Examining the Construct Validity of Mastery-Avoidance Achievement Goals: A Meta-Analysis

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Examining the Construct Validity of Mastery-Avoidance Achievement Goals: A Meta-Analysis

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We used meta-analysis to obtain a comprehensive perspective on the construct validity of achievement goals, focusing on the most recent addition to the achievement goal framework, mastery-avoidance (Elliot & McGregor, 2001). Mastery-avoidance achievement goals positively correlated with need for achievement, perceived competence, competitiveness, interest, negative affect, and other achievement goals (mastery-approach, performance-approach, performance-avoidance) and negatively correlated with cognitive ability, help seeking, and performance. The correlations between mastery-avoidance and the other achievement goals were moderate. Thus, we conclude that mastery-avoidance is a conceptually and empirically distinct construct with unique antecedents and consequences and should be included in future studies on achievement goals.

The concept of achievement goals, also referred to as *goal orientation*,1 has proven to be a particularly robust motivation construct, demonstrated by the past 25 years of motivation research (Elliot, 2005). Achievement goals predict key outcome variables, such as performance (Ntoumanis & Biddle, 1999; Payne, Youngcourt, & Beaubien, 2007), feedback-seeking behavior (VandeWalle & Cummings, 1997), and ability to retain knowledge (Bell & Kozlowski, 2002). There has been some dispute in the literature, however, regarding which achievement goals lead to the best combination of outcome variables, causing confusion regarding which achievement goals employees should be selected on and encouraged to endorse (Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002). This discussion has become even more complicated in recent years, with the addition of the *mastery-avoidance* (MAV) achievement goal construct. When individuals espouse a

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1We are adhering to Elliot’s (2005) call to refer to *goal orientation* as *achievement goals* to address inconsistent labeling across domains in the achievement goal literature. In addition, we use the terms *mastery* and *performance* achievement goals. Other terms have been used, such as “learning” versus “performance” goals (Dweck, 1986).

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MAV goal, they focus on avoiding task-related incompetence and use a task-based or self-based referent to gauge their competence (Elliot, 1999; Elliot & McGregor, 2001).

The purpose of the current study is to review the research on MAV goals via meta-analysis. Meta-analysis yields a quantitative summary of the combined results of similar studies and may provide more meaningful results than any one study alone (Hunter & Schmidt, 2004; Schmidt & Hunter, 1977). Past research has suggested that adopting a MAV goal is not as desirable as adopting a mastery-approach (MAP) goal but is not linked to as many dysfunctional outcomes as performance-avoidance (PAV) goals. However, despite the fact that achievement goals hold much promise for understanding employee motivation, scholars have noted that the field of achievement motivation still has quite a number of problems, including discrepancies in how achievement goals are defined, conceptualized, and operationalized across studies (e.g., DeShon & Gillespie, 2005; Elliot & Murayama, 2008). These discrepancies across studies make it very difficult to make progress in understanding what exactly achievement goals are and how they relate to employee behaviors and attitudes. The current study takes an initial step in establishing the construct validity of MAV and the other achievement goals in the 2 × 2 framework (Elliot & McGregor, 2001) so that researchers and practitioners can understand what these goals are and how they relate to important work-related variables.

WHAT ARE ACHIEVEMENT GOALS AND WHY ARE THEY IMPORTANT?

Achievement goals refer to the type of mindsets individuals hold when engaging in achievement-related behavior, such as performing a task at work (Dweck & Leggett, 1988; Elliott & Dweck, 1988). During tasks such as these, individuals have different reasons for wanting to perform well (see Payne et al., 2007). Although achievement goal researchers agree that achievement goals stem from these different reasons for wanting to perform well, different researchers have taken various approaches for understanding achievement goals, resulting in numerous inconsistencies in defining, conceptualizing, and operationalizing achievement goals (DeShon & Gillespie, 2005).

Recognizing the disarray of the achievement goal literature, Elliot and Dweck (2005) organized the achievement goal literature according to two dimensions: competence and valences. First, according to the competence framework, individuals have different referents for gauging their competence on an achievement-related task. Using task-referential (evaluating absolute performance) or self-referential (evaluating past performance) competence evaluations are linked to mastery achievement goals, whereas using other-referential (evaluating others) competence evaluations is linked to performance achievement goals (Elliot & McGregor, 2001). Individuals who have a strong mastery orientation feel competent at a task when they have mastered the task itself or when they have improved relative to their own past performance, whereas individuals who have a strong performance orientation feel competent at a task when they have performed well on the task relative to others.

Furthermore, mastery and performance goals can be split according to valence, into approach and avoidance motivations. These approach and avoidance motivations represent whether the individual is focused on approaching success on the task or avoiding failure. Crossing the mastery versus performance orientation with the approach versus avoidance orientations creates a 2 × 2
framework for achievement goals (Elliot & McGregor, 2001), consisting of four constructs: mastery-approach (i.e., MAP), mastery-avoidance (i.e., MAV), performance-approach (i.e., PAP) and performance-avoidance (i.e., PAV) achievement goals.

Thus, mastery goals represent achievement orientations in which an individual gauges competence by using a self- or task referent. Mastery-avoidance, then, is a “focus on avoiding self-referential or task-referential incompetence … [that entails] striving to avoid losing one’s skills and abilities (or having their development stagnate), forgetting what one has learned, misunderstanding material, or leaving a task incomplete” (Elliot & McGregor, 2001, p. 61). The focus on avoiding incompetence may be especially salient in specific situations, such as among individuals who are older and losing skills or among newly hired employees who are focusing on mastering the basics of their job (Elliot & McGregor, 2001; Murphy, 1989), or in dynamic work environments. Employees may frequently need to master new skills and be put in challenging, novel situations that require them to adopt mastery-avoidance goals to just “get by.”

A comprehensive meta-analysis conducted by Payne et al. (2007) helped to summarize how MAP, PAP, and PAV achievement goals relate to theoretically related outcome variables. As would be expected by theory and past empirical research, MAP goals were linked to a number of positive outcome variables, including self-efficacy, adaptive learning strategies, and feedback-seeking, whereas PAV goals consistently were linked to a number of negative outcome variables, such as anxiety and decreased performance. Research has been less consistent for PAP goals, with findings showing that although they are related to performance, they are also related to negative outcomes, such as state anxiety, showing that they can have both positive and negative outcomes (Payne et al., 2007).

Due to the novelty of the MAV construct, it was not included in the meta-analysis conducted by Payne et al. (2007). More recently, Bodmann, Hulleman, and Schrager (2007) conducted a meta-analysis in the education domain specifically focusing on MAV. MAV was negatively related to both achievement (ρ = −.12) and interest (ρ = −.07), paralleling the PAV findings. Furthermore, tests of significant differences between correlations revealed MAV and PAV to be indistinguishable. Thus, results from this study indicate that MAV goals may be as harmful as PAV goals and that these goals may not be distinct. The authors noted limitations of their study, however, including significant sampling bias and questionable measurement used to capture the construct of MAV. Indeed, the finding that MAV and PAV are indiscriminable constructs challenges repeated factor analytic and path analysis findings that demonstrate the two not only to be distinct but differentially related to theoretically relevant variables (Baranik, Barron, & Finney, 2007; Conroy, Elliot, & Hofer, 2003; Cury, Elliot, DaFonseca, & Moller, 2006; Elliot & McGregor, 2001; Finney, Pieper, & Barron, 2004; Van Yperen, 2003).

EXPANDING THE NOMOLOGICAL NET OF MAV

Researchers investigating MAV have started to expand the nomological net of MAV to include more than the two variables that were investigated by Bodmann et al. (2007), achievement and interest, and to include both the antecedents and consequences of adopting certain achievement goals. Moller and Elliot (2006) summarized the most recent findings on MAV and noted that variables such as perceptions of competence predict achievement goal adoption and variables such as help-seeking are important, theoretically related outcomes of achievement goal adoption.
Beyond the variables identified by Moller and Elliot (2006), other important relationships in the achievement goal nomological net have been proposed by Payne et al. (2007), such as cognitive ability, need for achievement, and performance. Payne et al. and others (Cury et al., 2006) use social-cognitive theories of self-regulation (Bandura, 1989, 1991) as a theoretical framework for examining achievement goals. Specifically, individual difference variables (e.g., affect) lead to the formation of achievement goals and are mediated by self-regulatory constructs (e.g., goal-setting), leading to important work outcomes, such as job performance. One individual difference variable that was important in early theorizing about achievement goals (Dweck, 1986) is implicit theory of intelligence, which refers to individuals’ beliefs about the malleability of their intelligence and suggests that individuals endorse either entity or incremental theories of intelligence. Individuals endorsing an entity theory believe that intelligence is fixed. Conversely, individuals endorsing an incremental theory believe that intelligence is malleable. Individuals endorsing entity theories of intelligence adopt performance goals. As such, examining the way in which MAV is associated with variables inherent in individual theories of intelligence may help establish its construct validity. Specifically, because MAV is based on holding an incremental belief and PAV is based on holding an entity belief, MAV goals should be linked to less harmful outcomes than PAV goals.

However, because they both relate to avoidance orientation, PAV and MAV may show similar relationships with antecedent and outcome variables. Previous research suggests that PAV and MAV are similar in terms of the direction of the relationship with performance and perceived competence (Cury et al., 2006). However, consistent with empirical evidence suggesting that MAV goals are less deleterious than PAV goals (Cury et al., 2006), we expect MAV and PAV to differ in terms of their strength of relationship with these and similar variables (competitiveness, interest, and help-seeking).

INTERCORRELATIONS OF ACHIEVEMENT GOALS

It is important to meta-analytically examine how the achievement goals correlate with one another, especially in light of Bodmann et al.’s (2007) finding that MAV and PAV were extremely similar to one another. If MAV and PAV are, in fact, indistinguishable, there is little support for learning more about the MAV construct. If, however, these two goals are distinct, it may be that MAV helps researchers and practitioners to understand more about employee motivation. We expect MAV to be distinct from PAV but still related. In addition, we expect MAV to be positively correlated, although to a lesser degree, with MAP and PAP, as past research has supported this (Elliot & McGregor, 2001).

ANTECEDENTS OF ACHIEVEMENT GOALS

We used the Payne et al. (2007) findings as a foundation for the variables that we believed would differentially predict achievement goals and included variables noted by Moller and Elliot (2006) to be particularly relevant when examining MAV goals. Because the focus of the current meta-analysis is on MAV goals, our predictions primarily describe relationships between MAV and other constructs.
Cognitive Ability

Individuals’ ideas about their own intelligence is a central component of achievement goal theory (Dweck & Leggett, 1988), and although most of this research has focused on individuals’ perceptions of ability, researchers have found that objective measures of ability are related to achievement goals. Although the majority of this research has shown that the relationship between cognitive ability and achievement goals is null, there have been some mixed findings. Payne et al. (2007) found that cognitive ability was positively correlated with MAP achievement goals and negatively related to PAV achievement goals. Similarly to the PAV findings, we expect the cognitive ability will have a small, negative relationship with MAV goals.

Need for Achievement

The need for achievement refers to an individual’s desire to master challenging tasks. Based on Elliot and colleagues’ (e.g., Elliot & Dweck, 2005) idea that achievement goals should be framed using a competence (i.e., need for achievement) perspective, we believed that the need for achievement would be an important antecedent of MAV. Because the need for achievement describes a desire to establish competence relative to the task, self, and others, referents that are reflected in the achievement goals in the 2 × 2 framework, we expected it to be positively correlated with all of the achievement goals.

Perceived Competence

In early achievement goal theory, perceived competence was initially proposed to be a moderator between individuals’ beliefs about the malleability of intelligence and achievement goal adoption (e.g., Elliott & Dweck, 1988). Perceived competence refers to the level of confidence individuals have regarding their ability to accomplish a task. Although research has shown that there is little empirical support that perceived competence is a moderator of this relationship, perceived competence does appear to be an important antecedent of achievement goals (Cury et al. 2006). Specifically, individuals who believe that they are competent at a task are more likely to endorse approach achievement goals, whereas individuals who do not believe that they are competent are more likely to endorse avoidance achievement goals. Individuals high in perceived competence appear to be more resilient to failure and thus are less affected by performing poorly on a task in comparison to individuals low on perceived competence, who may react more strongly to failure, leading to avoidance goal adoption. Cury et al. (2006) found that perceived competence was negatively related to MAV, and we expected to find the same relationship.

Competitiveness

Competitiveness refers to the desire to engage in challenging tasks with others. Both PAP and PAV achievement goals have an other-referent when establishing competence, meaning that individuals compare themselves to others to establish their competence. Thus, the relationship between both types of performance goals and competitiveness should be strong. We believe that competitiveness may be an important variable to use to compare PAV and MAV achievement goals to determine if the two achievement goals are theoretically distinct. We predicted that the relationship
between MAV and competitiveness should be weaker than the relationship between PAV and competitiveness. Individuals espousing PAP and PAV goals should be more competitive than individuals espousing MAV and MAP goals because the former individuals use others as their competence referent, whereas the latter use the task or their own past performance as their referent, and so are not as concerned with how they compare to others.

**Interest**

Interest is the extent to which individuals enjoy performing achievement-related tasks. Individuals who are engaged or interested in a task are oftentimes absorbed in the task because they are enjoying themselves, not because of rewards outside of the task (e.g., getting paid). Because MAV is task and self-referent, we believe that individuals who espouse MAV goals will have some interest in the task that keeps them motivated, but not as much as individuals who strongly endorse MAP achievement goals. Individuals endorsing mastery goals should be more engaged than individuals endorsing performance goals because they view tasks as an opportunity for self-improvement. As such, MAV should show a stronger positive relationship with interest than PAV.

**Positive and Negative Affect**

In general, emotions and dispositions that could be classified as positive affect (e.g., Agreeableness) have been linked with the approach achievement goals (which has been especially clear with MAP goals), whereas negative affect (e.g., anxiety) has been linked with PAV goals (Pintrich & Schunk, 2002). Following this same pattern, we believe that because of the avoidance component of MAV goals, negative affect will be positively related and positive affect will be negatively related to MAV adoption.

**CONSEQUENCES OF ACHIEVEMENT GOALS**

We were able to identify two outcome variables that had enough studies to be meta-analyzed, help-seeking and performance. Previous research suggest that individuals endorsing incremental theories of intelligence (i.e., those espousing MAP and MAV goals) show higher levels of performance and feedback-seeking (Dweck & Leggett, 1988) than those endorsing entity theories of intelligence (i.e., those espousing PAP and PAV goals). We also used Payne et al.’s (2007) findings and Moller and Elliot (2006) summary as our theoretical framework and report results primarily in terms of MAV.

**Help-Seeking**

Help-seeking refers to reaching out to other individuals for assistance and includes behaviors such as asking questions and asking for feedback. Because help-seeking necessarily involves putting one in a situation where he or she may reveal incompetence, individuals who endorse PAV goals, and to some extent PAP goals, tend to avoid seeking help (VandeWalle, Ganesan, Challagalla, & Brown, 2000). Because individuals who endorse MAV goals are not necessarily concerned with
how they compare to others, we would expect help-seeking to help distinguish between MAV and PAV, such that the PAV will have a stronger negative relationship with help seeking than MAV.

Performance

Early achievement goal work focused on children’s “mastery” responses to failure, which involved sustained persistence despite setbacks compared to “helpless” responses to failure, which involved avoiding challenges and deterioration in performance (Dweck & Leggett, 1988). Since these seminal studies, researchers have found that mastery-approach goals are related to adaptive responses (e.g., deep-level processing) because the individual is motivated to learn, whereas performance-approach and performance-avoidance goals are related to maladaptive responses (e.g., cheating) because the individual is motivated by how he or she compares to others. Mastery-avoidance goals contain both the adaptive mastery component, which has traditionally been associated with good performance outcomes, but also the maladaptive avoidance component, which has been linked to many maladaptive performance outcomes. We expect to replicate the findings of Bodmann et al. (2007) and hypothesize that MAV goals will be negatively related to performance. However, we do not believe that MAV goals are as deleterious to performance as PAV goals, and so expect to find a smaller negative relationship than that found between PAV and general performance.

In sum, MAV achievement goals are the most recent addition to the achievement goal framework. Past research has indicated that MAV goals are the second most commonly endorsed achievement goal (Van Yperen, 2006). Thus, it is important for organizational scholars and practitioners to understand what leads to these goals and, more importantly, what the consequences are. To address this gap in the literature, we conducted a meta-analysis on MAV achievement goals and other theoretically relevant variables.

METHOD

Search Procedures

We identified relevant studies by conducting a comprehensive search of published and unpublished studies containing the term “mastery-avoidance.” First, we searched PsycINFO and Business Source Premier for articles in the work domain. We then searched Academic Search Premier, Sociological Collection, and Physical Education Index for articles in the sport domain and ERIC for articles in the education domain. We also searched Web of Science for articles in all domains. These databases include only peer-reviewed articles. Our intention was to include studies containing MAV; as such, we limited our search to only include achievement goal studies published after Elliot and McGregor (2001) proposed the 2 x 2 achievement goal framework. We also searched for studies that cited Elliot and McGregor (2001). Second, we searched the 2001 through 2007 Academy of Management and Society for Industrial and Organizational Psychology conference programs for unpublished MAV papers in the work domain. To identify unpublished papers in the sport and education domains, we searched the North American Society for the Psychology of Sport and Physical Activity and American Educational Research Association conferences, respectively. We contacted authors of these conference papers in order to obtain their conference...
studies and other unpublished studies that included MAV. Third, we contacted achievement goal researchers to obtain additional achievement goal manuscripts including the MAV dimension. Finally, we searched the references section of key meta-analyses and other sources to identify studies. Our search yielded 54 published and unpublished studies.

Inclusion Criteria

We focused on trait achievement goals and excluded studies that induced state achievement goals or manipulated the achievement goals context because there were not enough studies examining state achievement goals to meta-analyze. The majority of the studies included in the meta-analysis (63%) used Elliot and McGregor’s (2001) measure of achievement goals. The remaining 37% used other measures (e.g., Baranik et al., 2007; Conroy et al., 2003; Pintrich, 2000). In addition, we included only those studies that provided sample sizes as well as correlations, or statistics that could be converted into correlations. If studies included statistics that could not be converted into correlations, we contacted the authors to request correlation matrices.

Coding Process

To ensure a uniform coding process, we identified possible antecedents and consequences of achievement goals using Payne et al.’s (2007) goal orientation meta-analysis and Moller and Elliot’s (2006) overview of achievement goal research before coding. Next, we identified variables within the antecedents and consequences categories. Categorizing the variables in this way provided guidance in determining which variables should be combined. The first three authors met to discuss coding discrepancies and resolved any issues by consensus. These authors coded for the achievement goal measure, domain (work, education, and sport) and other characteristics of the sample (mean age, and demographics including race and gender). We recorded sample size, effect size, and reliability of measures of each variable. In cases where there was a discrepancy between the articles’ use of a variable and prevailing theory regarding antecedents and consequences, we coded the variable according to prevailing theory using Moller and Elliot’s (2006) achievement goal framework. After excluding studies that could not be coded, the final number of studies included in our analysis was 25, for a total of 33 distinct samples.

Antecedents of Achievement Goals

Cognitive Ability

Cognitive ability was measured by Scholastic Aptitude Test scores (Elliot & McGregor, 2001). Scholastic Aptitude Test scores were used as a measure of cognitive ability in all studies.

Need for Achievement

The need for achievement category included external regulation (behavior that is controlled by other-imposed rewards or constraints), introjected regulation (internally controlled behavior), identified regulation (engaging in an activity because it is highly valued), intrinsic motivation (being motivated by the activity itself), amotivation (not being motivated), and extrinsic motivation...
(being motivation by external rewards; Wang, Biddle, & Elliot, 2007). This category also included work and mastery subscales of the Work and Family Orientation Questionnaire (Spence & Helmreich, 1983). The Work and Mastery subscales assess individuals’ desire to work hard and engage in challenging tasks, respectively.

**Perceived Competence**

Perceived competence included general self-efficacy (Hargis, Senter, & LeBreton, 2004), self-determination, and competence valuation (Elliot & McGregor, 2001).

**Competitiveness**

Measures from the competitiveness subscale of the Work and Family Orientation Questionnaire, which assesses one’s desire to engage in interpersonal competition (Pastor, Barron, Miller, & Davis, 2007) were included in the meta-analysis.

**Interest**

Interest measures in the education domain included general and specific interest, general value, perceived class engagement, and instrumentality (Baranik, Barron, & Finney, in press; Sideridis, 2007a). Measures in the sport domain included enjoyment, effort, boredom, and physical activity participation (Wang et al., 2007).

**Trait Positive and Negative Affect**

Trait positive affect measures included joy, interest, and arousal (Sideridis, 2007b). Trait negative affect measures included general anxiety, cognitive anxiety (cognitive arousal), somatic anxiety (physical arousal), sadness, fear, hostility, and guilt (Elliot & McGregor, 2001; Radosevich, Allyn, & Yun, 2007; Sideridis, 2007b).

**Consequences of Achievement Goals**

**Help-Seeking**

In the work domain, help-seeking included feedback-seeking from both coworkers and supervisors (Baranik et al., in press). In the education domain, help-seeking included instrumental help-seeking (seeking help when struggling to understand material), formal and informal help-seeking (asking teachers and students for help, respectively), help-seeking threat (feeling like a failure when needing help), help-seeking avoidance (guessing rather than asking for help), and executive help-seeking (asking for help to avoid work or reduce work-related effort; Karabenick, 2003, 2004).
Performance

In the education and work domain, performance measures included grade point average, exam performance, and performance on math-related tasks. Sports-related performance was not included.

Analytical Techniques

We used Raju, Burke, Normand, and Langlois’s (1991) meta-analytic approach for conducting the analyses. Raju et al. argued that the use of other meta-analytical techniques, such as Schmidt and Hunter’s (1977) artifact distribution, rely on how closely the proposed artifact distributions match true population distribution. Given that in practice it is nearly impossible to measure the similarity between a proposed artifact distribution and a true population distribution, results using this method may be subject to potential inaccuracies (Raju et al., 1991). Furthermore, Raju et al. found that that their method was more accurate in estimating mean and variances of the population correlation than the Hunter and Schmidt (2004) method.

As suggested by Silver and Dunlap (1987), we first transformed sample correlation coefficients ($r_s$) to Fisher’s $z$ scores. Silver and Dunlap found that using correlation coefficients lead to greater negative bias than the positive bias associated with using $z$ transformations. Based on Raju et al.’s (1991) meta-analytic approach, missing reliabilities were replaced with the average reliability from available studies for all criteria and predictors. The $z$-transformed correlation coefficients were then corrected for sampling error and unreliability in the predictor and criterion. Raju et al.’s method allows for different calculations of corrections based on whether reliability information is missing (for a full discussion, see Raju et al., 1991). Finally, confidence and credibility intervals were computed around the corrected population correlation ($\rho$) using the standard error of the mean correlation and corrected population variance, respectively.

RESULTS

Analyses were conducted for the four subscales of achievement goals across eight antecedents and two consequences of achievement goals. Tables 1 and 2 display the number of effects included in each analysis ($k$), the total sample size across studies ($N$), the estimated population correlation ($\rho$), estimated population variance ($\sigma^2_{\rho}$), estimated error variance ($\sigma^2_e$), 95% confidence intervals, and

<table>
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<th>2</th>
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<td>1. Mastery-Avoidance</td>
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<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2. Mastery-Approach</td>
<td>.29 (.023)</td>
<td>—</td>
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<td>—</td>
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<tr>
<td>3. Performance-Avoidance</td>
<td>.46 (.013)</td>
<td>.13 (.069)</td>
<td>—</td>
<td>—</td>
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<tr>
<td>4. Performance-Approach</td>
<td>.23 (.021)</td>
<td>.34 (.025)</td>
<td>.51 (.027)</td>
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</table>

*Note. N = 9,014, k = 26 for all population correlations. $\rho$ = the estimated population correlation; ($\sigma^2_{\rho}$) = estimated population variance.*
95% credibility intervals, respectively, for antecedents and consequences. The confidence intervals explain the likely amount of error in the estimates and assess whether the population correlation is different from zero. The credibility intervals are used to examine the influence of moderators (Hunter & Schmidt, 2004; Schmidt & Hunter, 1977). Confidence intervals that includes zero would indicate a null relationship. Credibility intervals that contain zero would indicate the presence of a moderator.
Achievement Goals Intercorrelations

First, the correlations among achievement goals were estimated. As expected, MAV was moderately related to PAV ($\rho = .46$), and less related to PAP ($\rho = .23$), and MAP ($\rho = .29$). In addition, the correlations between MAP, PAP and PAV were all positively related (see Table 1).

Antecedents of Achievement Goals

**Cognitive Ability**

As expected, cognitive ability was negatively related to MAV ($\rho = -.15$). In addition, cognitive ability was also negatively related to MAP ($\rho = -.09$) and PAV ($\rho = -.25$). However, the relationship between PAP and cognitive ability was negligible ($\rho = .04$), indicating PAP is unrelated to cognitive ability.

**Need for Achievement**

As expected, the need for achievement was positively related to MAV ($\rho = .11$), MAP ($\rho = .49$), PAP ($\rho = .27$), and PAV ($\rho = .16$). The relationship between the need for achievement and MAP was higher than the relationships using the other achievement goals, which would be expected because both the need for achievement and MAP are approach orientations, focusing on task competence.

**Perceived Competence**

Contrary to expectation, MAV was positively related to perceived competence ($\rho = .16$). In addition, perceived confidence was positively related to MAP ($\rho = .37$) and PAP ($\rho = .26$), whereas PAV was negatively related to perceived competence ($\rho = -.08$).

**Competitiveness**

Competitiveness was positively related to all four achievement goals: MAP ($\rho = .12$), MAV ($\rho = .12$), PAP ($\rho = .62$), and PAV ($\rho = .32$). As expected, the relationship between MAV and competitiveness was weaker than the relationship between PAV and competitiveness. It is also interesting to note the high correlation between competitiveness and PAP, which highlights the importance of comparing oneself to others and wanting to be the best (i.e., being competitive) that is found when individuals endorse PAP goals.

**Interest**

There was a strong positive relationship between interest and MAP ($\rho = .61$). As expected, the relationship between interest and MAV ($\rho = .14$) was positive, although weaker than the relationship between interest and MAP. Similarly, PAP ($\rho = .17$) and PAV ($\rho = .09$) were also positively related to interest. The strong relationship between interest and MAP is supported by theory, such that individuals who endorse MAP goals are often absorbed in achievement-related tasks because of their focus on trying to learn and master the task.
Positive and Negative Affect

As expected, MAV was positively related to negative affect ($\rho = .30$). However, the confidence interval for the relationship between MAV and positive affect ($\rho = .04$) included zero. MAP ($\rho = .17$) and PAP ($\rho = .14$) were positively related to positive affect. Although both MAP ($\rho = -.02$) and PAP ($\rho = -.03$) were negatively related to negative affect, the relationships were null. PA V was strongly related to negative affect ($\rho = .20$) and negatively related to positive affect ($\rho = -.06$). However, the confidence interval for the relationship between PA V and positive affect included zero.

Consequences of Achievement Goals

Help-Seeking

Help-seeking was negatively related to MAV ($\rho = -.08$) and PA V ($\rho = -.21$) and, consistent with expectations, there was a much smaller relationship between MAV and help-seeking than between PAV and help-seeking behaviors. In line with previous findings, MAP ($\rho = .16$) was positively related to help-seeking, whereas PAP was virtually unrelated to help seeking ($\rho = .03$; see Table 3).

Performance

As expected, MAV was negatively related to performance ($\rho = -.09$). In addition, the relationship was not as strong as the relationship between PAV and performance ($\rho = -.18$). Both MAP ($\rho = .10$) and PAP ($\rho = .13$) were positively related to performance.

DISCUSSION

Although MAV has been present in the achievement goal literature for quite some time (Elliot & McGregor, 2001), some doubt has been conveyed about whether it is worth including alongside...
MAP, PAP, and PAV achievement goals (DeShon & Gillespie, 2005). Part of the reason MAV has not been as prominent in the literature as the other achievement goals is because its construct validity and predictive validity were relatively unknown. The purpose of the current study was to review the research on MAV achievement goals by using meta-analytic techniques to help clarify where MAV goals fit in the nomological net. Our findings show that, as expected, the need for achievement, competitiveness, interest, and negative affect were positively related to MAV goals, whereas cognitive ability was negatively related to MAV goals. Contrary to our expectations, perceived competence was positively related to MAV. Finally, MAV goals were negatively related to both help-seeking behavior and performance.

Overall, our findings replicated past research, which has found that MAP goals tend to be related to positive variables, whereas PAV goals tend to be related to negative variables (Payne et al., 2007). Our results indicate that, out of all of the achievement goals, MAP goals were the most strongly related to the need for achievement, perceived competence, interest, and positive affect. On the other hand, PAV goals were the most strongly related to competitiveness. Furthermore, PAV goals were negatively related to adaptive variables, such as perceived competence, positive affect, help-seeking behavior, and performance. MAV and PAP goals fall in between these two extremes. Although MAV goals were related to adaptive variables, such as need for achievement, perceived competence, and interest, they were also related to competitiveness, negative affect, and perhaps most important, positive outcomes variables such as help-seeking and performance. Overall these findings show that, although PAV goals appear to be the most detrimental achievement goal to endorse, MAV achievement goals also appear to be quite detrimental. Thus, despite the potentially misleading, positive “mastery” component of MAV goals, MAV goals appear to have little in common with MAP goals and the positive relationships MAP goals have with employee outcome variables, such as help-seeking behavior and performance.

In addition to showing what variables MAV is related to, it is perhaps more important, when discussing the nomological net of MAV, to show evidence for its discriminant validity, especially compared to PAV goals. Although some studies have suggested and shown that MAV goals are indistinguishable from PAV goals (e.g., Bodmann et al., 2007), our study found quite different results, and it suggests that MAV and PAV goals are distinct. We found that the meta-analytic correlation between MAV and PAV was moderate, suggesting that the two constructs do share some variance but appear to be distinct. Correlations among all of the achievement goals were low to moderate. Although based on theory and past research it is expected that achievement goals sharing either a competence component (e.g., PAP and PAV) or valence component (e.g., PAP and MAP) would be positively correlated, we did not expect to find positive correlations between achievement goals that did not share a competence of valence component (e.g., MAV and PAP). One possible explanation for this finding is that the studies used in the current article are more recent (2001–2007) than those used in past meta-analyses (e.g., 1993–2002; Payne et al., 2007) and researchers have been using different methods and measurements in the past 5 years than they have been in the past 20 years. For example, our sample probably reflected a more frequent use of Elliot and McGregor’s (2001) instrument for measuring achievement goals than have other meta-analyses and studies, and researchers have noted that this instrument contains items that can potentially assess both mastery and performance orientations with the same item (Elliot et al., 2008).

To further examine the discriminant validity of MAV, we closely examined how MAV and PAV related to other theoretically relevant variables. Individuals’ level of interest and competitiveness
were particularly notable in making this distinction because both of these constructs reflect differences in how individuals endorsing MAV and PAV goals approach achievement tasks. MAV goals should be more strongly related to interest than PAV goals because of the focus on using the task or past performance as a competence referent, and striving to master the task as opposed to striving to be the best. Our finding supported this, with MAV being more strongly correlated with interest with PAV. On the other hand, PAV goals should be more strongly related to competitiveness than MAV goals because of the focus on using others as a competence referent, and striving to be better than others. Again, our findings supported this. Of interest, MAV and PAV were quite different in their relationship to perceived competence, with MAV being positively related and PAV being negatively related to the construct. Although we initially thought that low perceived competence would lead individuals to adopt an avoidance orientation, and would relate to both MAV and PAV, it may be that low perceived competence only relates to individuals wanting to avoid failure relative to others. Perhaps because MAV goals do not invoke the same embarrassment that performance-oriented goals do, feeling low perceived competence does not necessarily lead mastery-oriented individuals to become more avoidant. Both MAV and PAV related in similar ways to the need for achievement and to negative affect. Finally, both MAV and PAV were negatively related to the outcome variables we examined, help-seeking and performance. Although PAV achievement goals had stronger relationships with both variables, MAV achievement goals were significantly related to both. Thus, preliminary results suggest that, despite having the adaptive “mastery” component, MAV goals do not appear to lead to productive outcomes. In fact, MAV goals were more harmful than PAP goals, which were positively related to performance and to help-seeking.

Above all else, our primary suggestion for future research is for achievement goal scholars to include measures of MAV in their data collection efforts. Although the importance of MAV goals was initially questioned, we have demonstrated in the current study that MAV goals are an important construct that can help us gain a better understanding of achievement motivation. Future research should focus on examining more antecedents and consequences of adopting MAV goals so that we can begin to see a more detailed picture of the construct validity of MAV. In particular, future research should look at how MAV predicts other important outcome variables, such as learning at work. Another direction for future research is to critically examine the definition, operationalization, and measurement of achievement goals (DeShon & Gillespie, 2005). Although the current study has addressed the issue of dimensionality of achievement goals, other issues such as the trait versus state nature of achievement goals need to be resolved to more clearly understand achievement goal functioning. Finally, future research should examine important moderators between achievement goals and outcomes, such as task characteristics and situational contexts (e.g., task difficulty).

The implication for achievement goal theory from the current study is primarily that MAV may be an important construct to consider when trying to best understand employees’ achievement motivation. The current study shows that employers should not encourage adoption of MAV goals, as these goals relate to less help-seeking and lower performance. Instead, adoption of approach goals, especially MAP goals, should be encouraged. Managers should strive to create an atmosphere that encourages success at work, rather than focusing on avoiding mistakes to help facilitate adopting approach-oriented goals.

Like all research, the current study was not without some limitations. Due to the novelty of MAV, the final number of studies that we included in our analysis was low. As such, we were
limited to the variables included in those studies. We categorized variables into antecedents and consequences using Payne et al. (2007) and Moller and Elliot (2006) as a guide. Although we feel that these sources provided a valuable theoretical framework, it also created some limitations to the current study. Similar to the aforementioned authors, we are unable to infer causality. We felt that, as MAV goals were the focus of the current study, it would detract from the focus of the article to also conduct meta-analytic comparisons that may have been available from the studies included in the meta-analysis but did not include MAV. We focused on including variables that were theoretically relevant to understanding the construct validity of mastery-avoidance, and as such our analyses on the studies that were included were not exhaustive. In addition, we combined variables across the work, sport, and education domains. Although this allowed us to conduct an analysis that yielded a broad estimate of how achievement goals function across domains, researchers in the work, sport, and education domains may have different conceptualizations of variables. It is important to note that our measure of performance was composed of performance measures from the education domain. Another limitation of our analysis is that we only included those unpublished studies from authors who responded to our requests for papers. As such, there may be other unpublished studies that were not included in the analysis.

Another potential limitation of the current study was that many of the articles that were used in the meta-analysis relied on Elliot and McGregor’s (2001) measure of achievement goals, the Achievement Goal Questionnaire (AGQ). Elliot and Murayama (2008) pointed out that the AGQ may not be the best measure of achievement goals when achievement goals are defined as different combinations of competence definitions (e.g., mastery vs. performance) and valences (approach vs. avoid), as the measure does not accurately reflect these conceptualizations. For example, the AGQ does not always accurately measure achievement goals, which is problematic, as goals are a central component to understanding how mastery and performance achievement goals function. It is important to note that Elliot and Murayama (2008) created a revised AGQ, which eliminated the negative affect component of mastery-avoidance that was found in the original AGQ, and that the revised AGQ found that mastery-avoidance was strongly related to the need for achievement. It is important to consider, when looking at the current study’s findings, that the items used to assess mastery-avoidance achievement goals did contain references to negative affect. Thus, future research using the more appropriate revised AGQ may find mastery-avoidance goals to be less strongly related to negative variables than the current study. In fact, Payne et al. (2007) found that the AGQ led to stronger relationships in their meta-analysis than other measures, such as VandeWalle (1997). We recommend that future studies conducted on achievement goals use the revised AGQ rather than the original.

This study demonstrated that MAV is an important achievement goal to consider. MAV achievement goals are empirically distinct from other achievement goals and predict important outcome variables, such as performance and help-seeking behavior. Thus, to fully understand the functioning of achievement goals, researchers should include MAV in future research. Results from the current study show that MAV appears to be a maladaptive goal to espouse when engaging in achievement-related behavior. Thus, our recommendation for practitioners is to discourage promoting a MAV mindset and to continue to encourage MAP achievement goals and perhaps even PAP achievement goals in some situations, as these two achievement goals have been linked to more positive attitudes, cognitions, and behaviors.
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REFERENCES

*References marked with an asterisk indicate studies included in the meta-analysis.


