



Getting on board with new ideas: An analysis of idea commitments on a crowdsourcing platform

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ABSTRACT

While it is commonly known that ideas submitted through crowdsourcing platforms need support from others to be realized, our understanding of what idea creators can do to garner this support is still limited. In this study, we argue that the behavior of idea creators on a crowdsourcing platform plays a critical role to attract support. In particular, we suggest that creators who commit their time and energy to the development and realization of others' ideas may activate generalized exchange dynamics that result in an increased number of commitments from other peers to their own ideas—especially when these ideas are very novel or not very feasible. To test our hypotheses, we studied 1,201 participants and their behavior related to 244 ideas on the internal crowdsourcing platform of the car manufacturer Renault. Controlling for a series of relevant individual and idea characteristics, our findings confirm that creators who commit themselves to others' ideas on the crowdsourcing platform elicit more commitments from others for their own ideas. This relationship becomes stronger for very novel and not very feasible ideas. We discuss the theoretical and managerial implications of these findings that contribute to the general discussion of crowdsourcing and how idea creators can assemble a team of supporters on such platforms.

1. Introduction

In order to fill their innovation pipelines, organizations increasingly crowdsource new ideas from their employees (e.g., Deichmann and Van den Ende, 2014; Malhotra, Majchrzak, and Loram, 2017; Zuchowski, Posegga, Schlagwein, and Fischbach, 2016). Internal crowdsourcing is a way for firms to tap into their employees' creative potential and steer the further development of the ideas they create (Burgelman, 1983; Kokshagina, Gillier, Cogez, Le Masson, and Weil, 2017; Zuchowski et al., 2016). It can be a powerful tool for allowing employees from all functions and ranks to share their ideas without constraint by formal reporting lines or by the boundaries of their department or organizational unit (Malhotra et al., 2017; Reuter, 1977).

Increasingly, organizations are not just using crowdsourcing platforms as a source of ideas but also as a way to involve peers and get them engaged with the crowdsourced ideas. For instance, on many crowdsourcing platforms, peers are invited to vote for or to “like” ideas (Hofstetter, Aryobsei, and Herrmann, 2018; Schemmann, Herrmann,

Chappin, and Heimeriks, 2016). However, most peer engagements on crowdsourcing platforms remain inconsequential (Majchrzak and Malhotra, 2020; Riedl and Woolley, 2017). Indeed, while liking a particular idea may signal support for that idea, it does not necessarily imply a serious commitment in terms of a costly investment of time, energy, or resources (Malhotra and Majchrzak, 2014). Peers may like an idea without being committed to helping the idea creator push it forward. A lack of supporters, however, may hinder the idea's implementation. Research has demonstrated that collaborative networks of supporting members are essential to realize an idea (Baer, 2012; Deichmann and Jensen, 2018; Lüttgens, Pollok, Antons, and Piller, 2014; Perry-Smith and Mannucci, 2017).

While it is clear that the implementation of an idea is a team effort and involves collaboration, we know surprisingly little about how an idea creator in a crowdsourcing context can initiate collaborative relationships with other peers by attracting them to support the realization of his or her idea (Kokshagina et al., 2017; Riedl and Woolley, 2017). In this paper, we take a first step to address this gap by investigating a

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mechanism through which idea creators can attract commitment to their ideas from peers on a crowdsourcing platform. Following a conceptualization of commitment as a psychological state dedicated to pursuing a specific course of action (Meyer and Anderson, 2016), we define an idea commitment as the result of a concrete offer by a peer to an idea creator to dedicate time and energy into helping advance and potentially realize the idea. We propose that idea creators who commit themselves to others' ideas are likely to elicit more peer commitments to their own ideas.

By committing to other participants' ideas, idea creators increase their visibility on the platform, show their prosocial engagement in the crowdsourcing community, and signal their attractiveness as collaboration partners. Given the transparent nature of social actions on crowdsourcing platforms, and the value that individuals place on signals of support, we argue that the act of committing to an idea—rather than just liking it—triggers generalized exchange dynamics in the form of generalized or indirect reciprocity (Baker and Bulkley, 2014; Simpson, Harrell, Melamed, Heiserman, and Negraia, 2018). The more idea creators commit to others' ideas, the more they receive commitments to their own idea in return by peers who participate on the platform. In addition, we investigate the boundary conditions under which this mechanism operates by considering the role of underlying idea characteristics developed by the focal idea creator. In particular, we argue that idea novelty and idea feasibility moderate the generalized exchange mechanism at play. We expect that generalized exchange dynamics will increase in magnitude when ideas submitted by the focal idea creator are very novel or not very feasible. Very novel and not very feasible ideas are more challenging and uncertain and therefore, the behavior of the idea creator on the platform becomes even more salient and important for platform participants when they evaluate the attractiveness of the focal idea. To test these hypotheses, we investigated the online behavior of 1,201 participants related to 244 ideas in an R&D intensive context, namely Renault's internal crowdsourcing platform, over a four-month period.

Our study of how idea creators attract commitments from peers on Renault's crowdsourcing platform offers several important contributions. First, we contribute to the crowdsourcing literature by being one of the first studies to demonstrate how idea creators' online behavior on the crowdsourcing platform influences the support they get from peers for their own ideas (Majchrzak and Malhotra, 2013; Shen, Lee, and Cheung, 2014). We show that commitment to others' ideas—but not just liking others' ideas—serves as a serious signal of support that helps generate support in return by activating generalized exchange dynamics. Second, our findings advance the creativity literature by showing how idea creators can start to gain the necessary support to develop their ideas and bring them to fruition and by showing how idea characteristics (i.e., idea novelty and feasibility) interact with idea creator behavior in defining boundary conditions for gaining support from peers (Baer, 2012; Lu, Bartol, Venkataramani, Zheng, and Liu, 2019; West, 2002). Finally, we contribute to the commitment literature by conceptualizing an idea commitment as a particular form of action commitment and by identifying the generalized exchange dynamics through which this commitment is generated (Meyer and Anderson, 2016; Neubert and Wu, 2012). Besides these theoretical contributions, our study also offers several important recommendations for practice. A central implication of our study is that crowdsourcing platforms should not solely be designed as competitive innovation contests (Majchrzak and Malhotra, 2013; Riedl and Woolley, 2017; Shen et al., 2014). Instead, we recommend that managers encourage more team-based collaboration by creating more possibilities for participants to engage with and support the development of peers' ideas.

2. Gaining commitment to ideas on a crowdsourcing platform

To develop and realize ideas, it is essential for an idea creator to form a team that supports the idea (Deichmann and Jensen, 2018; Singh and

Fleming, 2010). Team members can provide support to idea creators in two forms (Perry-Smith and Mannucci, 2017). First, they may support the idea creator emotionally. This is important because ideas at this early stage in the innovation process involve many risks and uncertainties. Encouragement from others is critical in order to successfully work through stressful situations and to avoid setbacks (Amabile, Schatzel, Moneta, and Kramer, 2004; Madjar, Oldham, and Pratt, 2002). In addition, receiving emotional support by collaborating with others gives idea creators more leverage to overcome the resistance that may be present in an organization to a new idea (Baer, 2012; Lechner and Floyd, 2012). Second, team members can support idea creators by providing constructive feedback. Sharing feedback may, for instance, help an idea creator better understand the problem space that the idea addresses (Harrison and Rouse, 2015; Volkema and Gorman, 1998). Also, idea creators may mobilize and leverage diverse knowledge and expertise of supporting team members to address potential weaknesses of an idea (Alexander and van Knippenberg, 2014; Deichmann and Van den Ende, 2014; Kurtzberg and Amabile, 2001).

While support from team members is critical to enable an idea creator to move the idea forward and bring it to fruition, the crowdsourcing literature so far has not paid much attention to how idea creators can assemble a team of supporting peers. Although our understanding of interactions among crowdsourcing participants is increasing (e.g., Bayus, 2013; Hofstetter et al., 2018; Poetz and Schreier, 2012), our knowledge of how idea creators can initiate collaborative relationships to form a team of supporting peers remains limited. This study takes a first step in this direction by investigating how some idea creators elicit strong and serious support for their ideas by attracting a team of peers committed to the idea.

While participants of crowdsourcing platforms can signal their support by simply "liking" an idea, this type of endorsement does not entail any costly investment of time or resources by the "liker." Therefore, liking an idea may constitute "cheap talk" signaling (Backus, Blake, and Tadelis, 2019) rather than actual and active support (Hofstetter, Zhang, and Herrmann, 2017). However, when participants *commit* to an idea, they "walk the talk" by sending a serious signal of support to idea creators. We maintain that committing to an idea is a serious signal of support for several reasons. First, an organizational participant's decision to commit to another peer's idea entails costly investments of time and resources to bringing the idea to fruition—time and energy that is limited and that therefore cannot be invested in other ideas (Deichmann and Jensen, 2018). Furthermore, people who promise to help advance and implement others' ideas can be expected to be held accountable to that promise. It constitutes the start of a longer working relationship between the idea committer and the idea creator. It also means, however, that committed participants may incur reputational costs in case of withdrawal or disengagement from the team (Boons, Stam, and Barkema, 2015; Dellarocas, 2010). Finally, a participant who commits to another peer's idea faces the risk of negative spillovers if the idea fails (Gebauer, Füller, and Pezzeri, 2013; Gomez-Mejia, Welbourne, and Wiseman, 2000; Shepherd and Cardon, 2009).

Extant literature defines commitment as "a volitional psychological bond reflecting dedication to and responsibility for a particular target" (Klein, Molloy, and Brinsfield, 2012: 137). While most existing work addresses questions related to organizational commitment—i.e., the psychological bond between an organization and its members—researchers have recently explored the nature of commitment in relation to several different targets, such as goals (Klein, Wesson, Hollenbeck, and Alge, 1999), change (Hill, Seo, Kang, and Taylor, 2012; Meyer and Hamilton, 2013), and projects (Hoegl, Weinkauff, and Gemuenden, 2004). Scholars have classified these forms of commitment as "action commitments" (Meyer and Anderson, 2016; Neubert and Wu, 2012), stressing their temporary nature in opposition to more durable forms of entity commitment. In particular, action commitment has been defined as "a psychological state characterizing an individual's orientation toward a course of action that contributes to persistence in that

course of action” (Meyer and Anderson, 2016: 179). From this conceptualization, we introduce idea commitment as a specific form of action commitment in the context of crowdsourcing platforms.

In such a context, participants may decide to commit to peers’ ideas by signaling their interest to join the idea creator’s team, therefore devising a particular course of action centered on their involvement in the “idea journey” such as in the idea development phase (Perry-Smith and Mannucci, 2017). However, the transparent nature of peer activities on crowdsourcing platforms (Haas, Criscuolo, and George, 2015) differentiates idea commitment from other types of action commitment. For instance, while organizational goals and changes are often determined in a top-down manner, crowdsourced ideas are created and developed bottom-up by peers and these ideas therefore compete for participants’ limited attention on the platform (Piezunka and Dahlander, 2015). This implies that acts of idea commitment are visible to the entire participant community and constitute important lenses or informational cues that others may use to evaluate an idea’s attractiveness and make consequential decisions about whether or not to support it (Podolny, 2001; Smith, 2011). According to this view, idea evaluations are the product of “socially endogenous inferences” (Zuckererman, 2012: 227) based on prior activities of peer participants on the platform.

In this paper, we seek to extend this view by arguing that idea creators who commit to others’ ideas not only signal their support for the ideas they commit to, but also send important information about themselves. In particular, we argue that idea creators who commit to others’ ideas increase their visibility and signal their willingness to engage in prosocial as well as collaborative behavior, which therefore—thanks to generalized exchange dynamics—increase the likelihood of attracting support for their own submitted ideas. In the next section, we elaborate further on these premises and develop a set of hypotheses rooted in the theoretical debate on generalized exchange in the context of crowdsourcing. In addition, we explore how this mechanism is contingent on the novel and feasible characteristics of a creator’s focal idea.

3. Hypothesis development

3.1. Generating commitment by committing yourself to others’ ideas

We propose that idea creators who commit to the ideas of others elicit more commitments for their own ideas from other peers. Essentially, we argue that by signaling support towards the potential development and realization of a colleague’s idea, an idea creator may initiate a system of generalized exchange processes (Yamagishi and Cook, 1993) in which the helping behavior is indirectly reciprocated by other peers on the platform (Faraj and Johnson, 2011; Hofstetter, Zhang, and Herrmann, 2017; Kathan, Hutter, Füller, and Hautz, 2015). We conceptualize generalized exchange systems as “the flow of material and social support through groups and communities” (Simpson et al., 2018: 88–89). To develop our arguments we borrow Baker and Bulkley’s (2014) mechanism of “rewarding reputation,” which is central to systems of generalized exchange. The notion is that individuals who help others in the community increase their reputation and, as a result, receive helpful behavior in turn by third parties. In our context, this would translate into a situation in which idea creators who send signals of support to others’ ideas tend to attract additional commitments for their own ideas from other peers who may—or may not—have submitted ideas themselves (Malhotra and Majchrzak, 2014). More specifically, we posit that when participant A commits to participant B’s idea, then C—who observes this action—rewards A by committing to A’s idea. We suggest that idea creators who commit themselves to others’ ideas trigger this type of generalized exchange dynamic for three reasons.

First, in contrast to liking someone else’s idea, committing time and energy to the development of someone else’s idea is considered a more critical activity. Provided that commitments are not given easily, when

someone does commit to another idea it stands out as a very deliberate and engaging activity. Committing to others’ ideas will therefore increase an idea creator’s visibility on the platform and spark others’ awareness of the idea creator as well as of his or her ideas. Visibility functions as the necessary base for reputation-building mechanisms that tend to be rewarded by third parties. By committing themselves to someone else’s idea, idea creators show support for the key members of the community—other idea creators—and they therefore become closer to these core actors within the crowdsourcing platform, a move that is usually coupled with increased reputation (Cattani and Ferriani, 2008). We suggest that this subsequently translates into more signals of support that the idea creator receives for his or her own idea.

Second, by committing to others’ ideas, idea creators display prosocial behavior on the crowdsourcing platform. They show that they do not exclusively focus on their own ideas but that they are also active in the crowdsourcing community and open to contributing to other members’ ideas (Wasko and Faraj, 2000). More specifically, by displaying organizational citizenship behavior and voluntarily offering help to others (Podsakoff et al., 2000; Organ, 2018), idea creators stress the collective duty of everyone to support each other (Podsakoff, MacKenzie, and Bommer, 1996; Podsakoff, MacKenzie, Moorman, and Fetter, 1990). We suggest that this kind of role modeling creates a collective “we-mode” (Shen et al., 2014) while also enhancing the original idea creator’s reputation on the crowdsourcing platform. In turn, this should motivate more peers to commit to the creator’s own ideas. This proposition is supported by a study by Deichmann and Stam (2015), who found that leaders who committed themselves to the goals of an internal crowdsourcing program of a company motivated their employees to commit themselves to that program, too—more so than leaders who were not committed to the program themselves.

Third, by committing to others’ ideas, creators may signal to others their learning capability and attractiveness as a collaboration partner. Indeed, idea creators who actively participate in the development and realization of others’ ideas vicariously may learn important lessons (Deichmann and Van den Ende, 2014). For instance, they may learn how to effectively communicate with other peers in order to produce high-quality work. A study by Schemmann and colleagues (2016) provides some tentative evidence for this proposition. The authors found that idea creators who were actively engaged with others’ ideas and who were publicly acknowledged for this were more likely to submit ideas that were subsequently adopted by the company. Therefore, Schemmann et al. (2016) conclude that idea creators who pay attention to others’ ideas learn to enhance their own creative outputs. In the same vein, we suggest that idea creators who commit to others’ ideas display to peers their willingness to learn and because this attitude is associated with the ability to produce more higher-quality work, other peers will recognize the idea creator as a more reputable collaboration partner. Eventually, we expect this to translate into this idea creator’s receiving a higher number of commitments from other peers for his or her own idea.

To conclude, we hypothesize that idea creators can attract support for their ideas by eliciting commitments from their peers. We suggest that when idea creators commit themselves to others’ ideas first, they make others aware of own ideas, they engage in prosocial behavior, and signal that they are willing to learn and to produce high-quality work. For these reasons, generalized exchange dynamics—in terms of indirect or generalized reciprocity—are set in motion, increasing the likelihood that idea creators attract commitments from others for their own ideas. We summarize these arguments in the following hypothesis:

Hypothesis 1. An idea creator’s prior commitments to others’ ideas are positively associated with receiving commitments from other peers for the creator’s own idea.

3.2. The moderating role of idea novelty and idea feasibility

Extending the intuition that crowdsourcing platforms are arenas

where ideas and idea creators are linked by visible signals of support, we now explore how generalized exchange systems of commitments by idea creators are influenced by the characteristics of the submitted ideas. In particular, we focus on idea novelty and idea feasibility—two features of ideas that are central to the current debate on creativity in the context of crowdsourcing (Chan, Li, and Zhu, 2018; Girotra, Terwiesch, and Ulrich, 2010; Litchfield, Gilson, and Gilson, 2015).

Novel ideas are different from a firm's existing products and services and often involve significant uncertainty and risk (Alexander and van Knippenberg, 2014; Mueller, Melwani, and Goncalo, 2012). Such ideas carry market uncertainty because it is difficult to estimate their potential and to forecast how the market would respond to the launch of such an idea (Berg, 2016). While previous research has examined the direct effect of novelty on, for instance, evaluation and selection decisions (e.g., Criscuolo, Dahlander, Grohsjean, and Salter, 2017; Mueller et al., 2012), here we are interested in how the relationship between an idea creator's prior commitments to others' ideas and the receipt of commitments from peers changes when the focal idea is very novel. We expect that the idea creator's online behavior—and in particular, his or her prior commitments to others' ideas—will provide valuable cues that help reduce peers' uncertainty about whether to commit to a novel idea.

On the one hand, the more idea creators commit to others' ideas, the more they enhance their reputation by engaging in prosocial behavior on the crowdsourcing platform. We argue that idea creators' reputation is rewarded even more when the focal idea submitted by the creator is perceived as very novel. Novel ideas may be risky and uncertain but once they are launched on the market, they can also be very rewarding for those who were involved (Deichmann and Jensen, 2018). Peers need to trust that the idea creator will share these rewards with those who were committed to the realization of the idea—and this trust is more present for idea creators who have already displayed prosocial behavior on the platform (Gomez-Mejia et al., 2000). On the other hand, an idea creator who has committed time and energy to others' ideas signals to peers a strong willingness to learn. This makes the idea creator a more attractive collaboration partner to develop ideas that are very novel since advancing these ideas and decreasing their associated market uncertainty will be more successful with an idea creator who is willing to learn and to iterate quickly and who has a supportive team (Perry-Smith and Mannucci, 2017).

In other words, signals generated by the behavior of idea creators on the platform become even more salient when the focal ideas are very novel, a notion summarized in the following hypothesis:

Hypothesis 2. The positive association between an idea creator's prior commitments to others' ideas and the commitments received from other peers for the focal idea is strengthened when the focal idea has a high degree of novelty.

While feasible ideas are perceived as relatively easy to implement, ideas with low feasibility are usually associated with economical and technical constraints (Poetz and Schreier, 2012; Rietzschel, Nijstad, and Stroebe, 2010). Therefore, ideas that are not very feasible will require a certain degree of organizational change to be implemented (Castañer, 2016; Chan et al., 2018; Litchfield et al., 2015). Ideas that are not very feasible can be perceived as uncertain, although here, risks are related to technical uncertainty rather than to market uncertainty (Mueller et al., 2012). Prior research already established the direct effect of feasibility on, for instance, idea adoption decisions (e.g., Chan et al., 2018), but in this study we are concerned with how signals created by the behavior of idea creators on the crowdsourcing platform generate different levels of commitment to the focal idea, depending on whether it has a high or a low level of feasibility.

We argue that idea creators' online reputation generated by their commitment of time and resources to the development of others' ideas is rewarded even more when the focal idea submitted by the creator is perceived as scarcely feasible. The help that an idea creator offered to other peers on the platform becomes even more admirable and

energizing when the idea creator needs strong support to develop and realize his or her own idea when that idea is not very feasible (Podsakoff et al., 1996, 1990). We suggest that reciprocated supporting behavior by peers will likely be directed toward prosocial idea creators who need more help to develop and realize an idea that is still associated with economical and technical constraints—i.e., an idea with a low degree of feasibility. In addition, such long-shot ideas might be more attractive for peers to collaborate on if the idea creator has already signaled he or she has an open, learning attitude by committing to others' ideas. Developing scarcely feasible ideas and decreasing their associated economical and technical uncertainty will be more enjoyable and likely have better odds of success when tackled by an idea creator who approaches such problems as an intellectual challenge (Wasko and Faraj, 2000).

We argue that just as idea novelty has a moderating effect on an idea's reception, so does the lack of feasibility. When there is more uncertainty involved, peers will rely on other social and informational cues, such as the behavior of idea creators on the platform, to evaluate whether to commit their time and resources to the focal idea. We summarize the previous arguments in the following hypothesis:

Hypothesis 3. The positive association between an idea creator's prior commitments to others' ideas and the commitments received from other peers for the focal idea is strengthened when the focal idea has a low degree of feasibility.

4. Method

4.1. Sample and setting

For this study, we collected data at Technocentre Renault, the R&D center of Renault where the company designs its next generation of cars. Several prior studies have reported about Renault's strong innovation culture (e.g., Gillier, Hooge, and Piat, 2015; Segrestin, 2005). Quantitatively, too, Renault is a major innovator: according to the French National Industrial Property Institute, Renault is one of France's top five patent holders.² We used data from an internal crowdsourcing platform, which organized an ideation contest between February and March 2016. The contest was organized for two main reasons. One goal was to stimulate employees to generate innovative ideas about electric vehicles, digitalization, and future modes of transport. Another goal was to initiate and facilitate collaboration in the company across different business units and departments. The invitation to participate in the contest was communicated by email and other internal communication channels. As an added bonus for the research team, this was Renault's first online ideation contest, which meant that every member participating on the platform started with a clean slate.

The employees were able to log-in to their personalized user account on the online internal crowdsourcing platform. The participants used their real name and could provide information about themselves (e.g., skills and competences). The employees could register and voluntarily participate at any time during the period of the contest. Following prior studies that found that setting an explicit goal to be creative helps foster creative ideas (e.g., Shalley, 1995), the participants were explicitly invited to generate "wild" ideas. They were informed that the best ideas would be selected by a committee composed of top managers and experts. Furthermore, participants were informed that the winners would be invited to a special "bootcamp" for one week in which the selected ideas could be developed further. However, the conditions of acceptance and the content of the bootcamp were not presented to the crowdsourcing participants. The bootcamp took place after the contest was finalized. During the bootcamp, the company trained the winners of the contest in certain innovation methods (e.g., rapid prototyping or design

² Retrieved from <https://www.inpi.fr/fr/nationales/palmares-2019-des-principaux-deposants-de-brevets-l-inpi> on 1 March 2021.

thinking), provided support to them (e.g., mentoring or help of industrial designers), and financed other inspirational trips (e.g., visit of high-tech museum). The winners were authorized to work on their ideas up to two days per week for a period of one year.

Members of the crowdsourcing platform could participate in multiple ways, and all interactions were tied to one's profile and transparent to other participants of the platform. Besides submitting ideas, participants could endorse ideas by liking them, contribute to ideas by commenting on them, and commit to ideas by indicating that they would want to join them if they were to be selected for implementation. It is this last feature which we are particularly interested in as it indicates employees' commitment to someone else's idea. Submitting and liking ideas as well as commenting on ideas are common functionalities in most crowdsourcing platforms (Bayus, 2013; Majchrzak and Malhotra, 2013; Malhotra and Majchrzak, 2014). However, the possibility to indicate commitment to someone else's idea is a lesser-known functionality. The organizers decided to integrate this functionality to better identify a set of potential employees who would be interested in supporting their colleagues to develop their ideas. The participants were totally free to make commitments to the ideas of their choice. Idea creators could not advertise their ideas and could not send private messages through the online platform. The decision committee did not have a systematic set of criteria to select winners and it was not a necessity for idea creators to get support from others to be selected.

In order to investigate the intended and perceived meanings of the platform functionalities and to qualitatively corroborate the validity of our theoretical variables, we conducted a series of semi-structured interviews with some of the participants. Our fieldwork revealed that for the idea creators, going through the commitments they received (i.e., the number of people that wanted to join the idea) was an opportunity to identify colleagues with relevant expertise and to pre-select potential team members to develop ideas. Two idea creators told us the following:

“What I found interesting with the ‘I want to join’ button is that it permits to create a team. It's very positive because you already have the support of a team to develop the idea.” (Idea creator A)

“When I saw that my ideas got a lot of joiners it was a real motivation because this proved that people really wanted to be involved and be part of the adventure.” (Idea creator B)

Furthermore, our fieldwork revealed that participants felt there was an important difference between the decision to like an idea and the intention to commit to it. Several interviewees told us that liking an idea meant that they would like to see the idea move further ahead in the process because they believe that the idea has some potential commercial value for the customers or some new knowledge that could be valuable for the firm. One participant said:

“‘Liking’ and ‘I want to join’ are two different things. When I was reading the ideas, I've ‘liked’ several of them. It was just a way to say that these ideas were interesting and valuable for our customers.” (Participant A)

However, the degree of commitment was much higher when participants indicated that they would like to join the idea. In contrast to liking an idea, committing to an idea indicated that the employees thought that they could help the idea creator to move the idea forward by providing relevant knowledge and expertise, investing time and resources for idea support. For instance, two participants told us:

“There's a really big difference between pushing the button ‘I want to join the project’ and the button ‘I like’ the project in term of commitment. In the former case, it means that if the idea is selected, you're really supposed to join the project and to participate in a concrete way. It means that the joiners accept to spend time and energy on the project. This is really different than just ‘liking’ an idea. There's no commitment with ‘likes.’” (Participant C)

“When you inform the inventor that you want to participate, it's because you think that you've the right skills and competences to move the project forward.” (Participant D)

At the end of the online contest, the idea creators often called the people who wanted to join their idea. They asked them, for instance, to help conduct a market study or develop a prototype:

“After the contest, I've phoned almost 20 people. Some of them really spent a lot of time on our project. Some people did a market study and others helped us in creating a physical prototype.” (Idea creator B)

By the time the ideation contest ended, a total of 244 ideas were submitted by 144 participants. We recorded 2,368 likes, 1,330 comments, and 474 commitments. Out of these, 85 likes, 118 comments, and 38 commitments were actions performed by creators to their own ideas, while the rest were performed by creators to other ideas. Given the time-stamped nature of our data, we were able to capture precisely the fine-grained temporal dynamics happening on the platform. All actions are transparent to other participants and may be traced back to the idea creator profile. All time-changing covariates are coded by slicing the time window of past events to the focal event before calculating the intended measure. To alleviate further concerns of simultaneity and reverse causality, we lag all covariates by one day relative to the focal event. The first idea submission was recorded on 15 February 2016 while the last action was recorded on 25 March 2016. Therefore, the idea with the longest lifespan in our dataset clocked 40 days. The resulting total number of observations for our dataset is 7,247 idea-days. At the end of March 2016, a panel of experts and firm representatives gathered to select nine winning ideas.

4.2. Dependent variable: Idea commitments

Our dependent variable measures how many people indicated that they would commit their time and energy to the potential development and realization of a creator's focal idea. As discussed in more detail in the previous section—and consistent with the definition of action commitment provided earlier (Neubert and Wu, 2012; Meyer and Anderson, 2016)—an idea commitment stems from a participant's decision to “join the project,” and thus indicates a general “readiness” (Solinger, Van Olffen, and Roe, 2008) to dedicate personal resources to the development and realization of an idea, in case it were to be selected at the end of the contest. Participants indicated their commitment by clicking on the “join” functionality which was included on any idea page on the platform. Although participants were under no strict obligations to follow-up on an idea commitment, our fieldwork revealed that many felt there would indeed be social sanctions if they were to withdraw from a commitment, in terms of negative reputation spillovers and perceptions of unreliability:

“Clicking on the ‘I want to join’ button means that you're ready to invest some of your time for this project: you're really supposed to help. Personally, I didn't click on this button because I was very busy during this period. I didn't have enough time to really contribute.” (Participant E)

“When I clicked on the ‘I want to join’ button, I expected that the inventor would call me at some point. I wanted to contribute.” (Participant C)

Hence, given the implicit costs associated to deciding to join an idea project, we consider an idea commitment as a strong signal of support for the focal idea, rather than just “cheap talk” (Backus et al., 2019). During our observation period, we recorded 474 commitments over 244 ideas. Out of these, 38 resulted from creators signaling commitment to their own ideas—these own commitments were not included in the computation of our dependent variable. The substantially lower number

of idea commitments present in our data relative to the number of likes and comments any given idea attracts provides further descriptive evidence that the decision to commit to an idea is more than just cheap talk. While the idea that attracted the largest share of commitments received 96 commitments in total (with 20 commitments on just one day), 93 ideas received no commitments at all over the time they were accessible on the platform. It is important to note that the platform did not have a Facebook-type of landing page, where the most popular idea would appear on top of the wall. Ideas that received more commitments were thus not more visible than other ideas. Fig. 1 reports a frequency plot of our dependent variable over idea internal clock time. Ideas tend to receive the highest number of commitments during the early stage of their lifecycle, with approximately 70% of commitment events recorded within two weeks after idea submission day.

4.3. Independent variable: Prior commitments of idea creators to others' ideas

We consider an idea creator's commitments to others' ideas as a strong signal of support embedded in generalized exchange systems that will trigger instances of indirect or generalized reciprocity. Unlike direct reciprocity, which is based on the principle "if A commits to B's idea, then B commits to A's idea," systems of generalized exchange upon which we base our hypotheses entail extra-dyadic dynamics whereby "if A commits to B's idea, then C—who observes A's behavior—rewards A by committing to A's idea." We measure idea creators' support to others' ideas by including *prior commitments to others' ideas by focal idea creator*. This variable captures the number of commitments that the focal idea creator gave to others' ideas prior to time t . Ceteris paribus, we expect that a higher number of commitments by the focal idea creator to other participants' ideas prior to time t will be associated with a higher number of commitments to the focal idea at time t .

4.4. Moderating variables: Idea characteristics

We collected time-invariant data on idea characteristics in terms of *novelty* and *feasibility* (e.g., Baer, 2012; Criscuolo et al., 2017; Litchfield et al., 2015; Piezunka and Dahlander, 2015). Four individuals, who did not participate in the internal crowdsourcing platform, served as raters. These raters are highly recognized technical and business experts in the automobile and energy industry. They were not made aware of the purpose of this research. Each idea was evaluated on a 7-point Likert

scale (1 = "low" to 7 = "high"). The evaluation criteria were extensively discussed by the raters. Ideas were judged to be very novel when the idea was completely new for Renault and the car industry in general. Idea feasibility refers to how easy it is to implement the idea with the current technologies and constraints in the car industry. The evaluation of the ideas followed two steps. First, the raters individually evaluated each idea. The inter-rater reliability was computed and the scores were moderately high (Cronbach's α for idea novelty = 0.50; Cronbach's α for idea feasibility = 0.62). In a second step, the four raters met for one and a half days to discuss their respective evaluations. Each idea was then reassessed to reach a consensus among the four raters. Pearson correlations between the initial average scores (i.e., step 1) and the final scores (i.e., step 2) were very high (r for idea novelty = 0.73; r for idea feasibility = 0.76), which shows that the raters' scores did not vary much between the two steps.

4.5. Control variables

We control for a series of factors that may affect the probability of ideas to attract commitments from platform participants. In particular, we control for three main classes of covariates: the first one is related to time-changing activities performed by focal idea creators; the second one is related to time-changing activities performed on the focal idea; and the third one is related to time-constant creator characteristics, which we include in additional, post-hoc analyses. Similarly as our independent variable, all time-changing control variables are coded prior to the focal event and lagged by one day.

First, we control for the entire spectrum of activities performed by idea creators on the crowdsourcing platform. Indeed, given the transparency of the different online activities, they may influence idea creators' reputation on the platform, and by extension, the amount of support idea creators receive for their own ideas (Bayus, 2013; Füller, Hutter, Hautz, and Matzler, 2014; Hofstetter et al., 2018; Malhotra and Majchrzak, 2014; Piezunka and Dahlander, 2019). More specifically, we capture idea creators' activities regarding others' ideas including *prior comments to others' ideas* and *prior likes of others' ideas* by counting an idea creator's cumulative number of comments and likes on the platform before time t . In addition, we capture the different ways in which idea creators can engage with their own ideas by controlling for *prior likes of own ideas*, *prior comments to own ideas*, and *prior commitments to own ideas*. We also include *prior submissions by focal idea creator* as we expect that prolific creators are likely to receive more attention than less

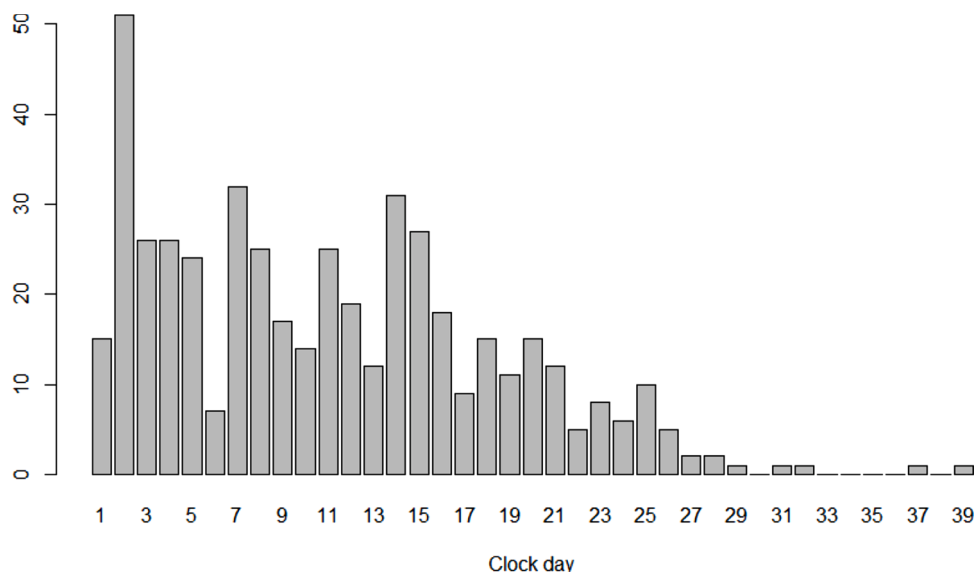


Fig. 1. Frequency of idea commitments per clock day.

prolific creators (Bayus, 2013). Number of submitted ideas on the platform captures ideas submitted to the platform in a single day and is included to control for a daily crowding effect, as single ideas receive a smaller share of individuals' attention when there are more ideas on the platform (Piezunka and Dahlander, 2015). In addition, we control for the degree of specialization of idea creators. Research has shown that specialist profiles are associated with focused expertise and thus are perceived as competent, whereas generalist profiles are associated with unfocused expertise and thus are perceived as "jacks of all trades and master of none" (Hsu, 2006). We calculated the *specialism index of focal idea creator* as a concentration index—namely the Herfindahl-Hirschman Index, or HHI, that varies between 0 and 1. We do this based on three official topics (i.e., electric vehicles, digitalization, and future modes of transport) that were established for the contest. The more idea creators concentrate their actions on ideas of the same topic, the more the HHI increases.

The second family of control variables that we include in our models concerns prior activities performed on the focal idea. Research by Schemmann and colleagues (2016) shows that idea popularity is associated with the implementation of the idea by the company. For our context this could imply that members on the crowdsourcing platform commit more often to ideas that already experienced high rates of commitment as these ideas will likely be implemented. To that end, someone's commitment to such an idea stands a higher chance of being considered by the idea creator. Furthermore, ideas may become more attractive the more they attract the attention of many participants, due to well-known status attainment processes in which "the rich get richer" (Bothner, Podolny, and Smith, 2011; Stewart, 2005). Therefore, we include others' prior likes of focal idea, prior comments to focal idea, and prior commitments to focal idea to capture the cumulative activities associated with different types of actions that peers can perform.

Finally, for additional analyses, we also collected time-invariant data on idea creators. We matched the data of idea creators with archival records from the HR department of Renault. Specifically, we measure an idea creator's tenure (ranging from 1 = "0 – 5 years" to 8 = "36 – 40 years") and hierarchical level in the organization (ranging from 1 = "lowest" to 4 = "highest"). For a different supplementary analysis, we developed two measures for degree of idea elaboration—one based on the word count in the description box of an idea (Beretta, 2019; Piezunka and Dahlander, 2015) and another one capturing the presence of additional material such as pictures or technical sketches that could be attached to the description of an idea.

4.6. Empirical strategy and model specification

Given the longitudinal nature of our data and our emphasis on the temporal dynamics of idea commitment, we organized the data in a daily panel structure. Within this panel, 244 ideas are observed over their individual clock time—with day 1 being set as submission day for each idea. As ideas could be submitted to the platform at any point in time, the resulting panel is unbalanced, with the first submitted idea being observed over the course of 40 days and the last submitted idea being observed over the course of 12 days. Our observation period covers the contest's entire lifespan. Therefore, we do not incur left truncation or right censoring problems.

Our dependent variable is constituted of non-negative integers and therefore calls for estimation procedures tailored to count data. Moreover, the panel structure of our data allows us to account for time-invariant unobserved heterogeneity by adopting a fixed-effects specification, in the form of a "within-unit" estimator. In this way we can safely average out the effects of unobserved factors that are based on time invariant characteristics of ideas (e.g., idea quality) and idea creators (e.

g., creator competence or hierarchical level). Due to well-documented concerns about the estimation of conditional fixed-effects specifications for negative binomial models (Allison, 2005; Hilbe, 2011), we opted for a fixed-effects Poisson model with Quasi Maximum Likelihood (QML) robust standard errors to correct for overdispersion in the data (Simcoe, 2008; Wooldridge, 1999) and to control for serial correlation across observations within panel units (Cameron and Trivedi, 2009). Poisson models for panel data have the additional advantage of eliminating what is known as "incidental parameter bias" (Allison, 2005), as incidental parameters for each individual in the panel are conditioned out of the likelihood function. For robustness, we estimated a conditional fixed-effects negative binomial regression, which yields substantially consistent results. Furthermore, as fixed-effects Poisson and negative binomial models for count data drop panels that exhibit all-zero outcomes in the dependent variable—and given that there are 93 ideas in our sample that received no commitments at all—we also estimated an OLS fixed-effects model. Our results hold using this specification. Finally, given the high frequency structure of our panel data, we control for further sources of serial correlation—in addition to using clustered standard errors—by estimating a population-averaged Poisson model with an AR(1) autocorrelation component (Cameron and Trivedi, 2009). The results hold in sign and significance (all analyses are available upon request).

For the main empirical analysis in this study, we used the *xtpoisson, fe vce(robust)* routine in Stata 16 to carry out our analysis. The final number of observations is 4,523 idea-days, based on the 151 ideas with non-zero outcomes in our data. Multicollinearity did seem to unduly influence our estimates. For the full model without interaction terms, the highest variation inflation factor (VIF) was 4.37 with a mean VIF of 2.59.

5. Results

In Table 1 and Table 2, we report summary statistics and bivariate correlations.

Table 1
Summary statistics.

	Mean	S.D.	Min.	Max.	N
(1) Prior likes of focal idea	5.99	12.34	0	170	7,247
(2) Prior comments to focal idea	4.42	6.31	0	56	7,247
(3) Prior commitments to focal idea	1.16	4.89	0	96	7,247
(4) Prior submissions by focal idea creator	2.23	2.10	0	10	7,247
(5) Number of submitted ideas on the platform	8.78	12.37	0	39	7,247
(6) Specialism index of focal idea creator	0.59	0.32	0	1	7,247
(7) Prior comments to own ideas by focal idea creator	0.70	2.22	0	18	7,247
(8) Prior likes of own ideas by focal idea creator	0.44	0.89	0	4	7,247
(9) Prior commitments to own ideas by focal idea creator	0.26	0.87	0	5	7,247
(10) Prior comments to others' ideas by focal idea creator	1.78	4.83	0	58	7,247
(11) Prior likes of others' ideas by focal idea creator	1.25	3.97	0	32	7,247
(12) Prior commitments to others' ideas by focal idea creator	0.28	0.90	0	10	7,247
(13) Idea novelty	4.03	1.84	1	7	7,247
(14) Idea feasibility	4.93	1.44	1	7	7,247
(15) Idea commitments	0.07	0.50	0	20	7,247

Table 2
Pearson correlations.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Prior likes of focal idea														
(2) Prior comments to focal idea	0.62													
(3) Prior commitments to focal idea	0.72	0.47												
(4) Prior submissions by focal idea creator	0.01	-0.10	0.02											
(5) Number of submitted ideas on the platform	-0.27	-0.18	-0.13	-0.29										
(6) Specialism index of focal idea creator	-0.09	-0.01	-0.06	-0.19	-0.05									
(7) Prior comments to own ideas by focal idea creator	0.29	0.42	0.04	0.04	-0.10	-0.19								
(8) Prior likes of own ideas by focal idea creator	0.28	0.15	0.15	0.06	-0.20	-0.13	0.26							
(9) Prior commitments to own ideas by focal idea creator	0.19	0.07	0.29	0.20	-0.12	-0.14	0.24	0.43						
(10) Prior comments to others' ideas by focal idea creator	0.21	0.46	0.04	0.01	-0.11	-0.23	0.60	0.18	0.11					
(11) Prior likes of others' ideas by focal idea creator	0.37	0.42	0.15	-0.05	-0.12	-0.21	0.50	0.23	0.04	0.71				
(12) Prior commitments to others' ideas by focal idea creator	0.40	0.40	0.36	0.01	-0.16	-0.19	0.30	0.40	0.31	0.62	0.52			
(13) Idea novelty	0.00	0.01	0.05	-0.16	0.04	0.07	-0.01	0.03	-0.03	-0.06	0.00	-0.01		
(14) Idea feasibility	-0.01	0.06	-0.06	0.02	-0.02	-0.06	0.03	-0.06	-0.08	0.07	0.04	-0.01	-0.16	
(15) Idea commitments	0.14	0.12	0.24	0.01	-0.04	-0.00	0.01	0.04	0.06	0.01	0.04	0.10	0.03	-0.04

5.1. Main analyses

In Table 3, we show the results of our analysis predicting the daily count of action commitments attracted by an idea as the outcome variables. Models 1 to 4 report the estimates from the Poisson regression with fixed effects and QML robust standard errors. Poisson models estimate the log of the expected count of the outcome variable as a function of the predictor variables. Therefore, regression coefficients are interpreted as the difference in the logs of expected counts for a one-unit change in the predictor variable, everything else being equal.

Model 1 includes only our control variables. An idea's tendency to attract commitment at time t does not seem to be affected by the number of *prior comments* on the idea page. On the other hand, the number of *prior likes* ($\beta = -0.02, p < 0.05$) and of *prior commitments* ($\beta = -0.04, p < 0.05$) are negatively associated with commitments to the focal idea. This tendency shows that participants prefer not to commit to ideas that have

already attracted some form of support, further confirming our intuition that idea commitments are rather selective and do not follow a “jumping on the bandwagon” dynamic. A significant and positive effect for *prior submissions of focal idea creator* ($\beta = 0.54, p < 0.05$) indicates that idea creators who previously submitted more ideas to the platform tend to receive more commitments to the focal idea. Next, we explore how actions performed by idea creators on their own idea pages are associated with idea commitments. While prior likes and prior comments of idea creators to their own ideas do not affect the rates of idea commitment, idea creators who commit to their own ideas significantly decrease the rate of commitments to the focal idea ($\beta = -0.37, p < 0.001$) suggesting that self-promotion is viewed negatively by the community of participants (Berg, 2016). Finally, we explore the effect of participants' behavior on the platform when engaging with others' ideas. We did not find a statistically significant result related to *prior comments to others' ideas by focal idea creator*. This demonstrates that engaging with the

Table 3
Estimates of fixed-effects Poisson regression models of *idea commitments*.

	Model 1	Model 2	Model 3	Model 4
Prior likes of focal idea	-0.02* (0.01)	-0.02** (0.01)	-0.01+ (0.01)	-0.02** (0.01)
Prior comments to focal idea	0.04 (0.03)	0.03 (0.03)	0.03 (0.03)	0.03 (0.03)
Prior commitments to focal idea	-0.04* (0.02)	-0.05** (0.02)	-0.06** (0.02)	-0.05** (0.02)
Prior submissions by focal idea creator	0.54* (0.22)	0.55** (0.20)	0.56** (0.20)	0.55** (0.20)
Number of submitted ideas on the platform	-0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Specialism index of focal idea creator	0.89 (0.55)	1.14* (0.59)	1.20* (0.59)	1.19* (0.59)
Prior comments to own ideas by focal idea creator	-0.10 (0.08)	-0.07 (0.09)	-0.08 (0.08)	-0.07 (0.09)
Prior likes of own ideas by focal idea creator	0.12 (0.19)	0.03 (0.19)	0.06 (0.19)	0.06 (0.19)
Prior commitments to own ideas by focal idea creator	-0.37*** (0.06)	-0.41*** (0.06)	-0.40*** (0.06)	-0.40*** (0.06)
Prior comments to others' ideas by focal idea creator	-0.00 (0.05)	0.02 (0.08)	0.07 (0.07)	0.05 (0.06)
Prior likes of others' ideas by focal idea creator	0.24* (0.11)	0.17+ (0.09)	0.14 (0.09)	0.16+ (0.09)
Prior commitments to others' ideas by focal idea creator (H1)		0.26* (0.11)	-0.31 (0.29)	0.95** (0.33)
Prior commitments to others' ideas * Idea novelty (H2)			0.11+ (0.06)	
Prior commitments to others' ideas * Idea feasibility (H3)				-0.16* (0.07)
Observations	4,523	4,523	4,523	4,523
Ideas	151	151	151	151
Log pseudolikelihood	-1038.82	-1033.48	-1031.62	-1031.42

Robust standard errors in parentheses *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

platform by commenting on other participants' ideas does not necessarily lead to an increase in commitments to the own idea. On the other hand, the positive and significant effect for *prior likes of others' ideas by focal idea creator* ($\beta = 0.24, p < 0.05$) indicates that ideas created by individuals who endorse other participants' ideas prior to time t attract more commitments at time t .

Model 2 introduces the main variable of theoretical interest to test our first hypothesis—*prior commitments to others' ideas by focal idea creator*—whose effect on the rate of idea commitments may then be interpreted above and beyond our control variables. The positive and significant coefficient ($\beta = 0.26, p < 0.05$) shows that ideas created by participants who commit to others' ideas before time t tend to receive more commitments at time t . A more intuitive way to interpret the magnitude of the regression coefficients is to calculate the incidence rate ratios (or IRR) by exponentiating the parameter estimates. Everything else held constant, if focal idea creators were to increase the number of commitments to other ideas on the platform by one unit, the incidence rate of commitments to the focal idea sent by other creators would increase by a factor of $\exp(0.26) = 1.29$, meaning an increase of 29%. It is worth noting that when our independent variable is included, *prior likes of others' ideas by focal idea creator* drops in significance. Actions that require long-term and costly commitment appear to be a stronger signal of support than simple acts of endorsements by liking an idea. We can therefore interpret this result as evidence that to attract support for their ideas, creators are better off if they have showed serious support to other participants on the platform. What pays off is not cheap talk, but “walking the talk.”

Finally, in Models 3 and 4, we present a set of estimations devoted to test our second and third hypothesis and thus to answer the question of whether the effect of idea creators' supporting behavior on idea commitments might be contingent on certain idea characteristics. Model 3 shows that the effect of committing to others' ideas on receiving commitments for the focal idea is amplified when *idea novelty* is high. We follow established best practice to examine the significance of interaction terms in non-linear models (e.g., Karaca-Mandic, Norton, and Dowd, 2012; Mize, 2019) by performing a post-hoc analysis of the marginal effects of the main predictor (i.e., *prior commitments to others' ideas by focal idea creator*) on the outcome variable (i.e., *idea commitments*) at different levels of the moderator (i.e., *idea novelty*). Table 4 shows this analysis.

Table 4 shows that for low and medium levels of idea novelty (i.e., between 1 and 4 on a scale of 7) the marginal effect of *prior commitments to others' ideas by focal idea creator* on *idea commitments* is not

Table 4
Marginal effects of *prior commitments to others' ideas by focal idea creator* on *idea commitments* at different levels of *idea novelty* and *idea feasibility*.

Marginal effects of prior commitments to others' ideas	Dy/Dx	Delta method St. Err.	Z	p> Z
Idea novelty = 1	-0.197	0.238	-0.83	0.408
Idea novelty = 2	-0.083	0.187	-0.44	0.657
Idea novelty = 3	0.030	0.145	0.21	0.833
Idea novelty = 4	0.144	0.120	1.20	0.229
Idea novelty = 5	0.258	0.123	2.10	0.036
Idea novelty = 6	0.371	0.152	2.44	0.015
Idea novelty = 7	0.485	0.197	2.46	0.014
Idea feasibility = 1	0.790	0.271	2.91	0.004
Idea feasibility = 2	0.634	0.213	2.98	0.003
Idea feasibility = 3	0.479	0.160	2.99	0.003
Idea feasibility = 4	0.323	0.122	2.65	0.008
Idea feasibility = 5	0.168	0.114	1.47	0.142
Idea feasibility = 6	0.013	0.142	0.09	0.929
Idea feasibility = 7	-0.143	0.190	-0.75	0.451

significantly different from zero, whereas for values equal to 5 or higher the marginal effect is positive and significant, and it increases when the moderator increases. To examine in further detail the regions of significance of the interaction between the main predictor and the moderator, we employ the Johnson-Neyman technique (Bauer and Curran, 2005; see also Busenbark, Graffin, Campbell, and Lee, 2021 for a similar approach) to plot the marginal effects by computing them at many different small intervals of the moderator, rather than just picking two or three arbitrary points of the moderator. Fig. 2 exemplifies this analysis for the moderating effect of *idea novelty*. The horizontal axis represents the different points of the moderator at which the marginal effects were computed (i.e., we picked 0.05 intervals between the minimum of 1 and the maximum of 7 for the range of idea novelty, resulting in 121 different points). The vertical axis represents the marginal effect (i.e., the slope) of the main predictor on the outcome variable, conditional on the moderator. The 95% confidence intervals describe the regions of significance for this marginal effect, indicating the range of the moderator within which the marginal effect is significantly different from zero, with $\alpha = 5\%$. The plot shows that the marginal effect of *prior commitments to others' ideas by focal idea creator* on *idea commitments* is statistically significant when the focal idea is highly novel (with the precise cutoff of significance being 4.8 out of 7). In other words, the slope of *commitments to others' ideas by the focal idea creator* is significantly different from zero only when the focal idea has a *novelty* score of 4.8 (out of 7) or more, providing support for our Hypothesis 2. As novelty is associated with increased uncertainty, an idea creator's behavior on the platform becomes more important for peers having to decide whether they want to join the idea effort or not.

Model 4 shows results relative to the moderating role of idea feasibility. Similar to the strategy we adopted for idea novelty, in Table 4 we also present results of a post-hoc analysis of marginal effects calculated at different levels of the moderator. In this case, the marginal effect of *prior commitments to others' ideas by focal idea creator* on *idea commitments* is not significantly different from zero at high levels of feasibility, but it becomes positive and significant for low and medium levels (i.e., 1 to 4) of feasibility. The Johnson-Neyman plot relative to this interaction effect further clarifies this dynamic. In Fig. 3 we show that the marginal effect of *prior commitments to others' ideas by focal idea creator* on *idea commitments* is statistically significant when the focal idea has a low *feasibility* score (with the precise cutoff of significance being 4.7 out of 7). In other words, the slope of the main predictor is significantly different from zero only when the focal idea has a *feasibility* score of 4.7 (out of 7) or less, thereby supporting our Hypothesis 3. Ideas with low feasibility provide challenges that participants may perceive as worth engaging when the prosocial behavior and learning attitude of the idea creators signal that they can provide exciting opportunities for collaboration.

5.2. Alternative explanations and supplementary analyses

It may be argued that idea creators alter their behavior on the platform as a consequence of the characteristics of the ideas that they submit. For instance, creators who consider their idea less feasible may aim at purportedly engaging in prosocial behavior on the platform in order to find support. In addition, creators who consider their ideas more novel may as well increase their engagement on the platform in order to foster cohesion and elicit feedback from peers. By doing this, they would signal to the evaluation committee that the risks that are normally associated with high novelty are offset by broad support and legitimation among peers (Crisuolo et al., 2017). In this case, the amount of commitment that an idea is able to attract may be associated with the underlying idea

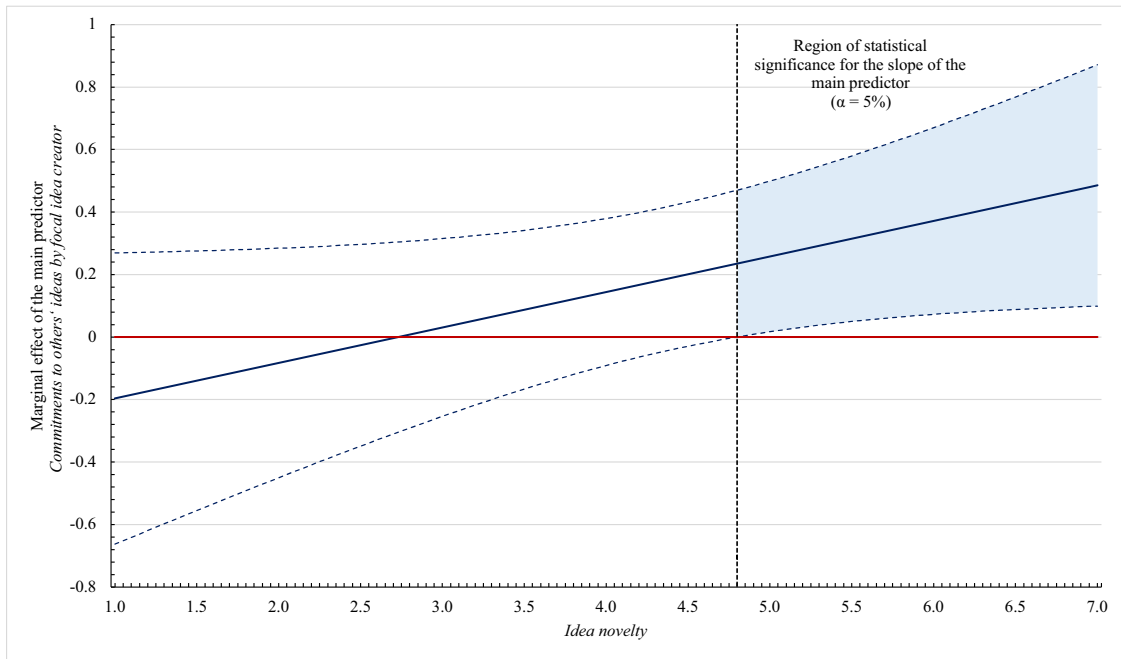


Fig. 2. Johnson-Neyman plot of the moderating effect of *idea novelty* on the relationship between *prior commitments to others' ideas* and *idea commitments* (with 95% confidence intervals).

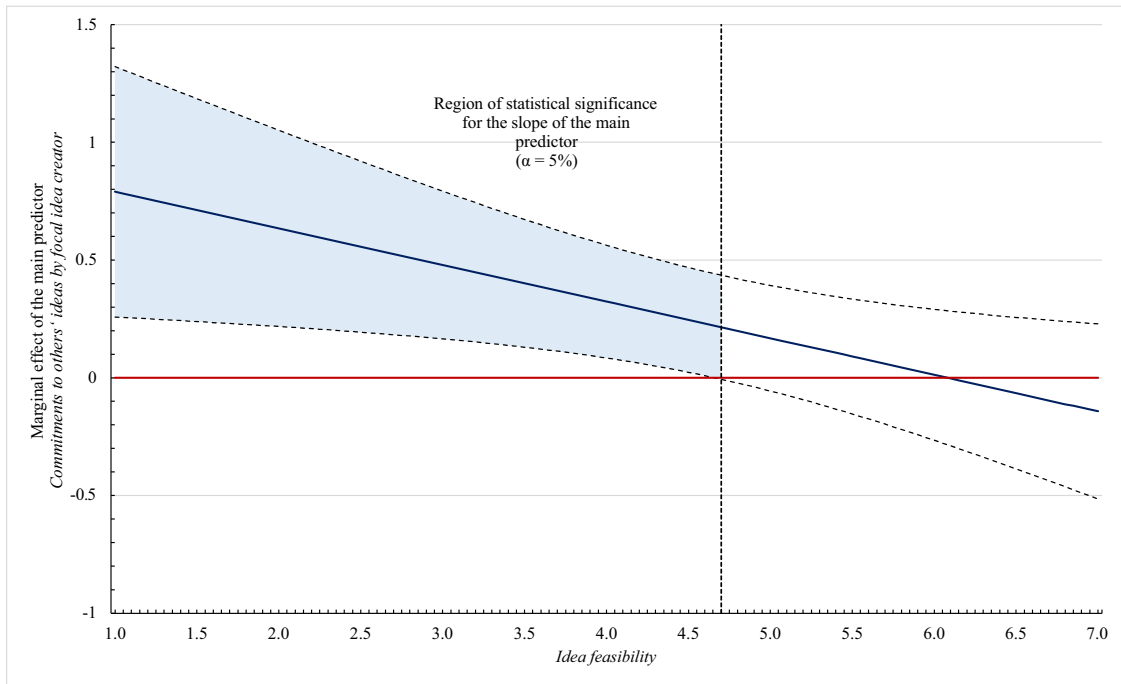


Fig. 3. Johnson-Neyman plot of the moderating effect of *idea feasibility* on the relationship between *prior commitments to others' ideas* and *idea commitments* (with 95% confidence intervals).

characteristics that are correlated to individual behavior, rather than the direct consequence of such behavior. In order to rule out this alternative explanation, we employ a simple linear model with pooled aggregated observations in which we regress *prior commitments to others' ideas by focal idea creator* on *idea novelty* and *idea feasibility*, finding non-significant results for either variable. These results indicate that the behavior of focal idea creators on the platform does not seem to depend on underlying idea characteristics.

Although our focus is on investigating how idea creators attract

support for their ideas in the form of commitments, platform participants can also signal their support to others' ideas by liking those ideas. Earlier we argued that we consider likes as a weaker signal of support than commitments. We showed that idea commitment is generated by idea creators who engage in generalized exchange systems in which committing to others' ideas is rewarded more strongly than liking others' ideas. Now we present a series of estimations devoted to exploring the social dynamics generated around idea "likes." We replicate the model specification that we used for our main results by

Table 5
Estimates of fixed-effects Poisson regression models of *idea likes*.

	Model 5	Model 6	Model 7	Model 8
Prior likes of focal idea	-0.02* (0.01)	-0.03* (0.01)	-0.02* (0.01)	-0.03* (0.01)
Prior comments to focal idea	-0.04 (0.03)	-0.03 (0.03)	-0.03 (0.04)	-0.03 (0.03)
Prior commitments to focal idea	0.04+ (0.02)	0.04+ (0.02)	0.03 (0.02)	0.04+ (0.02)
Prior submissions by focal idea creator	0.50** (0.15)	0.50*** (0.15)	0.50** (0.15)	0.50** (0.15)
Number of submitted ideas on the platform	-0.02*** (0.01)	-0.02** (0.01)	-0.02** (0.01)	-0.02** (0.01)
Specialism index of focal idea creator	0.41+ (0.21)	0.44* (0.21)	0.44* (0.21)	0.43* (0.21)
Prior comments to own ideas by focal idea creator	0.14* (0.07)	0.10 (0.07)	0.08 (0.07)	0.11+ (0.06)
Prior likes of own ideas by focal idea creator	-0.08 (0.14)	-0.12 (0.14)	-0.11 (0.13)	-0.12 (0.14)
Prior commitments to own ideas by focal idea creator	-0.26** (0.09)	-0.22** (0.08)	-0.21** (0.08)	-0.23** (0.08)
Prior comments to others' ideas by focal idea creator	0.00 (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.04 (0.03)
Prior commitments to others' ideas by focal idea creator	0.04 (0.13)	-0.00 (0.12)	-0.01 (0.11)	0.02 (0.11)
Prior likes of others' ideas by focal idea creator		0.07 (0.05)	-0.01 (0.08)	-0.07 (0.12)
Prior likes of others' ideas * Idea novelty			0.02 (0.01)	
Prior likes of others' ideas * Idea feasibility				0.02 (0.02)
Observations	6,628	6,628	6,628	6,628
Ideas	222	222	222	222
Log pseudolikelihood	-4489.60	-4480.22	-4473.52	-4475.73

Robust standard errors in parentheses *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

substituting *idea commitments* with *idea likes* as a dependent variable, and we explore whether generalized exchange also occurs for weaker forms of idea support. In addition, we examine the role of idea characteristics. The results are presented in Table 5.

Table 5 shows that generalized exchange dynamics do not affect the amount of support an idea receives in terms of likes. Idea creators who show their engagement on the crowdsourcing platforms by liking others' ideas do not generate additional likes for their own idea. Furthermore, idea characteristics do not seem to moderate this relationship. These results support our arguments about the implications related to the strength of idea support signals that participants on the platform send by engaging in different types of behavior. Committing to an idea constitutes a serious signal of support because it is an action backed by substantial investments in terms of time, resources, and reputation, whereas liking an idea constitutes a weak signal of support due to the absence of such investments.

Furthermore, our arguments rooted in theories of generalized exchange may be partly explained by processes of direct reciprocity (Faraj and Johnson, 2011). Arguments related to the concept of direct reciprocity would predict that commitments to the focal idea would increase when the participant committing to the focal idea submitted in the past an idea to which the focal idea creator had already committed. We explore this possibility by counting the number of reciprocal commitments in our sample. Out of 436 total instances of idea commitment in our sample (excluding those to own ideas), only 12 (roughly 2.75%) are the consequence of direct reciprocity, indicating already at a preliminary descriptive level that dynamics of direct reciprocity are almost not represented in our data. We then tested explicitly for the additional effect of direct reciprocity on the backdrop of our hypothesized mechanisms of generalized exchange in two ways. We first coded a dummy variable that took the value 1 when a commitment from a participant to the focal idea was preceded by a reciprocal commitment by the focal idea creator to one of the participants' ideas. We then aggregated this dummy in our panel data structure and tested the variable *prior reciprocal commitments* which yielded a non-significant result without

altering the magnitude and significance of the other parameter estimates. We present the results of this robustness check in Table 6. We find no significant evidence for the principle of direct reciprocity. Instead, our findings suggest that—*ceteris paribus*—idea creators seem to generate commitment to their own idea through generalized exchange dynamics. For additional evidence, we re-ran our initial model but excluded the 12 instances of direct reciprocity from the 436 instances of idea commitment, and we found that results are consistent in significance and magnitude.

In addition, one may argue that ideas submitted by creators with more experience or higher in the organizational ladder are more likely to attract commitments, due to processes of status attainment in online contexts (Stewart, 2005). Our panel data structure allows us to average out time-invariant sources of unobserved heterogeneity such as tenure or hierarchy. Nevertheless, we can include these variables as interaction terms to test whether generalized exchange processes are driven by these factors. We report in Table 6 the results of this robustness check as well. We find no significant result for *idea creator tenure* and a marginally significant positive result for *idea creator hierarchy*, meaning that ideas are attracting marginally more commitments as a result of generalized exchange when idea creators have a higher position in the hierarchy. These effects do not affect the sign and significance of our main variable of theoretical interest.

Finally, it may be argued that the challenge that derives from committing to less feasible ideas may be instead driven by the fact that less feasible ideas may also be underdeveloped, and therefore call for external support. In order to tease apart the effect of degree of idea elaboration from that of idea feasibility we follow established practice and used the word count in the description box of an idea as a proxy for *degree of idea elaboration* (Beretta, 2019; Piezunka and Dahlander, 2015). Furthermore, we also created a second proxy—a dummy variable that captures the presence of additional material such as pictures or technical sketches which could be attached to the description of an idea. We ran a new model where we interacted these two proxies with our independent variable *prior commitment to others' ideas by focal idea*

Table 6
Further robustness tests on fixed-effects Poisson regression models of *idea commitments*.

	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Prior likes of focal idea	-0.02** (0.01)	-0.03 ⁺ (0.02)	-0.03* (0.01)	-0.02** (0.01)	-0.02** (0.01)	-0.02* (0.01)
Prior comments to focal idea	0.03 (0.03)	0.06 (0.05)	0.07 (0.05)	0.03 (0.03)	0.04 (0.03)	0.02 (0.03)
Prior commitments to focal idea	-0.05** (0.02)	-0.03 ⁺ (0.02)	-0.04* (0.02)	-0.05** (0.02)	-0.05** (0.02)	-0.05* (0.02)
Prior submissions by focal idea creator	0.55** (0.20)	0.52* (0.21)	0.53** (0.18)	0.55** (0.20)	0.55** (0.19)	0.55** (0.19)
Number of submitted ideas on the platform	0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Specialism index of focal idea creator	1.14 ⁺ (0.59)	0.77 (0.49)	1.01 ⁺ (0.53)	1.15 ⁺ (0.59)	1.15 ⁺ (0.59)	1.22* (0.58)
Prior comments to own ideas by focal idea creator	-0.07 (0.09)	-0.13 (0.12)	-0.11 (0.12)	-0.07 (0.09)	-0.07 (0.09)	-0.06 (0.09)
Prior likes of own ideas by focal idea creator	0.03 (0.19)	0.14 (0.19)	0.02 (0.21)	0.02 (0.19)	0.03 (0.19)	0.08 (0.19)
Prior commitments to own ideas by focal idea creator	-0.41*** (0.06)	-0.37*** (0.06)	-0.43*** (0.06)	-0.41*** (0.06)	-0.40*** (0.06)	-0.40*** (0.06)
Prior comments to others' ideas by focal idea creator	0.02 (0.08)	-0.01 (0.05)	0.01 (0.08)	0.03 (0.08)	0.03 (0.08)	0.05 (0.06)
Prior likes of others' ideas by focal idea creator	0.17 ⁺ (0.09)	0.28 ⁺ (0.16)	0.22 ⁺ (0.13)	0.17 ⁺ (0.09)	0.17 ⁺ (0.09)	0.15 (0.09)
Prior commitments to others' ideas by focal idea creator	0.26* (0.11)		0.36* (0.15)	0.28** (0.11)	0.65*** (0.19)	0.86** (0.33)
Prior reciprocal commitments		-0.32 (0.29)	-0.54 (0.34)			
Prior commitments to others' ideas * Idea creator tenure				-0.01 (0.02)		
Prior commitments to others' ideas * Idea creator hierarchy					-0.08 ⁺ (0.04)	
Prior commitments to others' ideas * Idea feasibility						-0.16** (0.06)
Prior commitments to others' ideas * Degree of idea elaboration (nr of words)						0.00 (0.00)
Prior commitments to others' ideas * Degree of idea elaboration (attachments)						0.09 (0.16)
Observations	4,523	4,523	4,523	4,523	4,523	4,523
Ideas	151	151	151	151	151	151
Log pseudolikelihood	-1033.48	-1036.24	-1027.22	-1033.41	-1032.68	-1031.11

Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

creator. We also included our initial interaction effect between *idea feasibility* and *prior commitment to others' ideas by focal idea creator*. The final model in Table 6 shows that the interaction effects including the two measures of *degree of idea elaboration* are statistically insignificant while the significance of the interaction between *idea feasibility* and *prior commitment to others' ideas by focal idea creator* holds. These results provide evidence that it is indeed low idea feasibility that is driving the generalized exchange dynamics of idea commitments, above and beyond the degree of idea elaboration.

6. Discussion

In this paper, we studied how idea creators in an R&D intensive context attract support for their ideas on a crowdsourcing platform. Our analysis revealed that by committing to the ideas of others, idea creators are able to increase the number of commitments they get for their own ideas. We show that high idea novelty and low idea feasibility further enhance this reciprocity dynamic—creators who commit to others' ideas attract even more commitments from peers on the platform to their own idea when their idea is very novel or not very feasible.

6.1. Theoretical implications

Our study provides several novel contributions to the literature. First, most crowdsourcing literature takes a very individual perspective by showing how participants generate creative ideas on crowdsourcing platforms (e.g., Bayus, 2013; Poetz and Schreier, 2012). Recent research

has pointed out that idea creators can also improve their ideas by receiving feedback from peers (Wooten and Ulrich, 2017; Zhu, Kock, Wentker, and Leker, 2019), but little is known about how teamwork and collaboration can be facilitated on crowdsourcing platforms. The present study addresses this gap by examining how idea creators can get support from other peers to collaboratively develop and realize their ideas. We demonstrate that the behavior of an idea creator on the crowdsourcing platform is inextricably linked with how motivated others on the platform are to support a creator's focal idea (Podolny, 2001; Zuckerman, 2012).

Second, our findings have implications for the organizational creativity literature. Existing research has argued that idea development is a critical phase in an idea's journey—a phase that takes place after an idea has been generated, but before it is fully realized (Deichmann, Moser, and Van den Ende, 2020; Kijkuit and Van den Ende, 2010; Perry-Smith and Mannucci, 2017). In this phase, emphasis is placed on refining an idea and transforming it into a concrete project (Kijkuit and Van den Ende, 2010; Perry-Smith and Mannucci, 2017). Idea creators need two types of support in this phase: emotional encouragement and constructive feedback (Perry-Smith and Mannucci, 2017). Prior studies have shown that these forms of support are likely to be gained from strong ties (Deichmann et al., 2020; Kijkuit and Van den Ende, 2010), but these studies have not addressed how these strong ties can be established—especially on a crowdsourcing platform where the crowd is often composed of many online strangers (Majchrzak and Malhotra, 2013). This is surprising in that the success of any idea is often a collective effort, so idea creators need to involve other people to successfully bring

their idea to fruition (Deichmann and Jensen, 2018; Hargadon and Bechky, 2006). In this study, we show that idea creators can initiate strong and supporting ties with peers on a crowdsourcing platform by first committing themselves to the ideas of others, and thus triggering generalized exchange dynamics in creative contexts. In addition, we identify certain characteristics of submitted ideas as important boundary conditions for the effectiveness of this system of generalized exchange. We show that ideas with high novelty and low feasibility provide challenging yet uncertain opportunities for collaboration and learning. In such a case, an idea creator's behavior becomes a particularly salient signal that peers take into consideration when deciding whether to collaborate with him or her.

Third, our study makes important contributions to the commitment literature (Klein et al., 2012) by extending the concept of commitment to ideas submitted to a crowdsourcing platform, and by identifying a behavioral mechanism through which this "psychological state" (Meyer and Anderson, 2016) of commitment is generated. While most scholars have focused on more durable forms of attitudinal commitment, we shed light on people's commitment to ideas—a form of action commitment of a more temporary nature (Meyer and Anderson, 2016; Neubert and Wu, 2012) and which, in our context, manifests itself in behavioral decisions to offer time and resources for the realization of a project. In addition, many studies have conceptualized commitment as a one-way relationship and explored the factors that influence either the provision or the receipt of commitment (e.g., Hill et al., 2012; Hoegl et al., 2004). We propose a different perspective and show that if idea creators on a crowdsourcing platform want to gain commitment and support from others for their idea, they first need to commit their time and energy to the ideas of others. Our findings demonstrate that only committing to someone else's idea, and not just liking it, will help idea creators in attracting commitments from peers for their own idea.

6.2. Managerial implications

Organizations increasingly crowdsource new ideas from their employees on internal crowdsourcing platforms (e.g., Deichmann and Van den Ende, 2014; Malhotra, Majchrzak, and Loomam, 2017; Zuchowski, Posegga, Schlagwein, and Fischbach, 2016). While taking the specific context of our study into consideration—Renault has a strong focus on innovation and many employees are highly engaged in innovation activities and hence very open-minded about novel and scarcely feasible ideas—our findings also offer important insights on how to design successful internal crowdsourcing platforms or innovation contests. A central implication of our study is that intra-organizational innovation contests should not solely be competitive as such a focus could hinder idea creators' engagement with others' ideas. We unpack the desired online behaviors that are important to making crowdsourcing platforms successful and undesired online behaviors that can inhibit their success (Malhotra et al., 2017; Organ, 2018; Podsakoff et al., 2000; Riedl and Woolley, 2017; Shen et al., 2014). Our findings show that it is desirable when idea creators are being supportive to others. Not all kinds of support and prosocial behavior on the crowdsourcing platform, however, will result in an increased amount of commitments for the own idea (Ehrhart, 2018). We found that idea creators who commit themselves to the development of others' ideas are in a better position to get support in the form of commitments to their own ideas. While this does not mean that liking others' ideas is not important—in fact, doing so might still constitute a form of emotional support (Ehrhart, 2018; Malhotra and Majchrzak, 2014)—it does suggest that committing to others' ideas is a more consequential type of support. It entails a greater and riskier investment of time and resources (Deichmann and Jensen, 2018; Gebauer et al., 2013; Gomez-Mejia et al., 2000; Shepherd and Cardon, 2009) and, as a consequence, may also be considered a more serious signal of support. Interestingly, our results also show that committing to their own ideas is not helpful to idea creators and that doing so may constitute undesirable behavior on crowdsourcing platforms. One

plausible explanation for this effect is that committing to your own ideas might be perceived as self-serving behavior and not as behavior that is in the interest of the crowdsourcing community or the company (Berg, 2016; Organ, 2018).

With this in mind, platform managers should offer possibilities for participants to engage more deeply with the ideas of others even before these ideas are evaluated or selected by the organization. Our study shows that committing to others' ideas can be such a form of engagement. It allows peers to support idea creators by making a concrete offer to dedicate time and energy into moving forward their ideas. The support can have an encouraging component and therefore is useful for creators who face implementation challenges or resistance to their ideas (Amabile et al., 2004; Baer, 2012; Lechner and Floyd, 2012; Madjar et al., 2002). Such support may also be constructive in helping creators build a better and more thought-through case for their idea (Alexander and van Knippenberg, 2014; Deichmann and Van den Ende, 2014; Kurtzberg and Amabile, 2001).

To facilitate collaboration on the crowdsourcing platform and the use of the idea commitment functionality, managers need to clearly communicate that they value and reward collaboration. For instance, when people join the platform, managers could stress that engagement with others' ideas is very much appreciated and considered good citizenship. By requiring from idea creators that, at the time an idea is screened and evaluated, people have committed themselves to their idea, managers can create an indirect incentive for collaboration. Alternatively, they can reward collaboration more directly by offering incentives not only to participants who submit ideas but also to those who contribute in other ways (e.g., by committing to others' ideas). To benefit even more from the idea commitment functionality, it may be helpful to ask idea creators to formalize which specific expertise or skills are needed to develop their ideas. This may help idea creators to reflect on their own competences and to determine which types of support they truly need to move their ideas forward. Providing this information will also help peers to more accurately determine whether they can help the idea creator or not.

The idea commitment functionality can also be important in facilitating a firm's decision-making process about ideas (Criscuolo et al., 2017; Criscuolo, Dahlander, Grohsjean, and Salter, 2021). Innovation contests often permit participants to generate many creative ideas but not all of these ideas can be developed. Selecting the best, therefore, requires a careful idea evaluation process. Besides evaluating an idea's novelty or feasibility—typical idea evaluation metrics (Zhou, Wang, Bavato, Tasselli, and Wu, 2019)—it may also be important for firms to take into account how much interest and support there is for an idea from other participants on the platform. The number of people who commit themselves to someone else's idea can be an important criterion in this regard. In contrast to votes or "likes" for ideas, which can be socially biased because of their inconsequential nature (Hofstetter et al., 2018), an idea commitment is a stronger signal of support. As our interviews confirmed, the degree of commitment was much higher when participants indicated that they would want to join an idea rather than when they just liked an idea. Moreover, people carefully considered whether they wanted to commit themselves to an idea as they could expect social sanctions when withdrawing from a commitment. This consideration suggests that idea commitments are a stronger and more credible indicator than general expressions of interest and support through "likes."

6.3. Limitations and future research directions

The limitations of our study open several interesting avenues for future research. First, our study focused on providing a better understanding of how idea creators form a group of committed supporters even before any idea selection has taken place. From different interviews with the crowdsourcing participants, we learned that it is unlikely that idea commitments are just cheap talk. Interviewees confirmed that once

an idea was selected, idea creators contacted those peers that committed to their idea in order to get their help. Likewise, peers who committed to others' ideas also expected that the idea creator would call on them if the organization selected that idea. That said, future research could fruitfully extend our study and examine potential differences in the people who initially committed to ideas on the crowdsourcing platform and people who eventually worked on the realization of a selected idea.

Next, our study focused on online behaviors related to a limited number of ideas that were submitted to Renault's internal crowdsourcing platform. As long as the idea commitment behavior of idea creators on the platform is visible to other participants, there is no reason to believe that our results do not generalize beyond the Renault context. However, replicating our results for external crowdsourcing platforms might be useful. One interesting avenue for the vibrant literature on external crowdsourcing (e.g., Acar, 2019; Afuah and Tucci, 2012; Majchrzak and Malhotra, 2020; Schemmann et al., 2016) could be to investigate whether external idea creators can apply the same behaviors as internal idea creators to create commitment to their ideas.

Another interesting research direction would be to examine how informal network structures that people have outside of the crowdsourcing platform may complement or even contradict their online behavior. Unlike an online environment where interactions are readily visible to everyone who has access, offline networks are more confined and feedback is tailored within a distinct conversation (Ollier-Malaterre, Rothbard, and Berg, 2013). Rather than triggering generalized exchange dynamics, committing offline to others' ideas may therefore lead to more direct reciprocity. It would also be interesting to study the interplay between online and offline behavior and to examine, for instance, whether having a large offline network has any moderating effect on the generalized exchange dynamics we observed online and whether online or offline networks matter more in the beginning or the end of an idea journey.

Finally, our study focused on the novelty and feasibility of the creator's idea and in what way these idea characteristics can enhance or diminish the effect of an idea creator's commitment to others' ideas on the commitments he or she receives for the own idea. It would be interesting to study whether the novelty and feasibility of the ideas that a creator commits to also alter the generalized exchange dynamics that were the focus of the current study.

6.4. Conclusion

To facilitate innovation, organizations increasingly use internal crowdsourcing platforms to generate new ideas. However, the platforms are often competitive, and little is known about how to facilitate more collaboration to develop and realize ideas. In this paper, we studied an online crowdsourcing platform at Renault and unpacked the ways in which idea creators assemble a team of supporters who commit their time and energy to the development and realization of ideas. Our study has important implications for the crowdsourcing, creativity, and commitment literature by demonstrating that generalized exchange dynamics are activated when idea creators commit their time and energy to others' ideas, leading to an increased number of commitments from other peers to the own ideas—especially when these ideas are very novel or not very feasible. A central managerial implication of our study is that crowdsourcing platforms should not solely be designed as competitive innovation contests but, instead, should facilitate more possibilities for participants to collaborate and support the development of others' ideas.

Declaration of Competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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