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Anders Dysvik and Bård Kuvaas

BI Norwegian Business School

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Anders Dysvik and Bård Kuvaas

BI Norwegian Business School

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Author's Note

Correspondence concerning this article should be addressed to: Anders Dysvik,
Department of Leadership and Organizational Management, BI Norwegian Business
School, 0484 Oslo, Norway. E-mail: anders.dysvik@bi.no

Abstract

This research explored the roles of intrinsic and extrinsic motivation and the 2 x 2 model of achievement goals as predictors of increased work effort. A cross-lagged field study was conducted among 1,441 employees from three large Norwegian service organizations across a 10-month time span. The results showed that the relationship between intrinsic motivation and increased work effort was more positive for employees with high levels of mastery-approach goals. This observation suggests that having congruent goals may accentuate the positive relationship between intrinsic motivation and work effort.

Keywords: achievement goals; cross-lagged studies; extrinsic motivation; intrinsic motivation; work effort.

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Intrinsic and extrinsic motivation as predictors of work effort:

The moderating role of achievement goals

Work in contemporary organizations has become increasingly complex, less routinized, unidimensional, and strictly defined (Cascio, 1998). Accordingly, organizations are increasingly dependent upon employees to uphold high levels of work effort on their own initiative (Hunter & Thatcher, 2007) in contrast to using more traditional work practices that attempt to standardize and control work effort (Braverman, 1984). This raises the question as to why some employees exert more effort at work than others, which in turn may benefit the organization as a whole.

According to self-determination theory (SDT) (Deci & Ryan, 2000), differences in work effort exertion may be explained by the type of work motivation employees are driven by. SDT distinguishes between autonomous and controlled motivation (Gagné & Deci, 2005). The former describes acting based on perceived volition and choice, whereas the latter describes acting based on the perceived pressure of having to engage in actions. In SDT, intrinsic motivation, formally defined as the motivation to perform an activity for its own sake in order to experience the pleasure and satisfaction inherent in the activity (Deci, Connell, & Ryan, 1989), represents autonomous motivation in its purest form (Gagné & Deci, 2005)ⁱ. Intrinsically motivated employees work on tasks because they find them enjoyable, interesting and that participation is its own reward, which in turn should accentuate their task-directed effort (Ryan & Deci, 2000). In contrast, extrinsic motivation focuses more on the consequences to which the activity leads than on the activity itself (Gagné & Deci, 2005). Being extrinsically motivated involves performing an activity with the intention of attaining some separable consequence, such as receiving an award, avoiding guilt, or gaining approval (Deci,

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Ryan, & Williams, 1996, p. 167). Employees who are extrinsically motivated work harder to attain a desired consequence or to avoid a threatened punishment (Deci & Ryan, 2000). While previous theorizing advocated additive effects from intrinsic and extrinsic motivation (Porter & Lawler, 1968), recent research suggests that intrinsic and extrinsic motivation vary with respect to their influence on employee outcomes (Gagné & Deci, 2005).

The purpose of the present study is to explore the interplay between intrinsic and extrinsic motivation and achievement goals, also referred to as goal orientationⁱⁱ. Achievement goals refer to the purposeⁱⁱⁱ or cognitive-dynamic focus of competence-related behaviour (Elliot & McGregor, 2001, p. 501). The achievement goal approach (AGA) delineates between mastery^{iv} and performance goals. Mastery goals represent purposes for which an employee is concerned with developing their competence or mastering a task, while performance goals represent purposes for which an employee is concerned with demonstrating their competence relative to others (Elliot, 2005). A second distinction made by AGA is whether employees are directed towards the possibility of obtaining competence (approach), or away from the possibility of incompetence (avoidance) (Elliot & Harackiewicz, 1996). These four dimensions underpin a 2 x 2 conceptualization of achievement goals that entails each combination of the mastery-performance and approach-avoidance distinctions (Elliot & McGregor, 2001). *Mastery-approach* oriented individuals strive to achieve self-referent task mastery by skill acquisition and by comparing their current effort with past effort. In contrast, *performance-approach* oriented individuals strive towards demonstrating task mastery compared to others. *Mastery-avoidance* oriented individuals strive to avoid skill loss or not mastering a task, with a self-referenced orientation, and *performance-*

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avoidance oriented individuals seek to avoid failure and looking incompetent relative to others (Van Yperen, 2003).

Both AGA and SDT emphasize the importance of individual perceptions of autonomy, that is, feeling like the source of one's own behaviors (Ryan & Deci, 2002, p. 8) and competence, or feeling effective in one's interactions with the social environment and experiencing opportunities to exercise one's capacities (Ryan & Deci, 2002, p. 7). AGA scholars (e.g. Dweck, 1985; Nicholls, 1984) propose that individuals high in mastery goals and involved in a task based on self-oriented behaviour are also intrinsically motivated, which contributes to initiating and sustaining the activity. In turn, this involvement may be experienced as rewarding and developmental when task mastery and feelings of competence emerge. As such, the concept of mastery-goals align well with intrinsic motivation (Deci & Ryan, 2000).

Still, SDT and AGA differ with respect to the motives held by individuals when engaged in goal-directed behaviour. AGA is mainly concerned with the purpose for employees' behaviour and argues that dispositional goals influence cognition, affect, and behavior in achievement contexts. SDT, in contrast, focuses on the inherent pleasure and satisfaction derived from the activity based on the fulfilment of innate needs (e.g. Deci & Ryan, 2000; Elliot & Dweck, 2005; Elliot & Harackiewicz, 1996; Ntoumanis, 2001; Rawsthorne & Elliot, 1999) or universal necessities that are essential for human development and integrity (Gagné & Deci, 2005). In SDT, the satisfaction of the need is more important than whether there are individual differences in need strength. To say that a need is universal implies that there should not be high variation in need strength, and that individuals are likely to suffer more or less equally from need thwarting. Accordingly, goals/motives and traits/dispositions are likely to vary between

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persons, whereas needs are assumed to be universal across persons (Sheldon, Cheng, & Hilpert, 2011). Therefore, SDT research does not focus on the consequences of the strength of those needs for different individuals, but rather on the consequences of the extent to which individuals are able to satisfy the needs within social environments. Also, SDT describes the concept of competence unidimensionally, while AGA underscores the differences in competence perception, and that such perceptions may be self- or other-referenced (Elliot, McGregor, & Thrash, 2002). In sum, SDT places more emphasis on underlying needs and perceptions of need fulfillment, and AGA focuses on *what* makes individuals feel successful (Marsh, Craven, Hinkley, & Debus, 2003).

Whereas AGA and SDT can both explain variation in the motivation to exert work effort, we do not know how the *interplay* between the different motives predicted by AGA and SDT influences work effort since surprisingly few studies combine these two theories (Pulfrey, Buchs, & Butera, 2011). This may be an unfortunate oversight, given the likelihood that employees are subject to different motivational sources. Accordingly, we aim to contribute to our understanding of how employee motivation predicts work effort by investigating the interaction between intrinsic and extrinsic motivation and achievement goals. Furthermore, both SDT (Gagné & Deci, 2005) and AGA (DeShon & Gillespie, 2005; Fryer & Elliot, 2007; Payne, Youngcourt, & Beaubien, 2007; Yeo, Loft, & Xiao, 2009) stress the dynamic nature of employee motivation. Still, prior research relating both achievement goals and facets of work performance (including work effort) (Payne et al., 2007) and intrinsic motivation and facets of work performance (Gagné & Deci, 2005) is predominantly cross-sectional. Accordingly, by investigating the interplay between intrinsic and extrinsic motivation

and achievement goals over time, we contribute to SDT and AGA by capturing the dynamism of employee work motivation.

Theory and Hypotheses

According to SDT, intrinsic motivation requires the fulfilment of three innate, psychological needs: the need for autonomy, competence, and relatedness. The fulfilment of these needs predicts the influence of social contextual factors on individual growth-oriented processes and well-being (Deci & Ryan, 2000). When the needs are being met in a specific environment, individuals will be more likely to engage in activities for personal enjoyment rather than because they feel coerced into them (Ryan & Deci, 2006). Furthermore, the review by Gagné and Deci (2005) and more recent research, convincingly demonstrates how intrinsically motivated employees are more involved in their jobs and demonstrate greater effort and goal attainment than those less intrinsically motivated (e.g. Dysvik & Kuvaas, 2011; Grant, 2008; Piccolo & Colquitt, 2006; Zapata-Phelan, Colquitt, Scott, & Livingston, 2009).

Extrinsically motivated behaviours depend upon the perception of a contingency between the behaviour and attaining a desired consequence such as implicit approval or tangible rewards or avoiding a negative consequence such as punishment (Gagné & Deci, 2005). The effectiveness of extrinsic motivators for increasing work effort remains a controversial issue within motivational research, for instance, with respect to variable pay systems (e.g. Gerhart & Rynes, 2003; Kuvaas, 2006; Weibel, Rost, & Osterloh, 2010). Among the available research, meta-analytical evidence is supportive of a positive relationship between variable pay systems and increased performance quantity, but not quality of work (Jenkins, Mitra, Gupta, & Shaw, 1998). Furthermore, a recent meta-analysis reports a strong positive relationship between extrinsic motivators

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and performance for less interesting tasks (Weibel et al., 2010). Both meta-analyses are therefore supportive of a positive relationship between extrinsic motivation and work effort.

The moderating role of achievement goals

SDT proposes that intrinsic motivation may emerge or be sustained universally as the need for autonomy, competence, and relatedness are basic to all individuals (Gagné, 2009). This approach, which focuses on the *current* and situational-specific perceptions of need satisfaction (DeShon & Gillespie, 2005; Elliot et al., 2002) differs slightly from AGA, which focuses on more general and less situational-dependent mid-level trait-type dispositions. In addition, the main focus of SDT is whether individuals feel coerced to perform activities or choose to engage in them based on the satisfaction derived from the activity itself. AGA, on the other hand, focuses more on purposes for engaging in performance-related behaviours (self- versus other-regulated; directed at improvement versus avoiding loss of competence). Consequently, intrinsic motivation and achievement goals should be regarded as conceptually separate (Elliot et al., 2002; Ntoumanis, 2001). Nevertheless, the two theories share considerable similarities, such as the importance of competence-supportive work environments, and that extrinsic rewards, social comparisons, and normatively-based standards may impede individual outcomes (Deci & Ryan, 2000; DeShon & Gillespie, 2005; Gagné, 2009). In what follows, we argue that achievement goals will influence the relationship between intrinsic and extrinsic motivation and work effort depending on whether the goals pursued are congruent with the two types of motivation.

Prior studies have found mastery-approach oriented individuals to direct their achievement strivings towards personal improvement and skill development with an

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internal locus of perceived control and causality (see Elliot, 2005 for a review). In work settings, mastery-approach oriented individuals regard their skills as being more malleable and exhibit effort not only to achieve current tasks, but also to develop the ability to master future tasks. This drive should, in turn, facilitate higher levels of work effort (Dragoni, Tesluk, Russell, & Oh, 2009; Paparoidamis, 2005; VandeWalle, Brown, Cron, & Slocum jr., 1999) and interest for the task at hand (Rawsthorne & Elliot, 1999). In support of this, prior studies have found positive relationships between mastery-approach goals and work effort (e.g. Porath & Bateman, 2006; VandeWalle et al., 1999). Furthermore, research on the self-concordance of individual goal systems, or the degree to which stated goals express enduring interests and values (Sheldon & Elliot, 1999), shows that individuals pursuing self-concordant goals based on intrinsic motivation put more effort into their work. Therefore, in addition to the motivation to work hard stemming from inherent satisfaction with the work, mastery-approach goal orientation should explain additional effort arising from the motivation to improve one's self. This resembles the suggestion that the self-referent motivation to improve and the pleasure-based motivation stemming from the activity are congruent (Deci & Ryan, 2000). Consequently, mastery-approach goals should accentuate the relationship between intrinsic motivation and work effort.

Hypothesis 1: The relationship between intrinsic motivation and increased work effort is moderated by mastery-approach goals. The higher the mastery-approach goals, the more positive the relationship.

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As for the remaining three achievement goal dimensions, none of these focus on the development of skill or the interesting aspects of the task itself; therefore, they may be said to be incongruent with interest in general (Van Yperen, 2003) and intrinsic motivation in particular (Deci & Ryan, 2000).

In contrast to mastery-approach goals, performance-approach goals are more normatively oriented towards demonstrating competence relative to that of others (Van Yperen, 2006). Such concerns may distract individuals away from the activity itself and instead towards assessing the individual's performance relative to that of others. As such, extrinsically motivated employees whose behaviours are controlled by specific external contingencies should exert more effort when high in performance-approach or performance-avoidance goals, given the congruence between extrinsic motivation and the normative dimension of performance goals. As for the mastery-avoidance dimension, employees with high levels of such goals focus on trying to avoid self-referent negative outcomes, which may evoke feelings of risk when facing challenging tasks or feelings of worry and apprehension about not meeting one's own standards of competence and success (e.g. Baranik, Stanley, Bynum, & Lance, 2010; Elliot & McGregor, 2001; Sideris, 2007). Consequently, no interactions between intrinsic or extrinsic motivation and mastery-avoidance goals should occur. We therefore hypothesize:

Hypothesis 2: The relationship between extrinsic motivation and increased work effort is moderated by performance-approach goals. The higher the performance-approach goals, the more positive the relationship.

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Hypothesis 3: The relationship between extrinsic motivation and increased work effort is moderated by performance-avoidance goals. The higher the performance-avoidance goals, the more positive the relationship.

Method

Participants

The participants in our study were employees in three large Norwegian service organizations from different industries (670 within power supply and maintenance, 643 within auditing and consulting services, and 1665 within banking and finance). Representatives of the three organizations distributed questionnaires to their employees by use of a web-based tool (Confermit). The first data collection was conducted between September and November 2008. The second data collection was conducted between August and October 2009. This resulted in complete data sets from 1,441 employees and a response rate of 48 per cent., The participants were informed that their responses would be treated confidentially when responding to the survey, in order to reduce the presence of response distortion (Chan, 2009). Of the respondents 39.8 per cent were women and 60.2 per cent were men; 71 per cent held a university degree of three years' study or more; and average tenure was 11 years.

Materials and Procedure

All the items were placed on a five-point Likert response scale (1= *strongly disagree* and 5 = *strongly agree*). The items can be consulted in the Appendix. Cronbach's alphas for each scale are presented in Table 1.

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Intrinsic motivation was measured at time one by means of six items previously developed and used in a Norwegian setting by Kuvaas and Dysvik (2009).

Extrinsic motivation was measured at time one by means of four items previously developed and used in Norwegian settings (Kuvaas & Dysvik, 2011).

Achievement goals. Mastery-approach, performance-approach, and performance-avoidance goals were measured at time one by the 13-item scale validated by Vandewalle (1997), and previously used in a Norwegian context by Dysvik and Kuvaas (2010). The mastery-avoidance goal dimension was measured at time one by the six-item scale validated by Baranik, et al. (2007).

Work effort was measured at time one and time two by five items that capture how much effort employees put in their jobs. This scale has previously been used by Kuvaas and Dysvik (2009).

To control for potential socio-demographic and organizational differences in the predictor, the dependent variables education (measured by six categories where 1 represented “*primary and lower secondary school*” and 6 represented “*master’s degree of five years’ study or more*”), gender (measured by two categories where 1 represented “*women*” and 2 represented “*men*”), organizational tenure (in years), and dummy variables for organizational affiliation were included as controls in the analyses. We included the measure of work effort at time one as a control variable in order to unveil the incremental validity of our independent variables on work effort at time two.

Initially, an exploratory principal component analysis with promax rotation was performed on all the multiple-scale items to determine item retention (Farrell, 2010). In order to avoid confounded measures, we applied relatively stringent rules of thumb and retained only items with a strong loading of .50 or higher on the target construct

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(Nunnally & Bernstein, 2007), a cross loading of less than .35 on other included factors (Kiffin-Petersen & Cordery, 2003), and a differential of .20 or more between included factors (Van Dyne, Graham, & Dienesch, 1994).

To test for moderation, we used hierarchical moderated regression (Cohen, Cohen, West, & Aiken, 2003) and the computer software SPSS 19.0. Interaction terms often create multicollinearity problems because of their correlations with main effects. We thus computed the interaction terms by centering the variables before multiplying them with each other. In the first step, the control variables were regressed on work effort, followed by intrinsic and extrinsic motivation (Step 2), the four achievement goals (Step 3), and finally, the interaction terms between intrinsic and extrinsic motivation and each of the four achievement goal dimensions (Step 4).

Results

The principal component analysis revealed that all items met our inclusion criteria (see the Appendix for details). The final scales were computed by averaging the items. All scales demonstrated acceptable reliability estimates, ranging from .76 to .89. The means, standard deviations, bivariate correlations, and reliability estimates are reported in Table 1. Pairwise and multiple variable collinearity were inspected by collinearity diagnostics in SPSS prior to analysis. The lowest tolerance value was .51, well above the commonly accepted threshold value of .10 (Hair, Anderson, Tatham, & Black, 2005).

The two significant interaction terms in step 4 of the regression analysis (see Table 2) revealed that mastery-approach goals moderated the relationship between intrinsic motivation and work effort and that mastery-avoidance goals moderated the relationship between extrinsic motivation and work effort. To probe the form of the

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statistically significant interactions, we followed the procedure recommended by Cohen et al. (2003) and plotted low versus high scores of intrinsic motivation and mastery-approach goals and mastery-avoidance goals and extrinsic motivation (one standard deviation below and above the means using unstandardized scores). The slopes in Figure 1 suggest that the relationship between intrinsic motivation and work effort is more positive for employees with higher levels of mastery-approach goals. A t-test revealed that the two slopes were significantly different from each other ($t = 1.96, p < .05$). Thus, our first hypothesis was supported. With respect to effect size, the interaction term ($\Delta R^2 = .01, p < 0.05$) represents a 2.5 per cent increase in the total amount of variance explained. The slopes in Figure 2 suggest that the relationship between extrinsic motivation and work effort is more positive for employees with higher levels of mastery-avoidance goals, but the t-test revealed that the two slopes were not significantly different from each other ($t = 1.39, p = .08$). We received no support for the remaining hypotheses.

Discussion

In support of our first hypothesis, the relationship between intrinsic motivation and increased work effort was more positive for employees with high levels of mastery-approach goals. Beyond integrating mastery-approach goals and intrinsic motivation as combined predictors of work effort, this finding aligns well with theorizing and research findings from self-concordance of individual goal systems (Sheldon & Elliot, 1999), the hierarchical model of intrinsic and extrinsic motivation (HMIEM) (Guay, Mageau, & Vallerand, 2003; Vallerand, 1997, 2000; Vallerand & Ratelle, 2002), and the multilevel personality in context (MPIC) model (Sheldon et al., 2011), emphasizing the value of

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focusing on motivations differing in types and levels of generality. No interaction between intrinsic motivation and the other achievement goal dimensions was obtained. This observation adds to previous theorizing by both SDT (Deci & Ryan, 2000), AGA scholars (Elliot, 2005), and research on self-concordant goals (Sheldon & Elliot, 1999), in that intrinsic motivation and mastery-approach goals are congruent and direct individuals towards similar ends. With respect to the other achievement goals, we found no indication of a potential undermining role of incongruent goals on work effort. Thus, as long as intrinsic motivation is high, employees seem able to uphold their work effort at high levels. Our study should also contribute to both AGA and SDT by establishing longitudinal relationships in a work setting between mastery-approach goals, intrinsic motivation, and increased work effort, thus adding additional weight to previous cross-sectional findings (e.g. Janssen & Van Yperen, 2004; Kuvaas, 2006; Piccolo & Colquitt, 2006).

With respect to extrinsic motivation, we found no support for the moderating roles of performance-approach or performance-avoidance goals. We obtained some support for congruence in that extrinsic motivation was positively correlated with both performance-approach goals ($r = .28, p < .01$) and performance-avoidance goals ($r = .16, p < .01$). The interaction terms between extrinsic motivation and both performance goal dimensions, however, were non-significant. The lack of support for these interactions may be explained by two particular conditions. First, the majority of research in support of a positive relationship between extrinsic motivation and work effort is limited to trivial tasks, such as number of rats caught per hour or number of trees planted per hour (Jenkins et al., 1998) and non-interesting tasks (Weibel et al., 2010). In our study, the more complex work performed in the different organizations could allude to a more

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instrumental relationship between extrinsic motivation and work effort. Second, achievement goal research suggests the pursuit of performance goals may in fact be maladaptive (for low performers, for instance) (Van Yperen & Renkema, 2008) and imply long-term negative consequences for individual improvement and learning (Steele-Johnson, Beaugard, Hoover, & Schmidt, 2000; Van Yperen, 2003). Thus, the congruence between extrinsic motivation and the performance goals is not as clear-cut as for intrinsic motivation and mastery-approach goals.

In contrast to our expectations, a positive relationship between extrinsic motivation and work effort was found for employees with higher levels of mastery-avoidance goals. It may be that since the mastery-avoidance dimension entails feelings of worry and apprehension about not meeting internal standards of competence and success (Baranik et al., 2010), these perceptions may direct employees towards exhibiting more effort in meeting work requirements to avoid self-referent incompetence (Sideris, 2007). Since mastery-avoidance goals have been found to relate positively to competitiveness (Baranik et al., 2010) and extrinsic motivation (Van Yperen, 2006), they may represent a contingency that accentuate the relationship between extrinsic motivation and work effort. Accordingly, since individuals with high levels of mastery-avoidance goals are less interested in self-referent improvement (Van Yperen, 2006), extrinsic motivation may become an even more salient influence on work effort when other self-oriented motives are lacking.

It should also be noted that our data supports a model where intrinsic motivation mediates the relationship between mastery-approach goals and work effort (Bell & Kozlowski, 2008; Rawsthorne & Elliot, 1999). Supplementary analyses showed that the relationship between mastery-approach goals and work effort was reduced after the

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inclusion of intrinsic motivation in the regression model. Sobel tests (Preacher & Leonardelli, 2001) revealed that this drop was significant ($z = 3.79, p < .001$) and supportive of partial mediation. Accordingly, the mediated model is certainly valid, but the moderated model adds exploratory power on this relationship since the interaction term ($\Delta R^2 = .01, p < 0.05$) represents a 2.5 per cent increase in the total amount of variance explained.

Limitations and directions for future research

The results from our study should be interpreted in light of several limitations. First, due to organizational restrictions, we were only able to collect data at two points in time. Consequently, while maintaining the cross-lagged design of the study, we were unable to differentiate between short- and long-term influences on work effort. Also, the reliance on self-reported data raises a general concern regarding the validity of the findings (Chan, 2009). Still, the cross-lagged design of the study is in line with recommendations for reducing the potential influence of common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Spector, 2006). In addition, the principal component analysis generated seven factors with eigenvalues of 1 or more, and an explained variance of the factors ranging from 18.4 per cent (factor one) to 3.5 per cent (factor seven). While this test represents no more than a diagnostic technique to assess the extent to which common method variance may represent a problem (Podsakoff et al., 2003), it indicates that mono-method variance did not severely threaten our findings. Furthermore, given the modest correlations between the variables in this study, the collinearity diagnostics, and the strong criteria used in determining item retention, it is unlikely that common method bias has heavily influenced the

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observed relationships (Conway & Lance, 2010). In addition, the correlation between intrinsic motivation at time 1 and work effort at time 2 ($r = .32$) is lower than results from prior research with more objective measures of work effort (Grant, 2008) or manager-rated work effort (Dysvik & Kuvaas, 2011).

Nevertheless, the self-reported measure of work effort may have resulted in an upward bias. While self-rated work effort tends to be upward-biased, prior studies suggest that the concern for inflated relationship owing to self-reported data is exaggerated (Chan, 2009; Spector, 2006). In addition, if the tendency to upward bias in the self-report of work effort is prone to dispositional influences, we were able to mitigate such a threat to internal validity by controlling for prior work effort. Accordingly, even if the respondents may have overestimated their levels of work effort, this should not have affected the observed results (Conway & Lance, 2010). Still, future research should include additional remedies to further rule out the concern for potential influences by common method bias, such as measures of social desirability (Podsakoff et al., 2003), since the perceived social value of achievement goals has been found to influence individual responses (e.g. Darnon, Dompnier, Delmas, Pulfrey, & Butera, 2009). Whereas supervisor-rated performance may reduce potential validity threats of self-report data, the dependence on other reports is not without its potential problems (Chan, 2009). Performance ratings conducted by supervisors may be even more biased than self-report measures (Levy & Williams, 2004; Murphy, 2008; Stark & Poppler, 2009). Nevertheless, the ideal solution would probably be to collect both self- and supervisor ratings of work effort in combination with more objective measures (Kammeyer-Mueller, Steel, & Rubenstein, 2010).

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Finally, it should be noted that our measure of intrinsic motivation differs from what is usually applied in SDT research (Gagné et al., 2010). From a SDT point of view, meaning would probably reflect identified regulation. We can still assert that the scale focused more strongly on intrinsic motivation than on identified motivation since what is meaningful to a person depends on personal values, which may vary from person to person. Thus, having the experience of a meaningful job should certainly represent a motivation to perform an activity for itself that can also be experienced as both satisfactory and pleasurable. With this background, we used a measure that represents the core of the widely used construct definition (i.e. the motivation to perform an activity for itself, in order to experience the pleasure and satisfaction inherent in the activity (Deci et al., 1989). Furthermore, a study by Tremblay, Blanchard, Taylor, & Pelletier (2009) found the six motivational sub-dimensions of SDT to be adequately represented by two higher-order factors: work self-determined and non-self-determined motivation. In this respect, the measure of intrinsic motivation used in this study should be comparable with work self-determined motivation. Nevertheless, in order to fully test the interplay between SDT and AGA, and potentially provide additional and more precise results, future research should attempt to extend our results to the other subdimensions of autonomous and controlled motivation. From a theoretical perspective, such an extension would also address the issue of performance goals and extrinsic motivation more fully. While the mastery-approach goals and intrinsic motivation align well, SDT proposes different subdimensions of extrinsic motivation that could influence the relationship between performance goals and individual outcomes. Thus, the impact of performance goals on work effort could depend on whether individuals are more autonomously motivated (i.e. identified

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regulation) or more extrinsically motivated (introjected or external regulation) (Deci & Ryan, 2000).

With respect to future research, our study could be extended in several ways. First, the moderating role of task complexity could be investigated. Given the lack of support for our hypotheses involving extrinsic motivation, performance-approach, and performance-avoidance goals, future studies should investigate whether these relationships are found for less complex tasks in-line with prior research (Jenkins et al., 1998; Weibel et al., 2010). In addition, conceptions of ability or actual performance could be included as a moderator, since prior research suggests that able employees benefit more from performance-approach goals (Van Yperen & Renkema, 2008).

A second avenue for future research would be to investigate the stability and change of the AGA, and how changes influence work effort. AGA also describes *state-based* goals (e.g. Dragoni, 2005; Payne et al., 2007) that differ from their trait counterparts in their dynamic nature and responsiveness to situational influences (Dweck & Leggett, 1988). There is a lack of studies on the stability and change of the AGA in the work domain (Payne et al., 2007). Research from educational settings show that achievement goals vary owing to situational demands such as evaluation criteria and receiving performance feedback (Fryer & Elliot, 2007). As such, it would be interesting to see the extent to which these sources initiate changes in state achievement goals, and whether such potential changes explain variation in work effort above and beyond dispositional achievement goals.

Implications for practice

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If the associations between intrinsic motivation, mastery-approach goals, and work effort represent causal relationships, our findings may have important implications for practice. Research on 'best practice' HRM highlights the importance of employee intrinsic motivation (e.g. Kuvaas & Dysvik, 2010) and advocates autonomous and empowering work systems that rely on employees' self-regulated behaviour and discretionary effort (e.g. Pfeffer, 1998). These findings align well with SDT and research unveiling positive effects of autonomy-supporting work environments on need fulfilment and intrinsic motivation (Gagné & Deci, 2005). As for as work design, attention should be paid to core job characteristics, such as job autonomy, skill variety, task identity, task significance, and feedback from the job (Hackman & Oldham, 1976; Humphrey, Nahrgang, & Morgeson, 2007). Since our findings suggest that having congruent purpose goals accentuate the positive relationship between intrinsic motivation and work effort, organizations should benefit from facilitating work environments recognized by competence-supporting intrinsic rewards rather than extrinsic rewards, reduced inward social comparison and competition, and personal rather than normative performance standards (Deci & Ryan, 2000; DeShon & Gillespie, 2005; Gagné, 2009). Finally, it seems that neither extrinsic motivation nor performance-approach goals facilitate an increase in work effort, independently or combined. This observation runs somewhat counter to observations from practice where internal competition, monitoring and control, and excessive use of performance-based pay systems represent widespread elements of HR practices (O'Reilly & Pfeffer, 2000). Our results, in contrast, suggest that organizations that facilitate congruence in terms of intrinsically motivated *and* mastery-avoidance goal oriented employees will get more out of the average employee.

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References

- Ames, C., & Archer, J. (1988). Achievement goals in the classroom - students learning-strategies and motivation processes. *Journal of Educational Psychology, 80*(3), 260-267.
- Baranik, L. E., Stanley, L. J., Bynum, B. H., & Lance, C. E. (2010). Examining the construct validity of mastery-avoidance achievement goals: A meta-analysis. *Human Performance, 23*, 265-282.
- Bell, B. S., & Kozlowski, S. W. J. (2008). Active learning: Effects of core training design elements on self-regulatory processes, learning and adaptability. *Journal of Applied Psychology, 93*(2), 296-316.
- Braverman, H. (1984). The Real Meaning of Taylorism. In F. Fisher & C. Sirianni (Eds.), *Critical studies in Organization and Bureaucracy* (pp. 79-86). Philadelphia: Temple Press.
- Cascio, W. F. (1998). The virtual workplace: A reality now. *Industrial-Organizational Psychologist, 37*, 32-36.
- Chan, D. (2009). So why ask me? Are self-report data really that bad? In C. E. Lance & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends* (pp. 309-336). London: Routledge.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). London: Lawrence Erlbaum Associates.

WORK MOTIVATION AND WORK EFFORT

- Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business and Psychology, 25*(3), 325-334. doi: 10.1007/s10869-010-9181-6
- Darnon, C., Dompnier, B., Delmas, F., Pulfrey, C., & Butera, F. (2009). Achievement goal promotion at university: Social desirability and social utility of mastery and performance goals. *Journal of Personality and Social Psychology, 96*, 119-134.
- Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology, 74*(4), 580-590. doi: 10.1037/0021-9010.74.4.580
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227-268. doi: 10.1207/S15327965PLI1104_01
- Deci, E. L., Ryan, R. M., & Williams, G. C. (1996). Need satisfaction and the self-regulation of learning. *Learning and Individual Differences, 8*(3), 165-183. doi: 10.1016/S1041-6080(96)90013-8
- DeShon, R. P., & Gillespie, J. Z. (2005). A motivated action theory account of goal orientation. *Journal of Applied Psychology, 90*(6), 1096-1127.
- Dragoni, L. (2005). Understanding the emergence of state goal orientation in organizational work groups: The role of leadership and multilevel climate perceptions. *Journal of Applied Psychology, 90*(6), 1084-1095.

WORK MOTIVATION AND WORK EFFORT

- Dragoni, L., Tesluk, P. E., Russell, J. E. A., & Oh, I.-S. (2009). Understanding managerial development: Integrating developmental assignments, learning orientation, and access to developmental opportunities in predicting managerial competencies. *Academy of Management Journal*, *52*(4), 731-743.
- Dweck, C. S. (1985). Intrinsic motivation, perceived control, and self-evaluation maintenance: An achievement goal analysis. In C. Ames & R. E. Ames (Eds.), *Research on motivation in education: The classroom milieu* (pp. 289-305). New York: Academic.
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, *41*(10), 1040-1048.
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Philadelphia, PA: Psychol. Press.
- Dweck, C. S., & Leggett, E. L. (1988). A Social cognitive approach to motivation and personality. *Psychological Review*, *95*(2), 256-273.
- Dysvik, A., & Kuvaas, B. (2010). Exploring the relative and combined influence of mastery-approach goals and work intrinsic motivation on employee turnover intention. *Personnel Review*, *39*(5), 622-638. doi: 10.1108/00483481011064172
- Dysvik, A., & Kuvaas, B. (2011). Intrinsic motivation as a moderator on the relationship between perceived job autonomy and work performance. *European Journal of Work and Organizational Psychology*, *20*(3), 367-387. doi: 10.1080/13594321003590630

WORK MOTIVATION AND WORK EFFORT

- Elliot, A. J. (2005). A conceptual history of the achievement goal constructs. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 52-72). New York: The Guilford Press.
- Elliot, A. J., & Dweck, C. S. (2005). Competence and motivation – competence as the core of achievement motivation. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 3-12). New York: The Guilford Press.
- Elliot, A. J., & Harackiewicz, J. M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, *70*(3), 461-475.
- Elliot, A. J., & McGregor, H. A. (2001). A 2 x 2 achievement goal framework. *Journal of Personality and Social Psychology*, *80*(3), 501-519.
- Elliot, A. J., McGregor, H. A., & Thrash, T. M. (2002). The need for competence. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 361-387). Rochester, NY: The University of Rochester Press.
- Farrell, A. M. (2010). Insufficient discriminant validity: A comment on Bove, Pervan, Beatty, and Shiu (2009). *Journal of Business Research*, *63*, 324-327. doi: 10.1016/j.jbusres.2009.05.003
- Fryer, J. W., & Elliot, A. J. (2007). Stability and change in achievement goals. *Journal of Educational Psychology*, *99*(4), 700-714.
- Gagné, M. (2009). A model of knowledge-sharing motivation. *Human Resource Management*, *48*(4), 571-589.

WORK MOTIVATION AND WORK EFFORT

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331-362. doi: 10.1002/job.322

Gagné, M., Forest, J., Gilbert, M. H., Aube, C., Morin, E., & Malorni, A. (2010). The Motivation at Work Scale: Validation Evidence in Two Languages. [Article]. *Educational and Psychological Measurement*, 70(4), 628-646. doi: 10.1177/0013164409355698

Gerhart, B., & Rynes, S. L. (2003). *Compensation: Theory, evidence, and strategic implications*. Thousand Oaks: Sage.

Grant, A. M. (2008). Does intrinsic motivation fuel the prosocial fire? Motivational synergy in predicting persistence, performance, and productivity. *Journal of Applied Psychology*, 93(1), 48-58.

Guay, F., Mageau, G. A., & Vallerand, R. J. (2003). On the hierarchical structure of self-determined motivation: A test of top-down, bottom-up, reciprocal, and horizontal effects. *Personality and Social Psychology Bulletin*, 29(8), 992-1004.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 16, 250-279. doi: 10.1016/0030-5073(76)90016-7

Hair, J. F. J., Anderson, R. E., Tatham, R. L., & Black, W. C. (2005). *Multivariate data analysis* (6th ed.). New York: Maxwell Macmillan International.

Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2007). Integrating motivational, social and contextual work design features: A meta-analytic summary and

WORK MOTIVATION AND WORK EFFORT

theoretical extension of the work design literature. *Journal of Applied Psychology*, 92(5), 1332-1356. doi: 10.1037/0021-9010.92.5.1332

Hunter, L. W., & Thatcher, S. M. B. (2007). Feeling the heat: Effects of stress, commitment, and job experience on job performance. *Academy of Management Journal*, 50(4), 953-968.

Janssen, O., & Van Yperen, N. W. (2004). Employees' goal orientations, the quality of leader-member exchange, and the outcomes of job performance and job satisfaction. *Academy of Management Journal*, 47(3), 368-384.

Jenkins, G. D., Mitra, A., Gupta, N., & Shaw, J. D. (1998). Are financial incentives related to performance? A meta-analytic review of empirical research. *Journal of Applied Psychology*, 83(5), 777-787.

Kammeyer-Mueller, J. D., Steel, P. D. G., & Rubenstein, A. (2010). The other side of method bias: The perils of distinct source research designs. *Multivariate Behavioral Research*, 45(2), 294-321.

Kiffin-Petersen, S., & Cordery, J. L. (2003). Trust, individualism and job characteristics as predictors of employee preference for teamwork. *International Journal Human Resource Management*, 14(1), 93-116.

Kuvaas, B. (2006). Work performance, affective commitment, and work motivation: the roles of pay administration and pay level. *Journal of Organizational Behavior*, 27(3), 365-385. doi: 10.1002/job.377

WORK MOTIVATION AND WORK EFFORT

- Kuvaas, B., & Dysvik, A. (2009). Perceived investment in employee development, intrinsic motivation and work performance. *Human Resource Management Journal*, *19*(3), 217-236. doi: 10.1111/j.1748-8583.2009.00103.x
- Kuvaas, B., & Dysvik, A. (2010). Does best practice HRM only work for intrinsically motivated employees? *International Journal Human of Resource Management*, *21*(13), 2339 – 2357. doi: 10.1080/09585192.2010.516589
- Kuvaas, B., & Dysvik, A. (2011). Permanent employee investment and social exchange and psychological cooperative climate among temporary employees. *Economic and Industrial Democracy*, *32*(2), 261-284. doi: 10.1177/0143831x10371990
- Levy, P. E., & Williams, J. R. (2004). The social context of performance appraisal: A review and framework for the future. *Journal of Management*, *30*(6), 881-905.
- Marsh, H. W., Craven, R. G., Hinkley, J. W., & Debus, R. L. (2003). Evaluation of the Big-Two-Factor Theory of academic motivation orientations: An evaluation of jingle-jangle fallacies. *Multivariate Behavioral Research*, *38*(2), 189-224.
- Murphy, K. R. (2008). Explaining the weak relationship between job performance and ratings of job performance. *Industrial and Organizational Psychology*, *1*, 148-160.
- Nicholls, J. G. (1984). Achievement motivation - conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, *91*(3), 328-346.

WORK MOTIVATION AND WORK EFFORT

- Ntoumanis, N. (2001). Empirical links between achievement goal theory and self-determination theory in sports. *Journal of Sports Sciences, 19*, 397-409.
- Nunnally, J. C., & Bernstein, I. H. (2007). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.
- O'Reilly, C. A., & Pfeffer, J. (2000). *Hidden value: How great companies achieve extraordinary results with ordinary people*. Boston, Massachusetts: Harvard Business School Press.
- Paparoidamis, N. G. (2005). Learning orientation and leadership quality. *Management Decision, 43*(7/8), 1054-1063.
- Payne, S. C., Youngcourt, S. S., & Beaubien, J. M. (2007). A meta-analytic examination of the goal orientation nomological net. *Journal of Applied Psychology, 92*(1), 128-150.
- Pfeffer, J. (1998). Seven practices of successful organizations. *California Management Review, 40*(2), 96-124.
- Piccolo, R. F., & Colquitt, J. A. (2006). Transformational leadership and job behaviors: The mediating role of core job characteristics. *Academy of Management Journal, 49*(2), 327-340.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

WORK MOTIVATION AND WORK EFFORT

- Porath, C. L., & Bateman, T. S. (2006). Self-regulation: From goal orientation to job performance. *Journal of Applied Psychology, 91*(1), 185-192.
- Porter, L. W., & Lawler, E. E. I. (1968). *Managerial attitudes and performance*. Homewood, IL: Irwin-Dorsey.
- Preacher, K. J., & Leonardelli, G. J. (2001). Calculation for the Sobel test: an interactive calculation tool for mediation tests. Accessed 1.11.2011 from <http://quantpsy.org/sobel/sobel.htm>
- Pulfrey, C., Buchs, C., & Butera, F. (2011). Why grades engender performance-avoidance goals: The mediating role of autonomous motivation. *Journal of Educational Psychology, 103*(3), 683-700.
- Rawsthorne, L. J., & Elliot, A. J. (1999). Achievement goals and intrinsic motivation: A meta-analytic review. *Personality and Social Psychology Review, 3*, 326-344.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78. doi: 10.1037/0003-066X.55.1.68
- Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory: An organismic-dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3-36). Rochester, NY: The University of Rochester Press.

WORK MOTIVATION AND WORK EFFORT

- Ryan, R. M., & Deci, E. L. (2006). Self-regulation and the problem of human autonomy: Does psychology need choice, self-determination, and will? *Journal of Personality, 74*(6), 1557-1585. doi: 10.1111/j.1467-6494.2006.00420.x
- Sheldon, K. M., Cheng, C., & Hilpert, J. (2011). Understanding well-being and optimal functioning: Applying the multilevel personality in context (MPIC) model. *Psychological Inquiry, 22*(1), 1-16. doi: 10.1080/1047840X.2011.532477
- Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology, 76*(3), 482-497. doi: 10.1037/0022-3514.76.3.482
- Sideris, G. D. (2007). The regulation of affect, anxiety, and stress arousal from adopting mastery-avoidance goal orientations. *Stress and Health, 24*(1), 55-69.
- Spector, P. E. (2006). Method variance in organizational research: Truth or urban legend? *Organizational Research Methods, 9*(2), 221-232.
- Stark, E., & Poppler, P. (2009). Leadership, performance evaluations, and all the usual suspects. *Personnel Review, 38*(3), 320-338.
- Steele-Johnson, D., Beauregard, R. S., Hoover, P. B., & Schmidt, A. M. (2000). Goal orientation and task demand effects on motivation, affect, and performance. *Journal of Applied Psychology, 85*(5), 724-738.
- Tremblay, M. A., Blanchard, C. M., Taylor, S., & Pelletier, L. G. (2009). Work extrinsic and intrinsic motivation scale: Its value for organizational psychology

WORK MOTIVATION AND WORK EFFORT

research. *Canadian Journal of Behavioral Science*, 41(4), 213-226. doi: 10.1037/a0015167

Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 29, pp. 271-360). New York: Academic Press.

Vallerand, R. J. (2000). Deci and Ryan's self-determination theory: A view from the hierarchical model of intrinsic and extrinsic motivation. *Psychological Inquiry*, 11, 312-318.

Vallerand, R. J., & Ratelle, C. F. (2002). Intrinsic and Extrinsic Motivation: A Hierarchical Model. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of Self-Determination Research* (pp. 37-64). Rochester, NY: The University of Rochester Press.

Van Dyne, L., Graham, J. W., & Dienesch, R. M. (1994). Organizational citizenship behavior: Construct redefinition, measurement, and validation. *Academy of Management Journal*, 37(4), 765-802.

Van Yperen, N. W. (2003). Task interest and actual performance: The moderating effects of assigned and adopted purpose goals. *Journal of Personality and Social Psychology*, 85(6), 1006-1015.

Van Yperen, N. W. (2006). A novel approach to assessing achievement goals in the context of the 2 x 2 framework: Identifying distinct profiles of individuals with different dominant achievement goals. *Personality and Social Psychology Bulletin*, 32(11), 1432-1445.

WORK MOTIVATION AND WORK EFFORT

- Van Yperen, N. W., & Renkema, L. J. (2008). Performing great and the purpose of performing better than others: On the recursiveness of the achievement goal adoption process. *European Journal of Social Psychology, 38*, 260-271.
- VandeWalle, D. (1997). Development and validation of a work domain goal orientation instrument. *Educational and Psychological Measurement, 57*(6), 995-1015.
- VandeWalle, D., Brown, S. P., Cron, W. L., & Slocum jr., J. W. (1999). The influence of goal orientation and self-regulation tactics on sales performance: A longitudinal field test. *Journal of Applied Psychology, 84*(2), 249-259.
- Weibel, A., Rost, K., & Osterloh, M. (2010). Pay for Performance in the Public Sector- Benefits and (Hidden) Costs. *Journal of Public Administration Research and Theory, 20*(2), 387-412. doi: 10.1093/jopart/mup009
- Yeo, G. B., Loft, S., & Xiao, T. (2009). Goal orientations and performance: Differential relationships across levels of analysis and as a function of task demands. *Journal of Applied Psychology, 94*(3), 710-726.
- Zapata-Phelan, C. P., Colquitt, J. A., Scott, B. A., & Livingston, B. (2009). Procedural justice, interactional justice, and task performance: The mediating role of intrinsic motivation. *Organizational Behavior and Human Decision Processes, 108*(1), 93-105.

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Appendix

Principal Component Analysis with Promax Rotation

Items	IM	WE	MAP	MAV	PAV	PAP	EM
IM4: My job is very exciting	<u>.89</u>						
IM2: The tasks that I do at work are enjoyable	<u>.88</u>						
IM5: My job is so interesting that it is a motivation in itself	<u>.87</u>						
IM3: My job is meaningful	<u>.80</u>						
IM1: The tasks that I do at work are themselves representing a driving power in my job	<u>.72</u>						
IM6: Sometimes I become so inspired by my job that I almost forget everything else around me	<u>.64</u>						
WE4: I often expend more effort when things are busy at work		<u>.87</u>					
WE3: I often expend extra effort in carrying out my job		<u>.82</u>					
WE5: I usually do not hesitate to put in extra effort when it is needed		<u>.81</u>					
WE2: I intentionally expend a great deal of effort in carrying out my job		<u>.79</u>					
WE1: I try to work as hard as possible		<u>.64</u>					
MAP3: I enjoy challenging and difficult tasks where I'll learn new skills			<u>.86</u>				
MAP2: I often look for opportunities to develop new skills and knowledge			<u>.79</u>				
MAP5: I prefer to work in situations that require a high level of ability and talent			<u>.76</u>				
MAP1: I am willing to select a challenging work assignment that I can learn a lot from			<u>.76</u>				
MAP4: For me, development of my work abilities is important enough to take risks			<u>.71</u>				
MAV2: When I am engaged in a task at work, I find myself thinking a lot about what I need to do to not mess up				<u>.74</u>			
MAV6: At work, I am just trying to avoid performing the tasks required for my job poorly				<u>.73</u>			
MAV4: My goal is to avoid being incompetent at performing the skills and tasks required for my job				<u>.72</u>			

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MAV3: At work, I focus on not doing worse than I have personally done in the past on my job	<u>.70</u>
MAV1: I just try to avoid being incompetent at performing the skills and tasks necessary for my job	<u>.65</u>
MAV5: I just hope I am able to maintain enough skills so I am competent at my job	<u>.53</u>
PAV3: I am concerned about taking on a task at work if my performance would reveal that I had low ability	<u>.89</u>
PAV4: I prefer to avoid situations at work where I might perform poorly	<u>.88</u>
PAV2: Avoiding a show of low ability is more important to me than learning a new skill	<u>.80</u>
PAV1: I would avoid taking on a new task if there was a chance that I would appear rather incompetent to others	<u>.70</u>
PAP2: I try to figure out what it takes to prove my ability to others at work	<u>.83</u>
PAP3: I enjoy it when others at work are aware of how well I am doing	<u>.82</u>
PAP1: I am concerned with showing that I can perform better than my co-workers	<u>.73</u>
PAP4: I prefer to work on projects where I can prove my ability to others	<u>.71</u>
EM2: It is important for me to have an external incentive to strive for in order to do a good job	<u>.79</u>
EM3: External incentives such as bonuses and provisions are essential for how well I perform my job	<u>.79</u>
EM4: If I had been offered better pay, I would have done a better job	<u>.73</u>
EM1: If I am supposed to put in extra effort in my job, I need to get extra pay	<u>.68</u>
Eigenvalues	6.25 4.00 2.80 2.67 2.06 1.87 1.18
% of variance	18.37 11.79 8.24 7.85 6.08 5.51 3.47

Note: Factor loadings less than .30 are not shown; **bold and underlined loadings included in the final scales**; IM = intrinsic motivation; WE = work effort; MAP = mastery-approach goals; MAV = mastery-avoidance goals; PAV = performance-avoidance goals; PAP = performance-approach goals; EM = extrinsic motivation.

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Table 1

Descriptive statistics, correlations, and scale reliabilities

	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	
1. Organization 1	0.28	-	-														
2. Organization 2	0.22	-	-.33**	-													
3. Organization 3	0.50	-	-.62**	-.54**	-												
4. Gender	1.63	-	-.06*	.06*	.01	-											
5. Educational level	4.53	1.34	.47**	-.19**	-.26**	.07*	-										
6. Tenure	10.27	9.60	-.32**	.11**	.20**	.01	-.42**	-									
7. Work effort (time 1)	4.18	0.48	.14**	-.11**	-.03	-.08**	.10**	-.10**	-	(.82)							
8. Intrinsic motivation (time 1)	3.81	0.64	-.12**	-.04	.14**	.00	-.02	.06*	.39**	-	(.82)						
9. Extrinsic motivation (time 1)	3.23	0.76	.09**	-.11**	.02	.10**	.05*	-.07**	.03	-.07**	-	(.76)					
10. Mastery-approach goals (time 1)	3.93	0.56	.03	-.07*	.03	.02	.21**	-.17**	.40**	.32**	.05	-	(.77)				
11. Mastery-avoidance goals (time 1)	3.74	0.62	.06*	-.08**	.01	-.13**	-.15**	.03	.22**	.03	.14**	-.05*	-	(.79)			
12. Performance-approach goals (time 1)	3.22	0.67	-.07*	-.09**	.13**	-.02	.10**	-.10**	.20**	.09**	.24**	.22**	.19**	-	(.84)		
13. Performance-avoidance goals (time 1)	2.09	0.65	-.10**	.03	.07**	.06*	-.13**	.04	-.25**	-.16**	.16**	-.38**	.08**	.24**	-	(.89)	
14. Work effort (time 2)	4.16	0.50	.16**	-.14**	-.02	-.10**	.10**	-.08**	.61**	.32**	.05	.31**	.16**	.16**	-.17**	-	(.84)

$N = 1441$; coefficient alphas indicating scale reliabilities are in parentheses; * = $p < .05$, ** = $p < .01$

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Table 2

Regression analyses of the direct and moderated relationships

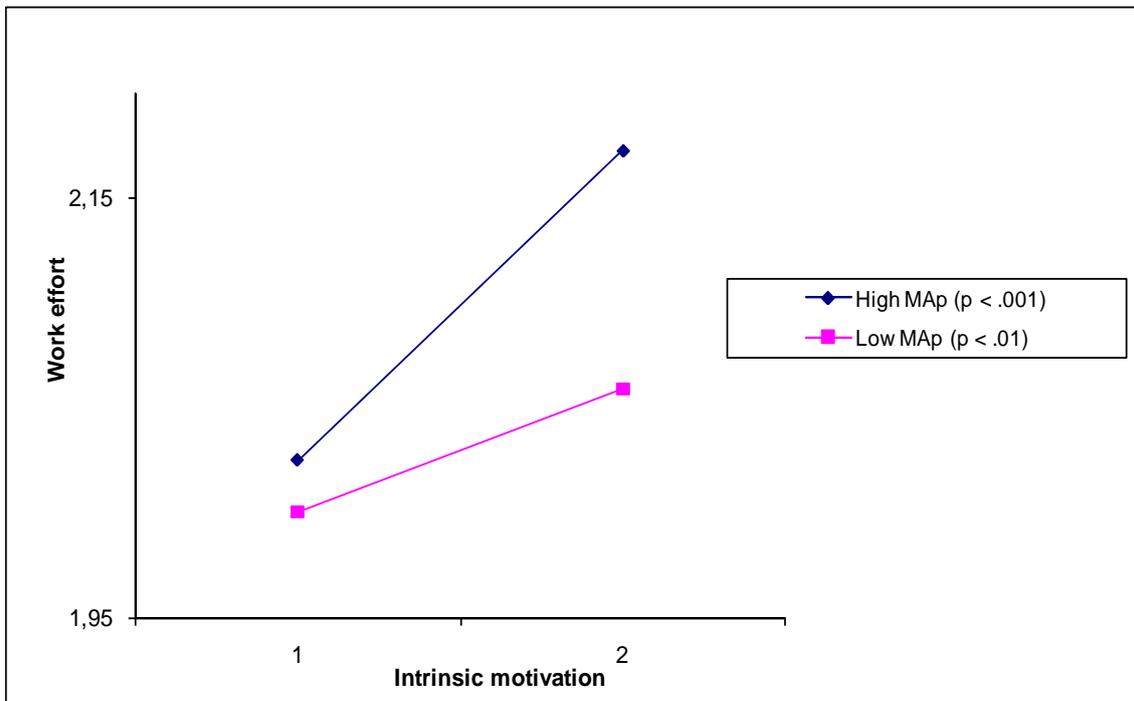
	Work effort (time 2)			
	Step 1	Step 2	Step 3	Step 4
Organization 2	-.10***	-.11***	-.12***	-.11***
Organization 3	-.06*	-.09**	-.09**	-.09**
Gender	-.05*	-.05*	-.05*	-.05*
Educational level	.02	.01	.00	.00
Tenure	.01	.01	.01	.01
Work effort (time 1)	.59***	.54***	.51***	.51***
Intrinsic motivation (time 1)		.12***	.11***	.10***
Extrinsic motivation (time 1)		.03	.02	.02
Mastery-approach goals (time 1)			.07*	.07**
Mastery-avoidance goals (time 1)			.02	.02
Performance-approach goals (time 1)			.03	.03
Performance-avoidance goals (time 1)			.01	-.01
Intrinsic motivation x Mastery-approach				.06*
Intrinsic motivation x Mastery-avoidance				.04
Intrinsic motivation x Performance-approach				.02
Intrinsic motivation x Performance-avoidance				.02
Extrinsic motivation x Mastery-approach				.02
Extrinsic motivation x Mastery-avoidance				.05*
Extrinsic motivation x Performance-approach				.05
Extrinsic motivation x Performance-avoidance				-.02
ΔR^2		.01	.00	.01
R^2	.38	.39	.39	.40
F	144.50***	113.72***	77.01***	47.48***
ΔF		13.69***	2.59*	2.33*

Standardized regression coefficients are shown; * $p < .05$; ** $p < .01$; *** $p < .001$

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Figure 1

The Moderating Role of Mastery-Approach Goals on the Relationship between Intrinsic Motivation¹ and Work Effort

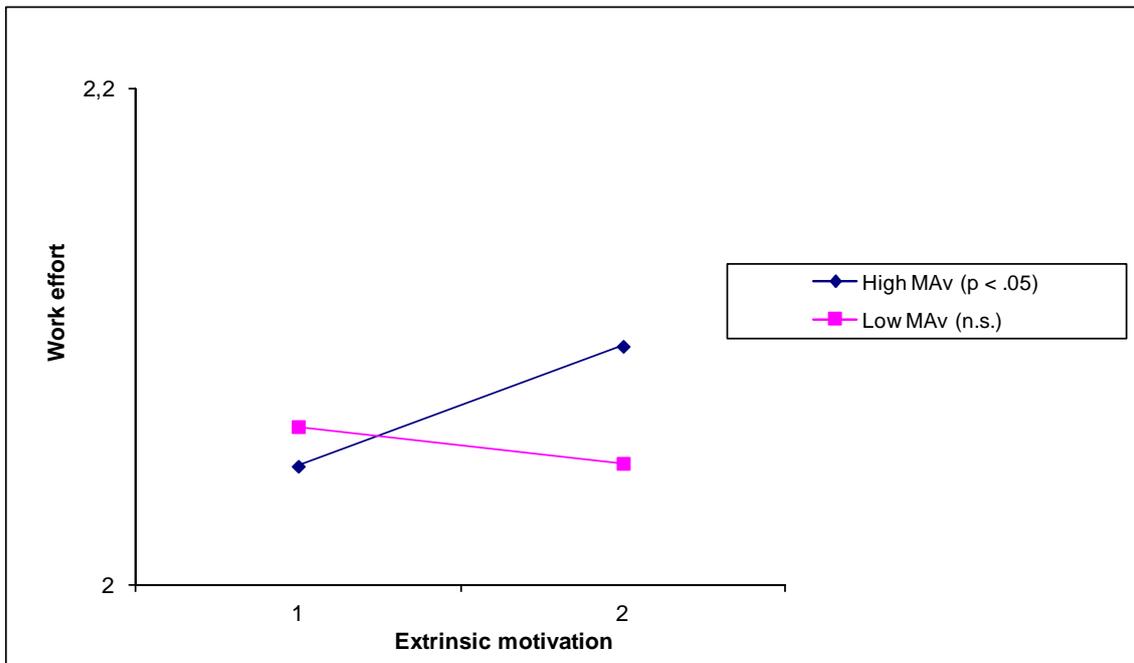


¹ Intrinsic Motivation: One standard deviation below the mean = '1'; One standard deviation above the mean = '2'.

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Figure 2

The Moderating Role of Mastery-Avoidance Goals on the Relationship between Extrinsic Motivation² and Work Effort



² Extrinsic Motivation: One standard deviation below the mean = '1'; One standard deviation above the mean = '2'.

Footnotes

ⁱ SDT also distinguishes between different forms of autonomous and controlled motivation, but as the focus of this paper is on intrinsic and extrinsic motivation in particular, readers are directed to Gagné & Deci (2005) for a more comprehensive presentation of the full SDT motivational continuum with its different subdimensions.

ⁱⁱ We are adhering to Elliot's (2005) call to refer to goal orientation as achievement goals in order to move towards a more specific and contextual level of analysis.

ⁱⁱⁱ Achievement goals are also used in different operational levels such as a combination of reason or aim (Dweck, 1986) or overarching orientation (Ames & Archer, 1988)

^{iv} We use mastery goal and performance goal as labels in this article. In contrast, other researchers refer to mastery goals as task goals (Nicholls, 1984) or learning goals (Dweck, 1999). Performance goals are often referred to as ego goals (Nicholls, 1984).

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