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New Advances in Self-Determination Theory Applied to Work

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Organizer:

Marylène Gagné
Future of Work Institute
Curtin University
Perth, Australia
marylene.gagne@curtin.edu.au

Presenters* and Co-Authors:

Well done vs. well paid: The influence of verbal and financial rewards on knowledge sharing

Karin S. Moser*
Business School
London South Bank University
London, UK
moserk@lsbu.ac.uk

Comparing the Motivational Effects of Different Pay Systems on Job Performance: A Simulation Study

Ethan Luxton
School of Population Health
Curtin University
Ethan.luxton@student.curtin.edu.au

Marylène Gagné*
Future of Work Institute
Curtin University
Perth, Australia
marylene.gagne@curtin.edu.au

Stacey Parker
School of Psychology
University of Queensland
Brisbane, Australia
s.parker@psy.uq.edu.au

The differential implications of motivational coping resources in the face of external shocks

Rebecca Hewett*
Rotterdam School of Management,
Erasmus University,
Rotterdam, Netherlands
hewett@rsm.nl

Cécile Emery
Business School
Exeter University, UK
c.emery@exeter.ac.uk

Revisiting the Multidimensional Work Motivation Scale (MWMS)

Sarah-Geneviève Trépanier*
Department of Human Resources Management
Université du Québec à Trois-Rivières
Trois-Rivières, Canada
Sarah-genevieve.trepanier@uqtr.ca

Clayton Peterson
Department of Philosophy and Arts
Université du Québec à Trois-Rivières
Trois-Rivières, Canada
Clayton.peterson@uqtr.ca

Marylène Gagné
Future of Work Institute
Curtin University
Perth, Australia
marylene.gagne@curtin.edu.au

Claude Fernet
Department of Human Resources Management
Université du Québec à Trois-Rivières
Trois-Rivières, Canada
Claude.fernet@uqtr.ca

Julie Levesque-Côté
Department of Psychology
Université de Sherbrooke
Sherbrooke, Canada
Julie.levesque-cote@usherbrooke.ca

Joshua L. Howard
Department of Management
Monash University
Melbourne, Australia
Josh.howard@monash.edu

SYMPOSIUM OVERVIEW

Self-determination theory (SDT; Deci & Ryan, 2000) has contributed to the advancement of knowledge on the topics of leadership and knowledge sharing. SDT proposes a multidimensional conceptualization of work motivation that comprises intrinsic motivation (i.e., doing something out of enjoyment), identified extrinsic motivation (i.e., doing something out of values), introjected extrinsic motivation (i.e., doing something to maintain self-esteem), and external extrinsic motivation (i.e., doing something to obtain a reward). A recent meta-analysis has shown that autonomous types of motivation (i.e., intrinsic and identified) account for more positive variance in work outcomes than controlled forms of motivation (i.e., introjected and external; Van den Broeck et al., 2021). SDT also proposes that the satisfaction of three basic psychological needs for competence, autonomy, and relatedness promote autonomous over controlled types of motivation, and are also associated with a host of positive work outcomes (see Van den Broeck et al., 2016 for a meta-analysis).

The four presentations that are part of this symposium aim to deepen knowledge of work motivation. Two of the presentations present research dealing with the effects of monetary rewards on performance and knowledge sharing, while the third links research on work motivation with research on coping when shocks happen. The fourth presentation re-examines the factorial structure of a work motivation measure based on self-determination theory. Together, these four presentations push researchers to “think again” about some well-accepted findings.

The first presentation revisits the effects of rewards on motivation and performance. Luxton and colleagues tested competing hypotheses based on SDT and expectancy theory to see if instrumentality or autonomy is more important to performance, and how rewards affect them.

They found that pay-for-performance does increase instrumentality perceptions and decrease feelings of autonomy. However, pay system had no direct or indirect effect on performance.

Based on past research showing that monetary rewards discourage knowledge sharing (Brock et al., 2005; Cockrell & Stone, 2010; Zhao et al., 2016), the second presentation focuses on the relative importance of verbal versus monetary rewards on promoting knowledge sharing. Moser present the results of three experiments showing that while praise increases knowledge sharing, monetary rewards decreases it. These results concur with previous research showing that verbal rewards increase feelings of competence and do not decrease feelings of autonomy, while monetary rewards decrease feelings of autonomy (Kuvaas et al., 2020).

The third presentation examines how motivational resources help employees cope with shocks (such as a pandemic). Hewett and Emery show, in a sample of scuba divers, that initial work motivation influenced the coping mechanisms they used to cope with job loss during the pandemic. They found that having more autonomous forms of motivation was related to better coping styles than having more controlled forms of motivation, resulting in better well-being outcomes.

The fourth presentation revisits the factor structure of the Multidimensional Work Motivation Scale (Gagné et al., 2015). Trépanier and colleagues tested and refined the factor structure of this popular work motivation measure, eliminating three items. They give future researchers avenues to further ameliorate the measure in a way that is consistent with the theory.

PRESENTATION SUMMARIES

Well done vs. well paid: The influence of verbal and financial rewards on prosocial motivation in knowledge sharing dilemmas

Karin S. Moser

While material rewards have received plenty of attention in the literature, intangible rewards such as receiving praise and verbal recognition for one's work are still under-researched. This gap remains despite plenty of evidence on how important feeling included and valued is for work motivation (Rogers & Ashforth, 2017; Ellemers et al, 2013). The question of possible differences between material and immaterial rewards for work motivation is of special interest for knowledge workers (Gagné, 2009). If the rendered services and produced goods are knowledge-based rather than tangible, material products, it is much more difficult to put a monetary value against the products or services and the employee knowledge that underpins them. The value of knowledge at work is inherently part of a social exchange process that is influenced by social norms, self and other perceptions, status and the behavioural expectations associated with these (Moser, 2017; Keysar et al., 2008; Cabrera & Cabrera, 2002). Based on these assumptions, it is hypothesised that social rewards such as recognition for team contributions are a stronger motivator for knowledge sharing behaviour than financial rewards.

Method

In three experimental studies ($N_1 = 38$, $N_2 = 240$, $N_3 = 40$) the effects of either verbal recognition (Studies 1 & 2) or pay rewards (Study 3) for contributions to teamwork were tested. All three studies used knowledge sharing dilemmas as experimental paradigms (Moser, 2017) where participants took place in RCTs with teamwork role plays and either knowledge sharing

intentions (Studies 1 & 2) or knowledge sharing behaviour (Study 3) measured as outcome variables. Additionally, Study 2 also tested perceived reciprocity of the work environment (6-point scale) as contextual moderator. Study participants in all three studies were postgraduate students in the United Kingdom receiving credits for study participation.

Results

In Studies 1 & 2, receiving recognition for contributions to the teamwork (such as doing extra literature research and providing summaries of all papers for the team) in the form of a simple verbal acknowledgement ('Thank you, your contribution is very helpful!') significantly increased the willingness to invest into team tasks and make an extra effort compared to receiving no acknowledgement for the same prosocial behaviour. Participants in Study 1 showed a more positive attitude towards investment into team work ($F(1, 35) = 3.29, p = .08, \eta^2 = .08$ in Study 1) and were significantly more willing to put in extra-effort ($F(1, 35) = 5.58, p = .02, \eta^2 = .14$ in Study 1) compared to the control condition. The same effects could be replicated with a larger sample in Study 2 with perceived reciprocity as moderator taken into account, showing significant differences for attitudes towards investment ($F(3, 233) = 5.11, p < .01, \eta^2 = .06$) and extra effort ($F(3, 233) = 4.95, p < .01, \eta^2 = .06$). The regression analysis in Study 2 revealed that verbal recognition was most effective in low reciprocity environments ($\beta_{\text{BELOW}} = .35, p < .01, \beta_{\text{MEAN}} = .19, p < .01, \beta_{\text{ABOVE}} = .02, p = .83$, see Figure 1).

In Study 3, the opposite effects were found with participants reducing their knowledge contributions if they received a pay reward compared to the control condition with no reward. Interestingly, this reduction in prosocial behaviour happened to the same extent for both individual and team pay rewards ($F(2, 36) = 2.87, p = .07, \eta^2 = .14$, see Figure 2).

Discussion

The results in these first studies can be interpreted as differential motivational effects on extra-role behaviour at work, which is especially important for knowledge sharing processes. Knowledge sharing in teams and organisations requires extra effort based on perspective taking, shared goals, and identification with the collective on the part of individual team members and employees (Ellemers et al, 2013). With the value of knowledge being dependent on the work context and the social exchange relations at work, verbal recognition by fellow team members seems to be a strong motivator for positive attitudes towards extra effort, together with perceived reciprocity as an important social norm. In contrast, pay rewards seemed to make participants very calculating and showed them reducing their knowledge contributions considerably compared to when no reward was given, possibly because the pay was seen as inadequate for something as valuable and intangible as their own knowledge. This may be especially the case in knowledge sharing dilemmas where uncertainty about other's contributions comes into play (Moser, 2017).

As always, the presented research has some limitations, such as the student participants, the small samples in Studies 1 and 3, and that only Study 3 used measures of actual knowledge sharing behaviour rather than attitudes towards knowledge sharing. Further research currently under way is aiming to replicate the current findings with behavioural experimental knowledge sharing paradigms and larger samples for both verbal and pay rewards and using employee instead of student participants. Nevertheless, the present research has important implications for understanding motivation in knowledge intensive work contexts and for the integration into models of work motivation such as Gagné and Deci's (2005).

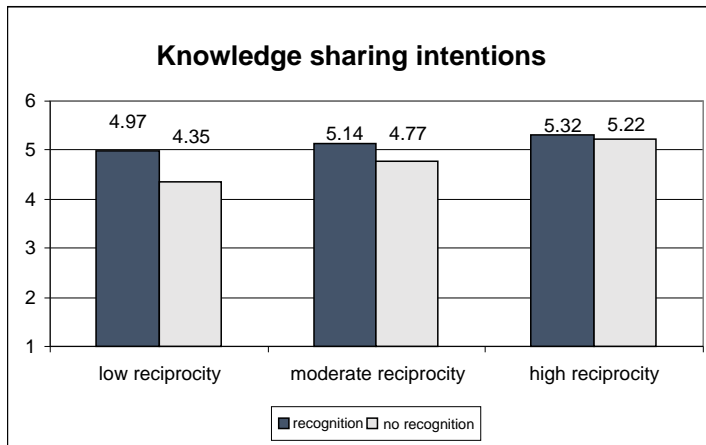


Figure 1. Results of Study 2

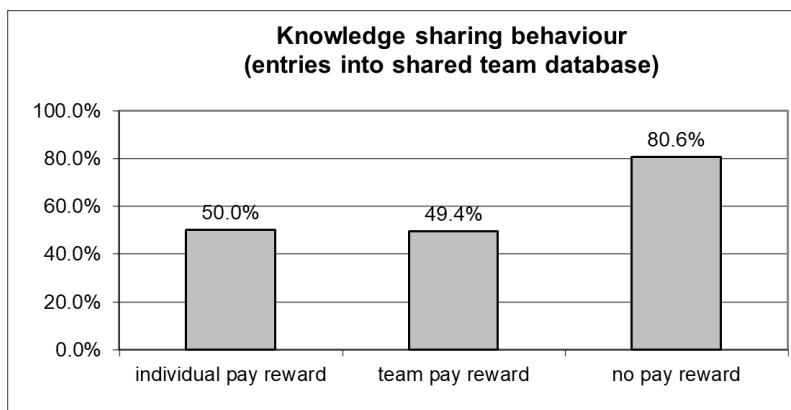


Figure 2. Results of Study 3

Comparing the Motivational Effects of Different Pay Systems on Job Performance:

A Simulation Study

Ethan Luxton, Marylène Gagné, & Stacey Parker

Pay-for-performance (PFP) systems aim to boost employee motivation and performance. However, while PFP systems are capable of significantly improving performance in some situations, they can significantly worsen performance in others (Cerasoli et al., 2014, 2016; Weibel et al., 2010). Research based on self-determination theory (SDT; Deci & Ryan, 2000) has often been used to explain the drawbacks of PFP systems by arguing that PFP reduces feelings of autonomy. Additionally, the design of PFP systems may often inadequately create “instrumentality” (Gerhart & Fang, 2015), which expectancy theory (Vroom, 1964) argues is a key motivational process. We have yet to understand which of these motivational mechanisms is most affected by PFP and most consequential to performance.

Expectancy theory proposes that individuals are motivated to perform when they believe they can attain performance standards (expectancy) and get rewarded for it (instrumentality; Van Eerde & Thierry, 1996; Vroom, 1964). PFP provides the anticipation of a valued monetary reward when a goal is met (satisfying instrumentality), and when received, these rewards provide positive performance feedback (satisfying expectancy; Gerhart et al., 2009; Nyberg et al., 2016). However, Kuvaas et al. (2016) and Nordgren-Selar et al. (2020) found that perceptions of instrumentality were not linked to the provision of bonus pay, which in turn was not strongly associated with performance. One possible explanation is that PFP based on behavior increases motivation more than PFP based on results because the latter may not be fully under the employee’s control (Beck et al., 2014; Gerhart et al., 2009) even though organizations use it

more frequently than the former. While improvements in performance in behaviour-based pay over results-based pay have been observed (e.g., Baldauf et al., 2002; Barker, 1999; Piercy et al., 1997), we could not find any research examining the mediating role of instrumentality.

Recent meta-analytic evidence shows that intrinsic motivation (i.e., doing something out of enjoyment) is a stronger predictor of work performance than extrinsic motivation (i.e., doing something to obtain an external reward; Van den Broeck et al., 2021). According to SDT (Deci, Koestner, & Ryan, 1999), PFP can affect intrinsic motivation by influencing feelings of competence (perception that individuals can carry out a task, similar to expectancy) and autonomy (feelings of volition and choice; Deci & Ryan, 2000). Like expectancy theory, SDT predicts that rewards can increase competence if they provide performance feedback. However, this effect can be mitigated by a decrease in feelings of autonomy if employees perceive PFP as controlling (Deci et al., 1999; Kuvaas et al., 2020; Ryan et al., 1983), an effect that might be even stronger with behaviour-based pay because it requires more performance monitoring (Anderson & Oliver, 1987).

Thus, two motivational mechanisms (instrumentality and autonomy) seem at odds and there is a need to examine the role that they play in performance differences under fixed pay, results-based pay, and behaviour-based pay systems. A work simulation was developed to test the hypotheses that: (H1) based on expectancy theory, behaviour-based pay leads to higher performance quantity and quality compared to fixed and results-based pay as a function of higher instrumentality; (H2) based on SDT, behaviour-based pay leads to lower performance quantity and quality compared to fixed and results-based pay as a function of lower autonomy; (H3) based on both expectancy theory and SDT, competence leads to higher performance quantity and quality, but will not be differentially affected by pay system.

Method: 161 participants were recruited on Prolific for a study on “the effects of workload on performance”. The simulation mimics a Microsoft Windows-based desktop with a lower taskbar containing four applications: An Outlook email app with a list of client email inquiries, a calculator, a notepad, and an Excel spreadsheet with parts prices. On the desktop is a message that welcomes participants to “Madison Computing”, informing them that they work as a sales associate, explains the work they will do, and how they will be paid for it. The pay information differed between groups: Participants in the fixed pay condition were told they will receive £8.50; participants in the behaviour-based pay condition were told they will receive £1 per correct quote response; participants in results-based condition were told they will receive £1 per computer they sell. After a guided tour of the simulation and practicing responding to three emails, participants were presented with 18 new emails (randomly ordered) and a 25-minute timer. After each response was sent, a popup displayed whether the participant’s quote was accurate and whether they made a sale. In the performance-based pay conditions, this popup also informed them how many pounds they earned for completing the email (if any) with a running total of their earnings. To keep feelings of competence constant across the conditions, performance feedback was predetermined so that approximately two out of every three emails gave positive performance feedback. At the end of the task, participants completed the post-experimental questionnaire, then were debriefed and received £8.50 regardless of pay condition.

Performance quantity was scored as the total number of responded emails, while performance quality was manually coded by two independent raters (inter-rater agreement $r = .94$) and assessed using six criteria per email, each scored as either 0 (unsatisfactory) or 1 (satisfactory). Criteria included whether the quote was correct, whether polite salutations were used, whether the client was referred to by name, whether additional queries were answered,

whether responses were void of spelling errors, and void of grammatical errors. Correct quote value was given a weighting of 3, answering additional questions a weighting of 2, and all other criteria was given a weighting of 1, reflective of the increased time requirements to satisfy these criteria. As such, performance quality scores can range from 0 to 9 ($\alpha = .72$). The post-experimental questionnaire contained measures assessed on a 1 (strongly disagree) to 7 (strongly agree) Likert scale for perceived competence (Ryan, 1982; $\alpha = .89$), perceived autonomy (Houffort et al., 2002; $\alpha = .92$), and instrumentality (Houffort, 2004; $\alpha = .87$).

Results: Differences between groups for performance quantity, $F(2, 158) = 0.05, p = .948, \eta^2 < .01$, and performance quality, $F(2, 158) = 0.32, p = .729, \eta^2 < .01$ were non-significant (H1 and H2 not supported). The hypothesised mediation models were each tested using model 4 in PROCESS with bootstrapping. The multi-categorical pay conditions were dummy coded so that fixed pay and results-based pay conditions were compared to behaviour-based pay as the reference group. The models accounted for 5.2% of the variance in performance quantity, 6.0% of the variance in performance quality. Pay condition comparisons accounted for 32.3% of the variance in perceived instrumentality, 3.0% of the variance in perceived autonomy, and 2.3% of the variance in perceived competence.

Unstandardized direct effects are illustrated in Figures 2 and 3. In partial support of H1, perceived instrumentality was higher in the behavior-based pay condition compared to fixed pay and results-based pay conditions. However, there was no indirect effect between pay conditions and performance quantity via instrumentality when comparing behavior-based pay to fixed pay, $b = -0.23, 95\% \text{ CI } [-1.48, 0.97]$, nor when comparing behaviour-based pay to results-based pay, $b = -0.07 [-0.55, 0.30]$. Similarly, there was no indirect effect between pay conditions and performance quality via instrumentality when making the same comparisons, $b = -0.39 [-0.83, 0.08]$ and $b = -0.13 [-0.31, 0.02]$ respectively. Additionally, instrumentality was not directly related to either performance quantity or quality. In partial support of H2, perceived autonomy was higher in the behavior-based pay condition than in the fixed pay condition, however there was no indirect effect between these pay conditions and performance quantity via

autonomy, $b = -0.22$, 95% CI [-0.73, 0.06], nor quality via autonomy, $b = 0.13$ [-0.00, 0.33]. Perceived autonomy did not differ significantly between behavior-based pay and results-based pay, nor was there an indirect effect between these conditions and performance quantity via autonomy, $b = -0.09$ [-0.39, 0.11], nor quality via autonomy, $b = 0.05$ [-0.05, 0.21]. However, perceived autonomy was negatively related to performance quality. Perceived competence did not differ significantly between behavior-based pay and fixed pay or results-based pay conditions and it was not related to either performance quantity or quality (H3 not supported).

Discussion: Consistent with expectancy theory, perceived instrumentality was more strongly and positively associated with behavior-based pay than with fixed pay and results-based pay, and consistent with SDT, autonomy was more strongly negatively associated with behavior-based pay than with fixed pay. However, neither pay condition, instrumentality, autonomy, nor competence were associated with performance quantity, and only autonomy was negatively predictive of performance quality. No indirect effects were found in any case. Findings therefore both supported and contradicted self-determination and expectancy theories. Bearing in mind the costs that organisations incur setting up and maintaining PFP systems (e.g., rewarding performance-based pay, increased management involvement, and administration costs; Cox, 2005; Lee, 2019), the implications of this study is that these costs outweigh benefits.

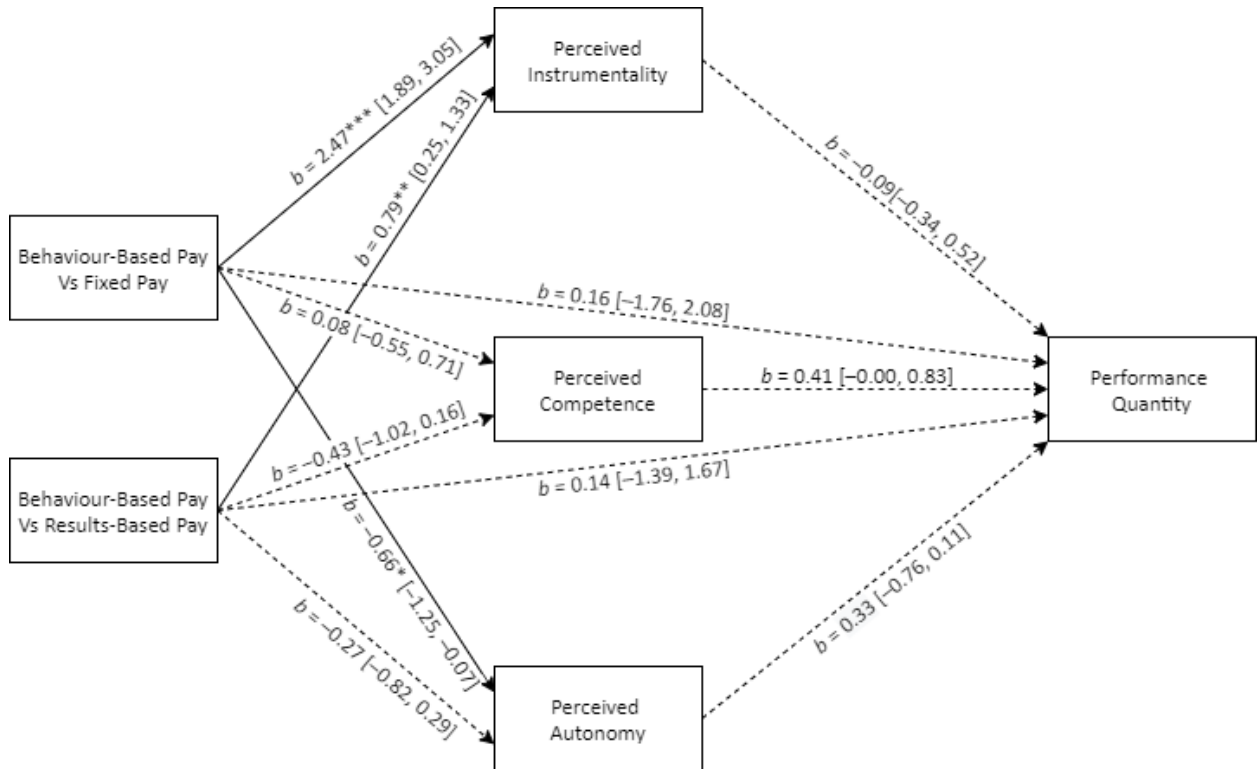
Table 2 : Mean (Standard Deviation) Scores by Condition

Variable	Fixed pay	Results-based pay	Behaviour-based pay
Performance quantity	8.69 (3.91)	8.65 (3.88)	8.45 (8.45)
Performance quality	6.85 (1.34)	6.80 (1.53)	7.04 (1.73)
Instrumentality	2.80 (1.39)	4.49 (1.63)	5.28 (1.18)
Autonomy	3.54 (1.57)	3.14 (1.37)	2.88 (1.50)
Competence	4.21 (1.66)	4.72 (1.43)	4.29 (1.62)

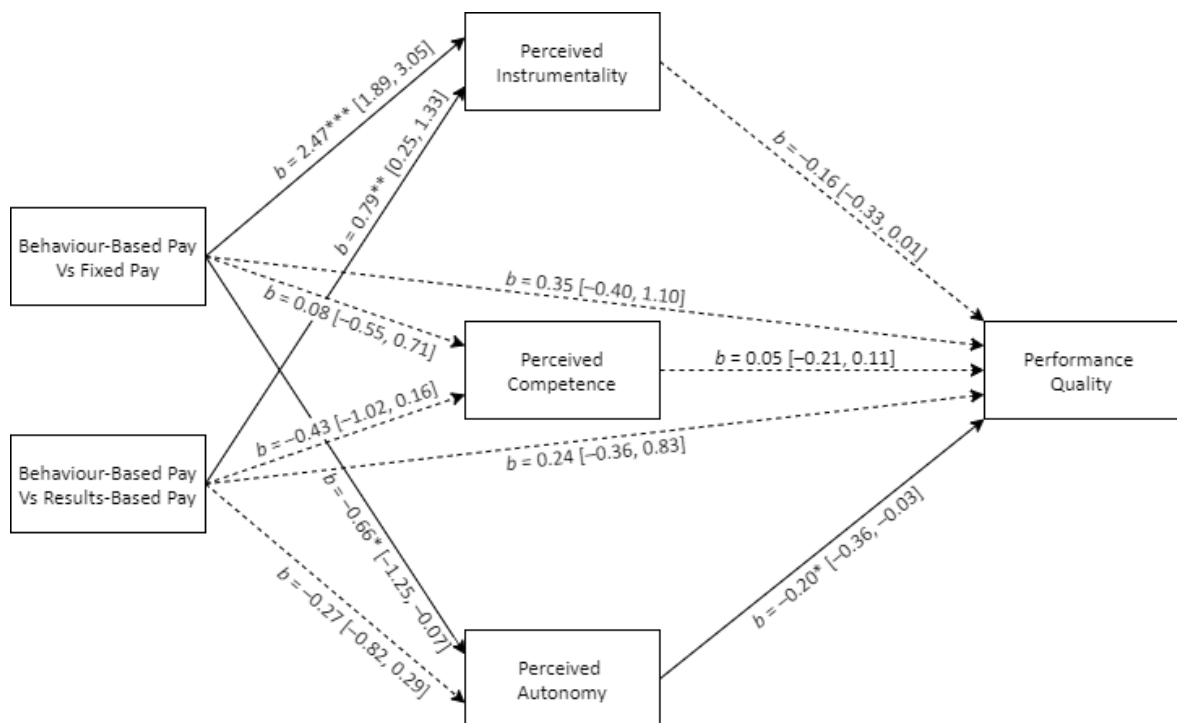
Note. $N = 161$.

Figure 2: a) Performance Quantity and b) Performance Quality Model Testing Results

a)



b)



Note. Solid lines denote significant pathways (at $\alpha = .05$); broken lines denote non-significant pathways.

The Differential Implications of Motivational Coping Resources in the Face of External Shocks

Rebecca Hewett & Cécile Emery

Shocks are events or experiences characterized by “a sense of disruption, novelty or newness, and criticality” (Crawford et al., 2019, p. 197). Negative shocks arising from external events are often uncontrollable and unpredictable (Akkermans et al., 2020; Fu et al., 2021). Confronted with external shocks, individuals must find ways to cope. Yet not every coping strategy is effective at reducing the negative emotional, cognitive, and physical implications of the shock (Hobfoll, 1989). While problem-focused coping (e.g., trying to deal with the issue, making a plan, or seeking social support; Lazarus & Folkman, 1984; Zhang et al., 2019) can alleviate the consequences of a shock, individuals often respond with denial which can exacerbate negative outcomes (Nandkeolyar et al., 2014; Zhang et al. 2019).

The extent to which people adopt different coping strategies is dependent on the resources at their disposal (Lazarus & Folkman, 1984). When shocks occur, individuals can draw on motivational resources to help them to cope more effectively (Halbesleben & Bowler, 2007; Hobfoll, 2002). Yet, motivation theories suggest that the nature of work motivation is complex and multi-faceted (Kanfer et al., 2017) and outcomes can vary according to the form that motivation takes (Van den Broeck et al., 2021). This implies that some motivational resources may be more effective for coping than others (Hobfoll, 2002). While some scholars have theoretically suggested that motivation acts as a coping resource (e.g., in coping with transition to retirement; Wang et al., 2011) and there is some evidence that motivational resources may vary (Halbesleben & Bowler, 2007), theorizing around the nature of these resources is under-developed, and the implications of differential types of motivational resources remains unclear.

We draw on self-determination theory (SDT; Deci & Ryan, 2000) to elaborate the multidimensional nature of motivational coping resources and the role of these resources for coping with shocks. We utilize SDT's theory of motivation internalization, which is "the process through which an individual acquires an attitude, belief, or behavioral regulation and progressively transforms it into a personal value, goal, or organization" (Deci & Ryan, 1985: 130). When their motivation is fully internalized (known as *identified motivation*), individuals put effort into a task or activity because they personally identify with the importance of it. When their motivation is only partially internalized (*introjected motivation*), individuals execute a task because they feel a sense of internal pressure to do so (Gagné & Deci, 2005).

When individuals are identified in their motivation, they act without internal conflict, which enables them to adapt, thrive and persist with their goals (Van den Broeck et al., 2021). Whereas, introjected motivation is characterized by contingent self-esteem in which "feelings of self-worth [are]...fragile and vulnerable to threat" (Kernis & Paradise, 2002, p. 340), individuals depend on the achievement of goals which help them to feel worthy (Koestner & Losier, 2002) so are more likely to act defensively (Kernis et al., 2008), make excuses for outcomes or situations (Kernis et al., 1992), or are less accepting of their situation (Kernis & Paradise, 2002). We therefore expect that individuals experiencing identified motivation for their job before a shock will more likely adopt problem-focused coping, but those experiencing introjected motivation are more likely to respond with denial.

It is also unclear *when* motivational resources become important for coping. Conservation of resources theory (COR, Hobfoll, 1989) states that people seek resources when others are threatened or absent (Hobfoll et al., 2012). In the context of external shocks, we argue that financial strain represents resource threat so serves as an activating agent for individuals to draw

on their motivational coping resources. Financial resources are important for coping (Ironson et al., 1997), yet can be compromised by external shocks which result in job loss in the context of external economic crisis (Akkermans et al., 2020). Financial *strain* is therefore a significant stressor (Zhou et al., 2009) which indicates individuals' need to draw on other resources to cope (Hobfoll, 2002). Therefore, when individuals experience financial strain because of a shock, the relationship between motivational resources and coping should be stronger.

As well as investigating the conditions (financial strain) under which different motivation resources (identified and introjected motivation) become important for more (problem-focused) or less effective coping (denial), we examined the implications of this from the perspective of both affective (subjective vitality) and cognitive (feelings of entrapment) outcomes of the shock. Research suggests that problem-focused coping is positively associated with well-being whereas individuals in denial are less likely to alleviate the stress associated with the shock, with negative implications for well-being (Taylor & Stanton, 2007). When individuals feel that they want to escape from a situation but are unable to find a way out, they feel trapped (Gilbert & Allan, 1998), which is particularly relevant for external shocks. Problem-focused coping helps individuals to take charge of a situation rather than feeling trapped by it. On the other hand, individuals engage in denial to avoid expending resources to deal with a stressor so continue to feel stuck in their situation (Hobfoll et al., 1991).

Method

We tested our theoretical model (Figure 1) with a sample of professional scuba divers, whose career prospects, professional status, and income were abruptly negatively affected by COVID-19. Already in precarious work, most professional scuba divers lost their job because of the pandemic, and had no job alternatives in scuba diving, received little or no financial

compensation, and often needed to quickly repatriate to their country of origin (Gentile-Crary, 2020). These workers therefore saw many of their coping resources suddenly compromised (McKee-Ryan et al., 2005). With a three-wave survey of 128 divers across three months (starting in March 2020), we examined the extent to which work motivation at the start of the shock related to divers' efforts to cope with their situation as the crisis unfolded. Pre-validated scales were used for all variables and showed good reliability and fit to our data.

Results

As predicted, identified motivation at time 1 was positively related to problem-focused coping (Table 1), but not denial at time 2. Introjected motivation was positively related to denial, but not problem-focused coping. There was a significant interaction between perceived financial strain and identified motivation on problem-focused coping which supported our predictions (Figure 2). As expected, problem-focused coping at time 2 was positively related to vitality and negatively to entrapment at time 3; denial was negatively related to vitality and positively to entrapment. We found a significant indirect effect between identified motivation and vitality through problem-focused coping, this was moderated by financial strain such that it was only significant at high levels of financial strain. Introjected motivation was indirectly related to entrapment via denial.

Discussion

By examining how professional scuba divers responded to COVID-19, we shed light on when and how individuals can draw on their work motivation to effectively cope with shocks. Given the threat of potential external shocks (e.g., war, terrorist attacks, global recession), the insights of this research can help organizations, leaders and employees better prepare. Our results emphasize the importance of creating a work environment that nurtures motivation

internalization because it not only has beneficial implications for performance and well-being in the moment but also equips people to better deal with the shocks that life unexpectedly throws their way. Our research offers insights about which resources individuals can draw on when other support structures are absent, and when their situation means that they really need it.

Figure 1: Theoretical Model

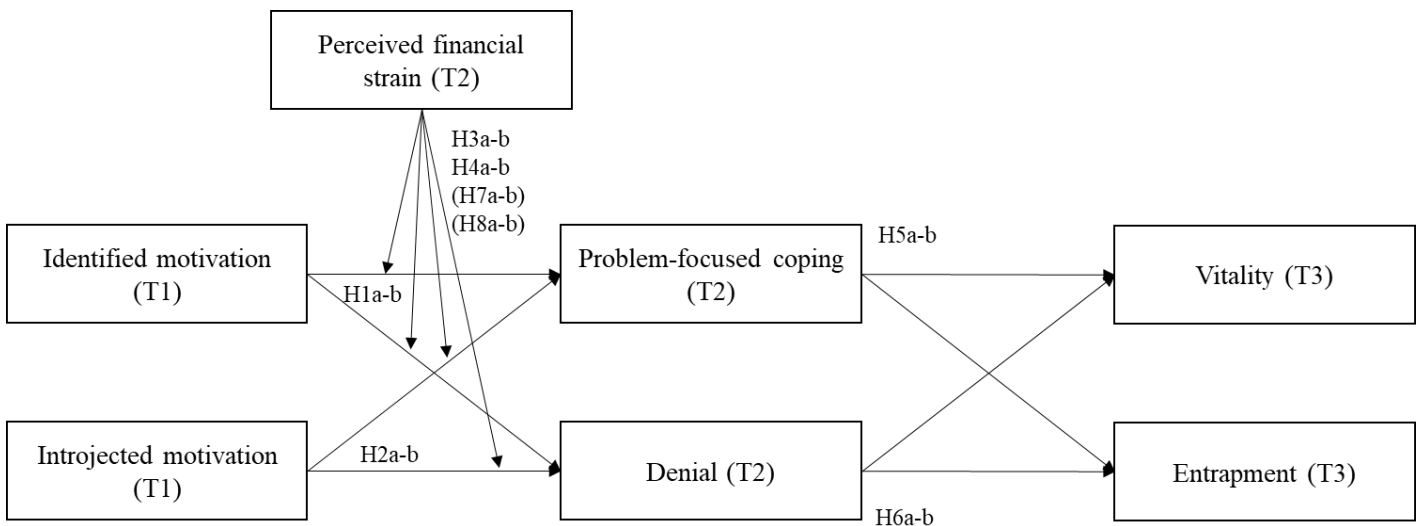
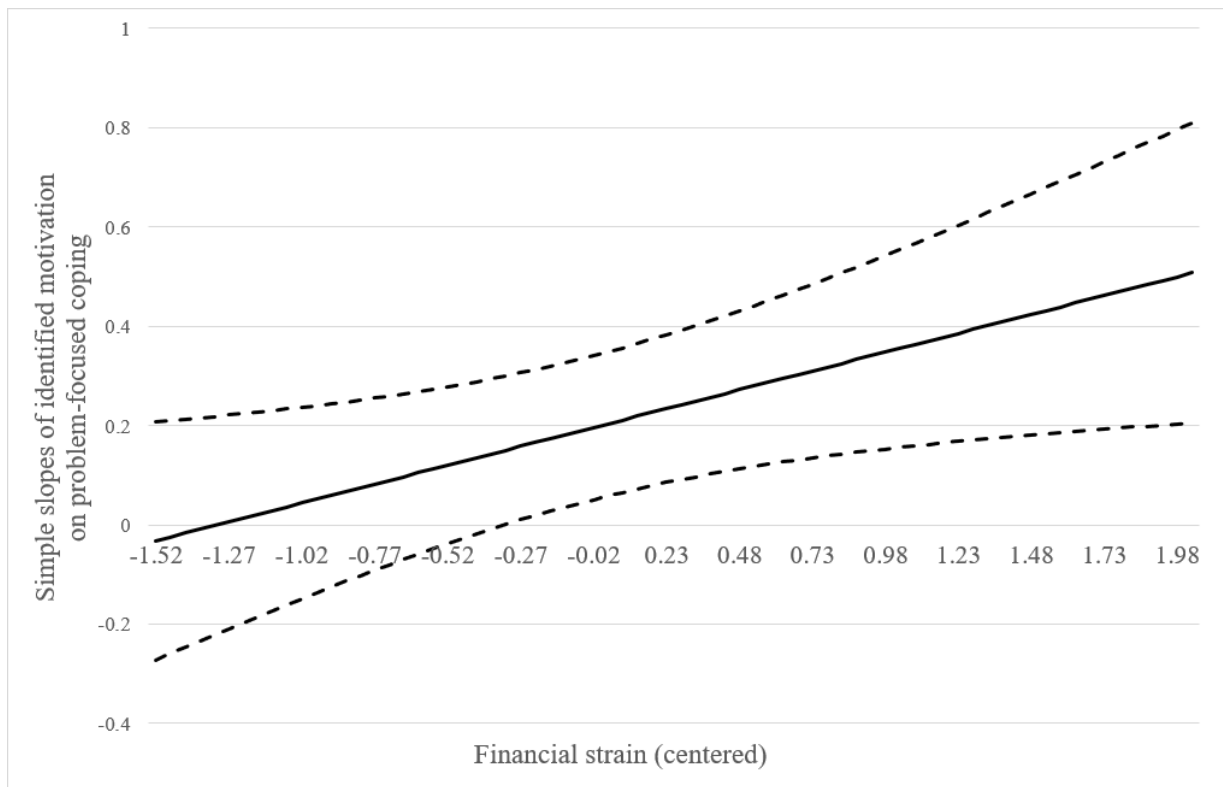


Figure 2: The Regions of Significance for the Simple Slope of Identified Work Motivation on Problem-focused Coping with Financial Strain as a Moderator



Note: Solid line represents the estimate of the slope, and the dashed lines represent the upper and lower 95% confidence intervals

Table 1: Unstandardized path modeling results

	Problem-focused coping											
	Problem-focused coping (T2)			Denial (T2)			Vitality (T3)			Entrapment (T3)		
	<i>B</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>
Constant	3.10**	.07	<.001	1.31**	.06	<.001	2.63**	.41	<.001	2.73**	.44	<.001
Identified motivation (ID)	.20*	.07	.007	-.09	.06	.098	.17*	.08	.028	-.15	.09	.118
Introjected motivation (IJ)	.002	.08	.977	.18**	.06	.004	.00	.08	0.998	.02	.09	.808
Financial strain (FS)	-.03	.07	.639	.04	.05	.424						
ID x FS	.15*	.07	.021	-.06	.04	.131						
IJ x FS	.05	.07	.497	-.07	.04	.090						
Problem-focused coping							.26*	.11	.018	-.25*	.11	.027
Denial							-.19*	.09	.043	.43**	.13	.001
	<i>R</i> ²	.12		.1			.15			.16		

Note. *N* = 128. Unstandardized regression coefficients are reported with standard errors. All predictors were centered prior to analysis. Hypothesized relationships are highlighted in bold. * *p* < .05, ** *p* < .01.

Revisiting the Multidimensional Work Motivation Scale (MWMS)

Sarah-Geneviève Trépanier, Clayton Peterson, Marylene Gagne, Claude Fernet, Julie Levesque-Côté, & Joshua L. Howard

Self-determination theory (SDT; Deci & Ryan, 1985) provides valuable insight into the motivational forces through which employees can achieve optimal functioning at work (Van den Broeck et al., 2021). SDT proposes different types of behavioral regulation (i.e., intrinsic motivation, identified, introjected, and external regulation, as well as amotivation) to explain why employees expend their efforts at work. Several scales have been developed to measure work motivation and its underlying types of behavioral regulation although the more recently developed Multidimensional Work Motivation Scale (MWMS; Gagné et al., 2015) has become one of the most widely used instruments.

Method

The present multi-sample study (5 samples) aimed to explore the content and factor structure of the MWMS and investigate the most appropriate way of operationalizing work motivation. Participants included 508 Québec nurses (sample 1), a heterogeneous group of 508 Québec workers, another group of 637 Québec nurses (sample 3), and two MTurk data sets each with 520 full-time American workers (samples 4 and 5). The Multidimensional Work Motivation Scale (MWMS; Gagné et al., 2015) was used to assess participants' motivation at work using a 1 (*not at all for this reason*) to 7 (*exactly for this reason*) Likert scale. Turnover intentions were captured using an adapted item from O'Driscoll and Beehr's (1994) scale in samples 1 to 3. This item was '*I plan to look for another job within the next 12 months*', whereas the item '*I am thinking of leaving my current organization*' was used in sample 2. Items were scored on a 1 (*strongly*

disagree) to 7 (*strongly agree*) Likert scale. The Meyer and Allen scale (1993) was used in samples 4 and 5 to assess turnover intention using a 1 (*never*) to 5 (*every day*) Likert scale. In samples 1, 2 and 3, psychological health was conceptualized as emotional exhaustion, which was evaluated using the Maslach Burnout Inventory General Survey subscale (MBI-GS; Schaufeli et al., 1996) on a 1 (*never*) to 7 (*every day*) Likert scale. Vitality was taken as an indicator of psychological health in sample 4 using Porath et al.'s (2012) measure on a 1 (*strongly disagree*) to 5 (*strongly agree*) Likert scale. Performance was assessed in samples 1, 2 and 3 using an adapted version of the in-role performance subscale (Williams & Anderson, 1991) using a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert scale.

Results

All analyses were performed using *Mplus* v.8 (Muthén & Muthén, 1998-2017). The factor structure of the MWMS was evaluated separately in all five samples using exploratory structural equation modeling. The theoretically proposed 5-factor model (M1; external-material, external-social, introjected, and identified regulation, and intrinsic motivation) was deemed unsatisfactory and rejected, and then alternative factor structures were tested and compared. All tested models (M2-M5) showed a lack of consistency of goodness-of-fit across all samples, and results revealed strong overlaps (i.e., significant cross-loadings) between several factors as well as problematic items. After removing two introjection and one identification item, a 3-factor structure provided a good fit to the data and satisfied the simple structure criterion in all samples (i.e., items loaded significantly only on their specific factor, and the model had the lowest number of factors, see Table 1), and it was thus retained. Results show that identified regulation and intrinsic motivation items load on the same factor, suggesting that these two types of behavioral regulation are best represented as a single construct (i.e., autonomous motivation).

Results also reveal that the two types of external regulation (social and material) are best represented by a single factor, and that introjected regulation is more strongly represented by its avoidance subscale. Assessment of measurement invariance of the 3-factor solution provided strong support for the invariance of factor structure across samples and languages (French and English versions of the MWMS). A structural equation model in which the final 3-factor solution (external and introjected regulation, autonomous motivation) predicted the three outcomes was tested. Autonomous motivation is linked to optimal employee functioning (indicators of psychological health, job attitudes and behaviors). The two controlled types of regulation have differentiated relations with employee performance, but both positively predict indicators of ill-being and turnover intention, with (avoidance) introjected regulation being a particularly important predictor (see Table 2).

Discussion

By revisiting the content of the MWMS and cross-validating its factor structure in five samples, this study provides an empirically adequate representation of the types of regulation and their outcomes. The study also offers suggestions for future research aimed at improving the item content of the MWMS, including improving on items that aim to measure approach-introjection (e.g., pride), investigating similarities and divergences between material-external regulation, social-external regulation and introjection, and exploring whether the lack of distinction between identified and intrinsic motivation is methodological or substantial. Overall, this study provides valuable insight for future SDT-based research into how to best operationalize the different types of behavioral regulation at work and paves the way for research aimed at improving the item content of the MWMS in order to optimally capture the complex nature of the different types of regulation, as conceptualized by self-determination theory.

Table 1: Standardized factor loadings of the final 3-factor ESEM solution (M4a)

	Autonomous motivation					Introjected regulation					External regulation				
	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5
IM1	.85*	.92*	.83*	.92*	.93*	-.02	-.10	-.02	-.07*	-.04	.03	-.01	-.01	.01	-.01
IM2	.92*	.87*	.85*	.90*	.91*	-.06*	-.07	-.04	-.08*	-.10*	.04	.04	.05	.04	.03
IM3	.87*	.86*	.84*	.91*	.89*	-.01	-.03	-.03	-.02	-.03	-.07*	-.06*	-.03	>.0	-.01
ID1	.77*	.72*	.72*	.57*	.48*	.04	.03	.02	.27*	.34*	-.03	.01	-.05	-.09*	-.05
ID3	.58*	.57*	.49*	.75*	.68*	.16*	.27*	.22*	.12*	.11*	-.01	.01	.03	-.01	.03
INTRO3	.16*	.15*	.06*	.09*	.09*	.53*	.58*	.60*	.77*	.81*	.15	.02	.13*	.03	.06
INTRO4	-.05*	-.05	.01	.03	.04	1.01*	.69*	.85*	.85*	.78*	-.05	.08	-.04	.07*	.07*
EXS1	.06*	.16*	.03	.06	.02	-.03	.08	.01	-.03	-.04	.71*	.58*	.62*	.82*	.85*
EXS2	-.13*	-.08*	-.11*	-.23*	-.23*	.14*	.08	.02	.20*	.13*	.71*	.76*	.73*	.60*	.67*
EXS3	-.01	.04	.02	.23	.16*	.05	.24*	.11*	.02	.12*	.77*	.65*	.69*	.68*	.64*
EXM1	-.01	-.17*	-.12*	-.25*	-.21*	-.05	-.01	.10	.10*	.09	.64*	.53*	.36*	.37*	.34*
EXM2	-.05	-.01	.04	-.04	.07	<.0	-.28*	-.16	-.16*	-.13*	.22*	.49*	.34*	.46*	.40*
EXM3	-.08	.05	.18*	.07	.14*	-.11	-.20*	-.17*	-.07	-.18*	.55*	.61*	.39*	.54*	.51*

Note: IM = Intrinsic motivation. ID = Identified regulation. INTRO = Introjected regulation. EXS = External regulation- social. EXM = External regulation-material.

* $p < .05$.

Table 2: The Outcomes of the Types of Behavioral Regulation: Final 3-factor solution

	Turnover intention					Psychological health				Performance		
	S1	S2	S3	S4	S5	S1	S2	S3	S4	S1	S2	S3
Autonomous motivation	-.33*	-.40*	-.31*	-.53*	-.54*	-.37*	-.37*	-.31*	.65*	.31*	.26*	.31*
Introjected regulation	.05	.12	.13*	.04	.22*	.25*	.30*	.14*	-.10*	<.0	.07	.18*
External regulation	.25*	.11*	0<	-.06	-.02	.11	-.01	.14*	.01	-.02	-.03	-.24*
	(.05)	(.05)	(.05)	(.04)	(.04)	(.05)	(.06)	(.05)	(.03)	(.06)	(.06)	(.05)
	(.06)	(.07)	(.06)	(.05)	(.05)	(.09)	(.07)	(.06)	(.05)	(.08)	(.06)	(.06)
	(.07)	(.06)	(.06)	(.06)	(.05)	(.08)	(.07)	(.06)	(.05)	(.07)	(.06)	(.06)

Note: β = Standardized coefficient. *S.E.* = Standard error. Psychological health in samples 1, 2 and 3 = emotional exhaustion, sample 4 = vitality.

* $p \leq .05$.

Appendix: The Multidimensional Work Motivation Scale (MWMS)

Intrinsic motivation	IM1	Because the work I do is interesting.
	IM2	Because what I do in my work is exciting.
	IM3	Because I have fun doing my job.
Identified regulation	ID1	Because putting efforts in this job aligns with my personal values.
	ID2*	Because I personally consider it important to put efforts in this job.
	ID3	Because putting efforts in this job has personal significance to me.
Introjected regulation	INTRO1*	Because I have to prove to myself that I can.
	INTRO2*	Because it makes me feel proud of myself.
	INTRO3	Because otherwise I will feel bad about myself.
	INTRO4	Because otherwise I will feel ashamed of myself.
Extrinsic regulation—social	EXS1	To get others’ approval (e.g., supervisor, colleagues, family, clients...).
	EXS2	To avoid being criticized by others (e.g., supervisor, colleagues, family, clients...).
	EXS3	Because others will respect me more (e.g., supervisor, colleagues, family, clients...).
Extrinsic regulation—material	EXM1	Because I risk losing my job if I don’t put enough effort in it.
	EXM2	Because others will reward me financially only if I put enough effort in my job (e.g., employer, supervisor ...).
	EXM3	Because others offer me greater job security if I put enough effort in my job (e.g., employer, supervisor ...).

*Removed items

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