

# **Will employees try again? – Contingencies of serial idea submissions**

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## **Abstract**

Employees' ideas are a crucial source for organizational creativity and innovation. As firms cannot implement all ideas employees generate, they must decide which ideas to select and which ideas to reject. Idea evaluation decisions, in turn, affect future idea generation and sustained innovativeness of firms, as idea rejections are known to dampen future submissions. However, the contingency factors under which idea decision impacts future submissions are unclear. Thus, we set out to investigate under what conditions the outcome of idea evaluation processes in organizations, that is selection versus rejection of decisions, are more or less likely to affect employees' future idea submissions. Drawing on feedback theories and social exchange theory, we argue that the effect of an idea rejection versus an idea selection is larger for higher levels of idea ownership (individual ownership and shared ownership) and smaller for higher levels of organizational attention in the evaluation process (number of idea evaluators and short evaluation time). We test our prediction in a sample of more than 300,000 idea evaluation decisions from more than 30,000 idea creators in a large organization. We find that the effect of idea rejections as opposed to idea selection on future idea submissions is larger for higher levels of ownership (individual ownership and shared ownership) and smaller for higher levels of attention (number of idea evaluators). We find no evidence for our expectation that the effect of idea rejections will be less harmful for timely attention (short evaluation time). We contribute to research on outcomes of idea evaluation, ownership, and organizational attention.

# Will employees try again? – Contingencies of serial idea submissions

## 1 Introduction

Idea generation is crucial for firms to remain competitive. Employees within an organization are a key source of ideas: firms use means such as suggestion boxes, internal crowdsourcing, or idea management systems to solicit employee ideas (Deichmann & Ende, 2014; Malhotra, Majchrzak, Kesebi, & Loram, 2017).

As firms cannot possibly implement all ideas, they must decide which ideas to pursue and which ones to reject. Decisions about submitted ideas affect subsequent submissions of new ideas (Deichmann & Ende, 2014; Piezunka & Dahlander, in press). While it seems evident that rejection is harmful for motivating future employee suggestions, it remains open under what circumstances the positive effect of selecting (vs. rejecting) an idea is more or less pronounced. In this paper, we set out to investigate under what conditions the outcome of idea evaluation processes in organizations, that is selection versus rejection decisions, is more or less likely to affect employees' future idea submissions.

We argue that employees' response to idea evaluation decisions is rooted in the question of *what* kind of performance has been evaluated and *how* the performance has been evaluated (Fletcher, 2001; Kim & Kim, in press; Kluger & DeNisi, 1996). Specifically, we argue that ownership over the submitted idea (individual and shared ownership<sup>1</sup>) and organizational attention to the submitted idea (number of evaluator and speed of process) shape the relationship between idea selection/rejection and future idea submissions. Following prior work on proactive behavior in firms (Bashshur & Oc, 2015; Grant & Parker, 2009), we take a social exchange perspective on idea submissions and decisions (Blau, 1964; Emerson, 1976): We hypothesize that the negative effect of an idea rejection

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<sup>1</sup> Ideas that are owned by more than one employee.

on future submissions is stronger the higher an idea creator's ownership of the idea, and weaker the more attention an organization allocates to evaluating the idea.

To test our theory, we use data from an idea suggestion system in a large organization (Deichmann & Ende, 2014), which encompasses more than 300,000 ideas from over 30,000 employees over 14 years. Our unit of analysis is idea evaluation decisions (98% of submitted ideas in our dataset received an evaluation decision) and subsequent submissions from employees. We conduct survival time analysis in the form of Cox proportional hazard models and marginal risk set models (Wei, Lin, & Weissfeld, 1989).

Our findings show that, as expected, idea rejections are less likely than idea selections to invite future submissions. The negative effect of rejections versus selection is stronger for high levels of ownership (individual ownership and shared ownership), as hypothesized. We also find that the effect of rejections is weaker if ideas received higher management attention, as measured by the number of evaluators. We do not find support for our hypothesis that management attention in the form of short evaluation time shapes the relationship between rejection/selection and future submission in the same way.

Our research has implication on the little understood topic of how decisions about voiced and submitted ideas affect future creativity (Morrison, 2011). Specifically, we contribute to research by introducing ownership and attention as contingency factors to the relationship between outcomes of the evaluation process and continuous idea submissions (Piezunka & Dahlander, in press). We also contribute to research on ownership of ideas (Baer & Brown, 2012) by elucidating the outcomes of different types of idea ownership on individuals' creativity. Lastly, we show how different types of organizational attention (time versus effort) affect idea submission in organizations differently (Dahlander & Piezunka, 2014; Piezunka & Dahlander, 2015).

## **2 Theoretical background**

### **2.1 Past idea decision and future idea submissions**

Digitalization has changed how firms organize innovation and engendered distributed innovation processes (Yoo, Boland Jr, Lyytinen, & Majchrzak, 2012). Digital technologies allow firms to engage in cocreation, inviting users, employees, and other stakeholders to continuously contribute ideas to the innovation process. A sustained and continuous stream of ideas fosters organizational innovativeness, and a large body of literature has explored what motivates idea creators to suggest ideas to organizations, specifically motivation (Acar, 2018; Frese, Teng, & Wijnen, 1999), incentives (Boudreau, Lacetera, & Lakhani, 2011; Jeppesen & Lakhani, 2010), self-efficacy (Axtell et al., 2000; Frese et al., 1999), needs (Jeppesen & Frederiksen, 2006; Schweisfurth & Dharmawan, 2019), or organizational attention (Dahlander & Piezunka, 2014; Jeppesen & Frederiksen, 2006).

However, to profit from ideas from its stakeholders, organizing to sustain a continuous flow of ideas is not enough. As firms cannot implement all ideas, they need to evaluate incoming ideas: they must decide which ideas to select and which ones to reject and inform the idea creators about their decisions. More recently, some scholars investigated how selection and rejection of prior ideas affect subsequent ideation behavior. Bayus (2013) shows that past success in terms of selected ideas is negatively related to valuable and creative idea submissions. He argues that this finding is rooted in the fact that successful idea creators get entrenched in the knowledge domain of their successful ideas and become less innovative (cf. cf. Dane, 2010). Deichmann and Ende (2014) explore how cumulated prior successes and failures of submitted ideas affect future submission and find that, contrary to their expectations, idea creators' failures, rather than successes, stimulate future initiation of ideas. They attribute this finding to the fact that creators receiving idea rejections, as opposed to idea selections, learn to built resilience and to fail which in turn fosters creativity. Piezunka and Dahlander (in press)

argue that idea rejections (and selections) create a bond between a submitter and an organization. They find that idea rejections are more likely to invite another submission than no response from the organization and that this relationship is stronger when submitters feel they match with the organization.

To summarize, very few papers have investigated why and how idea selections versus rejections affect future submissions, painting an inconclusive picture. Especially, what is lacking in the literature as of now is an account of the factors which shape the relationship between idea evaluation decisions and future ideas within organizations. At the core of our paper lies the relationship between feedback on submitted ideas and future idea submission and under which conditions (specifically ownership and attention) positive feedback (idea selection) and negative feedback (idea selection) affect future submissions.

## **2.2 A social exchange perspective on idea decisions**

We take a social exchange perspective on our phenomenon. Social exchange is an unspecified, non quid-pro-quo exchange between entities based on expectations by the other party (Blau, 1964; Emerson, 1976). Norms of reciprocity represent the central tenet of social exchange theory in organizations: if one entity supplies a benefit, the receiving entity responds (Cropanzano & Mitchell, 2005). Employees assess the value of the relationship between the organization and themselves by comparing benefits and costs of the relationship (Emerson, 1976). If they perceive the relationship to be worthwhile and fair and benefits higher than costs, they will go beyond minimal requirements and reciprocate (Van Dyne & Ang, 1998). The type of reciprocation behavior we investigate is proactive initiative taking at work in the form of submitting ideas to the organization (Deichmann & Ende, 2014; Frese et al., 1999).

Idea submission and subsequent evaluation represent an exchange of resources between the idea creator and the evaluating organization (cf. Huang & Knight, 2017); an individuals' attribution

of whether the exchange has been rewarding or not likely affects future submission (Bashshur & Oc, 2015). Higher perceived benefit from a social exchange is more likely to trigger future idea submissions, as employees feel obliged to reciprocate. Selection and rejection decisions are likely to affect employees' attributions of whether the submission process was beneficial for them or not.

In addition to the feedback decision as such, performance in response to feedback is adapted by individuals in the light the of *what* kind of performance has been evaluated and *how* the performance has been evaluated (Fletcher, 2001; Kim & Kim, in press; Kluger & DeNisi, 1996). We argue that how individuals appraise selection or rejection decisions and the associated outcome of this social exchange is shaped by two factors: the perceived relevance of a submission (i.e. feelings of ownership over the evaluated idea) and the perceived attention by the organization (attention given to the evaluation of the idea). Feelings of ownership of ideas is likely to shape individuals' perception of what they have contributed to the social exchange with the organization (Dawkins, Tian, Newman, & Martin, 2017). Perception of managerial attention is likely to shape individuals' perception of what the organization has contributed to the social exchange with the individual (McClean, Burris, & Detert, 2013).

In summary we argue that the effect of idea evaluation decisions on individuals' urge to reciprocate to the organization in form of future submission will be shaped by their ownership of the evaluated idea and the organization attention in the evaluation process. The framework for our study can be found in Figure 1.

### **3 Hypotheses**

We provide theory-based arguments to the baseline hypothesis that idea acceptances, as opposed to rejections, are more likely to promote future idea submission, arguing under which circumstances the effect of idea acceptance (as opposed to idea rejection) is becoming larger or

smaller. Specifically, we analyze how ownership (individual and shared ownership) and attention (number of evaluators and time to decision) shape the relationship.

### **3.1 Idea selection versus idea rejection**

We suggest that idea selections are more likely to invite future submissions than idea rejections. Idea submissions represent a problem that employees deem relevant and that they seek solutions for. Rejections signal to submitters that the organization does not share the view that the problem the employee perceives to be relevant or should be solved. Employees may perceive lack of support by the organization for the idea and the feeling that they have put in effort, but that the organization does not perceive their problem as seriously as they anticipated it would. The perceived disappointment and feeling that their idea is worthless to the firm lowers their motivation to contribute in form of future idea submissions. In contrast, individuals whose ideas have been selected feel that the organization is listening to them which and that it is willing to fix their problems (Morrison, 2011). This leads to a feeling that the organization share their estimation that the submitted idea is relevant and that the organization is willing to accept their idea, which in turn fosters employees' motivation to reciprocate. These arguments are in line with findings from prior research that has shown that idea selections are significantly more likely than idea rejections to invite future submissions of individuals (Piezunka & Dahlander, in press). As a baseline hypothesis we expect that:

*Baseline hypothesis:*

*Idea rejection decisions are less likely to yield future idea submissions than idea selection decisions.*

### **3.2 Ownership**

We argue that the ownership over an idea shapes how employees react to their idea being selected or rejected. Ownership describes possessive feelings towards an object, exemplified by

expressions such that an object is “mine” or “ours” (Pierce & Jussila, 2011). Ownership describes a relationship between a target of ownership and an individual or group of individuals (Pierce, Kostova, & Dirks, 2001). Higher feelings of ownership are characterized by the feeling that the owned object is an extension to ones’ self, part of ones’ identity, and of high importance to oneself (Dawkins et al., 2017; Pierce & Jussila, 2011; Pierce et al., 2001).

Ideas are a potential target of ownership and individuals can develop strong feelings about the extent to which an idea is theirs or not (Dawkins et al., 2017; Grimes, 2018; Pierce & Jussila, 2011). Individuals favor their own ideas over others (Keum & See, 2017) and are less likely to adopt changes to own ideas (Baer & Brown, 2012). In line with the notion that ownership not only relates to exclusive ownership but also to shared ownership (Pierce & Jussila, 2010), we focus on two types of ownership over ideas: individual and shared ownership. Individual ownership describes how much an individual feel that “this ideas is mine”, depending on how much they have invested in creating the idea (Baer & Brown, 2012; Pierce & Jussila, 2011). The higher an individual’s ownership over an idea, the more relevance and commitment the individuals will assign to an idea. Shared ownership describes how much an individual feel that “this ideas is ours”. Collective feelings of ownership are rooted in “a collective recognition of shared action toward the potential target of ownership [and] likely to be influenced by the degree to which each member of the group has traveled down one or more of the routes to ownership feelings (e.g., experienced control, intimate knowing) coupled with the degree to which there is a collective understanding that we (as an us) have traveled down those routes together” (Pierce & Jussila, 2010, p. 818, p. 818). With higher levels of shared ownership, i.e. more individuals having contributed jointly to an idea, each individual is likely to assign higher relevance to an idea, because they feel that many others feel that this is a good idea and that the described problem deserve solutions. In summary, both individual and shared ownership engender idea creators’ feeling of importance relevance of an idea.



The more valuable and more relevant individuals perceive submitted ideas by means of individual or shared ownership, the larger will be the effect of a selected idea versus a rejected idea. For ideas for which individuals perceive high ownership over, they will feel that the organization does not share their value expectations of the idea. The mismatch between the immediacy of the problem perceived by the submitter, and the assessment of the relevance of the idea, are especially high. Thus, the associated feeling that the organization does not acknowledge a very relevant problem, is more pronounced for highly owned ideas. In turn, as employees feel that the organization does not invest in their ideas even if they mean a lot to them, will lead to a much more reduced motivation to reciprocate new ideas (as opposed to a highly owned idea being selected). In case of low ownership, we argue, it matters less whether an organization selects an idea or not. We hypothesize:

*H1:*

*Individual ownership over an idea (share of individual on an idea) will moderate the relationship between idea selection/rejection and idea resubmission such that the effect of idea rejection (as opposed to idea selection) is larger for high than for low levels of individual ownership.*

*H2:*

*Shared ownership over an idea (number of idea creators on an idea) will moderate the relationship between idea selection/rejection and idea resubmission such that the effect of idea rejection (as opposed to idea selection) is larger for high levels of shared ownership than for low levels of shared ownership.*

### **3.3 Organizational attention**

We argue that the attention an organization puts on an idea shapes how employees respond to their idea being selected or rejected. Organization attention is the “focusing of time and effort by organizational decision makers” (Ocasio, 1997 , p. 189) on specific issues and activities within the organization. Attention is a scarce resource in organizations and employees compete for attention

from leaders and decision makers. Higher attention from the organization likely induces reciprocation by employees because they feel the organization supports them and listens to them.

Ideas compete for attention (Chai & Menon, 2019; Lu, Bartol, Venkataramani, Zheng, & Liu, in press), and organizations have to attend at least to some extent to ideas to evaluate whether they are suitable for implementation or not (Piezunka & Dahlander, 2015; Ren & Guo, 2011). Higher attention by the organization is more likely to lead to idea submissions, because received attention strengthens the bond between the organization and the submitter and triggers reciprocity (Dahlander & Piezunka, 2014; Piezunka & Dahlander, in press). We focus on two types of organizational attention, effort and time (Ocasio, 1997). In the context of the idea evaluation process, effort relates to how many decision makers evaluate an idea, time refers to how fast a decision has been issued.

In line with our social exchange account we expect that higher attention (high effort, short decision time) will alleviate the negative effect of idea rejections on future submissions. If employees receive idea rejections they feel set back by the organization, as they receive the signal that their needs or problems which encompass the idea are not shared by the organization. This feeling will be especially strong if the organization does only put small attention on the idea evaluation process. Employees feel that the organization has not spend the needed effort for evaluation or not evaluate the idea in a due and timely process. If the organization puts high effort on idea rejection, the rejected individual will get the signal that the organization has invested into the evaluation process. This perception buffers the rejection and makes future submissions more likely. For idea acceptances, however, the effect of attention will be weaker. As their idea has been accepted, individuals are much less likely to evaluate whether the process has been due and whether the organization has attended to the idea sufficiently. We hypothesize:

*H3:*

*Number of evaluators will moderate the relationship between idea selection/rejection and idea resubmission such that the effect of idea rejection (as opposed to idea selection) is larger for few idea evaluators and smaller for many idea evaluators.*

*H4:*

*Evaluation time will moderate the relationship between idea selection/rejection and idea resubmission such that the effect of idea rejection (as opposed to idea selection) is larger for shorter waiting time and smaller for longer waiting time.*

## **4 Methods**

### **4.1 Data**

We use data from an organizational idea submission system for process innovations to test our hypotheses (Fuchs, Sting, Schlickel, & Alexy, in press). The submission system represents a sophisticated version of a suggestion box: Employees submit ideas to this system and the organization then decides which ideas are selected and which ideas are rejected. All types of ideas can be submitted to the system, but most ideas come from the production plants and encompass process innovations.

The idea submission and evaluation process operates in a way that employees who come up with an improvement idea feed this idea into the system. They describe the idea and provide other information: Specifically, they indicate whether they are the main submitter, how many other individuals participated in the idea, and what share of the idea each individual had over the idea. After the idea enters the systems it is assigned to an idea evaluator with expertise in the relevant domain. By default this is the supervisor of the idea creator, but more idea evaluators are added once additional expertise or feedback is needed in order to decide about the idea. When the idea evaluators reaches a conclusion, idea creators are informed whether their ideas are selected or not.

In case of idea selection, for most ideas (ca. 80%) the organization does not monetarily compensate the ideas submission, as the value of the idea could not be calculated. If the value could be calculated, the idea creators received a monetary compensation proportionate to the estimated value.

Overall the system included more than 450000 ideas from over 52000 employees over 14 years. Approximately 52% of ideas were selected, 46% were rejected, and 2% did not receive a decision in our timeframe. We cleaned up the sample by deleting the ideas that did not come from the main locations of the firm. For our analysis we could only use ideas that received a decision within the time of analysis which resulted in a reduced sample of more than 30000 employees and more than 300000 ideas.

## **4.2 Variables**

Our dependent variable, subsequent idea submission, captures whether an individual submitted an idea after receiving a decision (selection or rejection) for a previously submitted idea. If an idea creator submits again after a decision, the value takes a value of 1. In the base analysis we only use the first submission after a previous idea decision as dependent variable. In an extended analysis we present evidence whether a decision influences the likelihood of submitting ideas beyond the first resubmission. We measure outcome of the idea evaluation as the decision that was issued to idea creators (selection of idea = 1, rejection of idea = 0).

We measure individual ownership over an idea as individuals' share over an idea. Idea creators could indicate what share of a submitted idea was theirs, ranging from 0-100%. We measure shared ownership over an idea as the number of idea creators on a specific idea. Ideas could be jointly submitted by more than one employee.

We measure the organizational attention an idea receives in terms of number of evaluators and time of evaluation. Number of evaluators represents the number of evaluators that review an idea,

assuming that more evaluators means higher organizational attention. The evaluation time is the time between submission and final decision of an idea in days, assuming that shorter evaluation time means higher organizational attention.

We use several control variables. First, we control for the fact whether an idea creator is handling the submission in the system (similar to a corresponding author), which could engender feelings of responsibility towards an idea. Second, we control for the number of selected and rejected ideas an individual has accumulated before the time of the idea decision, as prior failure and success experience might affect future submissions (Deichmann & Ende, 2014). We also control for location effects (as the firms had two main sites at which the system was implemented) and for the hierarchical position (apprentice, temporary, middle management, and many other job descriptions). We control for whether the idea creators received a monetary compensation for their idea or not (1- received monetary compensation, 0 – no monetary compensation). We also control for submitter gender.

The descriptive data with means and standard deviations can be found in Table 1.

### **4.3 Estimation**

Our goal is to estimate under which circumstances a selected/rejected idea is more or less likely to invite further subsequent submission. We use survival time analysis in the form of Cox proportional hazard models and marginal risk set models that estimate the risk of subsequent submission after and an idea has entered the risk set when a decision has been granted (Wei et al., 1989). We account for potential dependence in individuals and event order (Box-Steffensmeier, De Boef, & Joyce, 2007). We use clustered models to control for the fact the idea submissions are clustered in individuals.

## **5 Findings**

The unit of analysis is the outcome of the idea evaluation process, i.e. an idea selection and whether an individual submits again after the decision or not. Our hypotheses aim at the differential

impact of idea selection versus idea rejection on future submission, depending on idea ownership and management attention. Empirically, we test our expectations by modeling an interaction between idea selection versus rejection and whether the other variables of interest significantly alter the relationship between selection/rejection and future idea submissions. The results from the Cox regressions can be found in Table 2, showing the coefficients instead of the hazard ratios. Figure 2 shows the interaction plots for our findings. The coefficients and graphs are taken from the full model 2. Models 1 and 2 are the main models, model 1 only showing main effects and model 2 including interactions. Models 3 to 8 show extensions in which we assess whether an idea selection decision also affects the likelihood to submit more than one subsequent idea.

## 5.1 Controls and baseline hypothesis

Inspecting the control variables, we see that individuals are more likely to submit a new idea if they have been the main submitter for an ideas and when they have received monetary compensation for an idea. We also see that the number of accepted submissions and accepted rejections<sup>2</sup> at the time of the decisions significantly affects future submissions (cf. cf. Deichmann & Ende, 2014). Inspecting the main effects in model 2 we see that individual ownership, shared ownership, and evaluation time have a direct negative effect on likelihood to submit a new idea.

We also check whether our baseline hypothesis holds. In line with prior work (Piezunka & Dahlander, in press), we would expect is that idea selections are more likely to invite future submission than idea rejections. We find support for this finding: Individuals are ca. 10% more likely to submit a new idea if the prior idea has been selected vs. rejected.

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<sup>2</sup> The effect of cumulated rejections is only significant at the 10% level in models 1 and 2 but highly significant in the extensions.

## **5.2 Hypothesis 1**

We hypothesized that individual ownership over an idea (share of individual on an idea) will moderate the relationship between idea selection/rejection and idea resubmission such that the effect of idea rejection (as opposed to idea selection) is larger for high than for low levels of individual ownership. We find that idea selection/rejection and individual ownership over an idea jointly affect future submissions, as the interaction effect is significant and positive. The negative effect of idea rejections becomes more pronounced when idea creators have high ownership over their ideas. Inspecting Figure 2, we see that the gap between idea selection and rejection becomes more pronounced for high shares of individual ownership. Thus, hypothesis 1 is supported. On a side note, we also see that higher individual ownership is negatively related to future idea submission.

## **5.3 Hypothesis 2**

We expected that shared ownership over an idea (number of idea creators on an idea) will moderate the relationship between idea selection/rejection and idea resubmission such that the effect of idea rejection (as opposed to idea selection) is larger for high levels of shared ownership than for low levels of shared ownership. We find support for hypothesis 2, as idea selection/rejection and individual ownership over an idea jointly affect future submission (significant and positive interaction effect). The negative effect of idea rejections becomes more pronounced when more idea creators share an idea. Inspecting Figure 2, we see that the gap between idea selection and rejection becomes more pronounced for high shared ownership. On a side note, we also see that higher shared ownership is negatively related to future idea submission.

## **5.4 Hypothesis 3**

We hypothesized that number of evaluators will moderate the relationship between idea selection/rejection and idea resubmission such that the effect of idea rejection (as opposed to idea

selection) is larger for few idea evaluators and smaller for many idea evaluators. In support of hypothesis 3, we find a significant negative interaction effect. The negative effect of idea rejections becomes less pronounced when many evaluators in the organization evaluate an idea. We do not find a significant direct effect of number of evaluators.

## **5.5 Hypothesis 4**

We expected that waiting time will moderate the relationship between idea selection/rejection and idea resubmission such that the effect of idea rejection (as opposed to idea selection) is larger for shorter waiting time and smaller for longer waiting time. We do not find support for hypothesis, as the interaction between the time between submission and decision and the selection/rejection decision do not interact in a significant way. We do find, however, that the waiting time has a strong and significant negative impact on idea resubmission, independent of the issued decision.

## **5.6 Extension beyond first idea resubmissions**

Until now we have investigated how idea evaluation decisions affect the likelihood to submit again once. Models 3-7 extend the analysis and check whether an idea decision does not only affect an individuals' decision to submit once, but also future decisions. We estimate whether an idea decision affects the likelihood to submit ideas beyond the first idea to the  $n$ th idea. We choose 2, 5, 10, 20, 50, and all ideas for  $n$ . For these extensions, we use stratification to account for the fact that the hazard for submitting the first idea after a decision is different than for later the second, third, or  $n$ th idea submission.

We find that our findings remain the same for the first 20 ideas submitted after a decision. Moving beyond 20 idea the effects of attention vanish. The effects of ownership remain with the same direction. Interestingly, the main effects of idea selection and idea rejection become insignificant, but



the interaction with ownership remains intact. We interpret this finding such that in the very long term, ownership effects prevail, and idea rejections only keep hurting for highly owned ideas.

## **6 Discussion**

### **6.1 Summary**

Focusing on idea submissions in organization, we investigate under which circumstances the negative effect of idea rejections (versus selections) become more pronounced. We find evidence that the negative effect of an idea rejection (as opposed to an idea selection) on future submissions becomes stronger when individuals perceive high ownership over an idea that is if they feel a high percentage of the idea is theirs (individual ownership) and if many others share the idea (shared ownership). We find evidence that the negative effect of an idea rejection (as opposed to an idea selection) on future submissions becomes weaker if the organization puts high attention on the idea evaluation process in form of number of evaluators (but not in form of timeliness of evaluation).

### **6.2 Theoretical implications**

#### **6.2.1 Idea evaluation decisions as feedback**

First, we contribute to understanding how idea evaluation decisions affect future idea submissions. This literature has investigated whether prior success or failure in idea evaluation processes affects future submissions (Bayus, 2013; Deichmann & Ende, 2014; Piezunka & Dahlander, in press). We introduce contingency factors under which idea rejections (as opposed to idea selection) are more or less likely to yield future submissions in organizations. Prior research has focused of direct effects of selection and rejections decisions but failed to consider which intricacies of the idea evaluation process shape the effect of selection and rejections. The findings also inform the literature of proactive behaviors such as submission and voicing of ideas, which has called for

longitudinal studies that explore how reactions to voicing ideas affects future expressions of voice (Bashshur & Oc, 2015).

Second, we contribute to understanding how idea selection and rejection decisions operate within the organization. The organizational context is conceptually different from crowdsourcing (Piezunka & Dahlander, in press). As employees are already bound to the organization, newcomer binding mechanisms may not be the prevalent mechanism within the organization. Second, the default option outside the organization, that is not attending to idea requests at all, is not an option inside the firm (in fact, only 2% of idea submissions in our sample have not received a decision (yet)). We contribute to research by taking a social exchange perspective on the phenomenon and shed light on selection and rejection management moderators relevant within the organization.

Third, we integrate different perspective in prior research on how idea rejections and decisions operate. Whereas Piezunka and Dahlander (in press) find that rejections versus selection decisions are less likely to stimulate future idea submissions, Deichmann and Ende (2014) show that prior cumulated idea rejections positively relate to future idea submissions. We can replicate both findings which shows that decisions on idea submissions have two types of effect. First, the direct effect of a submissions versus rejections decisions, which as such affects future submissions: here the effect of idea rejections is negative since employees are less likely to reciprocate once rejected. Second, a long term accumulated effect of idea rejections, which builds resilience among employees which have been rejected (and accepted) often.

### **6.2.2 Ownership of ideas**

We contribute to the small literature on ownership of ideas (Baer & Brown, 2012; Dawkins et al., 2017). This research has investigated how ownership of ideas affects the adoption of suggestions (Baer, Dirks, & Nickerson, 2013), but not how ownership affect future creativity. We find that the effect of idea selection versus rejection is more pronounced when individuals feel high ownership

towards an idea. Rejections hurt most for ideas that individuals are especially attached to. Interestingly, our findings indicate that higher perceived ownership over an idea (individual and shared ownership of an idea) is not only negatively related for idea rejections, but also for selections. This makes sense from the social exchange logic we put forward: for ideas over which submitters perceive higher ownership, and that they thus deem highly relevant, individuals are less likely to view idea selections like a concession, but more like a rational decision on behalf of the organization. If they perceive only small ownership of an idea, rejections hurt less, but at the same time selections are more perceived as an unexpected thrust of support by the organization which in turn triggers reciprocity in form of future idea submissions.

### **6.2.3 Attention to ideas**

Our findings also contribute to literature linking attention and innovation (Dahlander & Piezunka, 2014; Piezunka & Dahlander, 2015; Piezunka & Dahlander, in press; Ren & Guo, 2011).

First, the literature has mainly studied the conditions under which organizations attend to ideas or not (Haas, Criscuolo, & George, 2015; Piezunka & Dahlander, 2015; Ren & Guo, 2011). We add to the few studies that have investigated the outcomes of organizational attention (Dahlander & Piezunka, 2014). However, these studies have focused on external contributor in open innovation. We speak to this stream by investigating the outcomes of managerial attention for future creativity within firm. Second, we answer calls for research on how different qualities of attention affect innovation (Van Knippenberg, Dahlander, Haas, & George, 2015): we show that time and effort, two main components of organizational attention (Ocasio, 1997), operate differently in facilitating future idea submissions. Higher attention is inherently positive for the timing of attention: Short evaluation times make future submissions more likely independent of whether and idea is rejected or not. The effect for attention effort is contingent on the idea selection decision. More evaluators only make future idea submissions more likely, if an idea has been rejected. Third, our extensions analyses speak

to attention research by zooming in on the dynamic dimension of attention (Ocasio, Laamanen, & Vaara, 2018). Attention is motivating in the short run, affecting the likelihood of future submissions in the near future. However, over time, individuals seem to forget that the organization has allocated attention to their idea so the effects fade out in the far future.

### **6.3 Managerial implications**

Organization cannot manage idea selections and rejections as such to sustain idea submissions. After all, firms can only implement good ideas, and not select inferior ideas just to motivate individuals to submit further ideas.

Our study equips managers with prescriptions of how they can manage idea suggestions independent of the outcome of the idea evaluation process. First, managers should be aware that the more attention the organization puts on evaluating idea, the more likely become future submissions. This is especially true for ideas that are being rejected, where each additional evaluator increases the likelihood of future submissions significantly. If it is costly to put more evaluators on each idea, quick and due evaluation processes are likely sustaining the flow of ideas. Second, managers should be aware that idea rejections are especially likely to hurt if idea creators perceive high ownership towards an idea. In such cases, in order not to stifle future submissions, they should try to soften the blow by putting more attention on highly owned ideas.

### **6.4 Limitations**

One limitation of our study is that the rejection and selections decisions are not random and managers might reject and select ideas depending on factors unobservable to us. Future versions of this manuscript will try to overcome this challenge (Piezunka & Dahlander, in press). We will also use qualitative evidence to understand the idea evaluation process better and to understand, whether social exchange is the main theoretical mechanism at play in our context.

Also, we cannot observe how the formulation of the feedback affects future submissions. Former research has shown that how the feedback is formulated affects future submission, but the content of idea rejections is not observable to us.

## **7 Conclusion**

When idea creators in firms submit ideas in organization, their ideas are either being selected or rejected. The decision of whether to reject ideas or not put organization into a dilemma: Rejections are less likely to invite future submissions and thus might stifle innovation, but firms cannot possibly accept and implement inferior ideas. Thus, firms cannot manage future idea submissions via rejection or selection decisions as such. However, it is important to understand under which circumstances idea rejections (as opposed to idea selections) are especially likely to refrain employees from future idea submissions. We show that idea rejections are more likely to stifle future submissions of employees, if the submitters perceive high ownership over their ideas and if the organization puts little attention on the idea evaluation process.

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## Tables and figures

Variable	Obs	Mean	SD	Min	Max
Idea realized	320605	0.50	0.50	0	1
Individual ownership	311881	73.74	30.70	1	100
Shared ownership	311881	1.85	1.88	1	87
Nr or evaluators	331567	4.01	4.22	1	103
Evaluation time	308328	86.49	142.92	1	3976
Monetary compensation	340616	0.16	0.37	0	1

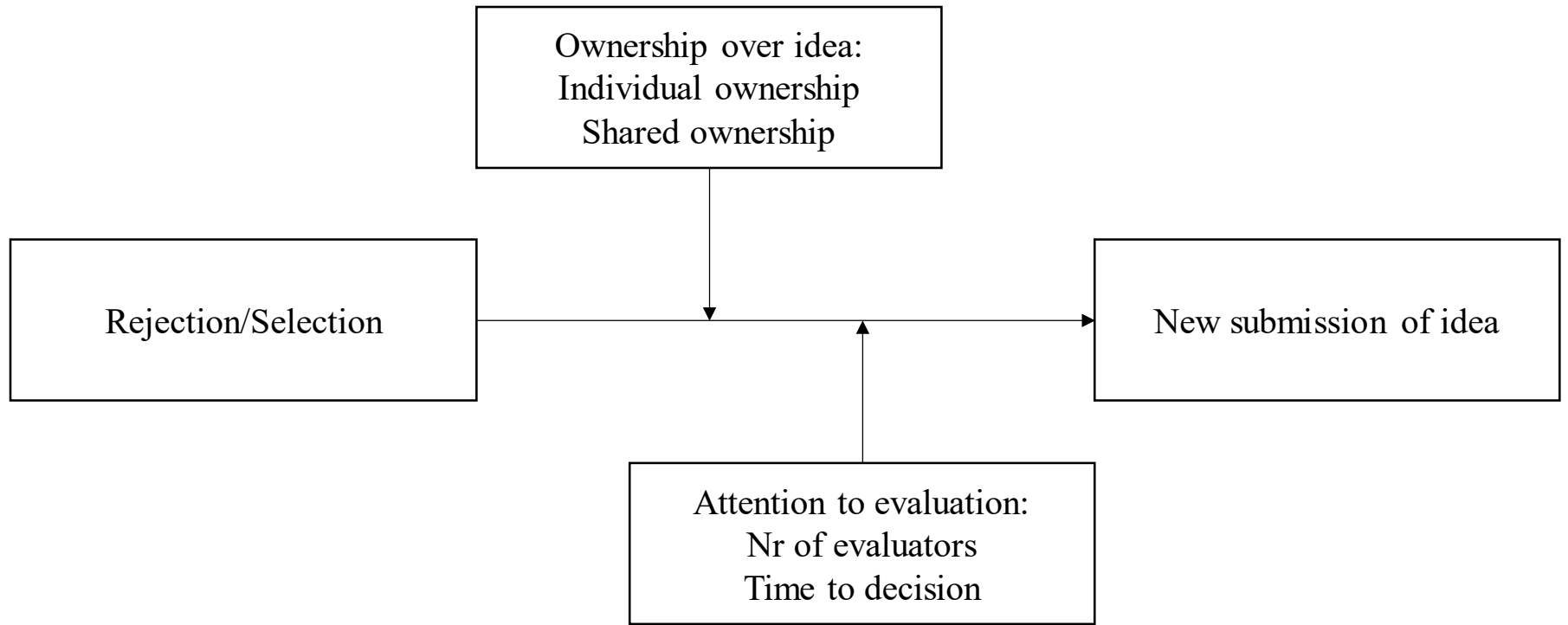
**Table 1: Descriptive statistics**

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Coeff	SE	p	Coeff	SE	p	Coeff	SE	p	Coeff	SE	p	Coeff	SE	p
Idea realized	0.1072	0.0044	0.0000	0.0969	0.0117	0.0000	0.0931	0.0118	0.0000	0.0812	0.0127	0.0000	0.0763	0.0139	0.0000
Individual ownership	-0.0036	0.0002	0.0000	-0.0038	0.0002	0.0000	-0.0039	0.0002	0.0000	-0.0041	0.0002	0.0000	-0.0041	0.0002	0.0000
Shared ownership	-0.0041	0.0007	0.0000	-0.0069	0.0009	0.0000	-0.0070	0.0010	0.0000	-0.0064	0.0011	0.0000	-0.0054	0.0012	0.0000
Number of evaluators	-0.0021	0.0007	0.0030	0.0015	0.0009	0.0740	0.0015	0.0009	0.0790	0.0008	0.0009	0.3920	0.0001	0.0010	0.9250
Evaluation time	-0.0004	0.0000	0.0000	-0.0004	0.0000	0.0000	-0.0004	0.0000	0.0000	-0.0004	0.0000	0.0000	-0.0003	0.0000	0.0000
Idea realized x individual ownership				0.0003	0.0001	0.0170	0.0004	0.0001	0.0030	0.0005	0.0001	0.0000	0.0005	0.0002	0.0010
Idea realized x shared ownership				0.0042	0.0007	0.0000	0.0048	0.0007	0.0000	0.0051	0.0008	0.0000	0.0045	0.0009	0.0000
Idea realized x number of evaluators				-0.0057	0.0010	0.0000	-0.0061	0.0010	0.0000	-0.0057	0.0011	0.0000	-0.0045	0.0012	0.0000
Idea realized x Evaluation time				0.0000	0.0000	0.9350	0.0000	0.0000	0.8060	0.0000	0.0000	0.4020	-0.0001	0.0000	0.0700
Main submitter	0.1870	0.0094	0.0000	0.1870	0.0094	0.0000	0.1883	0.0101	0.0000	0.1791	0.0114	0.0000	0.1621	0.0128	0.0000
Monetary compensation	0.0000	0.0000	0.0020	0.0000	0.0000	0.0070	0.0000	0.0000	0.0040	0.0000	0.0000	0.0080	0.0000	0.0000	0.0170
Cumulated rejections	0.0013	0.0007	0.0550	0.0013	0.0007	0.0550	0.0016	0.0007	0.0360	0.0021	0.0008	0.0110	0.0025	0.0008	0.0030
Cumulated acceptions	0.0038	0.0004	0.0000	0.0038	0.0004	0.0000	0.0040	0.0005	0.0000	0.0042	0.0005	0.0000	0.0043	0.0006	0.0000
Sex	0.2253	0.0211	0.0000	0.2245	0.0211	0.0000	0.2327	0.0233	0.0000	0.2338	0.0289	0.0000	0.2335	0.0370	0.0000
Number of following ideas	1			1			2			5			10		
Observations	509591			509591			1007903			2370188			4282132		
Idea creators	38180			38180			38180			38180			38180		
Location fixed effects	Y			Y			Y			Y			Y		
Job role fixed effects	Y			Y			Y			Y			Y		

	Model 5			Model 6			Model 7			Model 8		
	Coeff	SE	p	Coeff	SE	p	Coeff	SE	p	Coeff	SE	p
Idea realized	0.0763	0.0139	0.0000	0.0641	0.0160	0.0000	0.0204	0.0208	0.3280	-0.0685	0.0485	0.1580
Individual ownership	-0.0041	0.0002	0.0000	-0.0039	0.0003	0.0000	-0.0038	0.0003	0.0000	-0.0038	0.0006	0.0000
Shared ownership	-0.0054	0.0012	0.0000	-0.0052	0.0015	0.0010	-0.0083	0.0020	0.0000	-0.0138	0.0035	0.0000
Number of evaluators	0.0001	0.0010	0.9250	0.0000	0.0012	0.9970	0.0005	0.0015	0.7550	0.0048	0.0033	0.1430
Evaluation time	-0.0003	0.0000	0.0000	-0.0002	0.0000	0.0000	-0.0001	0.0000	0.0030	-0.0001	0.0001	0.4030
Idea realized x individual ownership	0.0005	0.0002	0.0010	0.0006	0.0002	0.0010	0.0010	0.0002	0.0000	0.0018	0.0005	0.0000
Idea realized x shared ownership	0.0045	0.0009	0.0000	0.0050	0.0010	0.0000	0.0089	0.0013	0.0000	0.0125	0.0027	0.0000
Idea realized x number of evaluators	-0.0045	0.0012	0.0000	-0.0037	0.0014	0.0070	-0.0032	0.0018	0.0650	-0.0007	0.0037	0.8420
Idea realized x Evaluation time	-0.0001	0.0000	0.0700	-0.0001	0.0000	0.0100	-0.0001	0.0000	0.1190	0.0000	0.0001	0.7950
Main submitter	0.1621	0.0128	0.0000	0.1354	0.0146	0.0000	0.1006	0.0183	0.0000	0.0365	0.0357	0.3070
Monetary compensation	0.0000	0.0000	0.0170	0.0000	0.0000	0.0250	0.0000	0.0000	0.0390	0.0000	0.0000	0.3970
Cumulated rejections	0.0025	0.0008	0.0030	0.0030	0.0009	0.0000	0.0035	0.0008	0.0000	0.0035	0.0008	0.0000
Cumulated acceptions	0.0043	0.0006	0.0000	0.0042	0.0006	0.0000	0.0040	0.0006	0.0000	0.0040	0.0007	0.0000
Sex	0.2335	0.0370	0.0000	0.2165	0.0509	0.0000	-0.1547	0.0820	0.0590	0.2014	0.1790	0.2600
Number of following ideas	10			20			50			all		
Observations	4282132			7261189			12835872			27294045		
Idea creators	38180			38180			38247			38247		
Location fixed effects	Y			Y			Y			Y		
Job role fixed effects	Y			Y			Y			Y		

**Table 2: Results from Cox regression**



**Figure 1: Study framework**

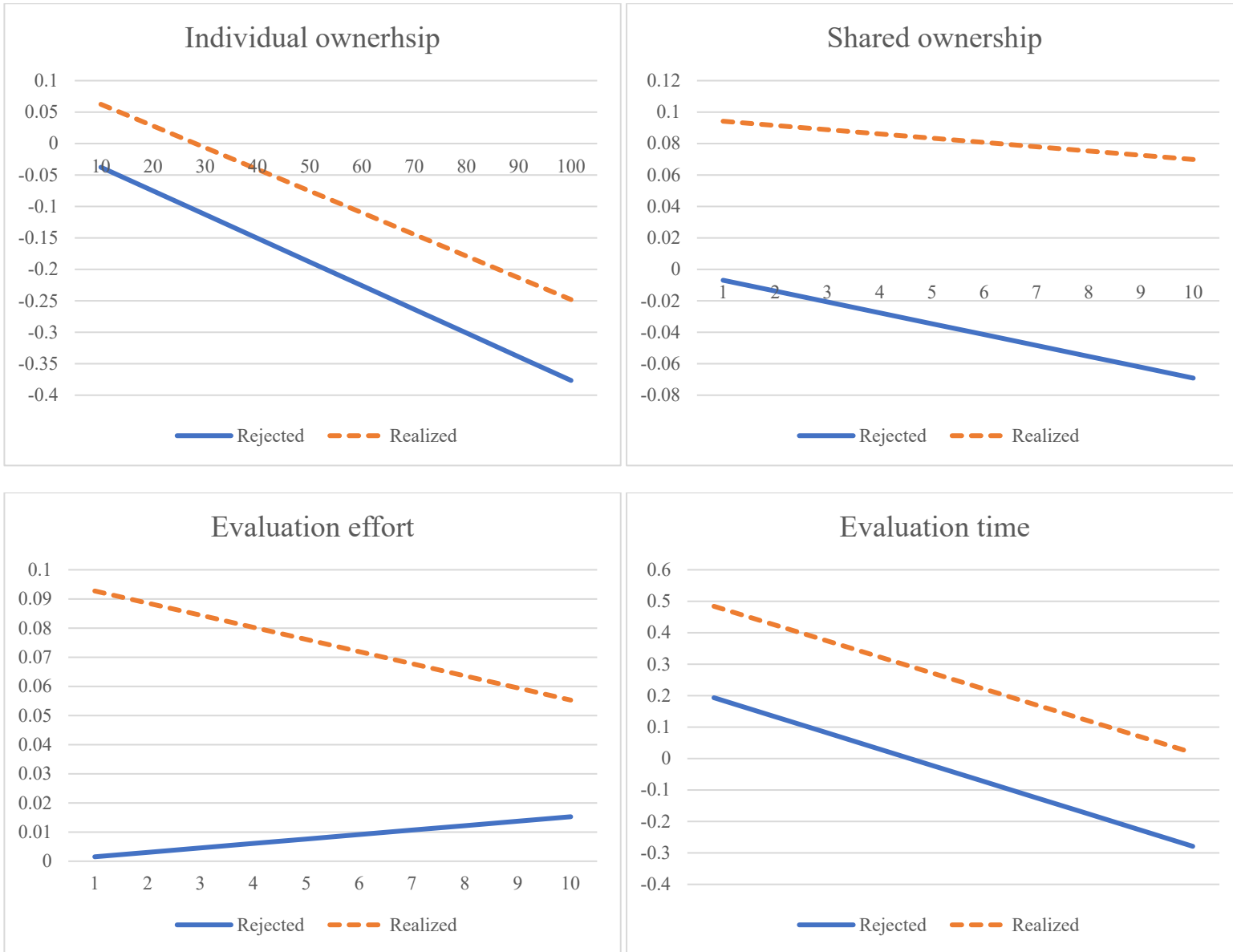


Figure 2: Interaction plots