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Self-set salaries and creativity

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Abstract

Organizations frequently try to incentivize employees to develop highly creative solutions. In this study, we examine self-set salaries as a specific type of incentive design. We investigate whether self-set salaries affect employees' motivation and overall (creative) performance. Moreover, because self-set salaries potentially risk opportunistic employee behavior, we consider the effect of the observability of peer performance on employees' level of self-set salaries. Using a laboratory experiment, we hold the average employee compensation constant and demonstrate that, in comparison with fixed-pay contracts, self-set salaries increase the quantitative performance in creative tasks without affecting the average creativity. However, we do not find significant differences between the amount of individuals' self-set salaries with observability of peer performance and the amount for individuals without the chance to observe peer performance. Our findings are important for firms that rely on the development of creative ideas but are unsure about the effects of the introduction of self-set salaries.

Keywords Creativity · Incentives · Self-set salaries · Employee participation · Autonomy

JEL Classification C91 · M40 · M41

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1 Introduction

This study examines the effects of self-set salaries as a means of stimulating employees' motivation to develop creative ideas. More specifically, we investigate whether self-set salaries affect creative performance in terms of quantity and average creativity levels compared with fixed compensation. We compare the effects of self-set salaries and fixed salaries because the economic prediction for the two incentive systems is the same, since compensation is not linked to performance. Moreover, because self-set salaries risk opportunistic employee behavior, we study the effect of the observability of peer performance on employees' salary requests.

All innovation, for example, new product development or new services, begins with a person or a team having a creative idea as a starting point (Amabile et al. 1996). Thus, organizations frequently demand that their employees develop highly creative solutions (Adler and Chen 2011; Fallon and Senn 2006; Speckbacher 2017). At first sight, offering incentives to stimulate and motivate creativity appears to be a feasible way to increase employees' creativity (Byron and Khazanchi 2012). However, it is still a challenge for the management and management accountants to provide adequate incentive or reward systems to promote creativity successfully (Kaplan and Norton 1996).

A growing stream of literature in the field of management accounting investigates different types of performance-contingent incentive systems and their effect on creative performance (e.g., Chen et al. 2012; Kachelmeier and Williamson 2010; Kachelmeier et al. 2008, 2019). Unlike the traditional understanding of performance-contingent incentives that refer to objective measures of productivity, such as the quantity produced (Bonner and Sprinkle 2002; Bonner et al. 2000), these studies investigate the "softer creativity dimension of productivity" (Kachelmeier et al. 2008, 342), meaning that performance-based incentive schemes are contingent on explicit measures of quantity, creativity, or both. These studies show that incentives that reward *quantity* lead to an increased number of creative ideas but may decrease the average creativity of these ideas. Moreover, incentives that reward *creativity* or *both creativity and quantity* lead to highly creative solutions but do not necessarily increase the number of produced ideas. These findings are in line with the reasoning that creativity is not affected simply by exerting more effort (Amabile 1996). Instead, creativity requires a multistage process that ranges from the initial preparation to the detached incubation to the eventual creative gains (Armbruster 1989; Csikszentmihalyi and Sawyer 2014). Incentives concerning quantity may therefore encourage employees to focus on easy solutions instead of exploring new approaches (Amabile 1996; Grabner 2014). However, even when prior research provides evidence for the success of performance-contingent rewards, setting up a creativity-contingent or quantity-contingent reward system in an organization is challenging concerning the objective measurement of both creativity and quantity (Kachelmeier et al. 2008). Based on these considerations, performance-based incentive systems might be rather uncommon in organizational departments that require creativity (Lambert et al. 1993; Sprinkle 2008).

In this study, we investigate an alternative compensation system that has gained in importance in creative firms—self-set salaries. We define self-set salaries as compensation contracts in which employees have the opportunity to determine (parts of) their own compensation. Self-set salaries are used in self-managed organizations that delegate decision rights to their employees (Laloux 2014). For example, the Brazilian manufacturer Semco and the U.S. manufacturer Skyline have delegated at least part of the salary determination process to their employees. In general, self-management is expected to increase employee performance through increased motivation (Harrison and Freeman 2004). Consequently, prior research finds that delegating the salary determination process to employees is positively associated with employee performance (e.g. Charness et al. 2012, 2015; Mellizo et al. 2014).

We contribute to prior research and investigate whether self-set salaries also affect creative performance. Self-set salaries may be especially suitable for successfully incentivizing creative performance because, compared with performance-contingent rewards, self-set salaries do not explicitly emphasize the quantity dimension of creative performance and may not crowd out creativity. Further, while measuring creativity for remuneration purposes is necessary under performance-contingent rewards, this challenge becomes obsolete when deploying self-set salaries. Finally, compared with fixed payments, compensation is not linked to performance either under self-set salaries. While the economic prediction for both incentive systems is therefore the same, self-set salaries are linked to higher levels of autonomy, competence, and relatedness such that creative performance may increase for psychological reasons.

To assess the suitability of self-set salaries for enhancing creativity, we investigate the effects of self-set salaries on creative performance in comparison with fixed payments. We argue that participation in the salary determination process satisfies basic psychological needs and thus increases intrinsic motivation compared with fixed payments (Ryan et al. 1996). Regarding creative performance, employees may direct their motivation toward two different dimensions of effort: quantity of ideas and creativity of ideas. We expect employees to focus on the quantity dimension because quantity is salient and therefore easily measurable and every produced idea induces feelings of completion and competence, which reinforce intrinsic motivation (Ryan et al. 1996). Consequently, we predict that self-set salaries lead to a higher *quantity* of produced ideas than fixed payments.

Regarding the effect of self-set salaries on the creativity of ideas, on the one hand, a focus on quantity may negatively affect creativity if employees focus purely on the more objective dimension of creative performance (Amabile 1996). Nevertheless, self-set salaries also add to an autonomy-supportive work environment that reinforces intrinsic motivation and may foster the development of creative ideas (Amabile and Gitomer 1984; Deci and Ryan 2008; Ryan and Deci 2000). Based on these competing considerations, we posit our second hypothesis in the null form such that self-set salaries have no effect on the creativity of produced ideas compared with fixed payments.

For our third hypothesis, we consider that self-set salaries naturally contain the risk that employees set unreasonably high salaries. Specifically, we investigate how information about their peers' performance affects employees' salary request.

In fact, most employees do not work in isolation and often observe and compare their results with their peers' results (Falk and Ichino 2006; Mas and Moretti 2009).¹ These observations may affect the evaluation of their own creative performance and their salary requests. Consequently, we investigate salary requests based on whether employees have observed their peers' performance, that is, the outcome of their work, before submitting a salary request.²

We argue that employees strive for fair input–outcome relations (Adams 1965). Thus, without any information about their peers' performance, employees are unlikely to request very high salaries because they feel like behaving opportunistically. However, when peer performance is observable, employees are almost always able to consider their own performance as superior. For example, “selective” top performers who produce either many ideas or a few very creative ones can convince themselves that the performance dimension on which they performed well (quantity or creativity) is the more important one. Even low performers are able to consider themselves as smart workers who deserve a high salary because they understood the economic incentives of the compensation system. Therefore, we argue that employees who are able to observe their peers' performance can justify high salary requests and do not experience negative feelings when claiming a high salary. Consequently, we predict that salary requests are higher when peer performance is observable than when it is not.

To test our predictions, we conduct a laboratory experiment in which participants perform the “rebus puzzle” task that is applied in prior studies on incentives and creativity (Kachelmeier and Williamson 2010; Kachelmeier et al. 2008, 2019).³ Specifically, we ask the participants to produce creative rebus puzzles that use images or signs to represent common phrases or wordplays. Independent raters then judge the creativity of the puzzles created.

¹ A large stream of accounting literature investigates the provision of relative performance information (RPI) (for an overview, see Schnieder 2018). While our construct “observability of peer performance” is similar to the provision of (cardinal) RPI, we decisively refrain from labeling our construct “RPI.” Accounting research on RPI often focusses on social comparison, impression management, and consequently employee performance. However, firms commonly avoid high transparency or publicity when it comes to the comparison of creative performance and instead try to foster competition with outside organizations (Amabile 1996). This is because public RPI leads to a competitive atmosphere, which causes employees to focus more on the competition than on creating innovative ideas (De Dreu et al. 2008). Thus, by referring to “observability of peer performance,” we stress the feedback function of peer performance information that we want to investigate in this study.

² Employees may generally be able to observe both the effort and the performance of their peers. However, since creative performance is considered to be less effort driven (Amabile 1996) and effort is thus less meaningful for the determination of a salary, we only investigate the observability of peer *performance*.

³ While it would also be possible to measure creativity through psychometric tests, these tests pose several problems. In particular, it is questionable whether individuals who answer predetermined questions correctly really exhibit creative behavior or whether they think creatively (El-Murad and West 2004; Weisberg 1993). Hence, we use a modified “consensual assessment technique” (Amabile 1982) that calculates the average value of a person's level of creativity assessed by several judges. Thus, we can determine both the participants' quantity and average perceived creativity of puzzles.

Concerning the manipulations, we deploy a nested design. First, we manipulate the payment scheme between subjects at two levels: self-set salaries and fixed payment. Nested within the self-set salary condition, we manipulate whether participants observe their peers' performance before making their salary requests. To hold the economic incentives constant, we determine the fixed payment based on the average self-set salary on the first day of the experiment. In line with our prediction, we find that self-set salaries increase the quantity of produced puzzles relative to fixed payments. Further, we do not reject the null hypothesis that self-set salaries have no effect on the creativity of produced ideas compared with fixed payments. In addition, participants request higher salaries when they observe their peers' performance before the request. However, the difference in salary requests is insignificant. We perform several additional analyses that shed more light on the relationship between self-set salaries, observability of peer performance, and creativity. Specifically, the analyses suggest that individuals' satisfaction with their own performance (after the comparison) has a significant impact on their salary requests.

Our study contributes to both management accounting theory and management accounting practice. From a theory perspective, we add to the literature stream that investigates incentives and creativity (e.g., Brügggen et al. 2018; Chen et al. 2012; Kachelmeier and Williamson 2010; Kachelmeier et al. 2008). We show that self-set salaries are an instrument that increases the quantity without affecting the average creativity. Further, our study contributes to research on self-set salaries (e.g., Charness et al. 2012, 2015; Faillo and Piovanelli 2017; Jeworrek and Mertins 2019). While prior research focuses on non-creative tasks, we provide evidence that self-set salaries increase intrinsic motivation and consequently performance in a creative task setting.

With regard to practice, our results are particularly relevant for firms of which the competitive advantage builds on the development of creative ideas. Specifically, our study suggests that firms can increase the quantity of ideas without affecting the creativity of ideas by using self-set salaries. Further, since the subjective performance evaluation of creative work is frequently subject to evaluator biases, which are complex to handle or require calibration committees (Demeré et al. 2019), firms can successfully avoid the problematic measurement of creativity and its link to pay by using self-set salaries. However, along with self-set salaries, additional mechanisms should be implemented that prevent inappropriate salary requests, because our findings show a high number of requests for the maximum salary.

The remainder of the study proceeds as follows. Section 2 provides the theoretical background and discusses the related literature. In Sect. 3, we develop our hypotheses. Section 4 describes the experimental design. Section 5 presents our results, while Sect. 6 concludes.

2 Background and related literature

2.1 Creativity and incentives

Creativity refers to the generation of new ideas, solutions, or products in any domain that are not only novel but also appropriate (e.g., Amabile 1996; Byron et al. 2010;

Shalley and Perry-Smith 2001). The term “appropriate” means that the creation is useful in that it offers value in a practical, esthetic, or intellectual sense (Byron and Khazanchi 2012). Innovation, defined as the successful implementation of creative ideas within an organization, is therefore a consequence of creativity by individuals or teams (Amabile et al. 1996).

Motivating creative performance appears to be substantially different from motivating employees to work on routine, structured, or repetitive tasks. The development of creative ideas requires skills such as curiosity, cognitive flexibility, or persistence in the face of barriers (Amabile et al. 1996; Shalley et al. 2004; Zhou and Shalley 2003), which creativity research considers to be unaffected by increases in effort from extrinsic incentives (Amabile 1996; Condry 1977). Instead, several aspects of the organization’s work environment (e.g., flexible working hours, a flying desk policy, and a home office) are considered to affect creative performance (e.g., Amabile 1988; Woodman et al. 1993). The positive effect of these aspects on creative performance derives from enhanced intrinsic motivation because creativity is more cognitively demanding and of less certain value than performing structured tasks repeatedly (Amabile 1996; Eysenck 1995). In fact, individuals are expected to be most creative when they are primarily intrinsically motivated; that is, they experience interest, enjoyment, or satisfaction from the work itself (Amabile 1983, 1988, 1993). Given the link between intrinsic motivation and creativity, prior literature concludes that individuals (or teams) who experience autonomy in terms of freedom or discretion during their work exhibit higher levels of creativity (e.g., Amabile and Gitomer 1984; Bailyn 1985; Paolillo and Brown 1978). If, however, extrinsic incentives lead individuals to feel externally controlled in their work, their intrinsic motivation and thus creative performance are expected to decrease (Amabile et al. 1990; Joussemet and Koestner 1999). Hence, using performance-based incentives to promote creativity may not be appropriate. In contrast to this expectation, a review of the extant studies on creativity and rewards by Byron and Khazanchi (2012) shows that creativity-contingent rewards are able to increase creative performance. However, the authors find that, when rewards are quantity contingent, incentives have a slightly negative effect on creative performance.

Further, an emerging stream of management accounting literature examines the relationship between creativity and incentives. For example, Grabner (2014) finds that, in creativity-dependent firms, performance-based pay and subjective performance evaluation are used complementarily. Hence, firms may find performance-based pay to be effective in evoking creativity. Moreover, in an experimental study, Kachelmeier et al. (2008) find that quantity incentives increase the number of ideas and that creativity-based pay increases the average creativity of ideas. However, when both quantity and creativity are incentivized by a creativity-weighted measure, participants perform worse with regard to the weighted measure than participants who are incentivized based on the number of creative ideas. The authors argue that participants focus on the creative dimension of the weighted measure and do not produce enough “mediocre” ideas. In a follow-up study, Kachelmeier and Williamson (2010) find that the possibility to self-select into either a contract that rewards quantity only or a contract that rewards both creativity and quantity strongly affects initial creativity. However, this effect is not sustainable when all the produced ideas

are considered. Kachelmeier et al. (2019) examine the creative process and incentives in this process. The authors argue that the creative process consists of multiple stages—preparation, incubation, and illumination—and that incentives may be especially useful in the preparation stage. In line with this expectation, the results show that incentivizing quantity compared with fixed compensation in the first phase of an experiment leads to more high-creativity solutions in the second phase of an experiment that takes place after an incubation period. Thus, quantity-based measures may increase not only quantity but also creativity after an incubation phase. Finally, Chen et al. (2012) find that a group tournament based on creativity ratings increases group creativity compared with a group piece rate that is also based on creativity ratings. Hence, group tournaments based on creative performance may be a suitable mechanism to increase creative performance in groups.

In sum, prior research shows that incentives affect performance with regard to both quantity and creativity. However, while quantity-based incentives are often easier to implement, they potentially hurt the creativity of ideas. In contrast, incentivizing creativity may lead to highly creative performance, but it is challenging to measure the creativity of ideas objectively. Against this background, we investigate an alternative incentive system—self-set salaries.

2.2 Self-set salaries

In general, prior research provides evidence for a positive association between employees' salary levels and their willingness to perform (Charness et al. 2004; Fehr et al. 1993). However, instead of just raising the salary level to evoke high effort and performance, alternative mechanisms may be suitable for increasing employee motivation. For example, organizations may delegate decision rights to their employees, such as the determination of salaries (Laloux 2014). In this regard, the Brazilian manufacturing company Semco has a long tradition of democratic processes that allow their employees to control their working hours, location, and salary (Semler 1989, 2007). Other companies, such as Skyline or Claravision, also involve their employees in the salary determination process (Charness et al. 2012; Tuna 2008). In a broader sense, wage negotiations between firms and workers' councils and/or trade unions also reflect democratic structures and employee participation (Franke et al. 2016). Thus, democratic structures that range from workers' councils to completely self-managed organizations are common nowadays. The main reasoning behind high levels of democracy is that employee participation and self-management increase employee effort and performance, because democracy gives employees autonomy and increases their organizational commitment (Harrison and Freeman 2004; Sliwka 2001).

Self-determination theory (e.g., Deci and Ryan 1985; Gagné and Deci 2005) describes the cognitive processes that explain how contextual factors can increase or decrease individuals' intrinsic motivation and hence their subsequent effort and performance. A fundamental prerequisite for enhancing individuals' intrinsic motivation is to satisfy the three basic psychological needs to experience feelings of autonomy, competence, and relatedness (Ryan et al. 1996). In

this regard, self-set salaries may be an appropriate means to address all three types of psychological needs. When employees are able to determine their own salaries, they experience a high level of autonomy. Moreover, the salary determination process may enhance their feelings of competence, because they are involved in an essential part of organizational management. Finally, employee participation typically creates a sense of responsibility and relatedness to organizational outcomes. Thus, self-set salaries may be an instrument that increases employees' intrinsic motivation.

Self-set salaries can also circumvent potential crowding-out effects of extrinsic rewards. The crowding-out hypothesis states that extrinsic incentives, such as monetary rewards, can undermine individuals' intrinsic motivation (Deci and Ryan 1985; Frey and Jegen 2001; Gneezy and Rustichini 2000). Consequently, when extrinsic rewards are not designed appropriately, effort and performance may be even lower under extrinsic rewards than when no rewards are used. However, because self-set salaries do not link performance to pay and address feelings of autonomy, competence, and relatedness instead, intrinsic motivation is likely to be enhanced by this type of compensation system.

Prior literature investigates self-set salaries primarily in experimental economics settings. These studies differ with regard to the degree of decision authority delegated to the employees in the salary determination process. Some studies let participants choose from a range of compensation options. For example, Mellizo et al. (2014) show that, when participants are allowed to vote on a set of different compensation schemes, they exhibit higher levels of effort. In contrast, Franke et al. (2016) do not find a positive effect of increasing participation in such a salary determination process.

Further studies investigate the effect of entirely self-set salaries. Charness et al. (2012) investigate, in a gift exchange setting, how a firm's decision to delegate the salary determination process to the employees affects their effort. They find that the decision to delegate significantly increases the effort levels and that this result is driven by participants' feelings of responsibility rather than positive reciprocity toward the firm that decided to delegate. Further, Charness et al. (2015) show that the positive effect of delegation holds when there is more than one employee and when a real-effort design instead of a chosen-effort design is deployed. Faillo and Piovanelli (2017) provide evidence that the delegation of the salary decision indeed increases intrinsic motivation. In line with these findings, Jeworrek and Mertins (2019) show that delegating the salary choice increases performance significantly in a natural experiment. The authors show that the positive effect is primarily driven by the transfer of responsibility.

In conclusion, prior literature shows that self-set salaries increase effort and performance in routine tasks. We contribute to this line of research by investigating the effect of self-set salaries in the context of creativity. Moreover, because employees may also exploit the possibilities of participation by requesting unreasonably high salaries (Harrison and Freeman 2004), we investigate how salary requests may be affected by the observability of peer performance.

3 Hypotheses

3.1 Effect of self-set salaries on quantity and creativity

In deriving our hypotheses on the performance effects of self-set salaries in the context of creativity, we distinguish between quantity (hypothesis one) and creativity (hypothesis two) effects of self-set salaries relative to fixed payments. In contrast to performance-contingent pay, both fixed pay and self-set salaries do not constitute contracts that directly link performance to pay. Therefore, conventional economic theory predicts that employee performance will be zero under both contracts.

However, prior research argues that intrinsic motivation is particularly important for generating creative solutions (Amabile 1983, 1988, 1993). Based on psychological theory, we argue that self-set salaries affect intrinsic motivation differently from fixed payments. Specifically, we expect that self-set salaries increase intrinsic motivation more than fixed payments, because participation in the salary determination process addresses feelings of autonomy, competence, and relatedness (Ryan et al. 1996). Moreover, because self-set salaries are not explicitly linked to performance, intrinsic motivation is unlikely to be undermined by this type of extrinsic reward. Consequently, employees who set their salaries themselves are likely to be more (intrinsically) motivated than employees with fixed compensation, which leads to higher performance (Baard et al. 2004).

However, a creative task enables employees to succeed on two different dimensions—quantity and creativity. In detail, employees may focus on producing a high number of creative ideas, thereby stressing the quantity dimension. Alternatively, employees may concentrate on creating only a few ideas that are highly creative, thus referring to the creative dimension of the task. To determine whether employees focus on quantity, creativity, or both, we argue that the two dimensions differ with regard to the ease of performance measurement. When employees focus on quantity, they can determine their performance simply by counting how many ideas they have produced. Besides, the production of a greater quantitative output due to increased effort has a more salient input–output ratio than the development of high-creativity ideas (Amabile 1996). Thus, every produced idea gives a feeling of completion and competence, which again reinforces intrinsic motivation (Ryan et al. 1996). Therefore, we expect that employees are likely to focus on the quantity dimension such that self-set salaries have a positive effect on the quantity of produced ideas compared with fixed payments.

H1: Self-set salaries lead to a greater quantity of produced ideas than fixed payments.

With regard to the creativity dimension, the evaluation of creative performance is rather subjective, and the value of an idea is less certain (Amabile 1982, 1996). In this regard, Amabile (1982, 1001) considers a product or response to be creative “to the extent that appropriate observers independently agree it is creative.” Consequently, creators themselves are not able to judge the creativity of their products

conclusively on their own. Hence, creativity may not be an appropriate dimension for employees to focus on when they want to experience feelings of competence and completion based on their effort. Employees are therefore likely to focus more on the quantity than on the creativity of produced ideas when working under self-set salaries compared with fixed payments. This focus on quantity may affect creativity negatively because high creativity is the result of a long process (Kachelmeier et al. 2019) that cannot take place when employees focus on producing as many ideas as possible in a given amount of time. Moreover, employees may refrain from exploring new approaches to creativity and focus on well-known methods to ensure a certain output of creative ideas (Grabner 2014). Overall, these arguments suggest that the creativity of produced ideas is lower under self-set salaries than with fixed payments.

On the other hand, self-set salaries and self-management, in general, are associated with high levels of autonomy. In this regard, it is necessary to distinguish between contextual autonomy support (e.g., organizational environment) and individual autonomy orientation as antecedents of employee creativity (Liu et al. 2011). While it seems challenging to influence individuals' autonomy orientation, research on creativity provides evidence regarding the benefits of an autonomy-supportive work environment for employee creativity (e.g., Amabile and Gitomer 1984; Bailyn 1985; Paolillo and Brown 1978). Similarly, Oldham and Cummings (1996) find that autonomous jobs and a supportive supervisory style have a positive influence on employees' creative performance. Zhou (1998) demonstrates that a high task–autonomy context facilitates the generation of creative ideas. These findings are consistent with self-determination theory, which predicts that employees will become more creative in an autonomy-supportive environment that takes into consideration employees' perspectives, recognizes their feelings, provides job-related choices, and minimizes pressure (Deci and Ryan 2008; Ryan and Deci 2000). Therefore, self-set salaries can also have a positive effect on the creativity of employees, even though they may not focus explicitly on creativity.

Based on these competing considerations, we formulate the following hypothesis in the null form to reflect the theoretical uncertainty.

H2: The creativity of produced ideas will be the same under self-set salaries as under fixed payments.

3.2 Effect of the observability of peer performance on salary requests

In this section, we discuss the effects of the observability of peer performance on salary requests when employees can set their salaries themselves. Whereas employee participation is generally considered to have positive outcomes, it also leaves room for self-interested behavior (Arrow 1985). In the case of self-set salaries, employees have a strong monetary incentive to request the highest salary possible.⁴ While standard economic theory expects employees to respond to financial

⁴ Note that while there may not be an official cap for salaries in companies with self-set salaries, there are often non-official limits that arise from resource restraints or industry standards regarding payment levels.

incentives and claim the maximum salary (Baiman 1990), equity theory states that individuals generally care for fair input–outcome relations (Adams 1965). As such, employees strive for salaries (i.e. outcome) that are fair with regard to both their own and their peers' performance (i.e. inputs). However, when employees are not able to observe their peers' performance, they are also unable to assess whether a high salary request is warranted. In such a situation, very high salary requests would imply opportunistic behavior at least to some extent. Behavioral research shows that individuals may experience cognitive dissonances when they behave opportunistically (Festinger 1957). Cognitive dissonances refer to feelings of discomfort that arise when a person holds two or more contradictory beliefs, ideas, or values. Thus, without information on peer performance, employees face a trade-off between maximizing their salary and maintaining their fair self-concept (Mazar et al. 2008) by requesting a salary that is most likely to be appropriate.⁵

However, the observability of their peers' outcome provides employees with an opportunity to justify a high salary request. More precisely, by observing their peers' output, employees are able to convince themselves that their own performance was better than that of their peers and that they have earned a relatively high salary. This is especially true when employees consider themselves to be top performers after observing their peers' performance. Thus, employees who feel that they outperform their peers with regard to both the quantity and the creativity of their produced ideas can easily request a very high salary.

Moreover, the multifaceted and subjective topic of measuring creative performance allows other employees to focus on dimensions in which they perceive their performance to be superior. "Selective" top performers who have either produced many ideas or feel that their ideas were creative can apply mechanisms of motivated reasoning (Kunda 1990) to justify a high salary. Motivated reasoning refers to the search for and interpretation of information such that the information confirms their existing beliefs and reduces cognitive dissonances. Hence, when employees observe their peers' performance, they are likely to consider the dimension of creative performance that makes their own performance look better to be more important. More specifically, employees may rely on quantity as a justification for a high salary when they observe that they have produced more ideas than other employees have. Alternatively, when employees feel that their ideas were more creative than their peers' ideas, even though they have produced fewer ideas, they may stress the creativity dimension when it comes to the salary request. Finally, even low performers with only a few rather uncreative ideas can convince themselves that they were particularly smart and understood the economic incentives correctly. They therefore earn a high salary for their superior strategy.

Taken together, by observing their peers' performance, employees are able to compare their performance positively and justify a high salary. Since this reduces cognitive dissonance when claiming a high salary, we expect that observability

⁵ What employees consider to be appropriate may also be affected by personality traits such as modesty. However, we expect the effect of such personality traits to be consistent across conditions and not to interact with our variables of interest. We report tests for both aspects in the results section.

of peer performance leads to higher salary requests than no observability of peer performance.

H3: Observability of peer performance prior to the salary request leads to higher salary requests than no observability of peer performance.

4 Method

4.1 Experimental task

The term creativity is as complex as the scientific methods for measuring creativity are diverse. Hocevar (1981) presents ten different categories for measuring creativity, which can be grouped broadly into *psychometric tests* and *expert opinions*. Psychometric tests range from self-completion divergent-thinking creativity tests, in which subjects have to complete a sequence of words (e.g., the “Remote Associates Test”; Mednick 1962) to verbal (e.g., guessing causes or guessing consequences) or figural tasks (e.g., picture construction or picture completion) (e.g., Torrance’s “Tests of Creative Thinking”; Torrance 1974) (Cropley 2000). However, a central problem of these tests is that they contain predetermined answers. Therefore, it is questionable whether a respondent who gives a correct answer is also truly creative (El-Murad and West 2004). Besides, it is unclear whether these tests measure creative thinking or the ability to become creative (Weisberg 1993).

In contrast to psychometric tests, proponents of expert opinions argue that the only reliable way to identify creativity is to evaluate creative products (Bailin 1984). While it hardly appears possible to find objective criteria for a creative product, Amabile (1982) proposes that, when judges independently agree that a given product is creative, then the product and the person who created the product must be accepted as creative. Therefore, Amabile (1982) proposes a “consensual assessment technique” (CAT), in which several judges have to assess the creativity level of creative products using their own criteria or definitions of creativity. This proposed technique enables researchers to gather a consensus opinion of the subjects’ average creativity.

Based on these considerations, we use an experimental task introduced by Kachelmeier et al. (2008) to capture creativity. The task refers to the design of creative “rebus puzzles” by participants. While *solving* rebus puzzles can occasionally be found in entertainment (e.g., Morris 1983) or educational research (e.g., Griggs 2000), it is essential to note that our task requires participants to *design* their own puzzles. Similar to Kachelmeier et al. (2008), we intend to demand a higher level of creativity with this design choice. Accordingly, the experimental instructions specify that it is the participant’s goal to represent idioms, proverbs, or wordplays using images and other types of signs. To ensure a correct understanding of the task, the instructions include example puzzles. In all the conditions, we inform the participants that there are no limits to their creativity. However, we refrain from providing a goal such as a high quantity of puzzles or highly creative puzzles. In this regard, our instructions differ from the original task instructions by Kachelmeier et al.

(2008, p. 350), which state that “we value both the number of different puzzles you can construct (i.e., quantity) and the creativity of those puzzles (i.e., puzzles that are original ideas, innovative, and clever).” We deliberately choose this deviation from the original task because our study investigates feelings of autonomy that we do not want to be affected by setting any type of goal. However, to ensure some task commitment, we informed the participants that the rebus puzzles could be used as tasks in future experiments.

In the experiment, all the participants work individually and are not able to observe other participants. To design rebus puzzles, participants use index cards on which they draw the puzzle and provide the solution.⁶ In line with Kachelmeier et al. (2008), participants have 20 min to construct puzzles and are asked to put their completed puzzles in an individual output box. Once a puzzle is put into the box, it cannot be removed and changed again. However, participants are free in their decision regarding which card to place in the box. They may also decide to stop working on a puzzle and refrain from submitting it (i.e., leaving the card on the table).

4.2 Experimental design and manipulations

We employ a nested design with three conditions. First, we manipulate whether the participants set their salaries themselves or receive a fixed payment. In the case of self-set salaries, the experimental instructions inform the participants that they will receive a payment between 0 and 20 euros for their performance in designing puzzles.⁷ The participants are allowed to decide independently and freely on their payment after they have finished creating the puzzles. The participants receive exactly the requested amount of money as payment using a form set up as an invoice. In the fixed-payment condition, the participants are informed that they will receive a fixed payment of 17.63 euros for their performance. To ensure comparability between the fixed-payment condition and the self-set salary condition, the fixed payment is determined based on the average requested payment in the self-set salary condition.⁸

Within the self-set salary condition, we manipulate whether peer performance is observable prior to the payment request. In the case of no observability of peer performance, the participants decide on their payment request without knowing about the quantity and creativity of the puzzles designed by other participants. In contrast, the participants in the observability of peer performance condition are able to look at the completed and submitted puzzles of all the participants in the same experimental session *after* the performance has materialized but *before* they

⁶ The solution is on the same side as the puzzle in a specified section of the card. Because all the participants are able to see the other participants' puzzles at the end of the experiment, it is necessary for the puzzle and the solution to be easily accessible.

⁷ In the German instructions, we use the term “Leistung,” which can be translated as “performance” but does not solely cover output aspects. Instead, “Leistung” may additionally refer to the provision of effort itself. Thus, by using “Leistung,” we do not explicitly imply that compensation is linked to performance in the sense of output.

⁸ We used the self-set salary condition without observability of peer performance prior to the payment request as the basis for the payment in the fixed-payment condition.

submit their payment request. By looking at the other participants' puzzles, the participants receive information about their peers' performance in terms of the quantity and creativity of the puzzles. However, they only learn about the possibility of looking at their peers' puzzles after the designing phase has ended. Thus, we rule out the possibility that participants can receive ideas to design rebus puzzles from looking at their peers' puzzles. Moreover, with this approach, we control for any effect of the (expected) observability of peer performance on creative performance (both quantity and creativity). Consequently, the observability of peer performance only serves a feedback function and does not affect creative performance (both quantity and creativity).

4.3 Procedures

We conducted nine sessions on three days within two weeks to collect experimental data. To mitigate potential concerns about weekday effects, all sessions were conducted either on a Monday or on a Tuesday. All sessions for the self-set salary condition (without observability of peer performance) were conducted on the first day. Then, we determined the average payment request for this condition and used it as the fixed payment in the fixed-payment conditions to hold the average payment constant across conditions by design. We conducted the sessions with fixed-payment conditions on the other two days.

The paper-and-pencil-based experiment took place in a classroom where cubicles were set up such that participants could work independently and were not able to observe their peers in the designing phase of the experiment. To ensure experimental control, the instructions, index cards, invoice forms, and post-experimental questionnaire (PEQ) were provided in separate, numbered envelopes on the participants' desks. The participants were instructed to open an envelope only when the experimenter told them to do so. Prior to the beginning of the experiment, all experimental materials were labeled with individual participant codes such that completed puzzles, the invoice form, and the PEQ could easily be attributed to the same participant. At the same time, participant codes ensured the anonymity of the participants.

When participants entered the laboratory, they immediately received a show-up fee of six euros. After a short introduction by the experimenter, participants had seven minutes to read the instructions. The instructions informed the participants about the puzzle task and their payment and ended with a short quiz that the participants had to answer. Specifically, the participants had to answer all the questions correctly to ensure that they fully understood the instructions. Next, the 20-min designing phase of the experiment took place. When the designing period ended, the experimenter collected the submitted puzzles and displayed them separately for every participant on a desk at the back of the classroom.⁹ The participants in

⁹ The experimenter displayed the cards of the different participants in random order such that the participants were not able to attribute the cards to a specific peer. However, the participants were able to determine which cards belonged to the same (anonymous) peer. Thus, they were able to assess the quantity and creativity of their peers' puzzles.

the condition with observability of peer performance then learned that they had two minutes to look at the other participants' puzzles before making their payment request. The experimenter called the participants in pairs, who were then able to look at the puzzles, starting at different sides of the desk and not being allowed to talk to each other. After all participants had assessed the puzzles, they were asked to make their payment requests using the invoice form. In contrast, the participants in the self-set salary condition without observability of peer performance filled out the invoice form directly after the designing phase ended, so they had no chance to learn about their peers' creative performance. In both conditions, the salary requests were kept confidential so that the participants did not receive any information about the other participants' salaries. Eventually, both the participants in the self-set salary condition without observability of peer performance and the participants in the fixed-payment condition were allowed to look at the other participants' puzzles *after* all experimental decisions had been made. Thereby, the same procedures were applied as described above. Thus, we ensured that all participants had the same state of knowledge about the performance of all participants in the respective session before filling out the PEQ. The PEQ asked questions related to the experimental procedures, the participants' personality, and general demographics. Finally, participants were instructed about their total experimental compensation and the payout procedures. Figure 1 provides an overview of the experimental procedures.

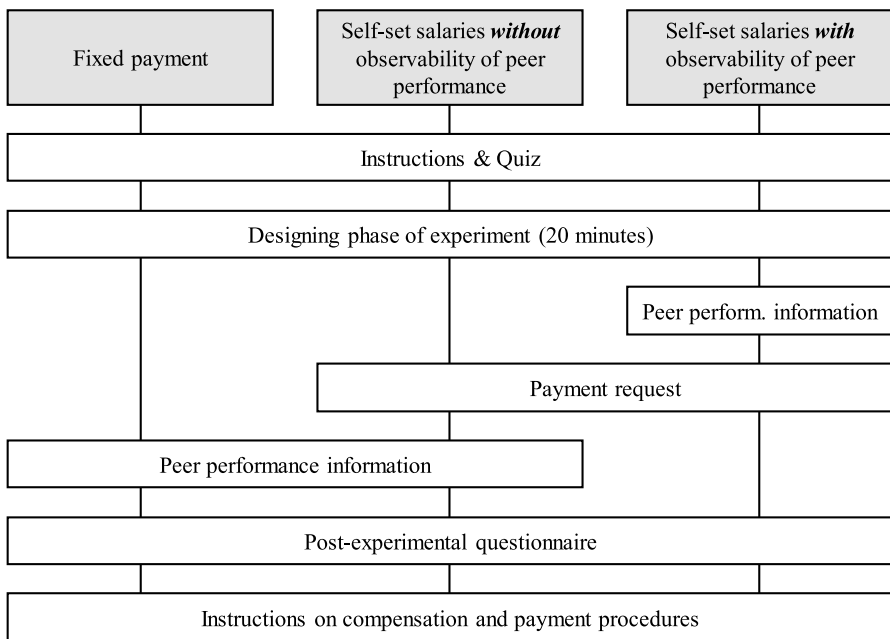


Fig. 1 Experimental procedures

4.4 Participants

We randomly assigned 89 participants to the three conditions (30 participants in both self-set salary conditions with/without observability of peer performance and 29 participants in the fixed-payment condition). We recruited undergraduate and graduate students from a large Western European university to participate in 70-min experimental sessions, from which we obtained 83 usable observations.¹⁰

In the final sample, 59.8 percent of the participants majored in a business-related subject, 62.2 (37.8) percent were undergraduate (graduate) students, 59.9 percent of participants were female, and the participants' average age was 24.4 years.

4.5 Creativity ratings

For our hypothesis tests, we use three different dependent variables: the quantity of designed puzzles, the average creativity of designed puzzles, and the requested payment. While the quantity of designed puzzles and the requested payment can be determined objectively, we assessed the creativity of the puzzles through independent evaluations. Specifically, we followed prior experimental studies (e.g., Brügger et al. 2018; Kachelmeier and Williamson 2010) and invited twelve undergraduate and graduate students from all fields of study to rate the creativity of all 850 rebus puzzles created by the experimental participants. The raters were paid 50 euros for their time.

We randomized the order of the 850 rebus puzzles such that the raters were not able to identify any patterns or abilities related to a specific participant. First, all the raters had to read the instructions on the experimental task given to the experimental participants. However, they were not informed about the different compensation schemes. Afterward, the raters evaluated the creativity of every puzzle by entering a score between 1 (lowest creativity) and 10 (highest creativity). The raters were advised to assess the creativity of about 20 puzzles first before starting to enter scores. Thereby, they would gain a better idea of the creativity of the puzzles. The Cronbach's alpha for the rating of all ideas is 0.86. Moreover, correlations between each rater and the average of the other eleven raters are significantly positive (ranging from 0.45 to 0.71). We therefore conclude that the creativity ratings are reliable and consistent across the raters.

To determine the average creativity of the rebus puzzles for every participant, we first average the ratings for every puzzle across raters. Thus, we obtain an average rating per puzzle. Next, we calculate average creativity for every participant as the sum of the average ratings of submitted puzzles divided by the number of submitted puzzles.

¹⁰ As outlined in Sect. 5.1, six participants failed the manipulation checks.

5 Results

5.1 Experimental design validation

To assess the validity of our experimental design, we test for successful randomization of participants across experimental conditions. Regarding the participants' demographics, we find that there are no significant differences across conditions regarding age, gender, pursued degree, or field of study (all p values > 0.42). Moreover, Kachelmeier et al. (2008) find in their study that familiarity with rebus puzzles is positively correlated with the average creativity ratings. Therefore, we asked in the PEQ the extent to which the participants agree (7-point Likert scale) with the statement that they had some experience with rebus puzzles prior to this experiment. However, we find that the familiarity with rebus puzzles influences creativity in terms of neither quantity ($F = 1.56$, $p = 0.22$) nor average creativity ($F = 1.51$, $p = 0.22$). Further, the Kruskal–Wallis equality-of-populations rank test reveals no significant differences in familiarity with rebus puzzles across all three conditions ($\chi^2 = 0.11$, $p = 0.95$). We also analyze differences in personality traits across conditions. More specifically, we test for differences in modesty, which refers to self-critical attitudes. We measure modesty based on the respective questions of the NEO Personality Inventory. Again, the Kruskal–Wallis test does not indicate significant differences across conditions ($\chi^2 = 2.59$, $p = 0.27$). Hence, we conclude that randomization was successful.

Further, we test whether our manipulations were successful. In the experiment, we manipulated whether participants were enabled to set their payment amount independently or received a fixed payment. Hence, we asked the participants whether they were allowed to decide on their payment on their own. All participants answered this question correctly. Nested within the self-set salary condition, we manipulated whether participants received peer performance information prior to the payment request. Therefore, we asked the participants in the conditions with a self-set salary whether they determined their payment after they had seen the puzzles of the other participants. Six participants answered this question incorrectly.¹¹ Consequently, we exclude these participants from all analyses.

5.2 Descriptive statistics

Table 1 presents descriptive statistics by the experimental cells. Concerning the quantity of designed puzzles, the participants created, on average, 9.59 rebus puzzles. Further, we find that the participants in conditions of self-set salaries with observability of peer performance (10.29) and without observability of peer performance (10.17) created more puzzles than the participants in the fixed-payment condition (8.41), which is in line with H1. Regarding the average creativity, results are

¹¹ Those six participants were all in the observability of peer performance condition and indicated that they did not determine their payment after they had seen the others' puzzles.

Table 1 Descriptive statistics

	Fixed payment (<i>n</i> = 29)	Self-set salaries		Total (<i>n</i> = 83)
		Observability of peer performance (<i>n</i> = 24)	No observability of peer performance (<i>n</i> = 30)	
Quantity	8.41 (3.17)	10.29 (3.54)	10.17 (4.24)	9.59 (3.75)
Average creativity	5.57 (0.98)	5.46 (0.97)	5.66 (1.14)	5.57 (1.03)
Payment request	17.63 (0.00)	17.92 (3.06)	17.63 (3.80)	17.71 (2.79)

The table presents the mean values (standard deviation) for each dimension and condition

similar across conditions. When combining the two conditions of self-set salaries, the average creativity (5.57) is equal to the fixed-payment condition.¹² This result suggests that neither the autonomy-supportive task context improves creativity nor the self-set salaries erode creativity while simultaneously increasing the quantitative output. Finally, Table 1 reports the participants' payment requests. On average, the participants with self-set salaries but without observability of peer performance requested 17.63 euros, which we use as the equivalent payment in the fixed-payment condition by design. The participants with self-set salaries and observability of peer performance requested a slightly higher amount of 17.92 euros. Thus, the participants requested relatively high salaries, which is also reflected in the high number of participants who asked for the maximum amount possible, that is, 20.00 euros (without observability of peer performance: 18 out of 30 participants; with observability of peer performance: 17 out of 30; not tabulated).

5.3 Hypothesis tests

Table 2 reports the results of our formal hypothesis tests. Hypothesis H1 posits a positive association between self-set salaries and the number of produced ideas in a creative task setting. To test this hypothesis, we pool our treatments of self-set salaries with and without observability of peer performance and compare them with the fixed-payment condition. With respect to the small number of observations, we perform both a *t*-test and bias-corrected and accelerated bootstrapping (95% confidence interval, 1,000 replications).¹³ The results from the *t*-test ($t = 2.07$, $p = 0.042$, two-tailed) and the bootstrapping ($z = 2.17$, $p = 0.030$, two-tailed) support hypothesis H1, indicating that self-set salaries increase the number of produced puzzles.

¹² Likewise, participants' highest-rated rebus puzzles are in a similar range, with means of 7.14, 7.02, and 7.11 in the fixed-payment condition, the self-set salary condition with observability of peer performance, and the self-set salary condition without observability of peer performance, respectively.

¹³ When testing whether the requirements of the *t*-test are met, a skewness test for normality reveals that participants' quantitative output is significantly skewed ($p = 0.002$). Performing a Shapiro–Wilk *W* test for normality confirms this pattern and indicates non-normal data ($W = 0.949$, $p = 0.002$). Therefore, we use logarithmic values to perform our analyses, which solves the issue of skewed results. Both the skewness test ($p_{\log} = 0.517$) and the Shapiro–Wilk *W* test for normality ($W_{\log} = 0.992$, $p = 0.881$) indicate that our data follow a normal distribution after the log-transformation.

Table 2 Hypothesis tests

Panel A: Hypothesis 1			
Variable	Self-set salaries ($n = 54$)	Fixed payment ($n = 29$)	t test ^a BCa bootstrap ^b
Quantity	10.22 (3.91)	8.41 (3.17)	2.07 (0.042) 2.17 (0.030)
Panel B: Hypothesis 2			
Variable	Self-set salaries ($n = 54$)	Fixed payment ($n = 29$)	t test BCa bootstrap ^b
Average creativity	5.57 (1.06)	5.57 (0.98)	0.01 (0.992) 0.01 (0.992)
Panel C: Hypothesis 3			
Variable	Self-set salaries without observability of peer performance ($n = 30$)	Self-set salaries with observability of peer performance ($n = 24$)	t test BCa bootstrap ^b
Payment request	17.63 (3.80)	17.92 (3.06)	0.30 (0.768) 0.31 (0.759)

Panels A to C of this table present the mean values (standard deviation) per condition or the test statistics (two-tailed p -values), respectively

^aThe t -test results are based on logarithmic values

^bWe bootstrap our results with bias-corrected and accelerated (BCa) confidence intervals (1000 replications)

Regarding hypothesis H2, we use the same research design to investigate whether self-set salaries affect the average creativity differently from fixed payments. As indicated by the descriptive results, we do not find significant differences in the average creativity when using either the t -test ($t=0.01$, $p=0.992$, two-tailed) or bootstrapping ($z=0.01$, $p=0.992$, two-tailed). This finding indicates that self-set salaries neither harm nor benefit the creative dimension of creative performance. Thus, in contrast to the results of Kachelmeier et al. (2008), who show that quantity-contingent incentives increase the quantity but reduce the creativity, we find that, while the quantity increases, the creativity remains unchanged when self-salaries instead of fixed payments are used.

Regarding hypothesis H3, we expect that the observability of peer performance *before* the payment request enables individuals to justify their payment requests, which results in higher payment requests. With respect to the descriptive results, the mean payment request of the participants with observability of peer performance is higher than the request of their counterparts without observability of peer performance. However, the difference is insignificant, both for the t -test ($t=0.30$, $p=0.768$, two-tailed) and for the bootstrapped results ($z=0.31$, $p=0.759$, two-tailed). Therefore, we reject H3. A possible explanation for the lacking support of our H3 could be a ceiling effect. In fact, 31 out of 54 participants (57.4%) requested the maximum amount of 20 euros. The corresponding chi-squared test also determines a uniform distribution of the payment requests between the two self-set salary conditions ($\chi^2=7.37$, $p=0.497$, not tabulated), so our research design may not allow such analyses.

5.4 Additional analyses

5.4.1 Robustness checks

To investigate the reliability of our results, we first repeat our analyses using data from all the participants (including the six participants who failed the manipulation checks). Table 3 reports the results. We find that the results are inferentially identical to those of our main analyses.

Further, we investigate whether the amount of the requested payment interferes with our results. Table 4 presents the results of the OLS regression analysis, in which the quantity (Panel A), the average creativity (Panel B), or the creativity-weighted productivity (Panel C) serve as dependent variables. Further, we add the payment request as a control variable. However, the level of the requested payment does not have a significant effect on the respective creativity measures, while self-set salaries have a significant effect on the quantity ($p=0.044$, two-tailed) and creativity-weighted productivity ($p=0.053$, two-tailed). Therefore, our results are supported.

5.4.2 Alternative measures of creativity

In this section, we report alternative measures of creativity to gain a better understanding of the effects of self-set salaries on creativity. Specifically, Kachelmeier

Table 3 Hypothesis tests (failed manipulation checks included)

Panel A: Hypothesis 1			
Variable	Self-set salaries ($n = 60$)	Fixed payment ($n = 29$)	BCa bootstrap ^b
Quantity	10.12 (3.74)	8.41 (3.17)	2.12 (0.037) 2.12 (0.034)
Panel B: Hypothesis 2			
Variable	Self-set salaries ($n = 60$)	Fixed payment ($n = 29$)	BCa bootstrap ^b
Average creativity	5.48 (1.05)	5.57 (0.98)	0.37 (0.716) 0.40 (0.692)
Panel C: Hypothesis 3			
Variable	Self-set salaries without observability of peer performance ($n = 30$)	Self-set salaries with observability of peer performance ($n = 30$)	BCa bootstrap ^b
Payment request	17.63 (3.80)	17.90 (3.09)	0.30 (0.767) 0.29 (0.771)

Panels A to C of this table present the mean values (standard deviation) per condition or the test statistics (two-tailed p -values), respectively

^aThe t -test results are based on logarithmic values

^bWe bootstrap our results with bias-corrected and accelerated (BCa) confidence intervals (1000 replications)

Table 4 Robustness check (effect of the payment level on creativity measures)

Independent variables	Coef.	Std. Err.	<i>t</i>	<i>p</i> -value
Panel A: Quantity (dependent variable)				
Constant	1.71	0.28	6.17	<0.001
Self-set salaries	0.18	0.09	2.05	0.044
Payment request	0.02	0.02	1.35	0.180
R^2	0.072			
Adjusted R^2	0.048			
$F(2, 80)$	3.08			
<i>p</i> -value	0.051			
<i>N</i>	83			
Panel B: Average creativity (dependent variable)				
Constant	5.17	0.75	6.86	<0.001
Self-set salaries	-0.001	0.24	<-0.001	0.998
Payment request	0.02	0.04	0.55	0.581
R^2	0.004			
Adjusted R^2	-0.021			
$F(3, 50)$	0.15			
<i>p</i> -value	0.858			
<i>N</i>	83			
Panel C: Creativity-weighted productivity (dependent variable)				
Constant	3.29	0.30	11.02	<0.001
Self-set salaries	0.19	0.10	1.96	0.053
Payment request	0.03	0.02	1.62	0.110
R^2	0.076			
Adjusted R^2	0.053			
$F(2, 80)$	3.31			
<i>p</i> -value	0.042			
<i>N</i>	83			

Panels A to C of this table present the regression results for the dependent variables quantity, average creativity, and creativity-weighted productivity and the independent variables self-set salaries (yes/no) and participants' payment requests. The values for quantity and creativity-weighted productivity are logarithmic

et al. (2008) also investigate creativity-weighted productivity, which is equivalent to the multiplicative product of quantity and average creativity. Consequently, we investigate whether creativity-weighted productivity differs between conditions with a self-set salary and those with a fixed payment. As shown in Table 5, Panel A, we find that participants with self-set salaries achieve higher levels of productivity (56.13 compared with 46.84, on average).¹⁴ The difference is significant, both on a

¹⁴ Similar to participants' quantity, the results are skewed when testing for normality ($p < 0.01$). Therefore, we perform a log-transformation so that the results do not deviate significantly from a normal distribution ($p_{log} = 0.13$).

Table 5 Alternative measures of creativity

Panel A: Creativity-weighted productivity (quantity \times average creativity)				
Variable	Self-set salaries ($n = 54$)	Fixed payment ($n = 29$)	t -test ^a	BCa bootstrap ^b
Creativity-weighted productivity	56.13 (21.56)	46.84 (20.85)	1.98 (0.051)	1.98 (0.048)
Panel B: Number of high-creativity ideas				
Variable	Self-set salaries ($n = 54$)	Fixed payment ($n = 29$)	t -test ^a	BCa bootstrap ^b
Number of high-creativity ideas	5.31 (3.09)	4.34 (3.53)	1.30 (0.199)	1.28 (0.202)

Both panels of this table present the mean values (standard deviation) per condition and the test statistics (two-tailed p -values), respectively

^aThe t -test results are based on logarithmic values.

^bWe bootstrap our results with bias-corrected and accelerated (BCa) confidence intervals (1000 replications)

parametric basis ($t = 1.98$, $p = 0.051$, two-tailed) and when bootstrapping our results ($z = 1.98$, $p = 0.048$, two-tailed). This result further stresses that the increase in quantity based on self-set salaries is not negatively affected by a decrease in creativity.

Since some firms might be interested in promoting high-creativity solutions, we also investigate the effect of self-set salaries on the number of high-creativity puzzles. We consider a puzzle as highly creative when its mean rating is higher than the median (5.57). As shown in Table 5, Panel B, we find that the participants created more high-creativity puzzles in the self-set salary conditions (5.31 puzzles) than in the fixed-payment condition (4.34 puzzles). This pattern is in line with our theory that predicts a general effect of self-set salaries on the quantity of produced ideas. The difference, however, is statistically insignificant (t -test: $t = 1.30$, $p = 0.199$, two-tailed; bootstrap: $z = 1.28$, $p = 0.202$, two-tailed). Yet, this finding could also be due to our experimental design, which may not allow for sufficient variance between conditions. Specifically, participants had only 20 min of time to produce creative ideas. This limits potential differences across conditions because high-creativity puzzles are a fraction of all created puzzles. Therefore, in the real world, where employees work much longer to produce creative ideas, our theory may still hold.

5.4.3 Investigation of underlying mechanisms

Next, we provide further insights into the underlying process driving our results using the participants' answers to the PEQ. Table 6 displays the mean response to the questions by experiment cell. The post-experimental questions are based on a 7-point Likert scale from 1 (does not apply at all) to 7 (applies fully).

Overall, Table 6 reveals that the participants in the self-set salary conditions are more satisfied with their performance (*satisfaction with own performance*) than the participants with fixed pay ($z = 1.87$, $p = 0.062$, two-tailed, not tabulated), which is in line with the greater quantity of designed puzzles.¹⁵

Further, in developing our hypotheses on the effects of self-set salaries, we argue that employees experience higher levels of autonomy than those receiving fixed payments, which is likely to increase their intrinsic motivation. Therefore, we measure autonomy based on the autonomy subscale of the Basic Psychological Need Satisfaction at Work Scale, developed by Deci et al. (2001). We perform principal-components factor analysis to compute a composite measure of autonomy.¹⁶ The resulting *autonomy factor* has an eigenvalue of 2.42 and an explained variance of 48.4 percent. We find that the participants in the self-set salary conditions experience higher levels of autonomy in the experiment than the participants in the fixed-payment condition ($z = 1.65$, $p = 0.099$, two-tailed, not tabulated). Hence, we conclude that self-set salaries can increase feelings of autonomy.

¹⁵ Table 6 also shows participants' focus on both quality and quantity. While all the participants indicated that they attached more importance to the quality than to the quantity of the rebus puzzles ($t = 2.80$, $p < 0.01$, two-tailed), their statements do not vary across conditions—both for quality ($\chi^2 = 2.60$, $p = 0.273$, two-tailed) and for quantity ($\chi^2 = 1.20$, $p = 0.548$, two-tailed).

¹⁶ We exclude items 5 and 7 due to low indicator reliability.

Table 6 Responses to post-experimental questions

	Fixed payment ($n=29$)	Self-set salaries	
		Observability of peer performance ($n=24$)	No observability of peer performance ($n=30$)
Satisfaction with own performance	4.97 (1.50)	5.83 (1.17)	5.30 (1.42)
Focus on quality	5.00 (1.39)	5.50 (1.38)	5.43 (1.38)
Focus on quantity	4.48 (1.64)	4.96 (1.65)	4.73 (1.66)
Autonomy factor (calculated)	- 0.17 (0.87)	0.40 (0.98)	- 0.16 (1.06)
Task enjoyment	5.10 (1.90)	5.79 (1.67)	5.73 (1.44)
Fair compensation	5.69 (1.26)	5.88 (1.48)	5.37 (1.50)
Compensation and performance	1.55 (1.30)	4.33 (2.46)	3.07 (2.27)
Orientation towards others	n/a	4.92 (1.98)	1.40 (1.16)

This table presents the mean values (standard deviation) for each PEQ item and condition. The participants responded to the following PEQ items on 7-point Likert scales (1 = does not apply at all, 7 = applies fully)

Satisfaction with own performance: I am satisfied with my performance

Focus on quality: I have attached importance to the quality of my puzzles

Focus on quantity: I have attached importance to the number of my puzzles

Autonomy: Based on the autonomy subscale of the Basic Psychological Need Satisfaction at Work Scale, developed by Deci et al. (2001)

Task enjoyment: I enjoyed creating the rebus puzzles

Fair compensation: I think my remuneration is fair

Compensation and performance: My remuneration was dependent on my performance

Orientation towards others: In my remuneration decision, I was guided by the performance of the other participants [not for fixed pay]

Further, we argue that self-set salaries ultimately lead to higher intrinsic motivation relative to fixed payments. In the PEQ, the participants assessed how much they agree with the statement that they enjoyed creating rebus puzzles (*task enjoyment*). We find that the participants in the self-set salary conditions experience more fun than the participants in the fixed-payment condition ($z=1.63$, $p=0.102$, two-tailed, not tabulated). This finding indicates that the participants in the conditions with self-set salaries are more intrinsically motivated to work on the creative task.

In contrast, fairness concerns are unlikely to drive our results, because we do not find differences ($z=0.30$, $p=0.976$, two-tailed, not tabulated) between participants with self-set salaries and participants with fixed pay in how they assessed their remuneration (*fair compensation*). Regarding the request for salaries, we do not find a significant difference between conditions with observability of peer performance before the salary request and conditions without observability of peer performance. As outlined above, this result may be driven by a ceiling effect. However, when investigating possible underlying mechanisms, we find that the participants in the condition with observability of peer performance agree more strongly with the statement that their compensation was dependent on their performance ($z=2.06$,

$p=0.039$, two-tailed, not tabulated). Further, the participants in the condition with observability of peer performance state that they oriented their remuneration decisions more firmly toward the performance of the other participants than the participants in the condition without observability of peer performance ($z=5.40$, $p<0.01$, two-tailed, not tabulated). These results suggest that the participants who could observe the performance of their peers prior to making their salary request considered this information for a subjectively appropriate salary request.

To encounter possible ceiling effects, we further analyze items from our PEQ. First, we investigate the participants' responses to the statement regarding whether it was their goal to earn as much as possible in the experiment (*earnings maximization*). We perform an OLS regression and examine the interaction between the *observability of peer performance* and *earnings maximization* in their payment requests. As shown in Table 7, Panel A, the goal of earnings maximization in the experiment has a significant main effect and is positively associated with participants' payment requests ($p<0.001$, two-tailed). Moreover, we find a positive treatment effect such that the observability of peer performance before the salary request leads to higher salary requests ($p=0.033$,

Table 7 Regression analysis for H3

Independent variables	Coef.	Std. Err.	<i>t</i>	<i>p</i> -value
Panel A: Base model (dependent variable: payment request)				
Constant	7.21	1.47	4.91	<0.001
Observability of peer performance	4.71	2.15	2.19	0.033
Earnings maximization	1.79	0.24	7.41	<0.001
Observability of peer performance \times earnings maximization	- 0.69	0.36	- 1.89	0.065
R^2	0.588			
Adjusted R^2	0.563			
$F(3, 50)$	23.76			
<i>p</i> -value	<0.001			
<i>N</i>	54			
Panel B: Control model (dependent variable: payment request)				
Constant	4.02	1.77	2.27	0.027
Observability of peer performance	4.48	2.01	2.23	0.030
Earnings maximization	1.74	0.23	7.70	<0.001
Observability of peer performance \times earnings maximization	- 0.71	0.34	- 2.09	0.042
Satisfaction with own performance	0.65	0.23	2.87	0.006
R^2	0.647			
Adjusted R^2	0.618			
$F(4, 49)$	22.46			
<i>p</i> -value	<0.001			
<i>N</i>	54			

Panels A to B present the regression results for the dependent variable payment request and the independent variables *observability of peer performance* and *earnings maximization*. Panel B also includes participants' satisfaction level with their own performance to control for interfering influence

two-tailed). Furthermore, there is a marginally significant interaction between the independent variables ($p=0.065$, two-tailed). Thus, participants who intended to earn more money from the experiment requested higher salaries in the condition with observability of peer performance than in the condition without observability of peer performance.¹⁷

Since one's satisfaction with the achieved performance (*satisfaction with own performance*) is a plausible starting point for a payment request, we repeat our regression analysis and include participants' satisfaction as a control variable. In line with this argument, Table 7, Panel B, shows a significant positive association between participants' satisfaction and their actual payment request ($p=0.006$, two-tailed). However, adding this control variable does not affect our inferences.

Finally, while prior research frequently finds indications for gender effects in salary negotiations (Croson and Gneezy 2009), we also test whether participants' payment requests varied between men and women. We find no indications of a gender effect in our experiment either for payment requests ($\chi^2(8)=10.23$, $p=0.250$) or for the goal of earnings maximization ($\chi^2=6.14$, $p=0.408$).

6 Conclusion

This paper reports the results of an experimental study that investigates the effect of self-set salaries on creative performance (i.e. the quantity and the creativity of ideas) as well as the effect of the observability of peer performance on salary requests. We find that, compared with fixed payments, self-set salaries lead to a higher number of produced ideas (the quantity dimension of creative performance). Further, we find that average creativity is unaffected. This is important because our results suggest that an increased quantity of ideas does not come at the cost of decreased creativity when firms use self-set salaries to motivate creative performance. We also provide evidence that the positive effects of self-set salaries can be attributed to feelings of autonomy, competence, and relatedness, which increase intrinsic motivation.

Finally, we find that, when information about peer performance is observable prior to the salary request, salary requests are slightly higher than when peer performance is not observable. While this effect is insignificant across conditions, further analysis reveals that it depends on individual aspects, such as individuals' goal of earnings maximization.

Our results have important implications for both practice and theory. Our study informs practitioners about the effects of self-set salaries with regard to creative performance. Self-set salaries may be especially suitable when a high number of creative ideas is needed. Moreover, because highly creative employees typically self-select into work environments that promise enjoyment, freedom, and identification (Caves 2000; Getzels and Jackson 1960), the use of self-set salaries could further

¹⁷ We also test whether modesty interacts with our treatment. We measure modesty based on the respective questions in the NEO Personality Inventory. We find no indications that modesty interferes with our treatments, since the interaction effect of *observability of peer performance* and *modesty* on salary requests is insignificant ($p=0.878$, two-tailed).

attract those types of employees. However, when implementing self-set salaries, additional mechanisms need to be considered that hinder employees from exaggerating their salary requests. A typical element of self-managed organizations is transparency of peer performance (Laloux 2014), which could be helpful in preventing self-serving behavior and inflated salary requests. Yet, our findings provide insights that it might be detrimental for firms to facilitate observability of peer performance under self-set salaries. Nevertheless, it does not seem realistic to completely prevent the observability of peer performance in practice. Given that the observability of peer performance also serves a feedback function, explicitly introduced feedback rounds could therefore offer more detailed and precise information, increase process transparency, and enable a dialogue between employees, peers, and superiors.

Additionally, our study contributes to two streams of literature. First, we add to the literature on incentives and creativity (e.g., Brügger et al. 2018; Chen et al. 2012; Kachelmeier and Williamson 2010; Kachelmeier et al. 2008). Specifically, we investigate a compensation scheme that does not incentivize creative performance but still affects behavior. Thereby, we find that self-set salaries increase the quantity while the average creativity is unaffected. Second, we contribute to research on self-set salaries (e.g., Charness et al. 2012, 2015; Faillo and Piovanelli 2017; Jeworrek and Mertins 2019) by showing that self-set salaries have positive motivational effects in a creative task context. Prior literature primarily focuses on settings with chosen effort or effort in routine tasks. Consequently, we identify an alternative setting in which self-set salaries may be helpful.

Our study is subject to limitations, which also offer opportunities for future research. With regard to the performance effects of self-set salaries, we compare self-set salaries with an economically equivalent fixed payment. Because our findings are similar to those of previous studies that investigate quantity-contingent rewards, future research could investigate the effects of self-set salaries relative to piece-rate incentives. Further, we use the creation of rebus puzzles as a proxy for creativity. While this design choice follows prior research, we acknowledge that creativity is a complex and multi-faceted construct that offers opportunities for future research.

With regard to the payment request, we limit the level of salary requests by introducing a salary cap of 20 euros, which potentially induces ceiling effects. Future studies could investigate the payment request with no or relatively high salary caps. Finally, our experimental design is a one-shot game that does not include a superior authority that impedes the justification of the self-set salary. In practice, there are long-term and repetitive superior-subordinate interactions so that a multi-period game with evaluations of creative performance by the superior could potentially affect employees' salary requests because employees learn how their outcome is morally judged by the firm. We leave it to future research to investigate whether a moral judge can mitigate the motivated reasoning mechanism and thus affect salary requests.

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Data availability Data are available upon request.

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