

Unpacking the effect of autonomous motivation on workplace performance: Engagement and distributive justice matter!

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Abstract

Self-determination theory explains the effects of autonomous motivation on work engagement and job performance. We use a self-determination theory framework to examine the interaction between distributive justice and autonomous motivation in the context of the allocation of pay to employees. We performed an empirical study in France that took place over three time periods to examine this relationship. Our findings show that when autonomous motivation is high employee perceptions of distributive justice are viewed as a source of control and results in decreased levels of autonomous motivation, work engagement and performance. As such, practical implications for human resource management are proposed to manage the prominence of attention given to employee perceptions of distributive justice of their rewards so that it should not be too high. In a context of high autonomous motivation in the workplace, managers could use *ex post* rewards.

KEYWORDS

autonomous motivation, distributive justice, engagement, performances, self-determination theory

INTRODUCTION

In this article we theorize and test the relationship between autonomous motivation and work engagement that is moderated by distributive justice and predict that reduced levels of job performance are the result which is supported by the findings. These findings challenge conventional wisdom which expects that providing distributive justice in the workplace, commonly referred to as outcome fairness, should enhance job performance. In our article we provide theoretical logic to suggest that there are specific workplace contexts that are less conducive to displays of outcome fairness when a higher level of performance is desired.

The optimal state of autonomous motivation is defined as “active engagement with tasks that people find interesting and that, in turn, promote growth” (Deci & Ryan, 2000, p. 233). In line with recent research (Crawford et al., 2010; Newton et al., 2020; Rich et al., 2010), Kahn (1990) indicated that work engagement occurs when individuals strongly identify with their work role when they are performing their jobs so that

they are physically, cognitively and emotionally involved with the work. In other words, work engagement is a motivational concept that represents an active allocation of personal resources to work-related tasks (Rich et al., 2010).

According to Deci & Ryan (2000) the postulate of autonomous motivation deals with a proactive individual; it presupposes that people are by nature active and seek personal growth opportunities that depend on a nurturing environment. This suggests that fulfillment of the innate and fundamental needs for autonomy, competence and relatedness enhances levels of autonomous motivation, and in turn triggers work engagement (Baard et al., 2004; Deci et al., 2001; Deci et al., 2017; Olafsen et al., 2017) which should be beneficial to performance.

The literature also establishes a positive relationship between autonomous motivation and work performance (Baard et al., 2004; Gagné & Deci, 2005; Nordgren Selar et al., 2020). However, it is noted that empirical research on this relationship is rare, particularly in the organization context, although it can be observed in other contexts such as in education and athletics (Ryan & Deci, 2000; Vansteenkiste et al., 2010). As such, our

Data is available on request from the first author.

research will provide empirical insights into the theoretical relationship between autonomous motivation and individual performance at work.

Our study, using a self-determination theory framework (SDT), posits that the interaction between distributive justice and autonomous motivation is negatively related to work outcomes in an organization context characterized by high autonomous motivation. This relationship in turn can diminish work outcomes that require autonomous motivation. Consequently, when organizations take efforts to inform employees that their pay allocations were made on a fair basis expecting positive work outcomes to result (Cropanzano et al., 2007; Howard, 1999), contrary to conventional wisdom, we show that organization efforts to demonstrate distributive justice with pay to employees can negatively affect task performance, adaptive performance, and organizational citizenship behavior with the organization.

On the one hand, autonomous motivation and work engagement are characterized by a workplace where an individual acts in complete autonomy and by conviction. On the other hand, distributive justice has its roots in equity theory (Adams, 1963) where an employee reacts to the fairness of rewards controlled by an external actor. It is characterized by the fact that an individual often compares the ratio between his remuneration and performance contribution with the remuneration and performance contribution ratios of internal pay referents in order to judge the fairness of received pay. In this sense, it relates directly to the material or emotional resources of the organization. The distributive dimension of organizational justice would be more relevant to analyze with regard to its intent to regulate employee behavior so that it is consistently focused on performance, rather than being motivated to correct a perceived injustice in the allocation of pay. Therefore, drawing employee attention to distributive justice is likely to be perceived as a source of external control of employee behavior which will weaken or disrupt autonomous motivation and engagement at work. To our knowledge, no research has examined into this question.

By analyzing the role of work engagement and distributive justice in the context of autonomous motivation, our research will also examine the explanatory power of these two variables. Based on the SDT framework, our research will study the significance of the positive effect of autonomous motivation on employee performance mediated by work engagement and moderated by distributive justice in the workplace. First, we present the conceptual framework of this study supporting the theoretical hypotheses. Next, we test our hypotheses from a sample of employees who were surveyed over three different time periods. Finally, we report our findings and discuss the contributions and limitations of this study.

JOB PERFORMANCE CONSEQUENCES OF WORK ENGAGEMENT

Work engagement contributes to positive organizational outcomes including task and extra-role performance (Breevaart et al., 2016; Reijseger et al., 2017; Rich et al., 2010). Indeed, engaged employees are generally energetic and enthusiastic about their work (Halbesleben & Wheeler, 2008). Many authors have also established that work engagement is a motivational state that captures the intensity with which an individual engages in work, and thus appears as a major determinant of individual performance (Rich et al., 2010; Salanova et al., 2005).

The meaning given to individual performance in the field of organizational behavior is changing (Carpini et al., 2017; Griffin et al., 2007), as organizations adjust to dynamic environmental pressures. The difficulty of performance management is said to arise from the complexity of assessing individual performance (Pulakos & O'leary, 2011). In recent years the conceptualization of individual performance has evolved to represent a more complete repertoire of behaviors. In this study, our objective is to use a comprehensive concept of individual performance that represents how it is currently viewed in organizations. We define job performance expansively as the aggregated value to an organization of the set of behaviors that an employee contributes both directly and indirectly to organizational goals (Borman & Motowidlo, 1993) in line with the recent work of Özcelik & Uyargil (2019). Individual job performance at work is composed of task performance, along with organization citizenship behavior-organization level (OCB-O), organization citizenship behavior-individual level (OCB-I)¹ and adaptive performance. It includes both in-role and extra-role performance. These constructs are different and complementary for evaluating the overall performance of employees (Pradhan & Jena, 2017; Pulakos et al., 2000).

This multidimensional perspective of work performance “can provide the specific types of employee behaviors that transmit the effects of engagement to more ‘objective’ outcomes, such as productivity, efficiency, and quality” (Rich et al., 2010, p. 619).

Because engaged individuals invest their physical, cognitive, and emotional energies into their work roles, they should exhibit enhanced performance because they work with greater intensity of effort for longer periods of time, and with more focus on responsibility. In addition, they are more emotionally connected to the task. Put simply, engaged employees involve their “hands, head, and heart” (Ashforth & Humphrey, 1995) in committed and purposeful work performance. Further, Kahn (1990) indicated that the physical, cognitive, and emotional energies of work engagement foster active, complete role performances through behavior that is highly conscientious, interpersonally collaborative, innovative, and involved.

The dynamic relation between people and the social environment in which they attempt to satisfy their needs explains work engagement and its link to individual performance. Conversely, SDT informs that the frustration of not attaining core workplace needs is associated with reduced autonomous motivation, increased controlled regulation and motivation, and increased extrinsic aspirations, which leads to diminished engagement and job performance (Deci & Ryan, 2000; Olafsen et al., 2017; Ryan & Deci, 2017).

Based on the above reasoning, and in line with self-determination theory, self-motivated employees are more likely to respond by investing time, energy, and becoming psychologically, emotionally, and physically involved in the workplace (Deci & Ryan, 2000; Kahn, 1990). Consistent with the findings of an earlier meta-analysis of work engagement, Christian et al. (2011) show that work engagement is positively associated with individual performance. Interestingly, a more recent literature review of work engagement, (Green et al., 2017) demonstrates that work engagement is often posited as a mediator of various positive organizational outcomes.

Many other studies based on the Job Demands-Resources (JD-R) model also consider work engagement as a psychological mediator between employment resource and employee performance variables, such as extra-role or citizenship behaviors (Bakker & Demerouti, 2014; Rich et al., 2010; Van Wingerden et al., 2017). According to the JD-R model (Schaufeli & Bakker, 2004), a professional environment that provides adequate resources conducts employees to devote their efforts and abilities to their work, resulting in a high level of engagement and, ultimately, to a high level of performance. Indeed, resources indirectly influence outcome variables through their ability to act on work engagement (Bakker & Demerouti, 2014).

As explained by Demerouti et al. (2001), the presence of adequate resources—the autonomous motivation in our case—reduces the demands of the job, promotes the achievement of goals and stimulates affective reactions. Autonomous motivation can be considered as a satisfactory and adequate employment resource, in that it directly results in the interest, pleasure and conviction that an individual has to bring to the job (Deci & Ryan, 2000). Work engagement will thus act as an indicator of the motivation of the individual that is likely to lead to proactive behaviors, which promotes positive results (Salanova et al., 2005). Therefore, work engagement contributes indirectly to work performance in that it encourages individuals to mobilize the necessary resources to provide greater value to the organization (Demerouti & Cropanzano, 2010).

Drawing from the literature on work engagement and job performance and the logic of self-determination theory, we predict that autonomous motivation influences

the individual performance of employees through its influence on work engagement. Our first hypothesis follows:

Hypothesis 1. Autonomous motivation is positively associated with individual performance at work: (a) task performance, (b) adaptive performance, (c) OCB-O, and (d) OCB-I, through mediation by work engagement.

THE RELATIONSHIP BETWEEN DISTRIBUTIVE JUSTICE AND MOTIVATION

The impact of autonomous motivation on task performance, adaptive performance, OCB-O and OCB-I is likely to vary as a function of distributive justice. Distributive justice is defined as employees' perceived fairness of the decision outcomes in relation to their contributions (Colquitt, 2001). In a pay context the facet of distributive justice is especially interesting because, it is concerned with whether the amount of pay a person receives is experienced as being fair and just. More specifically, distributive justice is relevant because it represents an appraisal of the support an employee receives from the organization. In other words and in line with Cropanzano et al. (2001, p. 165), "judgments regarding the fairness of outcomes or allocations have been termed distributive justice." Moreover, the expression of "pay fairness" is the practical implication resulting from the theoretical concept of distributive justice.

Different studies (Bobocel et al., 1997) have reported how employees make sense out of management reward allocations in order to find out how they impact employee attitudes. We will focus on understanding the underlying cognitive process to reveal attitudinal effects. Recent studies indicate that supportive organizational policies positively influence employee behaviors (Rofcanin et al., 2016; Menges et al., 2017).

Furthermore, consistent with the SDT framework, Deci & Ryan (2000) have explained that the functional significance (the psychological meaning) of any input affecting the initiation and regulation of intentional behavior can be usefully classified as either informational (supporting autonomy, promoting competence) or controlling (pressuring one to think, feel, or behave in specified ways). Experiencing an input as informational fosters self-determination, whereas experiencing it as controlling diminishes self-determination. Studies on the contextual factors that affect self-determination consisted of laboratory experiments involving external manipulations (e.g., reward structures, procedural justice) to influence how specific events are experienced as either informational (as supporting self-determination) or controlling (as thwarting self-determination).

Distributive justice is frequently a topic of interest in the pay literature because equity or justice (e.g., fairness) has long been an important consideration concerning the allocation of pay (Williams et al., 2006). Employees determine pay allocation fairness based on making relative comparisons of pay and individual contributions between themselves with that of internal and external pay referents (Adams, 1963).

Deci et al. (1977) established the relationship between equity and motivation in the mid-1970s. According to these authors, when employees feel unfairly treated, they feel less satisfied and put less effort at work. Thus, equity in the distribution of the organization's resources seems important for motivation according to SDT.

DISTRIBUTIVE JUSTICE AND AUTONOMOUS MOTIVATION

It has been established that the perception of distributive justice can alter the locus of causality of the individual from internal to external (DeCharms, 1968). According to Strom, et al., (2014), on a conceptual level, the contextual influences of justice may serve as specific examples of "job resources." Since distributive justice is a material or emotional resource linked to work according to the JD-R model (Strom et al., 2014), its existence can encourage controlled motivation, but may weaken self-motivation. According to SDT, controlled motivation is due to focusing on equity in the allocation of an organization's resources, so that the individual's behavior becomes controlled by an external factor (e.g., pay) that weakens his or her sense of self-determination and autonomous motivation. In their study, Grandey et al. (2013) realize the distinction between a "controlling perspective" of rewards and the "valuing perspective" of rewards. When employees' perceptions of distributive justice with pay are obtained on an ex-ante basis that occurs before performance ("controlling perspective") outcomes are known, employees will reduce experienced levels of work engagement (Grandey et al., 2013). This is so, because when employees direct their attention to thoughts about the fairness of pay (an externally administered reward) it activates the controlling effect of pay and reduces levels of experienced autonomy which in turn reduces work engagement. We can therefore assume that employees with *ex ante* perceptions of distributive justice (e.g., fair pay allocations) have an external causal locus that reduces their autonomous motivation, and reduces the positive effect on outcomes such as job performance and organizational citizenship behavior when employees are needed to be intrinsically motivated in the workplace.

Deci et al. (2017) explain that coercive leadership styles, time pressures on work outcomes, and *ex ante* pay contingencies are equated with the experience of being externally controlled. When employees experience having external factors controlling their behavior it can narrow

the range of their efforts, and produce short-term gains on targeted outcomes. It can also have negative spillover effects on subsequent work engagement and job performance. In more extreme cases, people engage in psychological withdrawal or antisocial activity as compensatory motives for unfulfilled needs (Deci & Ryan, 2000). The Olafsen et al. (2015, p. 8) study is consistent with the SDT framework where distributive justice appears to result in an extrinsic evaluation of one's pay, so that employees' pay amount and distributive justice do not predict either psychological need satisfaction or autonomous motivation.

Moreover we recognize that pay amount and distributive justice are different forms of support (Deci et al., 2017). As such, only managerial support should be a positive predictor of core psychological needs at work and autonomous motivation. Thus, pay and distributive justice were unrelated to employees' psychological need satisfaction or autonomous motivation. Furthermore Olafsen et al.'s (2015) findings were in agreement with the results of the meta-analysis of laboratory experiments by Deci et al., (1999), which showed that non-contingent task rewards were unrelated to autonomous motivation, and thus presumably needs satisfaction.

Finally, with high levels of autonomous motivation, people are more engaged and performing at higher levels. In the context of high autonomous motivation, distributive justice will be considered by employees as a source of external control and result in decreased levels of autonomous motivation, work engagement and job performance. When an organization provides greater salience to distributive justice, the link between autonomous motivation, work engagement and job performance will decline because distributive justice would be perceived by employees as a form of external control.

Therefore the interaction of distributive justice and autonomous motivation would diminish the indirect effect of autonomous motivation on task performance, adaptive performance, OCB-O, and OCB-I through work engagement.

Hypothesis 2. The indirect effect of autonomous motivation on task performance, adaptive performance, OCB-O, OCB-I through work engagement is moderated by distributive justice. Therefore, when distributive justice increases, the relationship is weaker.

METHOD

Sample and procedure

Participants of this study are from a medium-sized wine cooperative located in the south west of France. Management at the wine cooperative informed employees of the fairness of the pay allocations in order to be consistent

with the culture of cooperation that guides decision making in the organization. Prior to the start of the study, company executives and permanent employees were briefed about the overall process including the study goals, measures, and potential publication targets. All participants were ensured of the strict confidentiality of the responses, and no one else, other than the researchers, had access to the data provided. Following their approvals, all employees participated in the survey. A paper questionnaire was administered to collect data from employees at the workplace during their working hours once a year at the same time over 3 years. The time between data collections was not a threat to the validity of the findings. On the contrary, in a French context, it is important to disclose the factors that influence annual pay. Furthermore, the wine industry in France has experienced little change in recent years and has maintained strong work traditions embedded in the processing of grapes into wine.

At Time 1 (April 2015) of the study, 147 out of 149 responded to the first survey representing a response rate of 99%. One year later (April 2016), 135 participants (90%) completed the second survey (Time 2). At Time 3, 120 usable surveys were completed for the third survey (April 2017), providing an overall response rate of 81%. This time lagged design introduced the independent variables and moderator variable measured at Time 1, the mediator variable measured at Time 2, and the dependent variables measured at Time 3. The temporality of 1 year has been chosen in line with the annual salary policy. Data collection was carried out at different times to support the causal chain that was tested so that “The assessment of variables at different times provides a measurement framework consistent with the specification of directional effects” (Kline, 2011, p. 99).

All analyses are based on the final sample of 120 permanent employees who responded to all three surveys. These employees are distributed over six different sites. The professional categories consist of diversified types of jobs: (1) management: managing director, human resources, financial director, secretary; (2) wine marketing: sales manager, salesperson, sales assistant (3) grape cultivation for winemaking: technical manager for grape production, agricultural worker; (4) winemaking science: oenologist and worker; (5) winemaking production and logistics: wine distributor, wine production worker.

Demographic background of the respondents: 70% were male, 51% were blue collar, and 11% were white collar. The average age at time 3 is 45.7 years ($SD = 9.3$) and the average organization tenure at time 3 is 15.2 years ($SD = 11.25$).

The average annual salary for the respondents is 32,006 euro ($SD = 14,734$). The composition of the salary consists of the following: the annual salary with a fixed bonus as required by French law, an annual variable bonus based on individual performance and an annual collective performance bonus.

Measures

We translated all items into the French language consistent with the procedure used in Roussel (1996). The items for the variables in the survey used a 5-fivepoint Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), except for work motivation, which used a seven-point Likert scale in connection with the recommendations of the designers of the scale (Gagné et al., 2015). The work of (Dawes, 2008) shows that the simultaneous use of 5 and 7 point scales does not change the results of the study. All scale items were self-rated. Donaldson and Grant-Vallone (2002) from a longitudinal, multitrait-multimethod dataset, show that replacing self-report data with more distal sources of data from peers or superiors do not adequately reduce self-report bias.

In our study the self-reported data is appropriate because in the organization context, the employee works alone (not in groups or teams where peers can observe the performance) and the supervisor is rarely available to observe what the employee does in the workplace. However, the employee is best suited to know what he or she does every day at the workplace, which provides a context favorable to use self-report data. Furthermore, the longitudinal design of the study with three time periods also reduces the bias of the employee as the source of data by separating the time that independent variables are measured from the time for the measurement of the dependent variables. In addition, the task performance variable is based on objective and well-defined expectations of work communicated to and agreed upon by employees in advance with performance goals and it is documented in a job description.

Autonomous motivation (time 1)

Chemolli and Gagné (2014, p. 576) have recommended that “researchers use different scoring systems that are more or less in line with the theoretical proposition advanced in SDT that motivation is multidimensional and that it is best represented by a continuum structure.” Following this advice, we used the Gagné et al. (2015) multidimensional work motivation scale about autonomous motivation. It includes 11 items and three dimensions representing (1) identified regulation (three items, e.g., “Because I personally consider it important to put efforts in this job”); (2) integrated regulation (four items, e.g., “Because it makes me feel proud of myself”); and (3) intrinsic motivation (four items e.g., “Why do you put efforts into your current job? Because the work I do is interesting”).

In connection with this theoretical representation (Van den Broeck et al., 2021) and expert theory practices (e. g. Fall & Roussel, 2016; Kuvaas et al., 2016; Roussillon Soyser et al., 2018; Thibault Landry

et al., 2018) we combined these subdimensions to form the aggregate autonomous motivation scale ($\alpha = 0.94$).

Procedural and distributive justice (time 1)

We administered the Colquitt (2001) distributive and procedural justice scales at Time 1. We measured distributive justice with four items (e.g., “Does your pay reflect the effort you have put into your work?”) ($\alpha = 0.94$) and we used seven items to measure procedural justice (e.g., “To what extent, have you been able to express your views and feelings during those procedures?”) ($\alpha = 0.88$).

Work engagement (time 2)

We administered the work engagement scale developed by Rich et al. (2010), based on Kahn’s (1990) conceptualization. It has 18 items and three dimensions that represent the physical, emotional and cognitive investments in performing work. In order to control the length of the questionnaire, the scale was reduced by excluding items that had the greatest semantic similarity. Example items are as follow: “I work with intensity on my job” (physical dimension: four items); “I am proud of my job” (emotional dimension: three items); and “At work, I devote a lot of attention to my job” (cognitive dimension: three items). These three dimensions were combined to form the aggregate work engagement score ($\alpha = 0.88$).

Individual performance at work (time 3)

We operationalized individual performance at work with four measures: (1) task performance; (2) adaptive performance; (3) OCB-O and (4) OCB-I. In line with previous work, there are different and complementary constructs for the evaluation of individual employee work performance (Pulakos et al., 2000; Pradhan & Jena, 2017).

Task performance. (time 3)

To measure task performance we used the in-role behavior scale developed by Williams and Anderson (1991). Of the seven items on this scale, three were selected (e. g.: “Fulfills responsibilities specified in job description”) by excluding items that had the greatest semantic proximity in order to limit the length of the questionnaire ($\alpha = 0.84$).

Adaptive performance (time 3)

The adaptive performance scale of Charbonnier-Voirin and Roussel (2012) was used. It consists of five factors:

(1) mastering emergencies and unpredictable situations; (2) managing work-related stress; (3) creatively solving problems; (4) learning; and (5) interpersonal and cultural adaptability. Each dimension has been reduced to three items (e.g., respectively: “I quickly decide what to do to solve the problem; I am looking for solutions by talking calmly with my colleagues; In my department, we count on me to propose new solutions; I train regularly, inside or outside the company, to keep my skills up-to-date; I gladly adjust my behavior when it comes to working with new people”). We combined these five subdimensions to provide an aggregate adaptive performance score ($\alpha = 0.89$).

OCB-I (time 3)

OBC-I used the three items from the scale of Coleman & Borman (2000). The items were selected (e.g.: “Helps others who have been absent”) by excluding items that had the greatest semantic proximity in order to limit the length of the questionnaire ($\alpha = 0.86$).

OCB-O (time 3)

We used the OCB-O scale of Lee & Allen (2002). 3 items were selected (e.g., “Attend functions that are not required but that help the organizational image”) by excluding items that had the greatest semantic proximity in order to limit the length of the questionnaire ($\alpha = 0.78$).

Controls

We controlled for procedural justice and a number of demographic variables including age, gender, tenure and occupational category of employees. When they are integrated into the structural model, these variables do not change the significance of the links observed. Thus, as recommended by Becker (2005), the results will be presented without these variables.

Test for common method variance

Since the survey data were collected from a single source, the employee, that provided the responses, the threat of common method variance could represent a source of potential bias into the study (Podsakoff et al., 2003). We performed the Harman test (Podsakoff et al., 2003) to evaluate this potential source of bias. According to this test, if a single factor represents more than 50% of the explained variance, the bias from the variance of the common method is present. The exploratory factor analysis performed on all 49 items on the

scales allowed for the extraction of seven factors (autonomous motivation, distributive justice, work engagement, task performance, adaptive performance, OCB-O and OCB-I). Each has a unique value greater than 1. The first factor represents only 41% of the explained variance. Since several factors have been provided by the exploratory factor analysis and none of these factors alone accounts for more than 50% of the explained variance, the absence of common variance is verified based on the Harman test.

ANALYSES AND RESULTS

Confirmatory factor analyses

Prior to testing hypotheses, we conducted a series of confirmatory factor analyses (CFAs) to establish the convergent and discriminant validity of our variables. We assessed the fit of our data to a measurement model using Mplus logiciel Mplus 7.3 (Muthén & Muthén, 2017). In order to avoid under-identification of the model and to create a more parsimonious model with less various sources of systematic measurement or sampling errors (Little et al., 2013), we constructed parcels of items for Autonomous Motivation, Distributive Justice, Procedural Justice, Engagement and Adaptive Performance. The parcels were made randomly (Bagozzi et al., 1991). Table 1 summarizes confirmatory factor analysis of measurement models and fit indices.

The measurement model included eight factors (i.e., Autonomous Motivation, Distributive Justice, Procedural Justice, Work Engagement, Task Performance, Adaptive Performance, OCB-O, OCB-I), yielded a good fit to the data ($\chi^2 [295] = 428.14$, $p < 0.001$, SRMR = 0.06, CFI = 0.94, RMSEA = 0.061). This model outperformed a seven-factor model that merged Autonomous Motivation and Work engagement

($\Delta \chi^2 [7] = 58.86$, $p < 0.001$). It also yielded a better fit than a model that combined OCB-O and OCB-I ($\Delta \chi^2 [7] = 120.46$, $p < 0.001$), a model that combined Distributive Justice and Procedural Justice ($\Delta \chi^2 [7] = 147.32$, $p < 0.001$). Our measurement model was also superior to (a) a five-factor model that combined task Performance, Adaptive Performance, OCB-O and OCB-I ($\Delta \chi^2 [18] = 379.03$, $p < 0.001$), and (b) a one-factor model (Harman's single-factor test [Becker, 2005]) ($\Delta \chi^2 [28] = 1247.96$, $p < 0.001$). Therefore, these results support the distinctiveness of the eight constructs in this study. Furthermore, all items loaded on their respective predicted factors, and the factor loadings were all acceptable and statistically significant.

Hypotheses testing

Table 2 summarizes means, standard deviations, and zero-order correlations among the variables used to test our hypotheses. All internal consistency estimates (Cronbach's alpha) exceeded the minimum value of 0.70 recommended for research purposes.

To test hypotheses that involved both mediating and moderating effects, we used a regression-based moderated path analysis, following the procedure of conditional process modeling and employing nonlinear bootstrapping. This technique is consistent with the procedures recommended by Preacher et al. (2007) to test moderated mediation models. Conditional process modeling is used to estimate the mechanism by which Autonomous motivation will affect Task Performance, Adaptive Performance, OCB-O, and OCB-I through Work Engagement. It also evaluates how the size of direct, indirect, and total effects of Autonomous Motivation on Task Performance, Adaptive Performance, OCB-O, and OCB-I varies based on the values of Distributive Justice as a moderator (Hayes & Preacher, 2013).

TABLE 1 Confirmatory factor analysis of measurement models: Fit indices

Model ^a	χ^2	Df	$\Delta \chi^2$	Δ df	SRMR	CFI	RMSEA
Hypothesized eight-factor model	428.14 ^b	295	–	–	0.06	0.94	0.061
Seven-factor models							
Combining Autonomous Motivation (Time 1) and Work Engagement (Time 2)	487 ^b	302	58.86 ^b	7	0.08	0.91	0.071
Combining OCB-O (Time 3) and OCB-I (Time 3)	548.60 ^b	302	120.46 ^b	7	0.10	0.88	0.082
Combining Distributive Justice and Procedural Justice	575.46	302	147.32 ^b	7	0.09	0.87	0.087
Five-factor model							
Combining Task Performance (time3), Adaptive Performance (time 3) OCB-O (Time 3) and OCB-I (Time 3)	807.17 ^b	313	379.03 ^b	18	0.10	0.76	0.115
One-factor model (Harman test)	1676.10 ^b	323	1247.96 ^b	28	0.16	0.40	0.187

Notes: N = 120. SRMR = standardized root-mean-square residual; CFI = comparative fit index; RMSEA = root-mean-square error of approximation.

** $p < 0.01$. ^aThese models run without the control variables because they do not change the significance and strength of the links (Becker, 2005).

^b $p \leq 0.001$.

TABLE 2 Means, standard deviations, and zero-order correlations^d

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender ^a (T1)	-	-	-											
2. Age ^b (years) (T1)	45.7	9.3	-0.09	-										
3. Tenure ^c (years) (T1)	15.20	11.25	-0.09	0.48**	-									
4. Occupational Category (T1)	-	-	0.01	0.01	-0.05	-								
5. Distributive Justice (T1)	2.30	1.14	-0.04	-0.01	-0.04	-0.28**	(0.94)							
6. Procedural Justice (T1)	2.83	0.94	-0.22*	-0.10	-0.15	-0.18	0.49**	(0.88)						
7. Autonomous Motivation (T1)	5.45	0.98	-0.07	-0.03	-0.12	-0.27**	0.21*	0.36**	(0.94)					
8. Work Engagement (T2)	4.34	0.48	0.00	0.14	0.05	-0.19*	0.21*	0.29**	0.56**	(0.88)				
9. Task Performance (T3)	4.23	0.61	-0.03	0.06	0.09	-0.07	0.14	0.05	0.26**	0.40**	(0.84)			
10. Adaptive Performance (T3)	3.94	0.72	-0.02	0.06	-0.03	-0.43**	0.17	0.18	0.30**	0.37**	0.51**	(0.89)		
11. Organizational Citizenship Behavior to Organization (T3)	4.11	0.80	-0.20*	0.21*	0.09	-0.32**	0.17	0.28**	0.37**	0.40**	0.19*	0.44**	(0.78)	
12. Organizational Citizenship Behavior to Individuals (T3)	4.34	0.72	0.03	-0.12	-0.24**	-0.17	0.15	0.27**	0.22*	0.24**	0.37**	0.50**	0.24**	(0.86)

Notes: N = 120. T1 = Time 1, T2 = Time 2, T3 = Time 3.

^aGender: 0 = Male, 1 = Female; ^bAge and tenure were measured in years;

We created dummy variables to control for the belongingness to different sites of the organization.

Alpha coefficients are reported in parentheses along the diagonal.

*p < 0.05; **p < 0.01. ^dMost of the correlations involved “dummy variables on-site” are insignificant. These results are available on request.

We used a bootstrap approach (5,000 resamples) to establish 95% bias-corrected confidence intervals (CIs) to test for the significance of the indirect effects that are also modeled across levels of a hypothesized moderator. As shown in Figure 1, the predictors (Autonomous Motivation at Time 1) were related to the outcomes (Task Performance, Adaptive Performance, OCB-O, and OCB-I at Time 3) through a mediating variable (Work Engagement at Time 2), and moderated by Distributive Justice at Time 1. Hence, the model integrates some kind of “causal chain” of effects (an intermediary variable) with one boundary condition (the moderating variable or interaction effect).

We directly tested the process model of Autonomous Motivation to Task Performance, Adaptive Performance, OCB-O, and OCB-I, via Work Engagement and moderated by Distributive Justice, using the PROCESS macro developed by Hayes (2017). Results are reported in Table 3.

Hypothesis 1 predicted that Autonomous Motivation would influence Task Performance, Adaptive Performance, OCB-O, and OCB-I, through Work Engagement. We tested this mediation in two ways. First, as shown in Table 3, Autonomous Motivation was significantly related to Work Engagement ($b = 0.27$, $SE = 0.04$, $p = 0.000$, 95% CI [0.19, 0.34]). In addition, Work Engagement was significantly related to Task Performance ($b = 0.48$, $SE = 0.13$, $p = 0.000$, 95% CI [0.22, 0.74]), adaptive Performance ($b = 0.40$, $SE = 0.13$, $p = 0.004$, 95% CI [0.13, 0.66]) and OCB-O ($b = 0.46$, $SE = 0.17$, $p = 0.007$, 95% CI [0.13, 0.79]). But Work Engagement was not significantly related to OCB-I ($b = 0.25$, $SE = 0.16$, $p = 0.134$, 95% CI [-0.07, 0.57]). Second, we used the bootstrapping procedure to directly test the mediation effect of PROCESS. This establishes

the mediational path by inference. Results show that the average indirect effect of Autonomous Motivation on Task Performance, Adaptive Performance, OCB-O through Work Engagement was respectively 0.13, 0.11, 0.12 with bootstrap 95% confidence intervals that do not contain zero (i.e., [0.08, 0.20] for Task Performance, [0.04, 0.19] for Adaptive Performance, [0.03, 0.25] for OCB-O. The indirect effect of Autonomous Motivation on OCB-I is nonsignificant. Direct effects of Autonomous Motivation on Task Performance, Adaptive Performance, and OCB-I, were all nonsignificant. Only the direct effect of Autonomous Motivation on OCB-O was significant $0.18(0.08)^*$, [0.01, 0.34]. In sum, Hypothesis 1 on the indirect effects of Autonomous Motivation on Task Performance, Adaptive Performance and OCBO, through Work Engagement is supported. Only the indirect effect on OCBI is not supported.

Hypothesis 2 predicted that Distributive Justice would moderate the indirect relationship between Autonomous Motivation and Task Performance, Adaptive Performance, OCB-O, and OCB-I, through Work Engagement. We first examined the moderated mediation model with Autonomous Motivation as the independent variable. As shown in Table 3, Autonomous Motivation \times Distributive Justice interaction was significantly related to Work Engagement ($b = -0.08$, $SE = 0.03$, $p = 0.015$, 95% CI [-0.14, -0.02], $\Delta R^2 = 0.05$, $\Delta F = 32.35$). To understand the form of the significant interactions, we plotted the regression lines of the conditional indirect effect of Autonomous Motivation on Task Performance, Adaptive Performance, and OCB-O, through Engagement at different levels (i.e., 10th, 25th, 50th, 75th, and 90th percentiles) of Distributive Justice (Hayes, 2017). Figures 2, 3 and 4 provide the graphic depiction of these interactions.

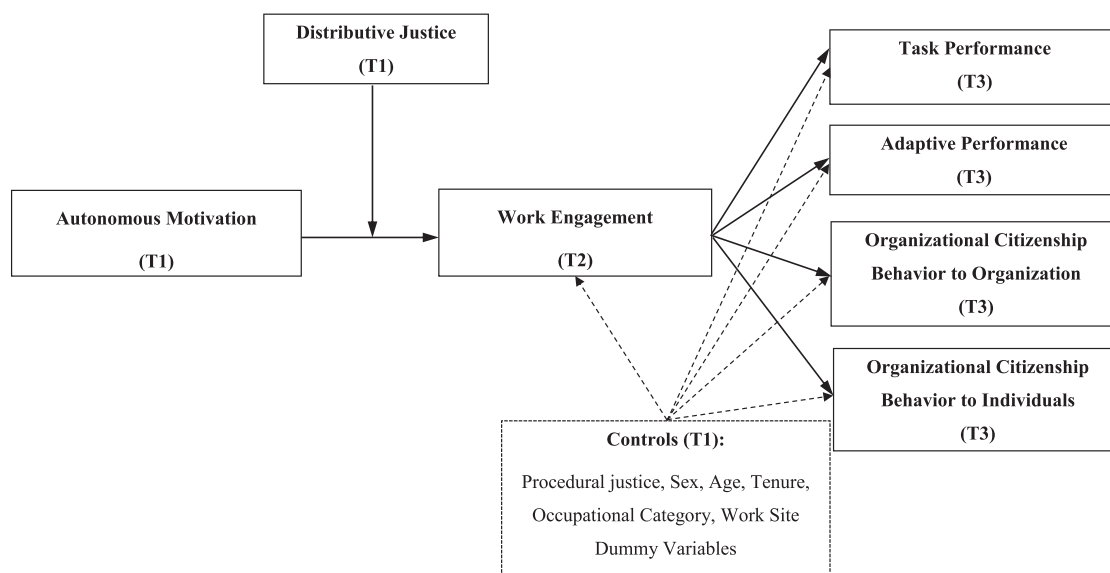


FIGURE 1 Conceptual model of the hypothesized relationships

TABLE 3 Results for moderated mediation model^a: Moderator is distributive justice

	Dependent variables									
	Work engagement (mediator)		Task performance		Adaptive performance		OCB-O		OCB-I	
	b (SE)	95% CI	b (SE)	95% CI	b (SE)	95% CI	b (SE)	95% CI	b (SE)	95% CI
(Constant)	4.36(0.04)***	(4.29, 4.43)	2.12(0.57)***	(0.99, 3.26)	2.22(0.58)***	(1.07, 3.38)	2.11(0.74)**	(0.65, 3.57)	3.27(0.71)***	(1.86, 4.68)
<i>Main effects</i>										
Autonomous Motivation	.27(0.04)***	(0.19, 0.34)	.03(0.06)	(-1, 0.15)	0.08(0.07)	(-0.05, 0.21)	0.18(0.08)*	(0.01, 0.34)	0.10(0.08)	(-0.06, 0.25)
Work Engagement	-	-	0.49(0.13)***	(0.22, 0.74)	0.40(0.13)**	(0.13, 0.66)	0.46(0.17)**	(0.13, 0.79)	0.25(0.16)	(-0.07, 0.57)
Distributive Justice	.06(0.03)	(-0.01, 0.13)	-	-	-	-	-	-	-	-
<i>Interaction effects</i>										
Autonomous Motivation x Distributive Justice	-.08(0.03)*	(-0.14, -0.02)	-	-	-	-	-	-	-	-
R ²	0.36		0.16		0.15		0.19		0.07	
ΔR ²	0.05		-		-		-		-	
F	21.12(3, 115)***		11.43(2, 116)***		10.40(2, 116)***		13.57(2, 116)***		4.24(2, 116)*	
ΔF	32.35		-		-		-		-	

Notes: N = 120. All coefficients are unstandardized B weights of centered variables. 95% CI: Bias-corrected confidence intervals

*p ≤ 0.05,

**p ≤ 0.01,

***p ≤ 0.001.

^aThese model run without the control variables because they do not change the significance and strength of the links (Becker, 2005).



FIGURE 2 Conditional indirect effect of autonomous motivation on task performance at values of the moderator distributive justice through the mediator work engagement. Note: (a) Values are at 10th, 25th, 50th, 75th, and 90th percentiles of the moderator. (b) These model run without the control variables because they do not change the significance and strength of the links (Becker, 2005)

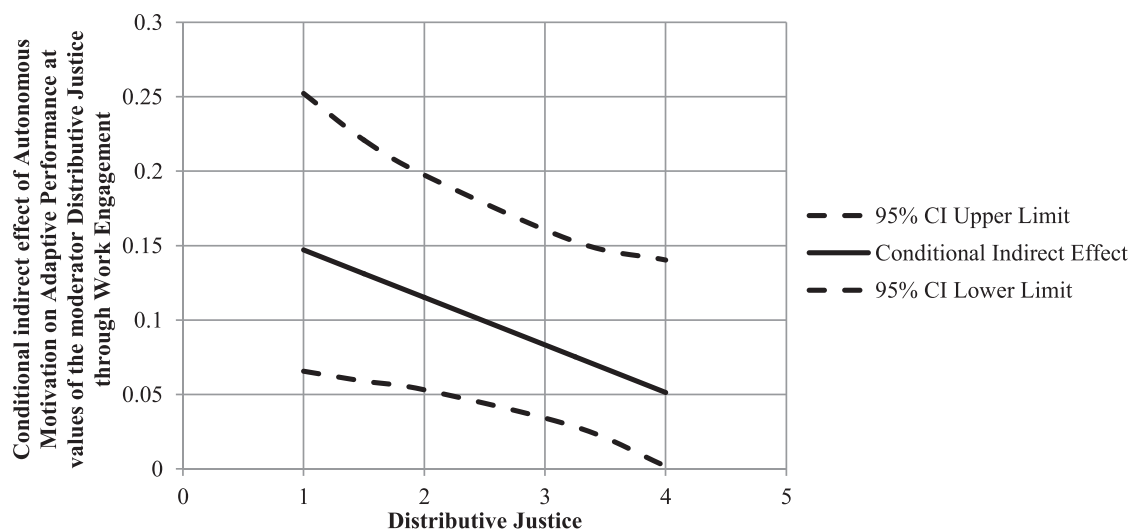


FIGURE 3 Conditional indirect effect of autonomous motivation on adaptive performance at values of the moderator distributive justice through the mediator work engagement.

Note: (a) Values are at 10th, 25th, 50th, 75th, and 90th percentiles of the moderator. (b) These model run without the control variables because they do not change the significance and strength of the links (Becker, 2005)

In sum, Hypothesis 2 on the moderation of Distributive Justice on the indirect relationship between Autonomous Motivation and Task Performance, Adaptive Performance and OCB-O, through Work Engagement is supported. This moderated mediation is not supported on OCB-I.

DISCUSSION

In summary, it is currently known that: (1) autonomous motivation is positively related to job performance; (2) work engagement contributes to positive organizational outcomes; (3).

individual job performance includes both in-role and extra-role performance; and (4) when employees are treated unfairly, they feel less satisfied and reduce their

effort at work. Our study adds to this knowledge as follows: (1) autonomous motivation is positively related to job performance through work engagement; (2) the relation between autonomous motivation and job performance through work engagement is moderated by distributive justice; (3) the interaction between distributive justice and autonomous motivation is negatively related to work outcomes when high autonomous motivation is present; and (4) when autonomous motivation is high, employee perceptions of distributive justice are viewed as a source of control and they result in decreased levels of autonomous motivation, work engagement and job performance.

In line with recent justice studies, Matta et al. (2017) report that justice findings are more variable than previously expected and depend on context. Yiwen et al. (2014, p. 688) indicate that “employees decide on

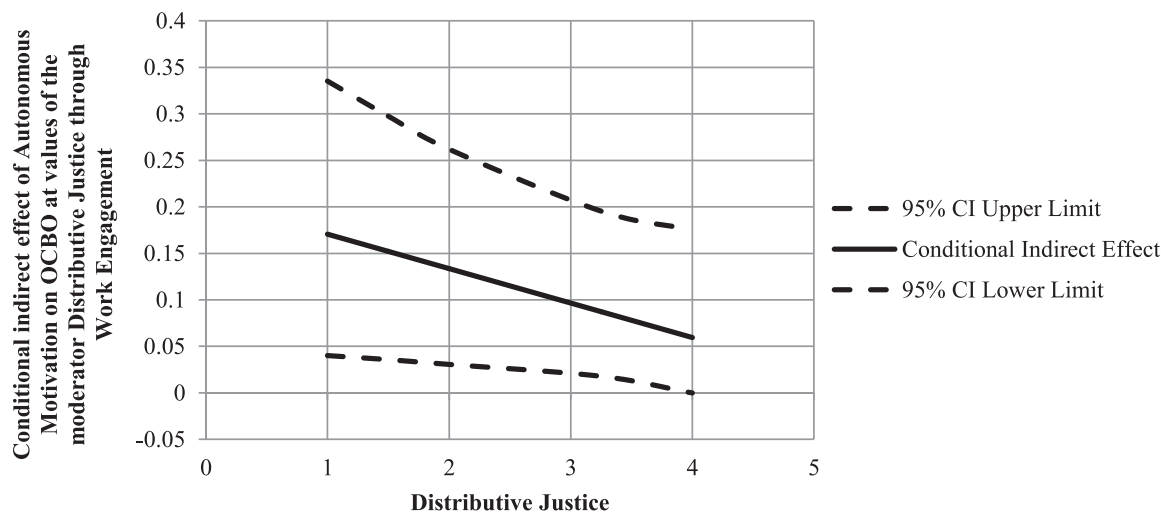


FIGURE 4 Conditional indirect effect of autonomous motivation on OCB-O at values of the moderator distributive justice through the mediator work engagement.

Note: (a) Values are at 10th, 25th, 50th, 75th, and 90th percentiles of the moderator. (b) These model run without the control variables because they do not change the significance and strength of the links (Becker, 2005)

how to reciprocate with performance behaviors based on these judgments of organizational justice.” In addition, Zapata et al. (2015, p. 1150) report that “when justice promote injustice,” and “justice could have surprising, unintended negative consequences.” As such, our study explores a counter-intuitive interaction of distributive justice with autonomous motivation.

The main purpose of this study was to examine the indirect effect of autonomous motivation on the work outcomes of task performance, adaptive performance, OCB-O, OCB-I through work engagement when it is moderated by distributive justice. We incorporated those variables in an SDT model of autonomous work motivation in order to examine employees’ experience of distributive justice based on the allocation of pay. We found that Autonomous Motivation has indirect effects on Task Performance, Adaptive Performance and OCB-O, through Work Engagement. High levels of autonomous motivation enhance work engagement which in turn increases the level of task performance, adaptive performance and OCB-O. In addition, we found a moderating role of Distributive Justice on the indirect relationship between Autonomous Motivation and Task Performance, Adaptive Performance and OCB-O, through Work Engagement. An increase in the level of distributive justice reduces the level of Autonomous Motivation, Work Engagement, Task Performance, Adaptive Performance and OCB-O. This moderated mediation analysis is not supported on the OCB-I measure of performance, because employees work alone and do not collaborate with others which may be a partial explanation of this result. Next, we provide theoretical and practical contributions.

Theoretical contributions

Our research offers three theoretical contributions to the work motivation literature. First, our empirical findings supported the predicted relationship taken from self-determination theory (SDT) (Deci et al., 2017; Deci & Ryan, 2000; Olafsen et al., 2017) between autonomous motivation, work engagement and work outcomes at a workplace setting. In the same model we integrate the different components of task performance, adaptive performance, OCB-O and OCB-I (Carpini et al., 2017). Self-motivated employees engage themselves to do their jobs and enact their behaviors beyond their prescribed role, and this is beneficial to the organization. Individuals acting on the basis of fun and/or conviction would more easily engage in adaptive behaviors. No links were found between autonomous motivation, work engagement and OCB-I. This latter facet of work outcomes (OCB-I) concerns behaviors beyond their prescribed role beneficial to their colleagues. It makes sense that work engagement is not a precursor to OCB-I.

Second, our longitudinal study supports self-determination theory concerning the effect of autonomous motivation to contribute to positive long-term work behaviors (Deci et al., 2017) due to the fact that our findings show that autonomous motivation is positively related to engagement a year later.

Third, contrary to conventional wisdom, we show that distributive justice can have negative effects on the interaction with autonomous motivation resulting in negative consequences on work engagement, and ultimately on task performance, adaptive performance and OCB-O. This finding is counterintuitive as well as interesting and

it is consistent with SDT (Deci & Ryan, 2000). It also extends the recent results of Olafsen et al. (2015). These authors found, consistent with the Deci et al. (2017) review of SDT research, that amount of pay was positively related to distributive justice, indicating that the more pay employees received, the more the payments were perceived to be just. More significantly, we found that distributive justice and the amount of pay employees received does not predict autonomous motivation. Our results extend SDT by showing that the interaction between distributive justice with pay and autonomous motivation reduces work engagement and ultimately work outcomes. We propose that payment systems affect the internalization of behaviors so that perceptions of distributive justice can be perceived by individuals as controlling and limit their experienced psychological needs. We expect that perceptions of distributive justice are likely to be perceived by individuals as less controlling if they are obtained on an *ex post* basis after payment has been received and after performance outcomes have been obtained consistent with the findings of Grandey et al. (2013).

Practical implications

The interaction between autonomous motivation and distributive justice (Colquitt, 2001; Greenberg, 1987) or pay demonstrates that the management of pay can be complex and nuanced. The level of engagement and work outcomes depends on the workplace context and how it interacts with making pay decisions (e.g., Colquitt et al., 2001; Skarlicki & Folger, 1997). As such, the salience of distributive justice should not be too high. Employees perceive distributive justice as a signal of control that is likely to negatively interact with autonomous motivation to reduce levels of engagement and work outcomes.

For example, in a context of high autonomous motivation in the workplace, managers could use *ex post* rewards. *Ex post* rewards are non-contractual and not linked to pre-established objectives. These are the discretionary rewards that can be awarded by a manager based on exceptional employee behavior that pleases an internal or external customer in an unexpected way. (Bénabou & Tirole, 2003). *Ex post* rewards do not degrade autonomy and individual motivation because they do not exercise control over employee behavior or outcomes (Balkin et al., 2015). *Ex post* rewards can preserve and positively influence the autonomous motivation of employees. They inform an employee that good work was accomplished after-the-fact and allows the individual to feel more autonomous in his or her actions through the preservation of an internal locus of causality (Deci et al., 1999).

Conversely, in a context of low autonomous motivation, distributive justice would be perceived by employees

as an external stimulus that could promote engagement and beneficial work outcomes. This is the classic case of extrinsic motivation in which people's behavior is controlled by specific external contingencies (Deci & Ryan, 2000). In this context, managers could use *ex ante* rewards (Bénabou & Tirole, 2003). *Ex ante* rewards are all forms of rewards directly linked to mutually agreed objectives that depend on performing programmed tasks that an employee knows how to do.

Furthermore, to strengthen the *ex post* rewards approach, it is certainly possible to establish an organizational culture linked to the possibility of obtaining rewards for positive behavior at work, whatever it may be. Culture determines the norms that dictate how employees should think and behave (Kerr & Slocum, 2005). Reward systems should reflect the organization culture, and also reinforce it (Gagné & Forest, 2008). Frey & Osterloh (2005) reported that simple instructions to cooperate increase cooperation by 40% when reinforced by rewards for cooperative behavior. In a similar way, Liberman et al. (2004) found that task labeling (i.e., World Trade Center Game vs. Community Game) can influence cooperation or alternatively, competition tactics. Gagné & Forest (2008) suggest that it would suffice to extoll the values of cooperation rather than to promote individualism or competition to strengthen the incidence of relatedness (Deci & Ryan, 2000).

Limitations and future directions

Our research is subject to a few limitations that suggest avenues for further investigation. First, our survey respondents consisted of a homogenous population in terms of context and working conditions and the study concerns a single organization, which limits the external validity of the results. It would be interesting to replicate the study in the future with organizations of different sizes, sectors and types of employment.

Second, while our study focused on the effects of distributive justice on work motivation, it would be worthwhile to expand this line of research by examining the interaction of autonomous motivation with other dimensions of organizational justice (Bies & Moag, 1986; Folger & Konovsky, 1989; Greenberg, 1987) and its effect on engagement and work outcomes.

CONCLUSIONS

To obtain the benefits of distributive justice for the fair allocation of pay, our study suggests that the level of attention given to distributive justice has limits. Our findings indicate that high levels of distributive justice can undermine autonomous motivation in certain contexts. This is so because employees are likely to perceive it as a

signal of external control that impedes autonomous motivation, followed by reduced levels of work engagement and ultimately work outcomes. Specifically, in a context of high autonomous motivation managers are advised to moderate the prominence given to the distributive justice of pay to avoid hindering autonomous motivation.

CONFLICT OF INTEREST

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ENDNOTE

¹According to these authors, OCB-O encompasses loyalty, organizational allegiance, adherence to prescribed rules, policies and procedures. OCB-I, understand the behaviors that assist and support the members of the organization: to voluntarily help colleagues with their problems at work.

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