



EMPLOYEE RECOGNITION AND NON-FINANCIAL REWARDS

An evidence
review



Scientific summary
January 2022

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1 Background

One way in which employers attempt to enhance organisational effectiveness and performance is through performance management systems that do three things:

- 1 Show employees that their contribution matters.
- 2 Give employees frequent and quality feedback.
- 3 Recognise and reward employees for their contributions.

Although these three hypotheses appear to make sense from a managerial perspective, it is yet unclear whether they are supported by scientific evidence. This review presents an overview of a rapid evidence assessment (REA) on the scientific evidence related to the third area: that is, on the link between recognition or rewards and workplace performance. Previous REAs have addressed the first and second areas.

2 What is a rapid evidence assessment (REA)?

Evidence reviews come in many forms. One of the best known is the conventional literature review, which provides an overview of the relevant scientific literature published on a topic. However, a conventional literature review's trustworthiness is often low: clear criteria for inclusion are often lacking and studies are selected based on the researcher's individual preferences. As a result, conventional literature reviews are prone to severe bias. This is why REAs are used. This type of review uses a specific research methodology to identify the most relevant studies on a specific topic as comprehensively as possible, and select appropriate studies based on explicit criteria. In addition, the methodological quality of the studies included is assessed by two independent reviewers on the basis of explicit criteria. In contrast to a conventional literature review, REAs are transparent, verifiable, and reproducible, and, as a result, the likelihood of bias is considerably smaller.

3 Main question: What does the review answer?

What is known in the research literature about the effect of employee recognition and non-financial rewards on performance?

Other issues raised, which form the basis of our conclusion to the three questions above, are:

- 1 What is meant by recognition and rewards (what is it)?
- 2 What is the assumed logic model (how is it supposed to enhance performance)?
- 3 How can recognition be measured?
- 4 What is the overall effect of recognition and rewards on employees' performance?
- 5 What is known about the (positive or negative) effect of possible moderators and/or mediators?

4 Methods

Search strategy: How was the research evidence sought?

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

- 1 scholarly journals, peer-reviewed
- 2 published in the period 2000 to 2019
- 3 articles in English.

A search was conducted using combinations of different search terms, such as 'recognition', 'appreciation', 'rewards' and 'performance'. In addition, the references listed in the studies retrieved were screened in order to identify additional articles for possible inclusion in the REA.

We conducted 15 different search queries and screened the titles and abstracts of more than 900 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.

Study selection took place in two phases. First, the titles and abstracts of the 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 19 secondary studies (meta-analyses) and 32 primary studies.

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

- 1 type of studies: only quantitative, empirical studies
- 2 measurement: only studies in which the link between recognition and/or rewards and performance outcomes was measured
- 3 context: only studies on recognition and rewards related to workplace settings.

In addition, the following exclusion criteria were applied:

- 1 recognition and/or rewards from clients or customers
- 2 financial incentives and/or financial rewards.

This second phase yielded 8 secondary studies and 27 primary studies. An overview of the selection process is provided in Appendix 2.

Critical appraisal

It is possible to find a scientific study to support or refute any theory or claim. Thus, it is important to determine which studies are trustworthy (that is, valid and reliable). 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'. 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 fall lower in terms of appropriateness. Meta-analyses in which statistical 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 included studies' research design, we used the classification system of Shadish et al (2002) and Petticrew and Roberts (2006). The following four levels of appropriateness were used for the classification:

Design	Level
Systematic review or meta-analysis of randomised controlled studies	AA
Systematic review or meta-analysis of controlled before–after studies	A
Randomised controlled study	
Systematic review or meta-analysis of non-controlled and/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	
Cross-sectional study	D

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 a predictor/driver (rewards and recognition) and its outcomes (workplace performance), which is the purpose of this review.

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 and the final level determined as follows: a downgrade of one level if two weaknesses were identified; a downgrade of two levels if four weaknesses were identified, etc. Since no study is perfect, one weakness is allowed without downgrading trustworthiness.

Finally, 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 significant if the sample size is big enough. For this reason, each study's effect size – a standard measure of the magnitude of the effect – was assessed. To determine the magnitude of an effect, we applied Cohen's rules of thumb (Cohen 1988). According to Cohen, a 'small' effect is an effect only visible through careful examination. A 'medium' effect 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.

5 What is the quality of the studies included?

The overall quality of the studies included was high. Most of the secondary studies were based on controlled studies and were therefore graded level A or higher. Of the 27 primary studies, 5 qualified as randomised controlled studies and were therefore graded level A. The remaining studies concerned quasi-experimental studies (2), longitudinal designs (2) and cross-sectional studies (18). An overview of all the studies included and their year of publication, research design, sample size, population, main findings, effect sizes and limitations are provided in Appendix 3.

6 Main findings

Question 1: What is meant by recognition and rewards?

Recognition is generally defined as the assignment of personal non-monetary rewards for individual efforts and work accomplishment to recognise and reinforce the desired behaviours displayed by an employee (Brun and Dugas 2008). Many organisations recognise employees based on their performance (Frey 2007). For example, organisations can recognise outstanding performers through compliments, gratitude, private notes or emails, public awards, or publication of their achievements in company newsletters. These recognitions are sometimes symbolic and come with no corresponding financial rewards (Wang 2017).

Non-financial rewards and recognition are usually regarded as synonyms. Behavioural psychologists, however, make an important distinction between the two terms: non-financial rewards are tangible, transactional, conditional and expected, whereas recognition is intangible, relational, unconditional and unexpected. Because the difference between the two is not always clear and often ignored in both academia and practice, this review focuses on both recognition and non-monetary rewards, although it is recognised that they have slightly different meanings.

Question 2: What is the assumed logic model? (How is it supposed to work?)

Studies in the social sciences draw on social comparison theory to predict that employee recognition increases performance. Social comparison theory (Festinger 1954) states that people tend to compare themselves with others in order to make judgements regarding their performance. They are concerned not only about their performance in an absolute sense, but also about how they measure up in relation to relevant peers. The theory argues that people engage in social comparison to enhance their own self-esteem. Comparing favourably with others increases self-esteem and produces positive affect, while comparing unfavourably lowers self-esteem and produces negative affect. Thus, receiving (private or public) recognition provides a positive signal about one's competence relative to others, which enhances self-esteem and induces positive affect (Wang 2017). As a result, employees are motivated to attain a high level of performance to increase their chance of receiving recognition. It is worth noting, though, that although social comparison theory is a useful explanation of recognition, as a general theory it is often seen as overly simplistic. As we discuss in our evidence review on [work motivation](#), social exchange theory and self-regulation theory do a fuller job of explaining how our relationships to others affect our behaviour.

Question 3: How can recognition be measured?

There are several measurement tools available that measure whether employees feel recognised by their manager and/or the organisation. One of the most widely used is the five-item scale developed by Migneault et al (2009). Respondents are asked to indicate how frequently (1 = 'never' to 5 = 'always') their manager displayed the listed behaviours: 'My manager shows appreciation for my contributions', 'My manager acknowledges my performance', 'My manager appreciates my efforts', 'My manager congratulates me for my achievements' and 'My manager takes an interest in what I'm doing'.

Question 4: What is the overall effect of recognition and rewards on performance?

Finding 1: There is strong evidence that employee recognition and non-financial rewards have a moderate to large effect on workplace performance (Level A).

There is wide consensus among both scholars and practitioners that employee recognition and non-financial rewards, in general, can have a large, positive impact on performance outcomes. There is indeed strong evidence from randomised controlled studies that employee recognition and rewards are an effective way to enhance (or maintain) performance. In the past 30 years several meta-analyses (for example, Cameron et al 2001) and high-quality studies (for example,

Li et al 2016; Wang 2017) have consistently shown moderate to large effect sizes, even when the recognition was merely a thank-you card¹ (Bradler et al 2016) or smiley button (Kosfeld et al 2017). In addition, employees rewarded with verbal praise or positive feedback show substantially greater intrinsic motivation than financially rewarded or non-rewarded employees. In addition, they also show more interest and enjoyment than non-rewarded employees (Deci and Koestner 1999; Cameron et al 2001; Kunz and Linder 2012).

Finding 2: Recognition and rewards can have a negative impact on performance when offered for simply doing a task (Level A).

A large number of controlled studies have consistently shown that employee recognition and non-financial rewards can have a negative effect on performance when offered to employees for engaging in a task without consideration of any standard of performance (Cameron and Pierce 1994; Cameron et al 2001).

Finding 3: Employee recognition contributes to employee retention, commitment, and work engagement, but the effects are small (Level D).

Several cross-sectional studies find that employee recognition may contribute to retention. Controlling for other factors (for example, job stress), it was found that there is a small but positive relationship between (perceived) recognition from management and employees' intention to stay (AbuAlRub and Al-Zaru 2008; Austen et al 2016). Similar small but positive associations were found for (normative) commitment and work engagement (Ghosh et al 2016).

Finding 4: Employee recognition has a large positive impact on employee attendance (Level A).

A randomised controlled study demonstrated that an attendance-recognition programme that included personal attention and recognition from senior managers substantially decreased absenteeism rates among employees (Markham et al 2002).

Finding 5: Employee recognition produces strong positive spill-over effects on other employees (Level A).

A recent randomised controlled study demonstrated that a single team member's recognition may produce strong positive spill-over effects on other team members' performance, as well as overall team performance, especially when the award recipient is located in a central position in a team (Li et al 2016).

Finding 6: There is some evidence that employee recognition can foster envy and resentment (Level D).

A cross-sectional study from the US found that, in some situations, formal (public) recognition for performance may foster envy and resentment among colleagues, which may create social discomfort (for example, feeling embarrassed) on the part of high performers and potentially erode their intrinsic motivation (Henagan 2010). The effect sizes found, however, were rather small.

¹ Remarkably, in this study employees who did not receive a thank-you card were mainly responsible for the performance increase. See also Finding 5.

Question 5: What is known about the (positive or negative) effect of moderators?

Finding 7: The effect of employee recognition is strongly dependent on perceived work meaningfulness (Level A).

A recent randomised controlled study found that, if perceived meaningfulness is low, employee recognition has a large impact on performance. However, if perceived meaningfulness is high, recognition has a limited effect (Kosfeld et al 2017).

7 Conclusion

Based on the evidence found, we conclude that employee recognition and non-financial rewards tend to have large positive effects on work performance.

8 Limitations

This REA aims to provide a balanced assessment of what is known in the scientific literature about the effects of employee recognition on 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 in the period 1990 to 2019 for meta-analyses and the period 2010 to 2019 for primary studies. 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 some of the studies included used (subjective) performance ratings as an outcome measure, not objective performance indicators.

A third limitation concerns the fact that the evidence of some findings is based on only one study. Although most of these studies were well controlled or even randomised, no single study can be considered to be strong evidence – it is merely indicative.

Given these limitations, care must be taken not to present the findings presented in this REA as conclusive.

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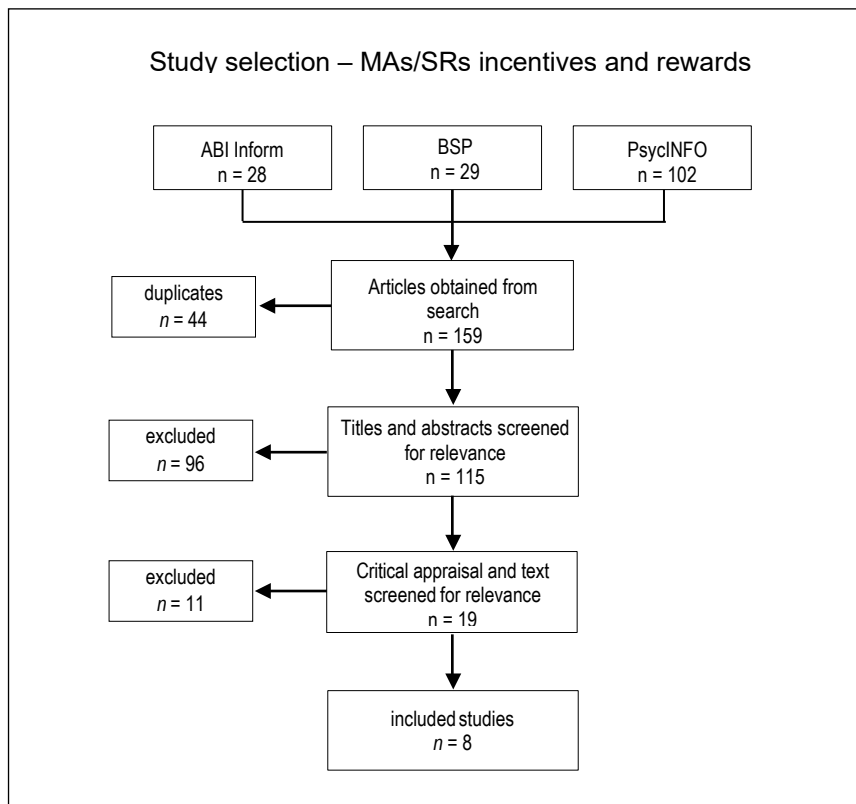
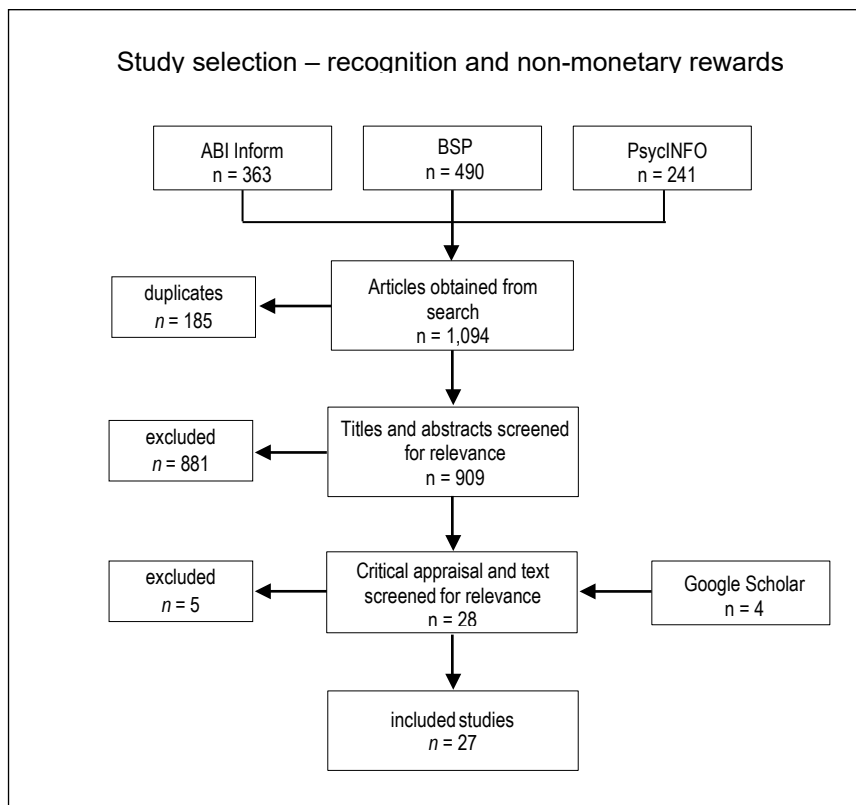
Appendices

Appendix 1: Search terms and hits

ABI/Inform Global, Business Source Elite, PsycINFO peer-reviewed, scholarly journals, July 2019			
Search terms	ABI	BSP	PSY
S1: ti(recogni*)	4,859	8,191	21,175
S2: ti(work*) OR ti(employe*)	77,882	92,102	100,824
S3: ab(work*) OR ab(employe*)	389,421	492,775	539,939
S4: S1 AND S3	930	1,303	2,393
S5: ti(appreciat*)	967	1,316	1,920
S6: S5 AND S3	210	262	321
S7: S4 OR S6	1,140	1,565	2,712
S8: S7 AND filter meta-analyses, limit > 1980	1	2	8
S9: S7 AND filter high-quality studies, limit > 2000	232	359	76
S10: S6 AND S2 (NOT S9) AND filter low-quality studies, limit > 2000	82	78	120
S11: ab('non monetary') OR ab('non financial')	3,595	4,304	677
S12: ab(reward*)	15,455	16,013	52,704
S13: ab(employe*) OR ab(work*)	398,541	493,029	777,376
S13: S11 AND S12 AND S13, filter studies, limit > 2000	48	51	37
S14: S8 OR S9 OR S10 OR S13	363	490	241

ABI/Inform Global, Business Source Elite, PsycINFO peer-reviewed, scholarly journals, July 2019			
Search terms	ABI	BSP	PSY
S15: ti(reward*) OR ti(incentive*)	9,296	10,996	15,406
S16: filter meta-analyses, limit > 1980	28	29	102

Appendix 2: Selection of studies



Appendix 3: Critical appraisal

Effect sizes: Cohen's rule of thumb

To determine the magnitude of an effect, we applied Cohen's rules of thumb (Cohen 1988). According to Cohen a 'small' effect is an effect only visible through careful examination. A 'medium' effect 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.

Effect size	Small	Medium	Large
Standardized mean difference: d, Δ, g	$\leq .20$	.50	$\geq .80$
ANOVA: η^2, ω^2	$\leq .01$	.06	$\geq .14$
Chi-square: ω^2	$\leq .10$	.30	$\geq .50$
Correlation: r, ρ	$\leq .10$	.30	$\geq .50$
Correlation: r^2	$\leq .01$	.09	$\geq .25$
Simple regression: β	$\leq .10$	.30	$\geq .50$
Multiple regression: β	$\leq .20$	.50	$\geq .80$
Multiple regression: R^2	$\leq .02$	.13	$\geq .26$

Included meta-analyses

First author and year	Design included studies and sample size	Sector/ population	Main findings	Effect sizes	Limitations	Level
Cameroon, 1994	meta-analysis of experimental studies (between-group and within-subject design) k = 96	not reported	<p>Overall: Results indicate that rewards don't decrease intrinsic motivation.</p> <p>Type of reward: Subjects rewarded with verbal praise or positive feedback show significantly greater intrinsic motivation than non-rewarded subjects. They also show more interest and enjoyment than non-rewarded persons. Those who receive a tangible reward show significantly less intrinsic motivation than non-rewarded persons. The only negative effect appears when expected tangible rewards are given to individuals simply for doing a task.</p> <p>Thus: Verbal praise and positive feedback enhance people's intrinsic interest. Rewards can have a negative impact on intrinsic motivation when they are offered to people for engaging in a task without consideration of any standard of performance (eg receiving a tangible reward simply for doing an activity).</p> <p>Note: Intrinsic motivation was measured: 1) free time on task; 2) attitude, performance during the free-time period; and 3) willingness to volunteer for future studies without reward.</p>	<p>Overall, effect sizes for the three measures are ns or very small.</p> <p>Verbal rewards – free time on task: = .42; attitude = .39</p> <p>Tangible rewards – free time on task = -.22 attitude: .05</p>	<p>Limited search strategy</p> <p>No critical appraisal of studies included</p>	AA
Cameroon, 2001	meta-analysis of experimental, controlled and non-controlled studies k = 145	mixed	<p>In general, rewards are not harmful to motivation to perform a task.</p> <p>1. Rewards (tangible and verbal) given for low-interest tasks enhance intrinsic motivation.</p> <p>2a. On high-interest tasks, verbal rewards produce positive effects on intrinsic motivation and self-reported task interest. 2b. Negative effects are found when the rewards are tangible, expected (offered beforehand), and loosely tied to level of performance.</p>	<p>1: d = .28</p> <p>2a: d = .31 2b: d = -.17, -.18, and -.35</p>	No critical appraisal of studies included	AA
Cerasoli, 2014	meta-analysis, design of included studies not reported k = 183	mixed	<p>1. Intrinsic motivation is a medium to strong predictor of performance.</p> <p>2. The correlation between intrinsic motivation and performance is stronger for quality performance than for quantity performance.</p> <p>3. The correlation between intrinsic motivation and performance, when incentivised, was stronger for indirectly performance-salient incentives than it is for directly performance-salient incentives.</p> <p>4a. Intrinsic motivation is a better predictor for (a) quality of performance, whereas (4b) financial incentives are a better predictor for (b) quantity of performance.</p> <p>Note: external incentive = any prize, credit, or financial compensation surrounding task performance.</p>	<p>1: $\rho = .26$</p> <p>2: quality perf $\rho = .35$ quantity perf $\rho = .26$</p> <p>3: indirect $\rho = .45$ direct $\rho = .30$</p> <p>4a: $\beta = .35$ vs $.06$ 4b: $\beta = .33$ vs $.24$</p>	No critical appraisal of studies included	C

Deci, 1999	meta-analysis of controlled studies k = 128	mixed	<p>1. Engagement-contingent, completion-contingent, and performance-contingent rewards undermine intrinsic motivation, as did all rewards, all tangible rewards, and all expected rewards.</p> <p>2. Engagement-contingent and completion-contingent rewards undermine self-reported interest, as did all tangible rewards and all expected rewards.</p> <p>3. Positive feedback (= verbal rewards) enhanced both free-choice behaviour and self-reported interest.</p> <p>Note: concerns only studies in which the task was defined as interesting.</p>	<p>1: $d = -.40, -.36,$ and $-.28$</p> <p>2: $d = -.15$ and $-.17$</p> <p>3: $d = .33$ and $.31$</p>	<p>Limited search strategy</p> <p>No critical appraisal of studies included</p>	AA
Garbers, 2014	meta-analysis, lab experiments were included k = 146	mixed	<p>1a. The overall effect size of individual incentives on performance was positive, but (1b) larger for qualitative than for quantitative performance measures, and (1c) smaller for less complex tasks.</p> <p>2a. The overall effect size of team-based incentives on performance was positive, and (2b) with equitably distributed rewards resulting in higher performance than equally distributed rewards.</p> <p>3. The effect of team-based rewards on performance decreases with the amount of team members.</p>	<p>1a: $g = .32$ 1b: $g = .39$ 1c: $g = .19$</p> <p>2a: $g = .45$ 2b: $g = .45$</p>	<p>No critical appraisal of studies included</p> <p>Concerns financial incentives</p>	AA
Jackson, 2012	meta-analysis of meta-analytic studies k or n = 554?	not reported	<p>1. Leader reward behaviour is positively related to higher task performance and organisational citizenship behaviour, and fewer intentions to turnover.</p> <p>2. These relationships are mediated by employees' perceptions of fairness and work morale.</p>	<p>1: $r = .28, .21$ and $-.32$</p>	<p>Research methodology somewhat unclear</p> <p>Limited search strategy</p> <p>No critical appraisal of studies included</p>	D
Jenkins, 1998	meta-analysis, lab experiments and controlled studies included k = 39	not reported	<p>Financial incentives were not related to performance quality but had a medium correlation with performance quantity.</p>	<p>$\rho = .34$</p>	<p>Search strategy somewhat unclear</p> <p>No critical appraisal of studies included</p>	A
Podsakow, 2006	meta-analysis of cross-sectional and longitudinal studies k = 78		<p>1. Contingent reward behaviour had a stronger relationship with employee effort than non-contingent reward behaviour.</p> <p>2. Contingent reward behaviour had a stronger relationship with individual task performance than non-contingent reward behaviour.</p> <p>3. Contingent reward behaviour had a stronger relationship with group performance than non-contingent reward behaviour.</p> <p>4. Contingent reward behaviour was a strong predictor of employees' cynicism about organisational change.</p>	<p>1: $\rho = .65$ vs $.09$</p> <p>2: $\rho = .28$ vs $.11$</p> <p>3: $\rho = .24$ vs $-.05$</p> <p>4: $\beta = .44$</p>	<p>No critical appraisal of studies included</p>	B

			5. These relationships are mediated by employees' perceptions of justice and role ambiguity.			
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Overview of excluded meta-analyses and systematic reviews

Cameron, 1996	Not a meta-analysis (comment on comment by Lepper et al and Ryan and Deci)
Deci, 2001	Not a meta-analysis (comment on Cameron et al)
Eisenberger, 1996	Traditional literature review
Eisenberger, 1999	Not a meta-analysis (critique on Deci et al)
Lepper, 1996	Not a meta-analysis (comment on Cameron et al)
Lepper, 1999	Not a meta-analysis (comment on Deci et al)
Luthans, 1999	Traditional literature review
Pierce, 2002	Summary of Cameron 2001
Ryan, 1996	Not a meta-analysis (comment on Cameron et al)
Wiersema, 1992	Focuses on the advantages and disadvantages of different operationalisations of the intrinsic motivation construct

Included single studies

Author and year	Design and sample size	Sector/ population	Main findings	Effect sizes	Limitations	Level
AbuAIRub and Al-Zaru, 2008	Cross-sectional survey n=206	Jordanian nurses in 4 government hospitals	<p>The main value of the study is evidence that recognition can contribute to employee retention. Controlling for other factors (demographic details, job stress and self-rated job performance), there is a positive relationship between recognition for outstanding performance and employees' intention to stay (the effect size isn't reported but the 't' value in the regression model increases).</p> <p>Simple (bivariate) correlations showed that self-rated job performance (role effectiveness for patient care) had weak positive relationships with the amount of recognition employees received for both meeting job requirements and going beyond the job. However, because the study is cross-sectional, it does not consider recognition independently of employees' level of performance – this association is thus a very untrustworthy guide to the performance effect of recognition. There was no relationship between performance and employees' recognition for other non-job professional achievements (eg earning a degree).</p> <p>Employees' job stress had slightly stronger but nonetheless weak negative correlations with all three types of recognition that employees received.</p> <p>Retention (intention to stay) had similarly sized correlations with recognition with outstanding performance and other achievements but not with recognition for competence.</p>	<p>Job performance simple correlations with recognition for: competence ($r=.14$, $p<.05$); outstanding performance ($r=.16$, $p<.05$); other achievements ($r=.02$, $p>.05$).</p> <p>Job stress correlations with recognition for: competence ($r=-.21$, $p<.001$); outstanding performance ($r=-.21$, $p<.001$); other achievements ($r=-.18$, $p<.001$).</p> <p>Retention (intention to stay) correlations with recognition for: outstanding performance ($r=.21$, $p<.01$); other achievements ($r=.23$, $p<.01$); competence ($r=.11$, $p>.05$).</p>	<p>Direction of causality between recognition and performance is very unclear in a cross-sectional study.</p> <p>Convenience sample (self-selection) from which a 57.5% response; also, the overall population size is not given but $n=206$ may be small in relation to the number of nurses across 4 hospitals (eg $n>1,000$).</p> <p>Performance was self-rated.</p>	D (55%)

Austen et al, 2016	Cross-sectional survey and semi-structured interviews n=3,945	Female employees aged 45+ working in aged care (nurses and community care workers) based in 19 Australian organisations (population n=6,867)	Controlling for a range of other factors, the paper presents evidence that intention to leave care work is related to perceived recognition in the community, perceived recognition from higher-level managers, and pay satisfaction (as an indicator of perceived social contribution). Also theoretically interesting: relates especially to Adam Smith, who in <i>The Theory of Moral Sentiments</i> (1759) identified recognition as fundamental for welfare and motivation; and also to Karl Marx, who drew on Hegel to argue that recognition was needed for social justice, as misrecognition (treating workers as objects) led to alienation from work (lack of meaning); and to others, including Honneth (1996, 2010) Brennan and Pettit (2004). The authors 'argue that recognition is a distinctive motivation that cannot be reduced to a form or part of self-interest; that recognition does not simply reflect a desire for the approval of others but also a desire to be "what ought to be approved of"' (p1037). Care work is argued to be relatively 'invisible' work, seen by some as 'demeaning' and 'paid like peasants', and thus generally misrecognised as a profession. Recognition is inherently linked to pay.	Small effect sizes: regression coefficients between intention to leave and high (vs low) for recognition in community coeff.=-.299, p<.05; and for recognition in organisation coeff.=.227, p<.1. ITL relationship with whether pay recognises value of contribution n.s. for high vs low recognition but for medium (vs low) recognition, coeff.=-.247, p<.01.	Self-selected cross-sectional sample.	D (60%)
Bhatnagar, 2014	Cross-sectional survey. n=312 (from random selection of n=400)	Indian knowledge workers (R&D engineers and experts) in 5 organisations (IT, electronics and software development, and pharmaceutical)	Reward and recognition helps explain the impact of supervisor support on innovation and turnover intention. From abstract: 'psychological contract and rewards and recognition were strong mediators between perceived supervisor support, innovation and TI'.	Small relationship between reward and recognition and TI: beta=.149.	Recognition not considered separately from reward.	D (60%)
Bradler et al, 2016	Randomised controlled study n=363	Workers hired for the experiment in Germany (mainly students)	Recognition of performance improves subsequent performance. 'When public recognition is more exclusive, such that the best 3 out of 8 employees in a work group receive a thank-you card, the estimated effect is even bigger and amounts to a 7.3% (or 0.38 standard deviations) performance increase. Remarkably, employees who do not receive a thank-you card are mainly responsible for this performance increase.'	Subsequent performance increases: treat 1 = 5.2% (d=0.27); treat 2 = 7.3% (d=0.38); treat 3 = 5.6% (d=.29). In treat 2, the increase for workers who don't receive the recognition is 10% (d=.52) whereas for the recipients of the card it was only 3.3% (d=0.17).	Limitations of specific controlled environment: performance was in a discrete data-entry task lasting 3 hours; employees worked in groups of 8 and had reasonable autonomy (free to take breaks, paid in advance, internet	A (90%)

			Unexpected recognition after 2 hours' work 'consisted of a thank-you card, personally signed by the head of the research institute... workers could deduce that no further thank-you cards would be provided in the remainder of the working period'. This was independent of payment, a flat rate of €25. Treatment 1 = all received recognition; treat 2 = recognition to best 3 performers; treat 3 = recognition to best performer only (in 2 and 3 it is explained that all workers valued but explicit recognition can only be given to the best performers due to time constraints).		access, supervisor absent).	
Chiang, 2008	Cross-sectional survey n=284	Workers in 7 hotels in Hong Kong (mainly Chinese, managers and non-managers)	Descriptive survey of employee attitudes. Workers regard financial and non-financial recognition as important for increasing their task and extra-task performance. Basic salary increase and individual bonus/tips were considered the most important financial rewards (more than team bonuses). Promotion opportunities were seen as the most important non-financial rewards, followed by recognition and job interest. Different incentives were seen to be more relevant for different performance outcomes: 'For example, basic salary increase and individual bonus/incentives were perceived as effective for achieving a wide range of performance dimensions. By contrast, the effectiveness of team-based incentives was limited to teamwork and extra work effort whereas promotion was associated more with performance dimensions, such as innovation and creativity, problem solving, honesty, and the ability to act independently.' Financial recognition is seen to have a greater impact than non-financial.	n/a	Response rate 36%. Subjective assessments of impact of recognition (respondents rated forms of recognition 'according to their perceived effectiveness for achieving' task and extra-task performance).	D (55%)
Feys, 2013	Hypothetical randomized controlled study (vignette experiment, post-test only) n=246	Administrative employees in a large Belgian health care organisation (population n=403)	Relationship quality moderates the relation between 'other-oriented' recognition and (H1a) positive affect, (H1b) negative affect, and (H2) interpersonal counterproductive behaviour, but not with (H3) interpersonal citizenship behaviour.	Results presented as interaction effects. Interaction between recognition and relationship quality: $R=.69$, $F(5,234)=41.89$, $p<.001$.	Hypothetical vignette situations lack external validity (show imagined not actual impact on behaviour). Post-test measures only (baseline effort not reported). Self-selected sample (response rate 61%), although random assignment to the 4 conditions.	B (80%)

Ghosh et al, 2016	Cross-sectional survey n=176	employees in 84 private banks in India	Rewards and recognition have a positive relationship with normative commitment and with work engagement, and the former relationship is partially mediated by work engagement.	Reward and recognition with normative commitment: $B=0.2658$, $SE=0.052$, $t=5.0462$, $p<0.001$.	Direction of causality between recognition and commitment / engagement is very unclear in a cross-sectional study; the latter could lead to recognition (see similar comment on AbuAlRub and Al-Zaru 2008). Response rate was 70% but unclear if the sample was randomly selected and if sample was large enough (ie sample was representative of the population).	D (55%)
Grolleau et al, 2015	Matched cross-sectional surveys of employees and firms (n for firms=5,309)	French firms	Controlling for firm characteristics, the study shows a positive association between whether or not employees feel their work is 'fairly recognised' and objective firm-level productivity. However, this relationship holds in large firms only, not small firms. Also, 'the results suggest that work recognition matters, but wages seem to be the factor that is the most relevant with regard to labor productivity'. Wages have a large effect, recognition a small effect. The study does not show causation but, as it draws on a large dataset of French firms, is a good guide to the <i>association</i> between recognition (very broadly defined) and firm performance.	OLS coefficients for recognition with labour productivity: -.03, $p>.1$ (small firms <250 employees); .11, $p<.01$ (large firms 250+ employees). Compared with unrecognised low wage (all firms): unrecognised high wage coeff=.31, $p<.01$; recognised low wage coeff=.05, $p<.05$; recognised high wage coeff=.45, $p<.01$.	Analysis uses combined data from three surveys; it is unclear whether the combined survey datasets are deduplicated. Direction of causality between recognition and performance is very unclear in a cross-sectional study (see comment on AbuAlRub and Al-Zaru 2008).	D (60%)
Henagan, 2010	Cross-sectional survey of employees n=505	Real estate agents in four US firms	Provides evidence that formal recognition for performance can 'foster envy and resentment' that creates social discomfort in the 'outperformers' and potentially erodes motivational benefits; and that this is influenced by 3 factors. The study focuses on 'comparison target discomfort' (CTD), specifically whether employees publicly recognised for their previous year's performance (n=217) feel social discomfort 1 to 2 months after firm awards ceremonies. The study shows that outperformers feel more discomfort if they have more 'empathic concern' for negative outcomes of the recognition on their colleagues ($\beta=.21$, $p<.05$) and if there is a 'competitive psychological climate' in the organisation ($\beta=.24$, $p<.05$); and gives weaker evidence for a relationship with whether lower-performing colleagues feel	See main findings.	56% response rates for outperformers, 54% for their colleagues. Also worth noting that the exclusivity of recognition varied between the four firms: respectively, 15.7%, 22.1%, 66.5% and 37% of employees were recipients of awards. Influence of this variance not analysed.	D (60%)

			<p>'external' forms of 'upward comparison threat' – eg feel inferior, intimidated, or vengeful ($\beta=.18, p<.1$).</p> <p>No significant relationships found between CTD and outperformers' interpersonal sensitivity ('fear of causing harm to others and, in turn, being rejected or criticised') or the level of 'internal upward comparison threat' felt by lower performers (eg feeling embarrassed, sad, disappointed).</p>			
Ho, 2009	Cross-sectional survey n=25	Employees in a purchasing and sales division in an electronic components firm	<p>Focuses on 'expertise recognition', being whether colleagues know each other's expertise so that they 'can allocate and retrieve information from one another', ie recognising colleagues' expertise to ultimately help one's own performance. This is about the 'ability to obtain resources (eg information, knowledge, help, and cooperation) from others' and is qualitatively different from recognition for performance as a motivational management intervention.</p> <p>Study shows that employees' work performance (supervisors' independent ratings) was moderately associated with the extent to which they were aware of their colleagues' expertise. This expertise recognition was also moderately associated with employees' job resourcefulness; and the relationship between expertise recognition and performance was fully moderated by job resourcefulness. Network recognition ('ability to recognise the friendship network in the division') did not play a moderating role.</p>	Expertise recognition associated with work performance ($\beta=.43, p<.05$); and job resourcefulness associated with expertise recognition ($\beta=.49, p<.05$).	Small sample.	D (60%)
Kosfeld et al, 2014, 2017	Randomised controlled study n=413	Students in China undertaking a paid one-off job	Field experiment assessing 'the impact of meaning on work performance in relation to and in combination with monetary incentives and worker recognition'. Subjects randomised to high-meaning condition (informed that the job made an important contribution to an important research project) or low-meaning condition (administrator suggested that the exercise did not make sense and the data may not be used). Within these two groups, also randomised to: control group (fixed wage); monetary-incentive condition (fixed wage plus piece rate); or recognition condition (told that the highest performer would be 'awarded a smiley button at the end of the work session' in front of others).	Performance increases: 14% from meaning; 7% to 9% from monetary incentive; 19% from recognition (all significant).	Limited relevance of experimental condition: students employed for a one-off two-hour data-entry job that was 'quite exhausting and monotonous' so intrinsic motivation assumed to be low.	A (90%)

			<p>'Increasing the meaning of a task significantly raises performance in the absence of incentives. The estimated effect size is 14 percent... Monetary incentives increase performance both when meaning is low and when meaning is high. The estimated effect size ranges between 7 and 9 percent... The effect of worker recognition strongly depends on meaning. If meaning is low, recognition increases performance by about 19 percent. If meaning is high, however, recognition has no observable effect' (pp17–18). Note: similar study and overlapping team as Bradler et al (2016).</p>			
Kunz and Linder, 2012	Hypothetical randomized controlled study (vignette experiment, post-test only) n=92	Graduate students in business administration at a Scandinavian business school 'told that they should imagine themselves as working in a project-oriented setting, such as an advertising or marketing project'	<p>Method: statements about participants' imagined jobs were combined to give various very positive, very negative and neutral vignettes. Vignette statements on affiliative rewards were added to this: 1) 'Your superiors, colleagues, and co-workers strongly reward good performance on a job through strengthening personal ties with you and honoring your performance'; and 2) 'In your company it is generally accepted to keep your performance level within a moderate range. Performance has only a weak influence on friendships and social membership.' Study gives evidence that non-financial recognition enhances enjoyment-based motivation, and acts independently of behavioural norms and financial reward: that is, non-monetary affiliative rewards interact positively with the relationship between enjoyment-based motivation and effort (H2a), do not interact with norm-based motivation and effort (H2b) and may leave the influence of extrinsic motivation unaffected (H2c). Study also shows that 'monetary rewards positively moderate the effect of extrinsic motivation on work effort' but 'crowd out' (negatively moderate) norm-based motivation.</p>	<p>Mixed-effects regression for 'willingness to exert work effort' controlling for motivation: affiliative rewards est.=.13(t), z=1.82; monetary rewards est.=.57**, z=6.87.</p> <p>Affiliative rewards × enjoyment-based motivation est.=.09(t), z=1.69; Affiliative rewards × norm-based motivation est.=.02, z=0.38; Affiliative rewards × extrinsic motivation est.=.02, z=0.52.</p>	Hypothetical vignette situations lack external validity (show imagined not actual impact on behaviour). Post-test measures only (baseline effort not reported).	B (80%)
Lee, 2018	Cross-sectional study n=569	'adults currently working in a setting that allows for interaction or communication with colleagues'	<p>Primary focus is knowledge-sharing behaviours. Financial rewards and non-financial rewards (eg getting a sense of satisfaction, a rewarding feeling, fulfilment, or friendship) are not positively related to knowledge <i>giving</i> (H3, H5). However, both financial and non-financial rewards are positively related to knowledge <i>asking</i> (H4, H6). Additionally, study suggests the relationship that financial rewards have with knowledge giving and</p>	<p>Regression results for knowledge-giving: financial rewards $\beta=.02$, $t(563)=.43$, $p=.67$; non-financial rewards $\beta=.06$, $t(563)=1.28$, $p=.20$.</p> <p>Knowledge-asking: financial rewards $\beta=.12$, $t(563)=2.61$, $p<.01$; non-financial rewards $\beta=.16$, $t(563)=3.54$, $p<.01$.</p>	<p>Snowballed convenience sample not representative of a specific population.</p> <p>Very broad conceptualisation of recognition.</p>	D (55%)

			knowledge asking do not significantly differ across career stages. However, there is some evidence that career stage moderates the relationship between non-financial rewards and knowledge giving (but not asking), with the relationship being more positive for those in the latter 'disengagement stage' of their career than for earlier 'exploration', 'establishment', and 'maintenance' stages.			
Li et al, 2016	Randomised controlled studies: Study 1: n=96 Study 2: n=160 Study 3: n=571	Study 1 & 2: psychology graduates at a Chinese university Study 3: employees in 52 teams in a Chinese electric transmission and distribution equipment firm	Argues that 'a single team member's recognition will produce positive spillover effects on other team members' performance, as well as overall team performance, via social influence processes, especially when the award recipient is located in a central position in a team.' Study 1 involved random allocation to 4-member teams for 90-minute tasks (making and stacking origami cubes). In experimental group, top performer was acknowledged and applauded in front of team peers partway through. In study 2 some details were changed to further isolate the treatment effect. Study 3 randomised a firm's existing 'employee of the month' award. Recognition had a positive impact on colleagues' performance as assessed by team leaders and a large effect on subsequent team performance ($\beta=.86$). Additionally, 'this effect was stronger when the recipient had more interactions with other team members (i.e., higher network centrality).'	Study 1: mean performance increase for recognition group =9.86 vs mean increase for no recognition group =1.13; ANOVA $F(1, 82)=83.18$, $p<.001$. Study 2 results similar. Study 3: Recognition impact on colleague performance: $F(1,381)=78.19$, $p<.001$; On subsequent team performance: $\beta=.86$, $p=.01$. Network centrality on performance: $F(1, 209)=31.83$, $p<.001$.	Studies 1 & 2 used an artificial lab environment; this rectified by study 3.	A (90%)
Luthans, 2000	Cross-sectional survey n=254	All levels of employees in a large, non-profit institution	Examines the value of recognition to employees. Results indicate they 'value highly personalised recognition for a job well done as a critical dimension of their reward system... 243 of the 254 respondents (96%) indicated an increased need for recognition was necessary'.	n/a	Opinion-based survey limited to descriptive results.	D (60%)
Markham et al, 2002	Randomised controlled study (quasi-experimental field study) n=4	Employees in 4 US cut-and-sew garment factories (n=1,100)	Focuses on impact of recognition on employee attendance. The 4 factories were comparable and in the same firm but largely operationally independent. One plant was randomly selected for a one-year personal attendance-recognition programme that included personal attention (gold star at end of the quarter), annual public celebration and recognition from senior managers, mementos (necklace for women, penknife for men) and communication of target	See main findings.	Small number of cases, although matched and comparable. Complications with changing conditions in control site 3 involving redundancies.	A (90%)

			attendance behaviour. Control site 1: employees received two-monthly information feedback on absence. Control site 2: survey only, no treatment. Control site 3: no intervention. The personal recognition treatment plant showed large decreases in absence 'ranging from 29% to 52% for each quarter's baseline assessment', and significant decreases when the control groups showed no decrease.			
Markova and Ford, 2011	Cross-sectional study n=288	Research and development employees and their supervisors in 30 Fortune 500 companies	Non-monetary rewards were more strongly associated with intrinsic motivation (longer work time) than group or individual monetary rewards. Also, significant positive relationship between work hours and performance.	Non-monetary reward and working hours $\beta = .21, t=3.04, p<.01$; by contrast individual and group monetary rewards and work hours = n.s. Work hours and performance $\beta = .23, t=3.2, p<.001$.		D (60%)
Masri and Suliman, 2019	Cross-sectional survey n=117	Full-time employees at Qatari research institutions	Employee recognition (measured as reward, promotion, and co-workers/relations) was found to have a strong association with self-rated proxies for performance (measured as work skills, understanding work duties, quality of work and work enthusiasm).	$\beta = .615, p<.01$.	Not clear that sample is large enough and representative of population. Response rate =65% of selected sample (n=180). Measures imprecise.	D (55%)
Merino and Privado, 2015	Cross-sectional survey n=1,831	A representative sample of 3,000 working adults in Spain	Positive psychological functioning moderates [is argued to mediate] the association between recognition and subjective wellbeing in employees.	SEM coefficients: Supervisor recognition & PPF = .20, $p<.03$; Co-worker recognition & PPF = .39, $p<.03$; PPF & wellbeing = .59, $p<.03$; Supervisor recognition & wellbeing = .07, $p>.03$; Co-worker recognition & wellbeing = -.03, $p>.03$.	Direction of causality between recognition and performance is very unclear in a cross-sectional study (yet authors argue that causal relationship and mediation shown). Unclear how 1,831 selected from the wider sample.	D (60%)
Montani et al, 2017	Cross-sectional study n=130	Employee-supervisor dyads in 9 French Canadian organisations (automotive, home products manufacturing and logistics)	Shows that meaningfulness of work partly moderates the association between the recognition employees perceive and their supervisor-rated behavioural involvement (conscientiousness, efforts to improve work, collaboration, personal initiative for efficiency, and organisational involvement). From abstract: 'manager recognition promotes behavioural involvement both directly and indirectly through the intervening role of meaningfulness'; 'coworker recognition strengthens the benefits of manager recognition to meaningfulness and subsequent behavioural involvement'.	Direct relationship between manager recognition and employee behavioural involvement $B = .47, p<.05$; manager recognition & meaningfulness $B = .35, p<.01$; meaningfulness & behavioural involvement $B = .47, p<.05$. Indirect effect of recognition on involvement = $B = .16, 95\% CI = .03, .24$.	Response rate 69% (non-managers), 61% (supervisors)	D (60%)

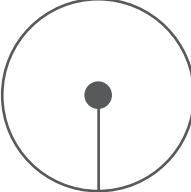
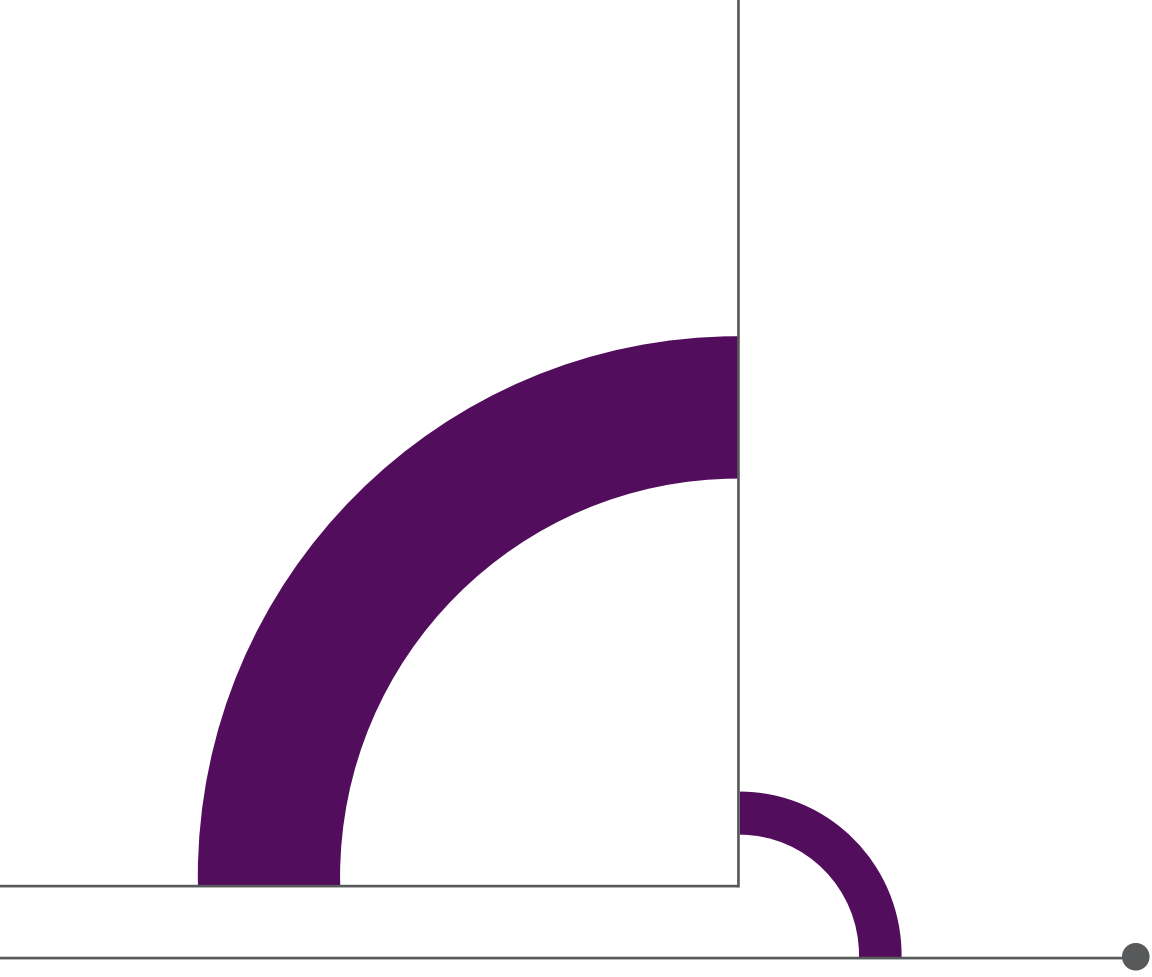
Seitovirta et al, 2018	Cross-sectional study n=402	Registered nurses in Finland	Survey of reward preferences. Subjects placed slightly greater value on non-financial reward – including ‘appreciation and feedback from work community, worktime arrangements, work content, and opportunity to develop, influence and participate’ – than financial rewards.	n/a	Worker preferences only, no measured associations with outcomes.	D (55%)
Stocker et al, 2010	Cross-sectional study n=228	Male career officers and career non-commissioned officers of the Swiss Armed Forces	From abstract: ‘Appreciation at work correlated positively with job satisfaction and negatively with feelings of resentment. Moreover, appreciation at work explained incremental variance over and above job control, social support, and interactional justice.’ Also finds that appreciation buffers the negative effect of working hours on job satisfaction; and that appreciation moderates the effect of illegitimate tasks on wellbeing (job satisfaction and resentment). Appreciation by supervisors and co-workers included ‘compliments, understanding, trust, sympathy, attention, interest, and gratitude’, eg of measures: ‘My colleagues ask for my advice’, ‘When I perform a task well, other interesting tasks are assigned to me’, ‘When talking with my supervisor I can voice my opinion’, or ‘My colleagues notice when I show extra effort’.	Hierarchical multivariate regression results: appreciation & job satisfaction $\beta=.30$, $p<.001$; Appreciation & resentment $\beta=-.18$, $p<.05$.		D (60%)
Stocker, 2018	Non-controlled before–after study n=208	Employees from 7 companies (transportation and storage, financial and insurance activities, landscape service activities, information and communication, and retail)	Provides evidence that appreciation at work buffers work stress from interruptions: ie suggests that interruptions contribute to stress if supervisors don’t show appreciation, but not if appreciation is shown. Investigates the negative influence of work interruptions (‘intrusions by a secondary, unplanned, and unexpected task’) and the positive influence of supervisor appreciation on employee wellbeing (job satisfaction, self-efficacy, job-related depressive mood, and sleep problems) approximately 1 year later. Finds no overall significant associations in these two relationships ($p>.05$) but finds that appreciation by supervisors moderated the effects of interruptions on employee outcomes. Mean time lag between T1 and T2 was 13.8 months (SD=5.8).	SEM coefficients for T1 interaction (interruptions \times appreciation) with: T2 job satisfaction = .16, $p<.01$; T2 occupational self-efficacy = .24, $p<.01$; T2 job-related depressive mood = -.16, $p<.05$; T2 sleep problems = -.14, $p<.05$.	Selection criteria unclear / possible convenience sample; sample size in relation to population not specified.	C (60%)
Von Bonsdorff, 2011	Cross-sectional study n=628	Nurses in 2 public hospitals in Finland	Preferences for rewards and recognition vary across four age groups: 20–29, 30–39, 40–49 and 50–59-year-olds. Preferences for financial rewards strongest for oldest group and weakest for	Age-related differences for: financial rewards $X^2(\text{chi-sq.})=15.70$, $p<.001$; non-financial rewards $X^2=4.68$, $p>.1$.	Response rate 48%.	D (60%)

			youngest group. Preferences for non-financial rewards unrelated to age.			
Wang, 2017	Randomised controlled trial n=76	Undergraduate students in business and accountancy	<p>Shows that a non-financial private and public performance recognition programme led to increases in both <i>productive and counterproductive</i> work efforts. Moreover, it shows that these effects are moderated by the Dark Triad (DT) personality traits (Machiavellianism, narcissism, and psychopathy). That is, recognition is a greater motivator for workers with strong DT traits and is more likely to lead to counterproductive work behaviour (CWB) for workers with weak DT traits. Increased counterproductive behaviour is theorised to be due to competitiveness between workers increasing suspicion and the tendency to undermine peers' performance – this is argued to be natural behaviour for high-DT workers who are 'innately antagonistic', whereas recognition can trigger this behaviour for low-DT workers. In sum, study suggests that recognition schemes are beneficial for DT workers but counterproductive for non-DT workers.</p> <p>Method: Base pay plus piece-rate pay given for a challenging letter-search task which individuals completed independently. Participants were randomly assigned to teams of 3 and teams assigned to one of three experimental conditions – no recognition, private recognition, and public recognition. Participants told before task started whether (non-financial) recognition would take place for highest performer; and explained that they can take away in advance up to 10 points from their team members' totals without affecting their own total (counterproductive behaviour).</p>	<p>Recognition increases performance overall $t=1.65, p=0.05$; Recognition increases CWB overall $z=2.45, p<0.01$.</p> <p>Performance low DT rec vs high DT rec $d = .52$.</p> <p>Performance high DT non-rec vs high DT rec $d = .75$.</p> <p>Recognition \times Dark Triad interaction effect on performance $t=1.54, p=0.06$; Recognition \times Dark Triad interaction effect on CWB $z=1.59, p=0.06$.</p>	<p>Limited relevance of lab-type environment.</p> <p>Small sample size.</p>	A (90%)
White, 2016	Non-controlled before–after study n=35	Division management team in a Fortune 500 company, US.	Assesses the impact of an Appreciation at Work training for managers on their ability to communicate appreciation effectively, measured by a composite Appreciation Index at baseline and 5 months after training. Scores improve for measures including on whether co-workers show appreciation (+.80 on a 5-point Likert scale), participants' own ability to show appreciation (+.79), their supervisor makes them feel appreciated (+.73).	n/a	Score increases not statistically tested for effect and significance. Scores self-rated by training participants, introducing likelihood of bias. Outcome measures included behaviour of training participants, their colleagues and their bosses; assumed causal	C (55%)

			Training covers importance of work appreciation, reasons employees don't feel valued, the differences between appreciation and recognition, conditions for feeling appreciated, useful language to use to show appreciation and challenges in doing so.		mechanisms for the latter two outcomes is unclear. Intervention was not independent of other changes. Percentage of dropouts not reported.	
White, 2018	Cross-sectional survey n=89,579	Individuals who had completed the Motivating By Appreciation Inventory	From abstract: 'Employees in a long-distance work relationship chose quality time ("hanging out" with coworkers, working together on a project, someone taking time to listen to them) as their preferred means to be shown appreciation more frequently (35 per cent) than workers on site (25 per cent). Words of affirmation (oral or written praise) remain high for both groups, but the long-distance group did not value it as much (long-distance: 38 per cent, general: 48 per cent).'	Effect sizes unclear. Statistical tests given only for grouped relationships: remote working and preference for quality time, words of affirmation and acts of service $X^2(\text{chi-sq.})=186.2, p<0.01$.	Limited statistical analysis. Not a random sample representative of a clear population.	D (60%)

Overview of excluded single studies

Author and year	Reason for exclusion
Godkin et al, 2010	Cross-sectional survey of 'employees of a municipal government from across all the civilian departments' in the US (n=494). The paper is seriously undertheorised; detail of statistical analysis is described without sufficient explanation of theory. The hypotheses 'that type of recognition is positively related to preference for rewards, source of recognition, and attitude towards recognition' make little sense.
Khan et al, 2011	Poor-quality study. Cross-sectional survey investigating relationships between non-financial recognition and employee performance, retention and long-term effectiveness. N (employee respondents) is alternately given as 100 and 40; and measures are not adequately described. In addition, direction of causality between recognition and performance is very unclear in a cross-sectional study (see comment on AbuAlRub and Al-Zaru 2008); despite this the study makes strong assertions about causality.
Kosfeld et al, 2017	Not appraised separately as reports on the same study as Kosfeld et al 2014.
Peluso et al, 2017	Discusses recognition only as an inherent aspect of pay (that is, pay described as 'reward and recognition'), not as a verbal/written acknowledgement of performance. Non-monetary forms of reward considered include training and development and a positive work environment, but not recognition. [Cross-sectional study, n=1,092, of workers in 12 multinational and domestic organisations in Italy (manufacturing, utility, consultancy and entertainment). Study looks at associations between total reward systems, which combine monetary and non-monetary rewards and employee outcomes (job satisfaction, affective commitment, and innovative behaviour).]
Schlechter et al, 2017	Study does not focus clearly on recognition for employee performance. Main focus is non-financial rewards, including work-life balance, learning, and career advancement; recognition was only loosely defined ('e.g. certificates of recognition') and was not isolated but grouped with other quite distinct factors – teambuilding, social relationships, health and wellbeing programmes. [Research method of 'full-factorial experimental design' not clearly described; n=180 (mainly South African) prospective workers; snowballed convenience sample. Study looks at influence of non-financial rewards on perceived attractiveness of a job offering and the moderating influence of demographic characteristics in this relationship.]



CIPD

Chartered Institute of Personnel and Development
151 The Broadway London SW19 1JQ United Kingdom
T +44 (0)20 8612 6200 **F** +44 (0)20 8612 6201
E cipd@cipd.co.uk **W** cipd.co.uk

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