

Technical report

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Rapid evidence assessment of
the research literature on the
effect of *goal setting*
on workplace performance



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About CEBMa

The Center for Evidence-Based Management is a non-profit member organisation dedicated to promoting evidence-based practice in the field of management. It provides support and resources to managers, consultants, organisations, teachers, academics and others interested in learning more about evidence-based management.



Foreword

As a professional body, the CIPD helps HR professionals and functions to develop effective strategies and practices in people management. We believe that applied research is a crucial step to achieving this. We thus see an important part of our role as making quality research available, distilling it into accessible forms and drawing out practical implications.

This technical report presents the methods and findings of a rapid evidence assessment (REA), a truncated form of systematic review, on the topic of goal setting. It is accompanied by another technical report of an REA on performance appraisals (Barends et al 2016). The insight and implications of both technical reports, which are written by the Center for Evidence-Based Management (CEBMa), are discussed in the discussion report, *Could do Better: Assessing what works in performance management* (Gifford 2016).¹

In publishing this technical report, we provide a step-by-step account of the evidence our REA uncovered on what is meant by goal setting, how it is assumed to work and what influences its effectiveness. A number of the academic papers referenced are accessible through the EBSCO online journals portal for CIPD members.²

We hope this report provides a useful reference and pointer to further reading on this important aspect of performance management.

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¹ All reports are available at cipd.co.uk/coulddobetter

² See www.cipd.co.uk/knowledge/journals

Introduction

This technical report presents the methods and findings of a rapid evidence assessment (REA), a truncated form of systematic review, on the topic of goal setting. It is accompanied by another technical report of an REA on performance appraisals. The insight and implications of both technical reports are discussed in the discussion report, *Could do Better: Assessing what works in performance management*. All reports are available at cipd.co.uk/coulddobetter

Rationale for this review

Given the widespread use of goal setting within management practice, the Chartered Institute of Personnel and Development (CIPD) approached the Center for Evidence-Based Management (CEBMA) to undertake a review to understand what is known in the scientific literature about the relationship between goal setting and the way in which this may impact workplace performance. This review will present an overview of this evidence.

Main question: What does the review answer?

What is known in the scientific literature about the impact of goal setting on workplace performance?

Supplementary questions

Other issues raised, which will form the basis of our conclusion to the main question above, are:

- 1 What is meant by goal setting (what is it)?
- 2 What is the assumed causal mechanism (how is it supposed to work)?
- 3 What is known about the positive or negative effect of goal setting on workplace performance (does it work)?
- 4 What is known about possible moderators and/or mediators that affect the relationship between goal setting and workplace performance?

Methodology

Search strategy: How was the research evidence sought?

The following four databases were used to identify studies: ABI/INFORM Global, Business Source Premier, PsycINFO and Web of Science. The following generic search filters were applied to all databases during the search:

- scholarly journals, peer-reviewed
- published in the period 1980 to 2016 for meta-analyses and the period 2000 to 2016 for primary studies
- articles in English.

A search was conducted using combinations of different search terms, such as 'goal setting', 'goal attainment', 'goal pursuit' and 'performance'. In addition, the references listed in the studies retrieved were screened to identify additional articles for possible inclusion in the rapid evidence assessment (REA).

We conducted eight different search queries and screened the titles and abstracts of more than 350 studies. An overview of all search terms and queries is provided in Appendix 1.

Selection process: How were the studies selected?

Two reviewers worked independently to identify which studies should be included. Where the reviewers disagreed on selection, a third reviewer assessed whether the study was appropriate for inclusion with no prior knowledge of the initial reviewers' assessments. The decision of the third reviewer was final.

Selection took place in two phases. First, the titles and abstracts of the 350+ studies identified were screened for their relevance to this review. In case of doubt or lack of information, the study was included. Duplicate publications were removed. This first phase yielded 50 meta-analyses and 30 controlled and/or longitudinal studies.

Second, studies were selected based on the full text of the article according to the following criteria.

Inclusion criteria

- 1 **type of studies:** quantitative, empirical studies
- 2 **measurement:** (a) studies in which the effect of goal setting on organisational outcomes was measured, or (b) studies in which the effect of moderators and/or mediators on the outcome of goal setting was measured
- 3 **context:** studies related to workplace settings.

Exclusion criteria

- 1 studies including goal setting as part of health-, lifestyle- or treatment-related interventions
- 2 studies focusing uniquely on students and the education context
- 3 studies on goal completion and goal orientations (that is, achievement goals, regulatory focus, preferred goals, preferred strategies for goals attainment) that do not evaluate goal setting *per se*.

This second phase yielded 34 meta-analyses and 19 controlled and/or longitudinal studies. An overview of the selection process is provided in Appendix 2.

Critical appraisal: What is the quality of the studies included?

In almost any situation, it is possible to find a scientific study to support or refute a theory or a claim, and sometimes to quite a large degree. It is therefore important to determine which studies are trustworthy (that is, valid and reliable) and which are not. The trustworthiness of a scientific study is first determined by its methodological appropriateness. For cause-and-effect claims (that is, if we do A, will it result in B?), a study has a high methodological appropriateness when it fulfils the three conditions required for causal inference: co-variation, time-order relationship, and elimination of plausible alternative causes (Shaughnessy and Zechmeister 1985). A study that uses a control group, random assignment and a before-and-after measurement is therefore regarded as the 'gold

standard'.³ Non-randomised studies and before-after studies come next in terms of appropriateness. Cross-sectional studies (surveys) and case studies are regarded as having the greatest chance of showing bias in the outcome and therefore sit lower down the ranking in terms of appropriateness. Meta-analyses in which statistical analysis techniques are used to pool the results of controlled studies are therefore regarded as the most appropriate design.

To determine the methodological appropriateness of the research design of the studies included, the classification system of Shadish et al (2002) and Petticrew and Roberts (2006) was used. The four levels of appropriateness used for the classification are shown in Table 1.

It should be noted, however, that the level of methodological appropriateness as explained above is only relevant in assessing the validity of a cause-and-

effect relationship that might exist between an intervention (for example goal setting) and its outcomes (performance), which is the purpose of this review. A case study, for instance, is a strong design for assessing why an effect has occurred or how an intervention might be (un)suitable in a particular context; it does a poor job of assessing the existence or strength of a cause-and-effect relationship (Donnelly and Trochim 2007).

In addition, a study's trustworthiness is determined by its methodological quality (its strengths and weaknesses). For instance, was the sample size large enough and were reliable measurement methods used? To determine methodological quality, all the studies included were systematically assessed on explicit quality criteria. Based on a tally of the number of weaknesses, the trustworthiness was downgraded

Table 1: Four levels of appropriateness used for classification

Design	Level
Systematic review or meta-analysis of randomised controlled studies ⁴	AA
Systematic review or meta-analysis of non-randomised controlled before-after studies	A
Randomised controlled study	
Systematic review or meta-analysis of non-randomised controlled or before-after studies	B
Non-randomised controlled before-after study	
Interrupted time series	
Systematic review or meta-analysis of cross-sectional studies	C
Controlled study without a pre-test or uncontrolled study with a pre-test	

³ It should be noted that randomised controlled studies are often conducted in an artificial (lab-type) setting - with students carrying out prescribed work tasks - which may restrict their generalisability. Non-randomised studies in a field setting - with employees carrying out their normal tasks within an organisational setting - on the other hand, have a lower level of trustworthiness, but can still be useful for management practice.

⁴ In a meta-analysis, statistical analysis techniques are used to pool the results of individual studies numerically in order to achieve a more accurate estimate of the effect. Most studies defined as systematic reviews include a meta-analysis. The difference between a systematic review and a meta-analysis is therefore mainly semantic. Indeed, in medicine a meta-analysis is often called a systematic review.

and the final level was determined as follows: a downgrade of one level if two weaknesses were identified; a downgrade of two levels if four weaknesses were identified, and so on.

Finally, the effect sizes were identified. An effect (for example a correlation, Cohen's *d* or ω) can be statistically significant but may not necessarily be of practical relevance: even a trivial effect can be statistically significant if the sample size is big enough. For this reason, the effect size – a standard measure of the magnitude of the effect – of the studies included was assessed. To determine the magnitude of an effect, Cohen's rules of thumb (Cohen 1988) were applied. According to Cohen a 'small' effect is an effect that is only visible through careful examination. A 'medium' effect, however, is one that is 'visible to the naked eye of the careful observer'. Finally, a 'large' effect is one that anybody can easily see because it is substantial.

Outcome of the critical appraisal

The overall quality of the studies included was high. Of the 34 meta-analyses, 13 included randomised and/or non-randomised controlled studies and were therefore qualified as level A or AA. Of the remaining 21 meta-analyses, one was graded as level B, and 14 were graded as level C. Finally, six studies were graded level D because they concerned traditional literature reviews. It should be noted, however, that some meta-analyses were graded level C because it was insufficiently clear what type of studies were included. The actual level of evidence of these meta-analyses (and as a result the overall quality of the studies included in this REA) may therefore be higher.

Most of the secondary studies were based on cross-sectional studies and were therefore graded level B or lower, with only seven qualified as level A. Of the 19 primary studies, 15 qualified as randomised controlled studies and were therefore graded level A. The remaining four studies concerned quasi-experimental or longitudinal designs and were graded level B or lower.

Findings

Question 1: What is meant by goal setting?

In one's personal life, a goal is simply something you are trying to do or achieve. In the domain of management, a goal can be defined as an observational or measurable organisational outcome to be achieved within a specified time limit (Locke and Latham 2002). Subsequently, goal setting is the process of consciously deciding goals you or the organisation want to accomplish and within what timeframe. In this review, we focus on conscious goals (self-set or assigned), aiming to steer behaviour at work and lever employee and organisational performance. As such, organisational goal setting can refer to desired work or business outcomes, as well as the intention or plan to act towards them. Goal setting is one of the most researched topics in the field of industrial and organisational psychology. Note that goal setting is not to be confused with creating competition. Moreover, one should realise that there is no noteworthy relation between competition and performance. Indeed, competition will motivate some employees to achieve; others, however, will be demotivated by competitive contexts and actually somehow avoid to achieve, for instance out of fear to fail (Murayama and Elliot 2012). As such, the aim of goal-setting interventions should not be to create a competitive climate.

Question 2: What is the assumed causal mechanism? (How is it supposed to work?)

Goal-setting theory was jointly developed by Edwin Locke and Gary Latham (Locke and Latham 1990). According to goal-setting theory, goals affect performance through four causal mechanisms (Latham 2004). First, goals serve a directive function. They direct an employee's attention and effort towards goal-relevant activities and away from goal-irrelevant ones. Second, goals have an energising function. As such, high goals lead to greater effort than low goals. Third, goals also affect persistence. When participants are allowed to control the time they spend on a task, hard goals prolong effort. Finally, goals affect action indirectly by leading to the arousal, discovery and/or use of task-relevant knowledge and strategies, which increases the odds for success (Locke and Latham 2002). While these four mechanisms describe how goal setting shapes an employee's performance, they do not explain where exactly the motivating nature of goal setting stems from.

Although goal setting undoubtedly affects performance, based on our review, we conclude that it is unclear to date how exactly it energises employees to perform. At best, different processes seem to mediate the effect of goal setting on performance and provide us with insights on when and how goal setting will be effective. Originally, goal-setting theory (Locke and Latham 1990,

as cited in Harkin et al 2015) proposed that the absolute size of the discrepancy between the current and desired states (that is, the distance from the goal) determines subsequent effort. In other words, goals energise employees to reduce the tension that their (that is, the goals) very existence has created. Yet, this does not mean that any challenging goal will motivate an employee. A necessary condition seems to be that an employee is committed to that specific target, meaning that they are determined to reach it. In other words, if there is no commitment to the goal, goal setting does not work. For instance, a goal's perceived importance or attractiveness, as well as the degree to which an employee believes they master the necessary skills to reach that goal, influence a person's commitment to that goal (Klein et al 1999). One meta-analysis, however, failed to find support for the central role of goal commitment in explaining why and when goal setting is effective (Donovan and Radosevich 1998). Other accounts have focused on the role of evaluation processes in explaining why goal setting improves performance. Locke and Latham (1990) argue that these effects are mediated by the potential for self-evaluation. That is, the goal-setting effect requires that employees have knowledge of their output (that is, feedback). As such, goals provide them with a yardstick for determining whether their current output reveals acceptable or unacceptable performance. Thus, it is the opportunity for self-evaluation provided by the opportunity to

‘Goal setting is one of the most researched topics in the field of industrial and organisational psychology.’

compare performance to a specific, difficult criterion that is supposed to be responsible for the goal-setting effect.

This assumption was overturned, however, by a meta-analysis showing that external sources of evaluation (for example, supervisor expectations and feedback), rather than self-evaluation, motivate people to perform. Finally, the most recent breakthrough in our understanding of goal-setting effects can be identified in the meta-analysis of Harkin and his colleagues (2015). According to their research, monitoring goal progress is a crucial process between setting and attaining a goal. This means that the monitoring of progress towards a goal, rather than just the formulation of it, seems to motivate people towards such specific attainment. In support of this theory, another meta-analysis showed that people seem to report stronger well-being in relation to successful goal pursuit (that is, making progress), compared with reports of well-being after the goal has been attained (Klug and Maier 2015).

Question 3: What is the effect of goal setting on workplace performance?

Over the past decades, high-quality meta-analyses in a wide range of disciplines (management, medicine, sports, rehabilitation, prevention, and so on) and populations (patients, athletes, managers, senior adults, children, and so on) have demonstrated the positive effects of goal-setting interventions on performance outcome. As a result, it is now generally accepted that goal setting is effective and valuable for steering and improving performance. Overall, challenging (that is, in terms of difficulty) and specific (compare SMART) goals have a moderately positive effect on performance. Adding to the robustness of this finding is the fact that goal setting, as an intervention, also affects behaviour or achievement in areas other than workplace performance. Meta-analyses suggest that, among others, goal-setting interventions can increase learning (Mesmer-Magnus and Viswesvaran 2007, Sitzmann and Ely 2011), job search success (Liu et al 2014), training transfer (Rahyuda et al 2014), well-being (Klug and Maier 2015), physical activity (McEwan et al 2016, O’Brien et al 2015) and fitness-related outcomes (Abraham and Graham-Rowe 2009). Although goal setting is accepted as one of the most effective organisational interventions, some scholars believe that it should not be used as a one-size-fits-all, over-the-counter treatment for motivation. They suggest that managers need to approach goal setting as a prescription-strength

medication that requires careful dosage and consideration of any harmful side effects. Indeed, some randomised controlled studies (level A) suggest that overuse of extremely high goals combined with economic incentives may lead to diminished self-regulatory capacity and unethical behaviour, especially when people fall just short of reaching their goals, although the effect sizes relating to this were rather small (Schweitzer et al 2004, Welsh and Ordoñez 2014).

Question 4: What is known about possible moderators that affect the relationship between goal setting and workplace performance?

1 Difficult and challenging goals have a moderately positive effect on performance (level A)

Numerous meta-analyses have demonstrated that difficult, challenging goals have a moderately positive effect on performance, compared with easy goals (Tubbs 1986, Mento et al 1987, O’Leary-Kelly et al 1994, Locke and Latham 2002, 2006, Brown 2005, Brown and Warren 2009, Brown et al 2011, Rahyuda et al 2014). Goals must therefore be made as difficult but as realistic as the individuals can cope with in order for them to be motivating.

2 Clear, specific goals have a moderately positive effect on performance (level A)

Several meta-analyses have indicated that clear, specific goals have a moderately positive effect on performance, compared with non-specific goals or do-your-best instructions (Tubbs 1986, Mento et al 1987, Locke and Latham 2002, 2006, Brown and Warren 2009, Brown 2005, Abraham and Graham-Rowe 2009, O’Leary-Kelly et al 1994, McEwan et al 2016, Rahyuda et al 2014). The goal

must therefore be very focused and clear, and achievable within a certain time frame. It is not only work performance in general that benefits from specific goals, but also specific performance domains, such as negotiation outcomes (Jäger et al 2015) or the efficacy, efficiency and speed-to-market of new product development teams (Sivasubramaniam et al 2012).

3 However, when employees must first acquire requisite knowledge or skills to perform the task, specific and challenging goals can have a negative effect on performance (level A)

Several randomised controlled studies have demonstrated that when a task requires the acquisition of knowledge before it can be performed effectively, a general goal (for example ‘do your best’) leads to higher performance than a specific high goal (Kanfer and Ackerman 1989, Mone and Shalley 1995, Winters and Latham 1996). In fact, when knowledge acquisition is necessary for effectively performing a task, setting a specific high goal for a level of performance can lead people to focus on the potential negative consequences of failure rather than on task-relevant ways to attain the goal (Brown and Latham 2002).

4 In addition, when employees need to acquire knowledge or skills to perform a set task, or when the task involved is complex, behavioural goals and learning goals tend to have a more positive effect on performance than outcome goals (level A)

In addition to the findings reported above, several randomised controlled studies have demonstrated that when a simple task is involved, an outcome goal (focused on results) leads to higher performance than urging people to do their best, whereas when a complex

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task is involved, a learning goal (for example adopting a specific number of strategies or procedures to perform the task correctly) leads to higher performance than either an outcome goal or urging people to do their best (Winters and Latham 1996, Brown and Latham 2002, Latham and Brown 2006, Porter and Latham 2013). A possible explanation for this finding is that whereas the setting of a performance goal increases one's motivation to implement one's knowledge, the setting of a learning goal focuses attention on developing one's task-related ability through knowledge acquisition. This finding suggests that when attempting new or complex tasks, organisations should set specific, difficult learning goals as opposed to performance-outcome goals.

5 Distal goals are less effective when people are learning new skills (level A)

Several randomised controlled studies suggest that people who set proximal (shorter-term) as well as distal (longer-term) goals experience better transfer of training (maintenance of learned material over time and generalisation of learned material from the classroom to the workplace) relative to those who set only distal outcome goals (Seijts and Latham 1999, Brown 2005, Brown and Warren 2009). This finding suggests that when people are learning new skills, proximal plus distal goals may increase transfer in the short run, whereas distal goals only result in increased transfer once people have mastered the task.

6 The effect of goal setting varies across workers' ability levels (level A)

A recent randomised controlled study found that low-ability workers for whom goals were likely to be challenging increased their performance by 40% in the goal-setting treatment with respect to the baseline, while high-ability workers achieved the same level of performance across treatments (Corgnet et al 2015). This finding confirms the outcome of a previous randomised controlled study that 'ability-based' goals are more effective at improving performance than a 'one-size-fits-all' approach, where everyone is assigned the same performance target (Jeffrey et al 2012).

7 Goal setting shows stronger positive effects on performance when combined with some form of performance feedback or progress monitoring (level AA)

Several meta-analyses demonstrate that, more than merely setting a standard for performance, a crucial part of trying to achieve a goal is the ongoing evaluation of one's performance relative to that standard and the subsequent response (for example Harkin et al 2015). As goal-setting interventions in which performance feedback is provided allow or encourage the participant to make such an evaluation, they have a moderately strong, positive effect on performance, compared with interventions without feedback (Klein et al 1999, McEwan et al 2016, Patterson et al 2010). Rather than emphasising feedback provision, interventions can also encourage progress-monitoring. Indeed, employees can search for feedback by themselves, for instance, by frequently and deliberately assessing progress

towards goal attainment, or progress feedback can be inherent to the task (Harkin et al 2015, Harkins and Lowe 2000). In other words, the source of feedback, impersonal or personal, internal or external, does not seem to matter (Neubert 1998), as long as it allows the employee to monitor their progress. Furthermore, progress-monitoring has larger effects on goal attainment when the outcomes are reported or somehow made public, and when the information is physically recorded, which is often the case in organisation and work contexts through meetings, forms and reports.

8 Participative goal setting, or self-set goals, are thought to improve performance over assigned goals; however, there is no clear, unequivocal support for this assumption (level A)

Traditionally, participative³ goal setting, or self-set goals, are associated with improved performance over assigned goals (Patterson et al 2010). One explanation for this is that employees are more committed to their goals when they are allowed to decide for themselves which ones to strive for (Klein et al 1999). A judicious meta-analysis by Harkins and Lowe (2000), however, questions this assumption. It finds that experimenter-set goals are actually more potent than self-set goals, and the potential for evaluation by the experimenter is more potent than the potential for evaluation by the self. In other words, assigned goals are by definition tied to some form of external expectations, control or evaluation, which are observed to be more motivating than contexts stripped of all form of external expectations and evaluation (Klein

³ Participation refers to influence-sharing among supervisors and subordinates. In general, the following levels of influence-sharing can be distinguished: (1) tell (assigned without rationale); (2) tell-and-sell (assigned with rationale); (3) consultation (leader consults the employee/team and then decides); (4) participation (joint decision of employee/team and leader); (5) delegation (self-set goal, the employee/team decides).

et al 1999). Moreover, participation does not seem to moderate the effect of group goals on group performance (Kleingeld et al 2011).

To summarise, it is unclear in which situations self-set goals or participative goal setting are actually more effective than assigned goals. As some form of external evaluation is always present in the work context, in terms of performance gains, it does not seem to matter whether goals are self-set or assigned. Assigned goals are actually associated with higher effect sizes, which could be attributed to assigned goals often being more challenging than self-set goals. However, it is unclear how the distinction between assigned and self-set goals relates to employee satisfaction and well-being, as it is well known that a sense of autonomy plays a crucial role in these employee outcomes.

9 Group goals have a moderate to large positive effect on group/team performance (level A)

Setting goals for a group or team, so-called interdependent goals, has a moderately positive effect on the performance of that unit (O'Leary-Kelly et al 1994, Courtright et al 2015, Kleingeld et al 2011). Just as with individual goal setting, this is especially the case as goals increase in difficulty and specificity. The degree to which team members can participate in formulating the goals, surprisingly, seems to have no impact on the performance of the team (Kleingeld et al 2011). In organisation and work contexts, the goals of the team can often not be seen independently of the individual goals set for the team members. In this regard, a distinction should be made between egocentric goals, aimed at

maximising individual performance, and group-centric goals, aimed at maximising the individual contribution to the group's performance. Indeed, egocentric goals yield a particularly negative effect on group performance, while group-centric goals show positive effects. To summarise, group goals have a robust effect on group performance. Individual goals can also promote group performance, but they should be used with caution (Kleingeld et al 2011). Managers should monitor any potential risk for conflict between their team's shared goals and the goals of individual members.

10 Forming implementation intentions increases the odds for goal attainment (level AA)

Prompting people to form implementation goals, namely if-then plans specifying when, where and how they will achieve their goals, helps them to succeed in attaining their goals. Implementation goals can also include strategies for dealing with potential setbacks that could prevent someone from attaining their goal (Toli et al 2016, Webb and Sheeran 2008). However, except for Jäger et al (2015), we did not identify research on implementation goals in the organisation or work context. The degree to which this conclusion can be generalised with respect to organisations and their employees is hence unclear.

11 Goals rooted in personal interests show a somewhat stronger positive effect on performance compared with goals pursued for external reasons (level C)

In the late 1990s, several studies found that goals rooted in personal interests and values (often referred

to as 'autonomous' goals) were regularly associated with greater success (for example Sheldon and Elliot 1998). These findings were confirmed by more recent studies suggesting that people were significantly more likely to achieve autonomous goals than goals pursued for external reasons (Koestner et al 2002).

12 People with a learning orientation tend to set higher goals for themselves and perform better (level A)

Meta-analytic research on goal orientations has found that people with a learning orientation (that is, a focus on improving oneself), in contrast with people with a performance orientation (that is, a focus on doing better than others), set higher goals for themselves and perform better (Payne et al 2007, Van Yperen et al 2014). These conclusions were observed across different achievement domains and populations, namely students, athletes and workers. In summary, employees' beliefs about the malleability of their own skills and abilities has an impact on their goal pursuit and performance (Burnette et al 2013).

13 The concept of self-construal is associated with the way in which people select and pursue personal goals (level A)

A randomised controlled study has demonstrated that individuals with an independent self-construal (enjoying being unique and different from others) gravitate towards personal-goal pursuit, whereas individuals with interdependent self-construal (feeling that it is important to maintain harmony within the group) prioritise group goals above personal ones (Downie et al 2006).

14 The degree to which people engage in or set challenging goals for themselves depends on some degree on their self-confidence, personality and cognitive ability (level B/C)

People who believe they have the ability to succeed in a task or reach a goal (that is, self-efficacy) set more difficult goals for themselves (Brown et al 2011). The same conclusion is true for people with a conscientious personality (Judge and Ilies 2002, level B) and high cognitive ability (Brown et al 2011). These three individual differences show a moderate to strong association with self-set goal difficulty. Meanwhile, people with a neurotic personality tend to set lower goals for themselves. Their personality is characterised by the experience of unpleasant emotions such as anxiety, anger, depression and vulnerability (Judge and Ilies 2002, level B). Finally, one non-systematic review also related self-efficacy to more proactive goal setting, faster goal attainment, stronger effort and persistence (Bandura and Locke 2003).

15 The degree to which employees believe their own abilities can be developed predicts the nature of the goals they will pursue, as well as how they will pursue them (level C)

Beliefs that individuals hold on the nature of human attributes determines the nature of the goals they will pursue and how they will pursue them. These beliefs are referred to by implicit theories. People who adhere to incremental theories believe that human attributes such as skills and abilities are malleable and that they can be developed through training and practice. People who stick to entity theories, on the other hand, are convinced that one's talents are fixed and will not really improve through learning and effort. With reference to goal setting, people who hold incremental views: (1) focus on improving their own performance (that is, learning goals) rather than performing better than others (that is, performance goals); (2) are persistent in their efforts to attain their goals (that is, mastery-oriented strategies) rather than diverting their attention and resources away from the goal (helpless-oriented strategies); and (3) experience positive emotions and expectations in achievement contexts rather than negative emotions and expectations (Burnette et al 2013).

Synthesis

The theory of goal setting states that there is a positive, linear relationship between a challenging, specific goal and task performance. Thus, the theory makes it explicit that setting challenging, specific goals leads to higher performance than urging people to do their best, and that this positive effect is present in both self-set and assigned goals as well as individual and group goals. The theory is confirmed by hundreds of high-quality empirical studies and can therefore be regarded as one of the most 'evidence-based' interventions in organisation and people management. In addition, the evidence clearly demonstrates that the effect of goal setting can be enhanced when it is combined with some form of performance feedback or progress monitoring (in particular when the outcomes are reported or somehow made public), and when people specify when, where and how they will achieve their goals. Finally, some empirical studies suggest that goals rooted in personal interests will have a somewhat stronger effect on performance than goals pursued for external reasons.

Although goal setting can be regarded as one of the most effective organisational interventions, this REA also demonstrates that goal setting should not be used as a one-size-fits-all, over-the-counter treatment to boost performance, as there are several moderators that affect the outcome. For example, when employees must first acquire knowledge or skills to perform a task, or when the task involved is complex, specific and challenging, goals can have a negative effect on performance. In those situations, behavioural goals and learning goals are more effective, as outcome goals only result in increased performance once people have mastered the task. Furthermore, this REA indicates that the effect of goal setting varies across workers' ability levels, implying that 'ability-based' goals will be more effective than a 'one-goal-for-all' approach, where everyone is assigned the same performance target.

In addition to these contextual factors, several personality traits affect the relationship between goal setting and task performance. For example, several studies suggest that: (1) people with a learning orientation (that is, focus on improving oneself), in contrast with people with a performance orientation (that is, focus on doing better than others), set higher goals for themselves and perform better; (2) the degree to which people set challenging goals partly depends on their self-confidence, personality and cognitive ability; and (3) the degree to which employees believe their own abilities can be developed predicts the nature of the goals they will pursue, as well as how they will pursue them.

Finally, some studies suggest that overuse of extremely high goals combined with economic incentives may lead to diminished self-regulatory capacity and unethical behaviour.

Conclusion

Goal setting is one of the most powerful and evidence-based interventions for enhancing performance, provided that moderating factors such as goal attribute, type of task, organisational context and employee characteristics are carefully taken into account.

Limitations

This REA aims to provide a balanced assessment of what is known in the scientific literature about the effects of goal setting on individual work performance by using the systematic review method to search and critically appraise empirical studies. However, in order to be 'rapid', concessions were made in relation to the breadth and depth of the search process, such as the exclusion of unpublished studies, the use of a limited number of databases, and a focus on empirical research published between 1996 and 2016 for meta-analyses and from 2000 to 2016 for primary studies. In addition, the search for empirical studies was based only on the term 'goal setting'. As a consequence, some relevant studies may have been missed.

A second limitation concerns the critical appraisal of the studies included, which did not incorporate a comprehensive review of the psychometric properties of the tests, scales and questionnaires used. In addition, it should be noted that most of the studies included used performance ratings as an outcome measure, not actual performance, so the evidence is often indirect.

Finally, this REA focused only on meta-analyses and high-quality single studies, that is, studies with a control group and/or a before-and-after measurement. For this reason, cross-sectional studies were excluded. As a consequence, new, promising findings that are relevant for practice may have been missed.

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Appendix 1

Search terms and hits

ABI/Inform Global, Business Source Elite, PsycINFO
Peer-reviewed, scholarly journals, July 2016

Search terms	ABI	BSP	PSY
S1: ti("goal setting") or ab("goal setting") or ti(goalsetting) or ab(goalsetting)	1,026	1,113	2,985
S2: S1 AND filter ti(meta-analy*) OR ab(meta-analy*) OR ti("systematic review") OR ab("systematic review")	15	19	74
S3: S1 AND filter CEBMa controlled/longitudinal, and limited to 2000–2016	75	86	48

CEBMa filter for controlled and/or longitudinal studies:

- 1 ti(experiment* OR controlled OR longitudinal OR randomized OR quasi OR "field study")
- 2 ab(experiment* OR controlled OR "control group" OR "comparison group" OR quasi OR longitudinal OR randomized OR randomly OR laboratory OR "field study" OR "control variable")

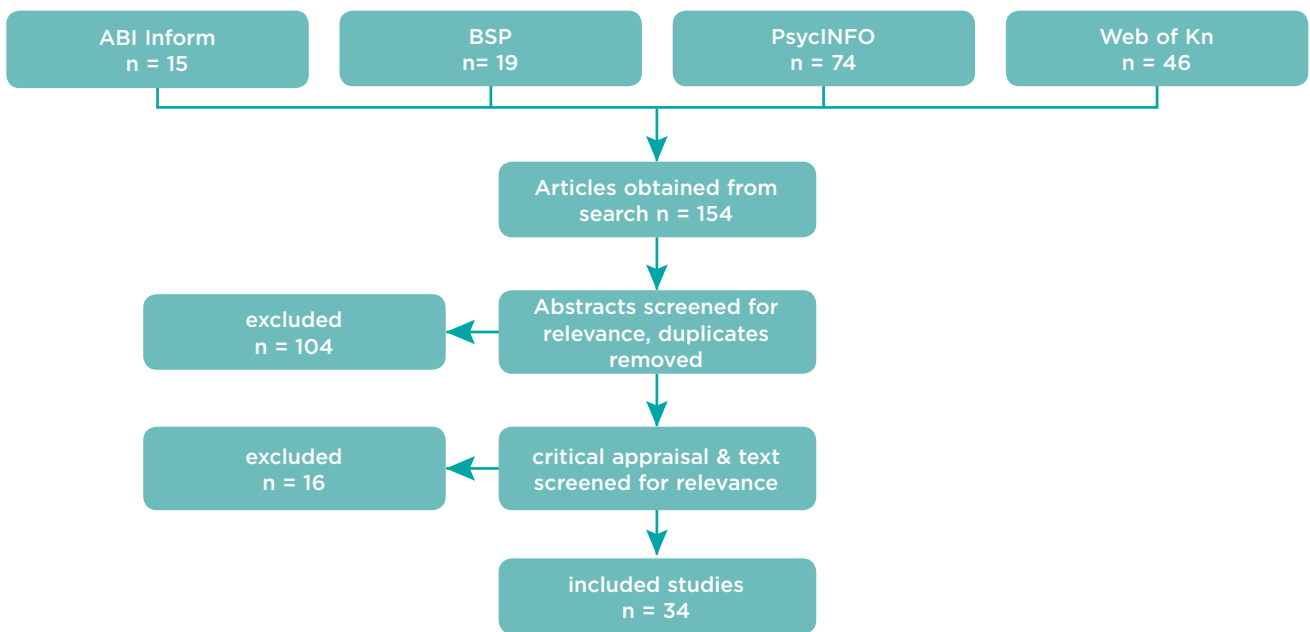
Web of Knowledge, peer-reviewed, scholarly journals, July 2016

Search terms	results	PSY
S1: TOPIC: ("goal setting" AND (meta-anal* OR review*))	495	2,985
S2: TOPIC: ("goal setting" AND (meta-anal* OR review*)) Refined by: research areas: (psychology or business economics or operations research management science or public administration or behavioral sciences)	91	74
S3: TOPIC: (goal* AND (performance) AND (employee* OR work* OR organi?ation*) AND (meta-anal* OR "systematic review*"))	225	48
S4: TOPIC: (("goal attainment" OR "goal pursuit" OR "goal commitment" OR "goal content" OR "goal specificity" OR "goal content" OR "goal interdependence" OR "competitive goal" OR "cooperative goal" OR "group goal" OR "goal level" OR "goal difficulty" OR "set goal*" OR "promotion goal*" OR "prevention goal*" OR "goal congruence") AND meta-anal*)	62	
S5: TOPIC: (("goal striving" OR "goal clarity" OR "primed goal*" OR "goal priming" OR "*conscious goal*") AND meta-anal*)	5	
Total		46

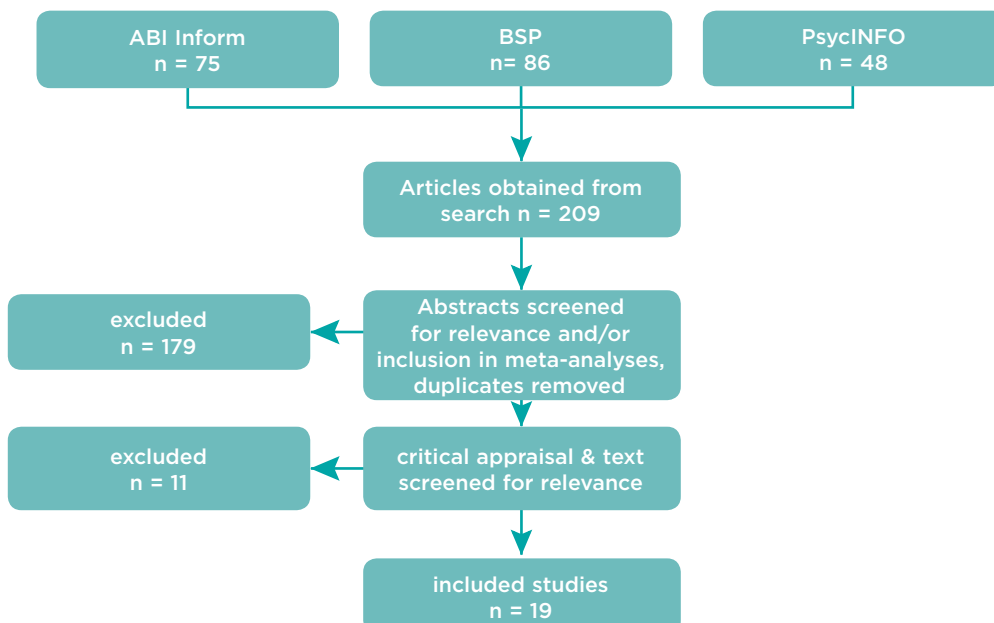
Appendix 2

Study selection

Meta-analyses or systematic reviews



Longitudinal and/or controlled studies





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