Do Big Words Make a Big Difference? Effect of Linguistic Complexity in Equity Crowdfunding

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Abstract

In this study we examine the link between linguistic complexity of campaign pitches and venture funding on digital crowdfunding platforms. Using text mining to determine the linguistic complexity of 1,151 venture pitches obtained from a leading equity crowdfunding platform we show that pitches with more (vs. less) complex language tend to have poor funding outcomes. Building on the processing fluency theory we contend that linguistically complex pitches create perceptions of low venture credibility which reduces investor confidence and consequently the amount invested. However, ventures with more present framing seem to mitigate the negative effects of linguistic complexity. This study contributes to the research on crowdfunding and digital marketing by providing actionable insights for entrepreneurs seeking funding on crowdfunding platforms.

Keywords: Linguistic complexity, Present focus, Crowdfunding, Digital communication

Track: Digital Marketing & Social Media

1. Introduction

As digital crowdfunding platforms and marketplaces continue to grow, an increasing number of early stage entrepreneurial ventures are turning to digital crowdfunding to raise equity. In 2018, 41,500 campaigns were launched on equity crowdfunding platforms globally, and this number is expected to grow to 64,500 by 2023.[1] The primary means of marketing funding campaigns to investors on digital crowdfunding platforms are campaign pitches. Entrepreneurs use pitches to not only articulate business plans but to create positive perceptions and build venture credibility among the diverse investors including both experts and novices (Wang et al., 2019). Given the high level of uncertainty regarding the viability of early stage ventures, investors often seek information cues in campaign pitches to inform their funding decisions (Manning & Bejarano, 2017).

A crowdfunding campaign pitch typically includes multiple sections that cover different aspects of the venture (e.g., introduction, business plan, marketing and competition strategy, etc.). Correspondingly, we observe a variety of pitches across campaigns. For example, pitches differ greatly in length, with some entrepreneurs giving short product descriptions while others delve into the background details. More importantly, there is great variability in the choice of language; with some entrepreneurs using informal language to engage with investors (e.g., "our journey started from a shed in East London", "…how was your experience? Was it fun?") while others emphasize professionalism and technicality ("we target a market that's worth…" "…our vision is to bring about the benefits of digitisation of contemporary banking market….").

We contend that the variability in pitch linguistics can provide non-financial cues about venture credibility and can in turn impact investor funding decisions. Indeed, recent research has shed light on the role of language such as narrative style, emotions, rhetoric, and self-mentions in garnering funding through digital crowdfunding platform (e.g., Allison et al., 2015; Clarke and Cornelissen, 2011; Gafni et al., 2019). One question that remains unanswered is whether linguistic complexity has any bearing on venture credibility and investment decisions? We specifically focus on linguistic complexity because it is linked to perceptions of innovation complexity (Wood & Moreau, 2006). For most crowdfunded

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[1] https://www.statista.com/outlook/377/100/crowdinvesting/worldwide#market-users

business ventures, explaining innovative ideas may require technological details warranting the use of complex language, while others may use complex language to signal expertise and build credibility (Tolochko & Boomgaarden, 2018; Thiebach et al., 2015). However, we argue that linguistic complexity can negatively impact the perceptions of venture credibility and investment decisions. Processing fluency theory (McNeel, 2017; Reber & Unkelbach, 2010) suggests the cognitive effort involved in processing complex words in pitches can create ambiguity, which in turn leads to reduced trust and negative perceptions of the venture, resulting in poor crowdfunding outcomes. We further predict that pitches with more present focused framing can mitigate some of the uncertainty introduced by complex language.

We use a multi-method approach comprising of a controlled lab experiment and field data from a leading equity crowdfunding platform to test our predictions.

2. Hypothesis Development

Linguistic complexity goes hand in hand with linguistic disfluency (Alter & Oppeneimer, 2009), which is caused by the use of complex or longer words instead of simpler and semantically identical words (e.g., "utilize" instead of "use", see Oppenheimer, 2006). Compared with shorter (simpler) words, lengthier (more complex) words are harder to memorize, recall, and retrieve because people tend to encounter fewer of them in reading experience (Song & Schwarz, 2009). Consequently, these words take more cognitive effort and working memory to process, leading to less favourable evaluations (Cowan et al., 1992). Such disfluency also impairs source credibility, as hard-to-retrieve propositions are not as semantically or conceptually priming and hence are perceived as less truthful (Kelley & Lindsay, 1993; Reber and Unkelbach, 2010). Further disfluency can create uncertainty as it weakens people's confidence in judgements (Simmons & Nelson, 2006).

Given that trust is an antecedent for investment, language that builds trust and signals credibility is more likely to encourage investment (Gafni et al., 2019). Any information cue that increases perceptions of uncertainty is likely to have a negative impact on investment behavior. Thus, a linguistically disfluent pitch can hinder comprehension, casting doubts on investors' judgement towards venture credibility. Since, linguistic complexity leads to processing disfluency, which in turn increases uncertainty and reduces credibility, we contend that pitches with more complex language are perceived less credible and register poor funding performance compared to pitches with less complex language.

H1. *Compared to pitches with high linguistic complexity, pitches with low linguistic complexity are perceived as being more credible*

H2*. Compared to pitches with high linguistic complexity, pitches with low linguistic complexity receive higher funding (a) this effect is mediated by venture credibility*

Prior research shows that the use of concrete language provides specificity to address investors' information needs, hence reducing uncertainty (Afifi and Weiner, 2004). Since processing concrete language requires lower cognitive effort (Morgan and Reichert, 1999), it is found especially effective in communication between firms and investors when salience of risk is high (Toma and D'Angelo, 2015). Using the present tense increases temporal proximity between the venture and investors, and, according to construal level theory, elicits more concrete and contextual mental representations of investors (Förster et al., 2004).

A pitch with more present-related words is deemed more concrete and less uncertain, positively affecting perceived venture credibility. As argued previously complex language increases investors cognitive load and creates ambiguity, whereas present-focused language eases cognitive load, inhibiting some of the negative perceptions from complex language. We anticipate that present focused framing moderates the effect of complex language.

H3*. For crowdfunding campaigns with a present focussed language, more (vs. less) complex pitches have a less negative effect on funding outcomes.*

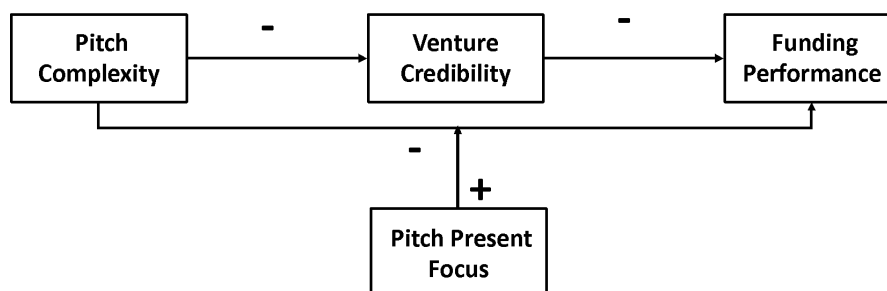Figure 1 outlines our conceptual framework.

Figure 1. Conceptual Framework

3. Study 1

In this study, we examined whether pitches with higher (vs. lower) level of linguistic complexity are perceived as being less credible.

Stimuli. For the purpose of this study we created fictitious campaign pitches for an electric steam iron (a consumer product category which is widely popular on crowdfunding sites). We created two versions of pitch with high and low levels of complexity, (Complexity$_{High}$=49.13, Complexity$_{Low}$=38.58) by manipulating the proportion of words that are longer than 6 characters ("sixr" in LIWC).

Results. One hundred and twenty-two participants recruited on Amazon Mechanical Turk (MTurk) participated in this study. We randomly assigned them to one of the two versions of pitch (high vs. low complexity). After participants read their assigned pitch, they rated their trust and perceptions of credibility of the venture on seven-point scales (1=very low, and 7=very high). In line with H1 we find that (see Figure 2) participants rated low-complexity version of pitch as more trustworthy (Trust$_{High\_C}$=2.754, Trust$_{Low\_C}$=3.557; t=2.965, p=0.004) and, more credible (Credibility$_{High\_C}$=2.623. Credibility$_{Low\_C}$=3.148; t=1.93, p=0.056). Study 1 supports H1, whereby less complex pitches are deemed more credible and trustworthy.
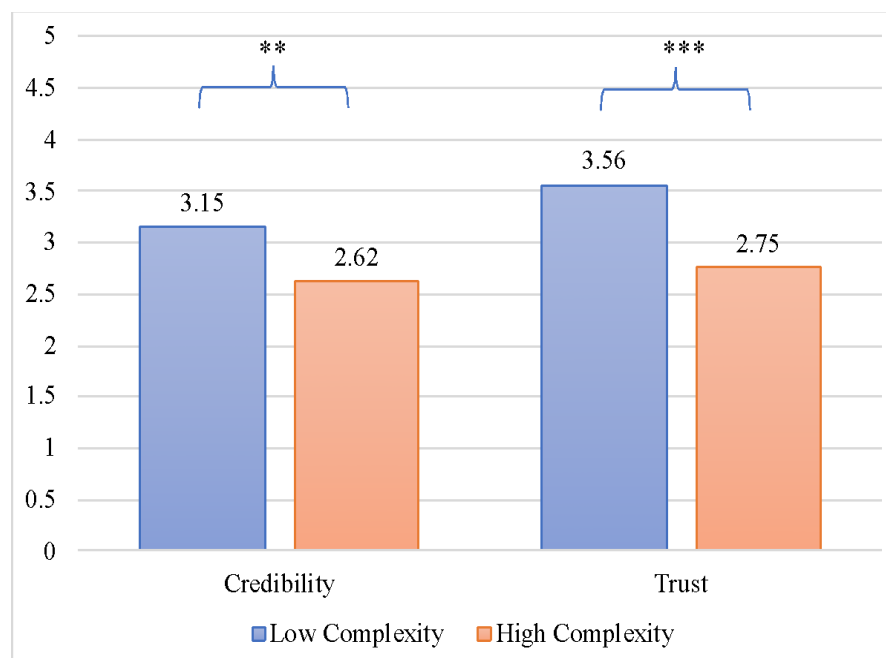

Figure 2. Results of Study 1

4. Study 2

Using data on actual equity crowdfunded campaigns, the purpose of this study is to show that pitch complexity is negatively related to funding performance and that present focused framing can mitigate the negative impact of pitch complexity.

Sample and data. We collected data for 1,151 campaigns from a leading equity crowdfunding platform during the period July 2012 and September 2017. The data included basic campaign attributes such as funding goal (total amount of money intended to raise), equity offered (ownership offered to crowdfunding investors), venture valuation, and founding team profiles. Further, campaigns were categorized into 13 industry sectors with a considerable variation in funding goal ranging from £687 GBP to £3.81m (mean of £230,712.30 and standard deviation of £380,894.60). In addition, we collected the introduction section of campaign pitches. Pitch introductions differ greatly in length, ranging from two to 895 words (mean of 135.67, standard deviation of 56.44). The richness of pitch texts allows us to examine the effect of linguistic complexity on funding performance.

Dependent measure. our dependent variable is the natural logarithm of amount raised by the crowdfunding campaign. We took logarithm to help reduce skewness (skewness of 10.98).

Independent measure. our independent variable is the proportion of words that are longer than six letters in the pitch introduction. In line with previous studies, we categorize words with more than six letters as complex words as they require more time and cognitive effort for people to process and comprehend (Tausczik & Pennebaker, 2010; Pennebaker et al., 2015).

Moderating measure. To operationalize pitch present focus, we used LIWC to obtain the proportion of words in each pitch that reflect a general present time orientation and present tense of verb usage (e.g., "today", "now").

Control measures. We controlled for campaign- and pitch-related attributes that can impact fundraising performance. Specifically, we controlled for campaign funding goal *(Funding Goal)*, share of equity offered to crowdfunding investors *(Equity Offered)*, total number of investors (*Number of Investors*) and amount raised before the public launch of the crowdfunding campaign (*Amount Raised Pre-Crowdfunding*).

We also controlled for pitch linguistics, for instance, using LIWC we controlled for proportion of words in pitch introduction that reflect entrepreneur's *Clout* (i.e., high social status and power, such as "order", "strength"). Previous research indicates that one's social status and power can lead to differing levels of message persuasiveness due to source credibility (Connelly et al., 2011). Further, Pitch *Emotion* (proportion of positive net of negative emotion words) is controlled as emotion positivity is an important factor that exerts impact on crowdfunding campaigns (Anglin et al., 2018). We also controlled for *Pitch Innovativeness* by calculating the proportion of words that are synonymous with "original", "new" and "innovative" to represent venture innovativeness defined in previous literature (Mukherjee et al., 2017). Finally, we also control for *Pitch Length*.

At any given time, there are several campaigns raising funds on crowdfunding platforms, competing for investors' attention. To identify if a campaign stood out due to its uniqueness, we measured pitch *Uniqueness* based on previous literature (Xu et al., 2018). For each pitch we extract a vector of all LIWC dimensions and evaluate average cosine similarity between the focal pitch with every other pitch fundraising at the same time. Industry and year level dummies are included to control for sectoral and time level time-invariant effects. Finally, we use venture fixed effects to control for unobserved heterogeneity across ventures.

Results. We estimated fixed effect log-normal model of campaign funding performance on pitch complexity and control variables (Table 1). In support of H2, pitch complexity was significantly and negatively associated with funding performance despite controlling for pitch linguistic characteristics and campaign level financial and non-financial variables (see Model 1). We also found support for H3 since results show a positive interaction effect between pitch complexity and present focus (see Model 2), indicating that a more present focused pitch framing can mitigate the negative impact of pitch complexity.

Study 2 uses field data to show that pitch complexity is negatively associated with venture funding performance, yet a more present focused framing can mitigate the negative impact.

5. Conclusion

Building on processing fluency and construal level theories, we show the negative impact of pitch linguistic complexity on funding performance and that framing pitch in a present focused manner can mitigate such negative impact. By combining insights from the

marketing, psychology, crowdfunding, and entrepreneurship literature to shed light on the impact of linguistic complexity on equity crowdfunding platforms, our work addresses the call for multidisciplinary crowdfunding research (McKenny et al., 2017). Further, our study provides actionable insights for entrepreneurs and early stage ventures. Based on our findings entrepreneurs can strategically mix complex language with more present framing to better engage with early stage investors and potential consumers.

In fact, in a post hoc study of 456 successfully funded campaigns from our data set we find that ventures that used simpler language reported higher annual revenues compared to ventures that used complex language. While the results of this study are not causal, they do suggest that ventures that use language effectively in communication tend to enjoy greater long-term success.

VARIABLES	Model 1		Model 2	
Complexity	-0.795**	(0.393)	-3.062**	(1.472)
Present Focus	0.040	(0.209)	-4.513*	(2.418)
Complexity X Present Focus			1.274*	(0.734)
Pitch Length	0.332**	(0.161)	0.628***	(0.239)
Analytical Thinking	-0.734	(0.681)	0.351	(0.936)
Authenticity	0.034	(0.136)	0.109	(0.141)
Emotion Tone	-0.537***	(0.182)	-0.261	(0.223)
Clout	0.271	(0.448)	0.734	(0.610)
Innovativeness	0.082	(0.107)	0.0142	(0.159)
Uniqueness	0.189	(0.518)	0.346	(0.739)
Funding Goal	-0.656***	(0.098)	-0.873***	(0.139)
Equity Offered	0.216	(0.158)	0.331	(0.254)
Number of Investors	1.027***	(0.093)	1.005***	(0.077)
Amount Raised Pre-		(0.021)		(0.031)
Crowdfunding	0.095***		0.070**	
Constant	9.801***	(2.904)	4.878	(4.559)
Observations	1,151		1,151	
R-squared	0.693		0.770	

*Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1*

Table 1. Model Results of Study 2

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