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Idea Response and Adoption in Open Innovation Communities: The Signaling Role of Linguistic Style

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Abstract: Organizations are increasingly using open innovation communities to gain external ideas and foster user innovation. However, mass user generated content is making idea selection a tricky and time-consuming work. From the perspective of linguistic styles, this article explores the effect of writing style cues in the content of ideas (i.e., negative emotionality, self-interest oriented, cognitive oriented, future oriented) on idea response and adoption. 1,579 ideas collected from the Fantasy Westward Journey Online II forum are used to extract writing style cues. The hypothesis tests, via logistic regression models, demonstrate that the linguistic styles of ideas can indeed function as a signaling role and deliver novel insights into the relationship between these linguistic cues and the likelihood of idea responses and adoption. Specifically, a community member's use of self-interest oriented, cognitive oriented and future oriented writing styles has a positive effect on idea response; negative emotionality and cognitive oriented writing styles signal more possibility of idea adoption. This study offers theoretical implications by extending the innovation management research stream to the big data era and also provides managerial implications that can lead to more effective exploitation of open innovation communities.

Keywords: open innovation community, user innovation, linguistic style, idea response, idea adoption

1. INTRODUCTION

Organizations are increasingly using open innovation communities (OICs) to gain external ideas and foster user innovation. However, OICs are data-rich, cloud-based environments that can quickly overwhelm community managers and most ideas submitted by members are of low quality. Therefore, the issue of finding promising innovation ideas has attracted enormous attention from scholars. Prior studies mainly focus on behavioral data, and the exploitation of textual data is largely lagged behind. In fact, natural language processing techniques such as writing style analysis can be utilized to understand and analyze the postings ideas. A focus on language styles (“how it is said”) is preferable to a focus on language content (“what is said”) because detection models need to function across all innovation challenges and only language styles are independent of the context ^[1]. Members' communication style alignment symbolically reflects their community identification ^[2]. In view of this, our research focuses on solving the following issues: (1) can the writing styles of ideas affect OIC community managers' response behavior? (2) can the writing styles of ideas affect community managers' adoption behavior? (3) Is there any difference in the factors affecting idea response and adoption?

2. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

Four representative indexes (i.e. negative emotionality, self-interest oriented, cognitive oriented and future oriented writing styles) were selected to conduct data analysis. Emotional words are pretty common if a member wants to emphasize his/her passion and conviction regarding the idea. The pronouns such as “I”, “you”, “we”, and “they” are essential expression when writing a post. Positive emotional and self-interest writing styles could be used to detect inferior member participation (IMP) ^[3]. As cognitive oriented writing style reflects how well elaborated contributions are, the number of cognitive words has been used to measure members' participation

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quality. Compared with the current situation, participants will inevitably use more future words when formulating novel ideas. Taken together, we can conclude that negative emotionality, self-interest oriented, cognitive oriented and future oriented linguistic styles are classical expression in members' posts. Our hypotheses focus on the effects of these four writing style cues on idea response and adoption.

3. RESEARCH METHODOLOGY

We obtained data from the OIC of Fantasy Westward Journey Online II (www.xyq.netease.com), which is one of the most famous massively multiplayer online role-playing game (MMORPG) in China. Our data collection included all information available on this OIC between October 2018 and November 2019. After data cleaning, 1,579 ideas posted by 1,181 community members were selected. Logistic regression is used to test our hypotheses with binary dependent variables. Since different ideas may originate from the same contributor, we adopt robust standard errors clustered within each contributor to account for possible heteroskedasticity and autocorrelation of errors within contributors in our analysis.

4. RESULTS

Through descriptive statistics and correlation matrix, we get a rough understanding of these data. None of the variables suffer from major multicollinearity issues as the maximum of the VIFs equals 1.22. The final regression results demonstrate that the linguistic style expressed in idea content does play the signaling role and can be the guidance for organizations to filter ideas. In particular, (1) utilizing self-interest oriented, cognitive oriented and future oriented writing styles when posting ideas has a positive and significant impact on manager's response behavior, while the negative emotionality writing style has no significant effect; (2) member's use of negative emotionality and cognitive orientated writing styles has a positive and significant impact on manager's idea adoption behavior, while self-interest oriented and future orientated writing styles have no significant effect.

5. CONTRIBUTION

All of these findings are of great significance both in theory and in practice. Theoretically, this article proposes a new perspective for idea selection and responds to the call in the innovation literature. Moreover, we broaden the research scope of linguistic style in innovation management field. Finally, we increase the generalizability of empirical results by gathering data from an online game OIC. From a managerial perspective, our research offers insights that can facilitate better exploitation of OICs. First, participants should leverage linguistic style and be aware of using specific vocabulary to increase the likelihood of idea attention. In addition, analyzing the writing style cues expressed in idea content can be a shortcut to filter ideas for managers. Further study could use other methodological advances in big data analytics, consider company-specific factors by conducting enterprise surveys, and extend to other similar communities to increase the generalizability of our results.

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