the dominant research streams, we went for a lower number of suggested topics, in line with previous research applying LDA in similar research avenues (De la Hoz-M *et al.*, 2021).

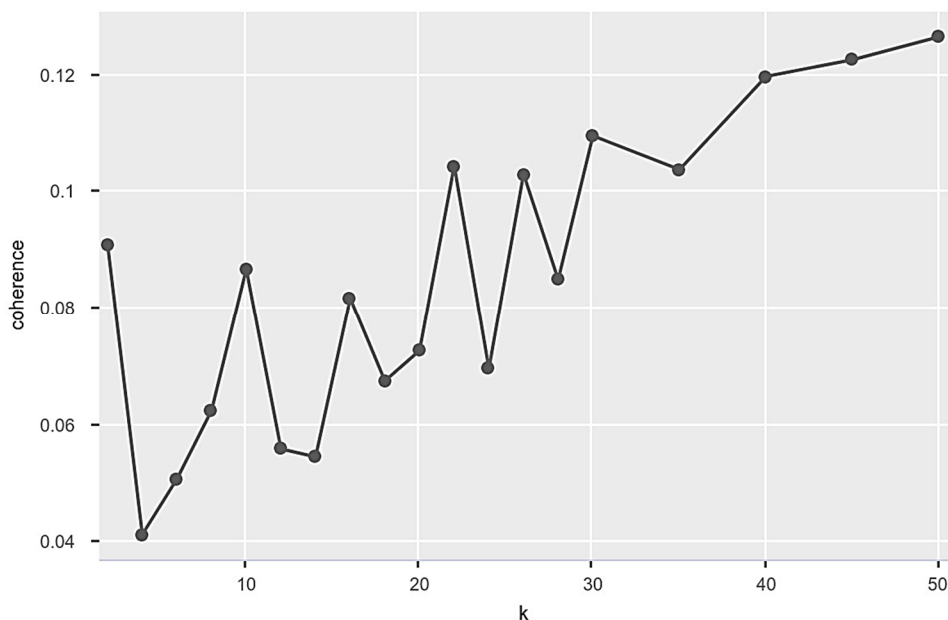


Figure 2. The criteria for inference of subject number: Coherence
Source: own elaboration.

Figure 2 shows that coherence has the strongest marginal up to the level of 7 topics after the initial drop, upon which the growth flattens afterwards.

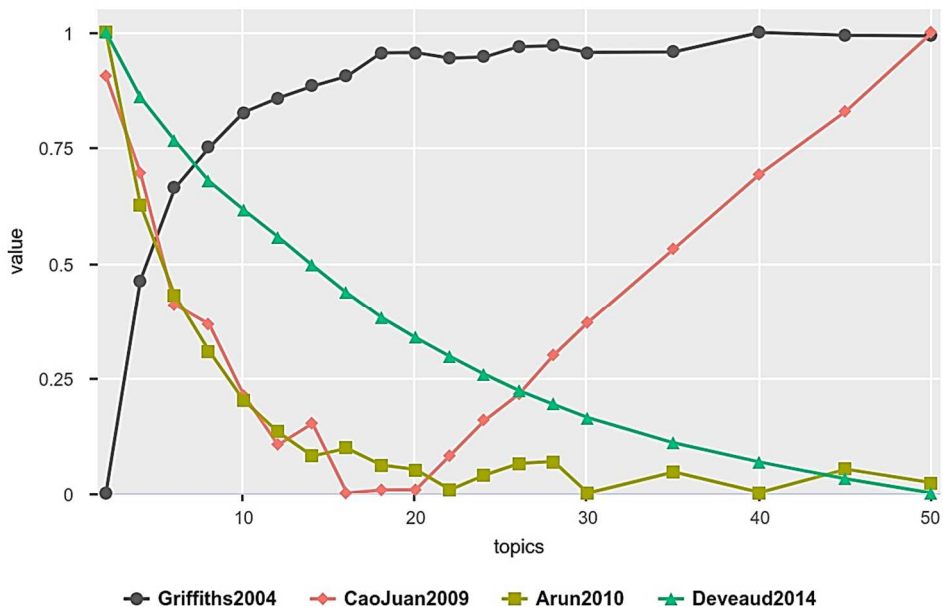


Figure 3. The criteria for inference of subject number: 4 metrics
Source: own elaboration.

Figure 3 illustrates convergence in 4-metrics, with diminishing returns beyond 7-10 topics.

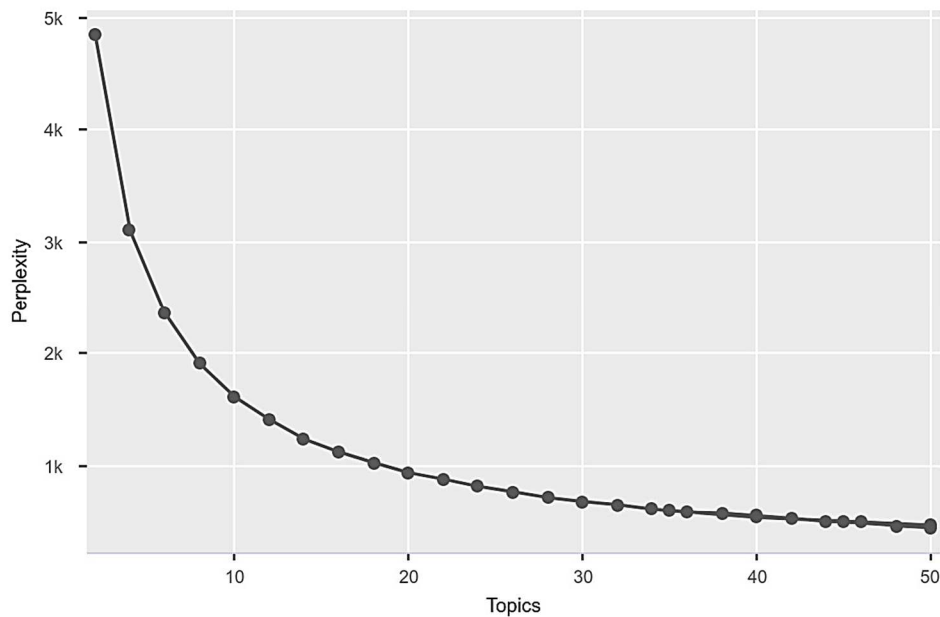


Figure 4. The criteria for inference of subject number: Perplexity

Source: own elaboration.

Figure 4 presents a decline in perplexity up to 7, after which the rate of improvement slows.

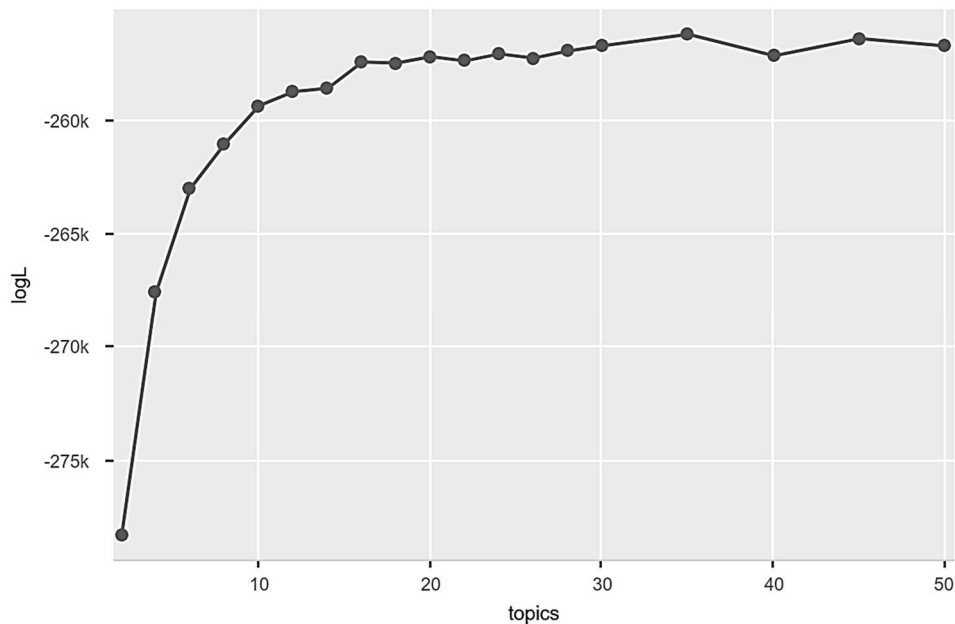


Figure 5. The criteria for inference of the subject number: Harmonic mean

Source: own elaboration.

Figure 5 indicates a plateau in the harmonic mean, confirming model stability near $k = 7$ to $k = 10$.

The suggested number of topics ranged from 7, suggested by the perplexity and coherence criteria, to over 35, suggested by the Griffiths criterion. Given the fact that the research aimed to identify the main bodies of contemporary research, we selected the lower end as the basis for the construction of the LDA model. For the third step, thus, the k parameter was set at seven.

As a consequence of the previous steps, we set 1000 iterations and a burn-in of 100. In line with Griffiths *et al.* (2007), we set the alpha parameter at $50/k$ for the value of 7.14. The estimated LDA

model allowed us to identify eight topics with acceptable coherence and a prevalence of between 11.155 and 14.528 (Table 1). There were 316992 entries for the phi catalogue. The primary results of the topic modelling method were a set of phrases together with their corresponding frequencies that define a subject, as well as the composition of each analysed text expressed as a percentage. The allocation of subject words lacked a meaningful interpretation on its own. Nevertheless, in the majority of situations, the themes may be accurately categorised based on the frequency of words used. The R package utilises a topic labelling method that employs a simple n-gram based topic algorithm from the textmineR Package (Jones *et al.*, 2022). Nevertheless, these algorithms possess restricted capability, so as part of the postprocessing, we proceed to reidentify the names of the topics, which leads to the final list in the table (label_expert).

Table 1. Regression models for the temporal development of the topics

topic	estimate	statistic	p.value
t_1	0.01	2.71	0.02
t_2	-0.02	-4.02	0.00
t_3	0.00	1.58	0.15
t_4	0.01	4.48	0.00
t_5	-0.01	-1.45	0.18
t_6	0.01	3.37	0.01
t_7	0.00	-0.45	0.66

Source: own study.

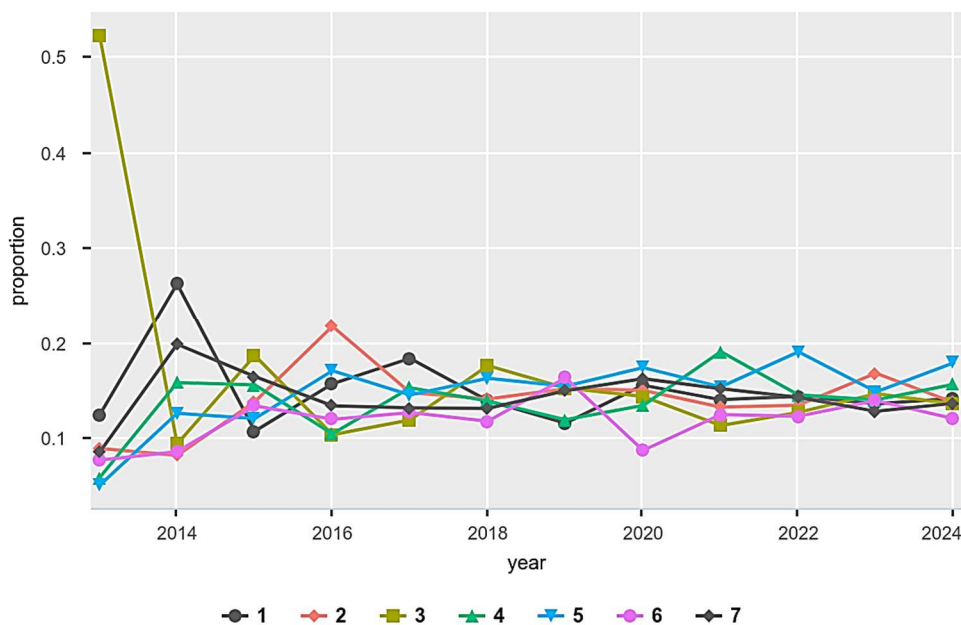


Figure 6. The development of the share of particular topics over time

Source: own elaboration.

The heat map specifically indicates a very diversified structure of the popularity of particular topics. Apart from the fifth topic, which had a significant rise at the beginning of the period of analysis, only to drop significantly later, most topics tended to come and go with their popularity increasing for shorter periods, a year or two. Given the relatively small number of researchers in the field, we may attribute such changes to events like conferences or seminars, inflating the interest in a specific topic.

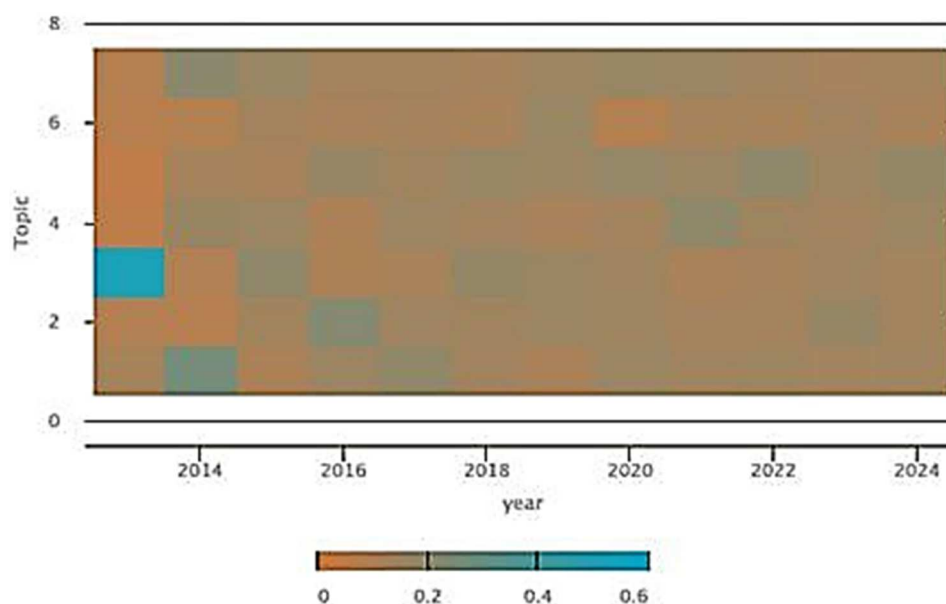


Figure 7. The development of the share of particular topics over time

Source: own elaboration.

RESULTS AND DISCUSSION

Through the application of LDA topic modelling, we identified seven key research themes in crowdfunding language studies. These topics represent dimensions of linguistic strategies, ranging from sentiment and persuasion techniques to branding, gender communication, and ethical considerations. Over time, some topics have gained prominence, reflecting shifting research priorities and methodological advancements in text analysis. The following sections discuss each topic in detail, outlining its significance, key findings, and implications for crowdfunding communication.

Topic 1: Language in Crowdfunding Success

The first topic explores how various elements related to linguistics influence the project's success. The research within the topic suggests that geographic distance amplifies the importance of high-quality linguistic signals, with distant backers relying more on positive psychological language to reduce the information gap (Johan & Zhang, 2020; Tajvarpour & Pujari, 2022). Surprisingly, the use of communal language in updates can negatively impact funding by making potential backers feel their contributions are less needed (Herd *et al.*, 2022). Furthermore, language suggesting personality traits and optimism can significantly enhance donor support, especially during crises like the COVID-19 pandemic (Allison *et al.*, 2024; Zhang *et al.*, 2023). In general, linguistic styles, such as personality-based, logic-based, and emotion-based, play a crucial role in shaping donor behaviour, with specific types of language positively or negatively affecting donation outcomes (W. Li *et al.*, 2023).

Topic 2: Entrepreneurial Narrative in Crowdfunding

This topic focuses on how crowdfunders react to the linguistic style of text and how they tend to act strategically to the content at hand. Studies classified within this topic have shown that not only the message, but how it is conveyed is crucial to crowdfunding success; it is not only about emotional contagion, but about signals of entrepreneurial performance. Using intimate and perceptual language positively impacts the financial performance of the campaign (Chen *et al.*, 2023, 2024). Investors respond well to indications of high quality and low risk (Berns *et al.*, 2020). However, if risk in the high-risk projects is disclosed in a balanced tone, it impacts the project positively (Kim *et al.*, 2022). Incremental innovativeness language increases the success chances, as it is associated with the entrepreneurial passion, whereas radical innovativeness language negatively affects the funding outcome (Lu

et al., 2023). An interesting study by Zhang *et al.* (2023) highlights that there is a 70% user attrition rate in crowdfunding and that profit language used in the narrative of the lender's last loan is negatively associated with the retention of lenders, and therefore financial success of the project.

Topic 3: Emotional Language in Social and Medical Crowdfunding

The third topic focuses on the effectiveness of emotional and cognitive appeals in crowdfunding narratives in socially oriented and medical projects. These studies have shown that the solidity of messages appeals affects moral emotions such as pride and guilt, which in turn impact donation intentions, in particular, in medical crowdfunding (Naimi *et al.*, 2020; Zhang *et al.*, 2024). Furthermore, social distance and disease severity modulate these effects, indicating the nuanced role of message concreteness in stimulating donations (Zhang *et al.*, 2024). However, scholars have found that in prosocial crowdfunding, cognitive appeals attract more backers (and funds) than emotional ones. Specifically, the use of affective language and negative emotions can discourage potential backers, whereas cognitive, fact-based narratives are more effective in fundraising (C. H. Lee *et al.*, 2019; Naimi *et al.*, 2020). This is consistent with findings which suggest that while positive affective language can enhance funding outcomes, extensive use of social language does not necessarily increase the likelihood of project success (C. H. Lee *et al.*, 2019).

Topic 4: Gender in Crowdfunding

Another important area of study focuses on the relationship between gender, language, and crowdfunding success. Studies confirm that one may identify fundraisers' gender based on their writing style, which might significantly impact the project's success (Wan Mohamad Nazarie & Williams, 2021). McSweeney *et al.* (2022) identified four types of assertive language (certain, power, social, tentative) and investigated how they interact with the gender of the fundraiser. They argue that it is more about whether the fundraiser fits into the type of project archetype, as some project categories are attributed mostly to females, others to males. Wang *et al.* (2023) contribute to the discussion by noting that it is about the display of masculinity in online communication, not the gender per se. Wan Mohamad Nazarie and Williams (2021) partly support this notion, arguing that it is not so much about the gender of the author as about the style.

Topic 5: Branding and Linguistic Strategies

This topic explores how brand prominence and linguistic strategies influence the success of crowdfunding campaigns across different contexts. Studies indicate that visible display of brand names in project titles and descriptions significantly enhances funding success, particularly when combined with engaging language styles and well-structured narratives (Moradi & Badrinarayanan, 2021; Zihagh *et al.*, 2024). The positive influence of brand prominence is further amplified when textual and visual brand elements are effectively integrated, making campaigns more compelling to potential backers (Zihagh *et al.*, 2024). Moreover, the effectiveness of rhetorical signals such as emotional and cognitive tones and communal language styles in crowdfunding narratives changes over time. Emotional and cognitive tones are more impactful in the early stages of a campaign, while communal language styles become more effective in later phases (Moradi *et al.*, 2024).

Topic 7: Ethical Considerations & Crowdfunding

Crowdfunding research in Topic 7 focuses on the complicated language of campaigns, with special emphasis on ethical considerations (Lee *et al.*, 2022; Q. Li & Qu, 2022; Pekar *et al.*, 2024). Pioneering methodologies, such as fraud detection innovations, underscore the commitment to ensuring trust and transparency in crowdfunding campaigns. Articles on the topic show how advanced natural language processing techniques (Chaichi & Anderson, 2019; Pekar *et al.*, 2024), when combined with ethical frameworks, create a more accountable crowdfunding environment. Moreover, researchers not only interpret linguistic patterns but also demonstrate tangible advancements toward ensuring integrity and ethical adherence in crowdfunding initiatives.

Our findings confirm that the publishing trends reveal fluctuating interest in the identified research topics, with some gaining prominence over time while others decline. Notably, topics 4 (gender in crowdfunding), 5 (branding and linguistic strategies), and 6 (values and crowdfunding) began as niche areas, comprising less than 10% of research, but have grown significantly, now accounting for over 50% of all publications in 2023 and 2024. This suggests a rising interest in interdisciplinary and qualitative approaches. Conversely, topic 7 (ethical considerations and crowdfunding), after an early surge, has steadily declined. This pattern may reflect the episodic nature of ethical concerns, which often spike during global crises (*e.g.*, the COVID-19 pandemic) but fade as the urgency subsides, highlighting the event-driven nature of ethics in crowdfunding. Topic 1 (language and crowdfunding success) has shown consistent activity but has declined since 2018. While campaign success remains central, there is a shift toward more nuanced analysis beyond basic quantitative measures (*e.g.*, word count, adjectives). Repeated use of the same variables has reached its limit, prompting a move toward richer, qualitative analysis focusing on framing, emotion, and meaning. Simultaneously, advances in text processing technologies now enable deeper, more objective insights into language content, without needing to manually interpret each campaign's intent. Finally, topic 3 (general language style and complexity), which dominated early research, has declined in relative share. This shift may indicate a saturation point for broad analyses, as the field now favours more specialised, focused studies.

In light of our original research question on how the academic study of language in crowdfunding has evolved, we find a clear progression from foundational studies on general language features (*e.g.*, sentiment, linguistic style) to more specialised themes, including gender dynamics, branding strategies, and values-based communication. The prevalence and evolution of these topics (Topics 1-7) over time indicate a shift from instrumentalist views of language toward more nuanced, interdisciplinary frameworks. Thus, our model helps identify dominant themes but also reveals how scholarly attention has realigned in response to methodological advances and broader societal shifts, such as heightened awareness of diversity and ethics. For both researchers and practitioners, these findings underline the evolving nature of crowdfunding communication and provide a foundation for discussing the broader theoretical and practical implications of our results.

CONCLUSIONS

This article analyses the dynamically growing body of literature on the aspects of language in crowdfunding campaigns to identify the key research topics and find the most current avenues of further research. Based on the analysis of the LDA model, we have identified seven topics dominating in the subfield of crowdfunding research, including language aspects. We had several topic modelling approaches available and considered them. These included non-negative matrix factorisation (NMF), BERTopic, or dynamic topic modelling (DTM). We selected latent Dirichlet allocation (LDA) due to three key factors. First, LDA remains one of the most widely used and validated probabilistic models for unsupervised topic extraction, particularly for medium-sized corpora like ours. Second, our dataset consists of short texts (abstracts), for which LDA's performance is well-documented (Jelodar *et al.*, 2019). Third, unlike BERTopic or DTM, which require larger corpora or more complex temporal structures, LDA offered a transparent and interpretable model well suited to our aim of mapping major themes in an emerging research area. Nonetheless, we acknowledge that future work could benefit from applying complementary methods for finer-grained or temporally dynamic insights.

Our findings highlight a shift in academic focus from general linguistic complexity towards more nuanced and interdisciplinary analyses of persuasion strategies, gendered communication, branding, and ethical considerations in crowdfunding.

In terms of theoretical implications, our study contributes to the understanding of the importance of language used in crowdfunding dynamics. Studying the interplay between language and campaign success has enabled us to offer a nuanced perspective that enriches existing scientific knowledge. Our identification of key topics related to language in crowdfunding increases the comprehensiveness of scholarly insights, advancing understanding of how language fundraisers utilise language to engage potential backers. Moreover, our research underscores the importance of interdisciplinary approaches

in studying crowdfunding language. Integration of insights from diverse fields such as linguistics, psychology, and marketing will enable a more holistic understanding of the language-crowdfunding relationship. Our findings align with and contribute to the understanding of the ELM, reinforcing the idea that backers process crowdfunding messages through both rational (central route) and emotional (peripheral route) mechanisms. The fact that focus is on values-driven and emotional language suggests that peripheral cues play a dominant role in crowdfunding persuasion.

Furthermore, the fact that we observe growth of branding and linguistic strategies (Topic 5) suggests that fundraisers position themselves as trustworthy actors by employing consistent brand messaging. This is in line with the signalling theory, suggesting that crowdfunding campaigns rely on the credibility and trustworthiness of fundraisers. Finally, the observed rise of gender-related linguistic studies (Topic 4) highlights a broader interdisciplinary interest in diversity, inclusivity, and identity-based financing models, which, in general, contributes to gender literature and studies.

Our findings have practical relevance, especially for fundraisers and crowdfunding platforms. Fundraisers should optimise their language strategies to better connect with potential backers and improve campaign outcomes. Platforms can enhance their services by offering tools and guidance that support effective messaging, helping fundraisers craft compelling narratives and enriching the overall crowdfunding experience.

Despite these contributions, our study has certain limitations. Firstly, these are limitations resulting from LDA method of analysis. Similarly to other research employing LDA our study requires a fixed number of topics k , is limited to Dirichlet distributions in capturing correlations, does not fully capture the evolution of all topics over time, only these identified in the study, and is based on the oversimplified bag-of-words assumption, *e.g.* (Deremetz, 2023). In other words, LDA assumes Dirichlet-distributed priors (limiting topic correlations), produces a static snapshot (no dynamic topic evolution), and relies on an oversimplified bag-of-words assumption (Deremetz, 2023). Future studies could address these issues by employing dynamic topic models or other advanced techniques (*e.g.*, BERTopic) that capture topic correlations and temporal dynamics.

Secondly, we based our inference on a sample drawn from a single database (Scopus) using a specific set of search terms. While it is a commonly used point of reference and constitutes the mainstream of research published, it does not incorporate many publications, such as preprints or other types of early research, which could also be worth analysing, especially for such a contemporary field of analysis. None of these shortcomings is significant enough to warrant disregarding the results. While this approach ensured quality and focus, it may have omitted relevant studies (for example, preprints or non-Scopus publications). Future research should broaden the scope by using multiple databases and including grey literature to capture a more comprehensive and internationally diverse set of works on crowdfunding language. Future approaches could include corpora consisting of multiple queries over databases other than just Scopus. One could also identify the topics in other ways, *e.g.*, using techniques other than LDA or choosing an LDA-based approach with higher k parameters. While the approach based on coherence that we applied here is valid, higher k parameters could lead to more miniscule classification of the topics, which could be of value, especially when the body of literature on this subject continues to grow at such a rate. Moreover, future work could explore alternative or complementary topic modelling techniques, such as BERTopic or dynamic topic modelling, which may capture context or temporal shifts more effectively than LDA. All in all, our application of LDA offers a novel, data-driven perspective on how language is studied in crowdfunding, and the insights from this review are relevant to crowdfunding research and practice worldwide.

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The contribution share of authors is equal and amounted to:

AF (30%) – conceptualisation, literature writing, results and discussion, MS (30%) – conceptualisation, methodology, calculations, findings, JA (20%) – literature writing, results and discussion, PG (10%) – literature writing, UM (10%) – literature writing, results and discussion.

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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