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Scientific summary
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People managers

An evidence review

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Acknowledgements

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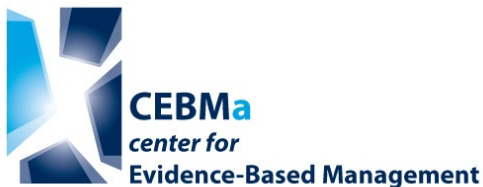
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1 Introduction

Rationale for this review

People managers have an important place within organisations. Through their position as intermediaries, they provide an interface between otherwise disconnected actors and stakeholders. However, their roles and responsibilities, as well as their impact on workplace performance, often remain unclear. For this reason, we conducted an evidence review to understand what is known in the scientific literature about the roles, practices and impact of line and/or middle managers on workplace performance.

What is a rapid evidence assessment?

Evidence reviews come in many forms. One of the best known is the conventional literature review, which provides an overview of 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 bias. This is why we use 'rapid evidence assessments' (REAs). REAs use 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. In contrast to a conventional literature review, an REA is transparent, verifiable and reproducible, and, as a result, the likelihood of bias is considerably smaller.

Main question: What does the review answer?

What is known in the scientific literature about the impact of line and middle managers on workplace performance?

Other issues that follow from this question are:

1 What are line/middle managers?

2 What are the roles and practices of line/middle managers?

3 What is known about the impact of these roles on workplace performance and employee wellbeing?

4 What roles and practices have the biggest impact on performance and wellbeing?

2 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.

A search was conducted using combinations of different search terms, such as 'middle manager', 'line manager' and 'front manager'. In addition, the references listed in the retrieved studies were screened to identify additional studies for possible inclusion in the REA.

We conducted five 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.

The search was first conducted for an evidence review in 2019. This was then re-run in 2022 to update the review with studies published since then.

Selection process: How were studies selected?

Study selection took place in two phases. First, the titles and abstracts of the 900+ 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 357 (2019) and 162 (2022). Second, studies were selected based on the full text of the article according to the following inclusion criteria.

1   date: published in the period 1990 to 2022 for meta-analyses and the period 2000 to 2022 for primary studies.

2   language: articles in English

3   type of studies: empirical, quantitative

4   measurement: studies in which the effect of roles and practices of line/middle managers on workplace performance is quantitatively measured

5   context: studies of workplace settings

6   focus: studies in the domain of people management.

In addition, the following exclusion criteria were applied:

1   studies that focus on characteristics, profiles, preferences, needs, perceptions, etc, of line/middle managers.

2   Studies that focus on determinants of particular line/middle manager behaviour.

This second phase yielded 29 studies (in 2019) and 16 studies (in 2022), making a total of 45. An overview of the selection process is provided in Appendix 2.

Data extraction: What data was extracted?

Data extraction involves the collation of the results of the studies included. From each study we extracted and interpreted information relevant to the review question, such as year of publication, research design, sample size, population (eg industry), possible moderators or mediators, main findings, effect sizes and limitations. An overview of all studies included is provided in Appendix 3.

Critical appraisal

In almost any situation it is possible to find a scientific study to support or refute a theory or a claim. Thus, it is important to determine which studies are trustworthy (ie 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 (ie 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 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 included studies' research design, the classification system of Shadish et al (2002) and Petticrew and Roberts (2006) was used. 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 pretest or uncontrolled study with a pretest	
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 (organisational culture) and its outcomes (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.

Finally, the effect sizes were identified. An effect (eg a correlation, Cohen's d or omega) 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.

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

The overall quality of studies included is limited. Of the 45 studies included, only four studies were graded level A or B, meaning only a small proportion were high-quality studies. The remaining 41 studies were graded level C or D, indicating that most of these studies were correlational. Thus, only limited inferences can be made regarding causality. An overview of all the studies included and information regarding year of publication, research design, sample size, population, main findings, effect sizes and limitations is provided in Appendix 3.

3 Main findings

Question 1: What are people, line or middle managers?

Although this review identified a large number of research articles using 'line' or 'middle' manager in the title, these terms are seldom defined. In some studies line/middle managers are broadly described as "the managerial position closest to employees" (Lundmark et al, 2017). For this reason, line managers are also referred to as 'frontline' or 'first-line' managers'. In other studies, line managers are defined as part of the (vertical) chain of command within an organisation's hierarchical system. As such, they are different from 'functional' managers (eg HR managers) or 'project' managers (eg change managers).

In management practice, however, the term 'line manager' is used interchangeably with the term 'middle manager' – managers who supervise frontline managers and who themselves are supervised by an organisation's senior managers. In the research literature, however, the term 'middle management' is understood rather broadly. It extends to managers located below top

managers and above first-level supervisors. In small organisations, frontline managers are also considered middle managers.

The distinguishing feature of both line and middle managers, however, is not where they sit in the organisational chart. Rather it is their access to top management coupled with their knowledge of operations (Wooldridge et al, 2008).

In this review, we do not distinguish between the terms frontline, first-line and middle managers, and use a broad term of 'people managers' to include all these. We exclude function-specific managers (such as HR managers) and project managers who do not directly manage people.

Question 2: What are the roles and practices of line/middle managers?

The roles and practices of line and/or middle managers are diverse. In particular, the research literature demonstrates that these types of managers not only communicate information and coordinate activities (Schlesinger, 1984; Floyd and Wooldridge,1997), but also implement strategies and policies (Jackson, 1995), act as change agents, and oversee the day-to-day running of the business (Barton and Ambrosini, 2013; O'Shannassy, 2014). Other roles mentioned include supporting, coaching, supervising and evaluating employees. In the case of implementing healthcare policies, guidelines or innovations, line and middle managers fulfil roles such as diffusing information, mediating between implementation strategy and day-to-day activities, 'selling' innovations, suggesting/developing alternatives, and shaping the implementation climate (Birken et al, 2016; Chen et al, 2017).

Question 3: What is known about the impact of these roles and practices on workplace performance and employee wellbeing?

Finding 1: Line and middle managers have a substantial impact on a wide range of organisational outcomes (Level A)

A wide number of studies demonstrate that line and middle managers substantially impact a wide range of organisational outcomes, such as strategy development and implementation, innovation, support for change, compliance, performance, employee satisfaction, absenteeism, commitment and workplace climate. Below, an overview is provided of the most frequently studied outcomes.

Finding 2: The HR roles and practices of line and middle managers have a moderate impact on a wide range of HR outcomes (Level A/C)

Several studies suggest that the role and (HR) practices of line and middle managers have a small to moderate impact on relevant HR outcomes (Ryu and Kim, 2013; Yang and Arthur, 2021), such as employee commitment, involvement (Alhaqbani et al, 2016), workplace climate (Ancarani et al, 2021), employee engagement, innovative performance (Alfes et al, 2013) and task performance. In addition, a recent randomised controlled study found that setting goals for middle managers to reduce employee turnover decreased the quit rate by a fifth to a quarter, lasting nine months before petering out (Friebel et al, 2022).

These findings are supported by several cross-sectional studies demonstrating a positive relationship between middle managers' responsiveness to HR implementation and employees' job performance (see, eg, Fu et al, 2020). The results of a longitudinal study suggest that assigning HR tasks to line and middle managers does not lead to the occurrence of increased workload or stress, provided that the HR department provides sufficient support, advice and training (Gilbert et al, 2011b).

Finding 3: The roles and practices of line and middle managers have a small to moderate impact on the outcome of workplace (change) interventions and employees' support for change (Level B)

A high-quality study demonstrated that middle managers' support for workplace (change) interventions affects staff support and influences how the intervention is perceived (Henderson, 2014). In particular, it was found that middle managers can facilitate workplace interventions and change initiatives by developing good relationships with their subordinates and addressing their perceptions and concerns (Van Dam et al, 2021). In addition, several cross-sectional studies suggest that middle managers' (change-oriented) behaviour directly affects an organisation's capacity to change (Sukoco et al, 2022) and that change interventions initiated or led by middle managers are positively related to employee support for change (Heyden et al, 2017).

Finding 4: The roles and practices of line and middle managers have a moderate impact on implementation effectiveness (Level A)

A recent systematic review shows that middle managers in healthcare organisations play an important role in facilitating implementation of new (evidence-based) practices (Birken et al, 2018). This outcome is consistent with findings from other studies that indicate that line managers' involvement and 'upward' activities (developing/suggesting new alternatives) increase implementation success (Birken, 2013; Chen et al, 2017; Fryer et al, 2018).

Finding 5: The roles and practices of line and middle managers have a moderate impact on organisational and team performance (Level C)

A recent longitudinal study suggests that middle managers' practices, such as setting clear goals, communication, participative management, human resource practices and resource distribution, have a positive effect on (objective) performance measures. This finding is consistent with findings from other studies that indicate that middle managers' behaviours and activities are positively linked with organisational performance (Ahearne et al, 2014; Mair, 2005).

Finding 6: The support of line and middle managers has a moderate impact on employees' wellbeing (Level C)

Several studies suggest that employees who perceive greater support from their line or middle manager also experience higher levels of wellbeing and greater organisational justice (see, eg, Birken, 2015; Huo et al, 2020). In addition, a longitudinal study found that emotional resilience and physical health is weakened when employees lack support from their manager (Huo et al, 2022). These findings are consistent with the results of a large meta-analysis demonstrating that there is a direct relationship between perceived management support and psychological wellbeing (Mor Barak et al, 2009).

Finding 7: The roles and practices of line and middle managers have a small to moderate impact on innovation (Level C)

Several cross-sectional studies found a positive relationship between line and middle managers' leadership and behaviour and employees' innovative work behaviour (Alfes et al, 2013; Ancarani et al, 2021; Birken, 2015; Birken et al, 2016; Alfes et al, 2013; Mustafa et al, 2022). In addition, a longitudinal study of more than 2,000 organisations showed that start-ups with middle managers are more likely to introduce innovative products and services. A possible explanation for this finding is that establishing a middle management level to attend to issues of coordination frees up time and attention for innovators in the organisation to introduce new products and services (Grimpe et al, 2019).

Finding 8: The involvement of line and middle managers in strategy development has a moderate impact on strategy implementation and consequently organisational capabilities (Level D)

Several studies suggest that middle managers' involvement in strategy development has a positive impact on strategy implementation and, consequently, organisational capabilities (Ouakouak et al, 2014). It was found that line managers' knowledge of internal resources and capabilities, the organisation's competitive environment, and their position in the social network of managers contribute to strategic consensus (Pappas et al, 2003).

Question 4: What factors influence the effectiveness of middle managers?

Several studies indicate that the effect of the roles and practices of line and middle managers is moderated by several factors, However, a recent systematic review suggests that most studies offer limited understanding regarding the relative impact of these factors (Birken et al, 2018). With this limitation taken into account, an overview is provided below of the most relevant factors that were reported in the included studies.

Work experience

A three-year panel study found that the performance of units supervised by middle managers who have a variety of work experience (eg job position and geographical location) tend to perform better than units/teams led by middle managers with limited work experience. The effect sizes found, however, were rather small (Mair, 2005).

Leadership style

Line and middle managers spend a substantial part of their time "influencing employees to understand and agree about what needs to be done and how it can be done effectively, and facilitating employees to accomplish the shared objectives" (Yukl et al, 2002). The term 'leadership style' refers to the way in which this process of influencing and facilitating is carried out. Several studies indicate that line and middle managers' leadership style has a direct impact on behavioural outcomes such as work engagement (Ancarani et al, 2021), affective commitment (Gilbert et al, 2011a), altruism, and conscientiousness (Cafferkey et al, 2019). In addition, it was found that ethical leadership of middle managers directly affects the ethical behaviour of employees (Al Halbusi, 2021).

People management skills

Line and middle managers play an important role in sustaining and enhancing a workplace climate that enables workers to perform to the best of their ability. In addition, they are

responsible for the coordination of day-to-day activities, the implementation of innovations, change and policies, and outcomes such as staff turnover, employee satisfaction and performance. Several studies have found that, to successfully fulfil these roles and responsibilities, line or middle managers should possess good 'people management' skills (Cafferkey et al, 2019; Gilbert et al, 2011b; Meisner, 2015; Ndlovu et al, 2021; Sukoko et al, 2022; Teague, 2012). Examples of people management skills – also referred to as 'soft' skills – are communication skills, building intra-team trust and psychological safety, enhancing social cohesion, mentoring and coaching skills, and conflict management skills. A recent rapid review conducted by CEBMa indicates that the provision of training in these skills substantially improves line and middle managers' impact and performance.

Organisational support

Several studies found that a supportive organisational climate is an important condition for middle managers to successfully support their subordinates (see, eg, Cafferkey et al, 2019). For example, it is important for the organisation's HR department to create a supportive environment in terms of giving HR support and advice to line managers, and training line managers regarding their HR competencies (Gilbert et al, 2011a, 2011b). In addition, it was found that middle managers who have good relationships with (and feel supported by) top management are more likely to act as a 'broker' – connecting, informing and engaging organisational members who are 'out of the loop' (Glaser et al, 2021).

Span of control

A cross-sectional study found that span of control – defined as the number of employees directly reporting to a manager or supervisor – moderates the effectiveness of middle managers (Dewettinck, 2017). This finding is in line with the outcome of a rapid review conducted by CEBMa, in which it was found that when span of control is large, time to interact with each subordinate on an individual level is limited – as a result, middle managers may be less effective. In addition, it was found that the more time a middle manager spends on non-managerial work (more than 30%), the worse a team's performance (Tsuda and Sato, 2020).

4 Conclusion

The roles and practices of line and middle managers and their effect on organisational outcomes are widely studied. However, the available evidence is rich in quantity but not quality. Based on this evidence, we conclude that the roles and practices of line and middle managers substantially affect a wide range of organisational outcomes. Thus, they are an indispensable link between the organisation's top management and its frontline employees. However, the impact of middle managers is affected by several moderating factors, such as work experience, leadership style, people management skills, organisational support and span of control.

Limitations

To provide a 'rapid' review, concessions were made in the breadth and depth of the search process. As a consequence, relevant studies may have been missed.

A second limitation concerns the critical appraisal of included studies. We did not perform a comprehensive evaluation of their measures (ie the psychometric properties of the tests, scales and questionnaires used).

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

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Appendix 1: Search terms and hits

ABI/Inform Global, Business Source Elite, PsycINFO, ERIC, EMBASE, CINAHL Peer-reviewed, scholarly journals, September 2019				
Search terms	**ABI**	**BSP**	**PSY**	**EMBASE**
S1: ti("middle manage*"), limit > 2010, studies	214	184	119	94
S2: ti("line manage*), limit > 2010, studies	-	-	109	-
Total	**214**	**184**	**228**	**94**

ABI/Inform Global, Business Source Elite, PsycINFO Peer-reviewed, scholarly journals, December 2022			
Search terms	**ABI**	**BSP**	**PSY**
S1: ti("middle manage*"), limit > Sept 2019, studies	55	64	30
S2: ti("line manage*), limit > Sept 2019, studies	34	34	12
S3: ti(front-line manage*), limit > 2010, studies	7	12	12
Total	**96**	**110**	**54**

Appendix 2: Study selection

Study selection: Line and middle managers 2019
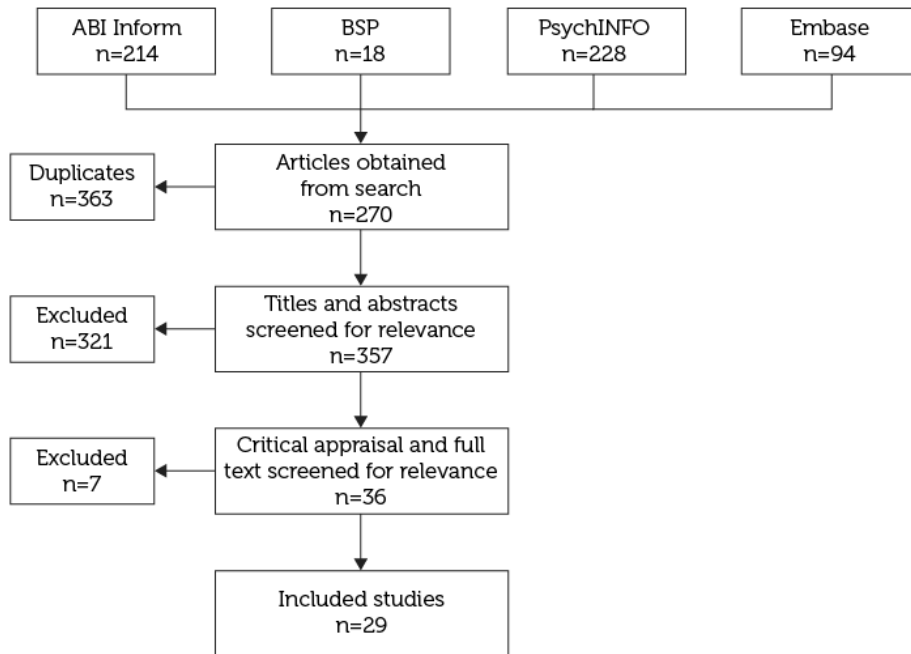
Study selection: Line and middle managers 2019
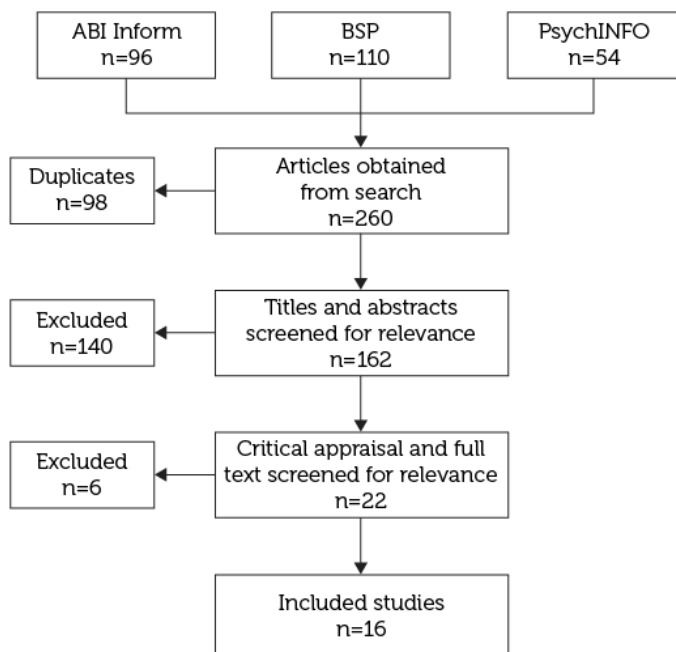
Appendix 3: Data extraction table

1st author and year	Design and sample size	Sector/population	Main findings	Effect sizes	Limitations	Level
Ahearne, 2014	Cross-sectional and longitudinal study n=43 sales directors and 285 sales managers	Business unit of a *Fortune* 500 company that operates in the industrial cleaning and sanitising industry	1. The relationship between middle managers' facilitating adaptability (ie downward influence behaviour/involvement in and influence on strategy) and objective business unit performance does NOT follow an inverted U shape. > apparently extreme adaptation does NOT lead to a lack of focus in the overall strategy. 2. The relationship between middle managers' championing alternatives (ie upward influence behaviour) and objective business unit performance follows an inverted U shape. > When managers engage in championing alternatives to the extreme, their behaviour may backfire: senior managers may perceive middle managers' extreme upward influence as acts that question their positional power, which in turn can intensify affective strategic dissensus and impair effective strategy implementation. 3. The rate of business unit performance gain associated with middle managers' facilitating adaptability is higher when a middle manager has high informational social capital (ie informal social ties with peers in neighbouring areas). 4. The rate of business unit performance gain associated with middle managers' facilitating adaptability is higher when the middle manager manages a large business unit network.	direct linear correlations: 1. r=.34 2. r=.39 3. r=.17 4. r=.02 5. r=.14 6. r=-.07	Single organisation	C

			5. The rate of business unit performance gain associated with middle managers' championing alternatives is higher when a middle manager's reputational social capital in the management network is high. 6. The rate of business unit performance gain associated with middle managers' championing alternatives is higher when a senior manager's regional network size is large.			
Al Habusi, 2021	two-wave cross-sectional survey n=270	employees in the Malaysian manufacturing industry	1. Ethical leadership of (middle) managers positively relates to employee ethical behaviour. 2*. Perceived organisational justice and its dimensions of distributive (a), procedural (b), interpersonal (c), and informational (d) justice each mediate the positive relationship between the ethical leadership of (middle) managers and employee ethical behaviour.	1. ß=.24	measures of employee ethical behaviour concerned self-report	D+

			Note*: some justice dimensions were more important mediators than others. > Interpersonal and informational justice showed the strongest size effects, procedural and distributive justice showed the weakest effect sizes.			
Alhaqbani, 2016	mixed methods, cross-sectional and qualitative (interviews) n=149	Saudi public service organisation	Lack of commitment of line managers leads to poor employee commitment, low employee involvement, and consequently poor implementation of improvement programmes/initiatives.	not reported	single organisation	D
Alfes, 2013	cross-sectional study, n=924	employees from service-sector organisations in the United Kingdom	Perceived line manager behaviour is positively related to (1) employee engagement, (2) task performance and (3) innovative work behaviour.	1. r=.36 2. r=.18 3. r=.21	all self-report	D
Ancarani, 2021	cross-sectional study n=2,721	Italian local government workers	1. Middle managers' transformational leadership style has a direct positive impact on the work engagement of subordinates. Mixed results emerge for other leadership styles (transactional, contingent-reward, management by exception, laissez-faire). 2. Middle managers' transformational leadership style is the only leadership style that has a significant and positive impact on climate constructs supporting organisational change (social, innovative, supportive).	1. moderate correlations (.37 – .49) between elements of TL and the 3 dimensions work engagement 2. moderate to large, (r=.3 – .7) but only SEM path coeff are provided	no serious limitations	D

Birken, 2013	mixed methods, cross-sectional and qualitative (interviews) n=120 + 103	Managers and CEOs at 149 community health centres in 21 Midwestern and West Central states in the US	Middle managers' commitment is positively related to implementation effectiveness. Qual: Middle managers' commitment influenced implementation effectiveness when middle managers engaged in extra-role behaviours with a positive attitude.	Varies from β=.14 to β=.44, depending on the type of implementation	no serious limitations	D
Birken, 2015	mixed methods, cross-sectional (n=120) and qualitative (interviews, n=16)	middle managers in 120 US health centres	Top managers increase middle managers' commitment by directly conveying to middle managers that innovation implementation is an organisational priority. Qual: Middle managers may maximise the influence of top managers' support on their commitment by communicating with top managers about what kind of support would be most effective in increasing their commitment to innovation implementation.	β=.37	no serious limitations	D
Birken, 2016	cross-sectional study n=63	nurse managers, Cleveland Clinic	The theory of middle managers' role in implementing healthcare innovations states that middle managers influence implementation effectiveness by fulfilling the following four roles: diffusing information, synthesising information, mediating between strategy and day-to-day activities, and selling innovation implementation. Middle managers rated all of the theory's hypothesised four roles as 'extremely important' but ranked diffusing and synthesising information as the most important and selling innovation implementation as the least important. They reported engaging in several activities that were consistent with the theory's hypothesised roles and activities such as diffusing information via meetings and training.	not reported	mainly descriptive study	D

Birken, 2018	systematic review of observational, quasi-experimental, and experimental studies s=105	middle managers from healthcare organisations	Middle managers play an important role in facilitating EBP implementation. - Mediating between strategy and day-to-day activities - Diffusing information - Selling implementation - Synthesising information - Shaping implementation climate However, included studies offered little understanding regarding the relative importance of various roles, potential moderators of the relationship between middle managers' roles and EBP implementation, or determinants of middle managers' role in EBP implementation.	not reported	no serious weaknesses	A
Bos-Nehles, 2013	cross-sectional study n=174 + 1,065	Line managers and subordinates of an international naval defence company and a Dutch construction company	The ability of line managers in terms of performing HRM practices is not related to how effectively they implement these practices on the work floor.	r=.05 ns	no serious weaknesses	D

Cafferkey, 2019	cross-sectional study n=374	academics in the faculty of business in private universities in Malaysia	1. Frontline managers' supportive leadership predicts employees' affective commitment (a), altruism (b) and conscientiousness (c). 2. Interactional justice mediates the relationship between frontline managers' supportive leadership and affective commitment (a), altruism (b) and conscientiousness (c). 3. Supportive culture mediates the relationship between frontline managers' supportive leadership and affective commitment (a), altruism (b) and conscientiousness (c).	1 a. r=.52; ß=.52 b. r=.39; ß=.39 c. r=.25; ß=.23	specific sample and context, possible limited representativeness	D
Chen, 2017	cross-sectional study n=644	random sample of senior employees, supervisors, and line managers from seven ministries of Taiwan central government	1. Line managers in public organisations are frequently involved in upward roles (a. suggesting/developing new alternatives and b. synthesising information). 2. High-performance-related practices are positively associated with public line managers' upward activities.	2. a. new alternatives r=.41 b. synthesising info r=.38	no serious weaknesses	D

Dewettinck, 2017	cross-sectional study n=731 + 425	frontline managers and employees in Belgium	H2: Perceived HR support is NOT positively related to frontline managers' enactment of formal performance management – (a) frequency, (b) duration, (c) informal pm – frequency. H3: Frontline managers' implicit person theory is NOT positively related to their enactment of formal performance management – (a) frequency, (b) duration, (c) informal pm – frequency. H4. Frontline managers' attitude regarding the usefulness of performance management mediates the relationship between (a) perceived HR support and (b) implicit person theory and (in)formal PM enactment. H5a: Span of control moderates the relationship between frontline managers' PM attitude and the enactment of formal PM – (a) duration, (b) frequency.	H2a: r=.11 ns H2b: r=.05 ns H2c: r=.03 ns H3a: r=-.04 ns H3b: r=.02 ns H3c: r=-.04 ns H4 and H5: small beta's	possibly biased sample	D
Friebel, 2022	RCT (3 arms) n=60 vs 60 vs 60	managers and employees from a firm with 238 stores located in an Eastern EU country	1. Setting goals for middle managers to reduce employee turnover decreases the quit rate by a fifth to a quarter, lasting nine months before petering out, but reappearing after a reminder. 2. There is no effect on sales. 3. Managers in the experimental group spent more time on HR and less on customer services, suggesting a trade-off. 4. Setting goals produces efficiency gains, but only at the firm level.	unclear/not reported	analysis is at the store level intervention (goal setting) is rather vague (managers were asked 'to do what they can' to reduce employee turnover')	A
Fryer, 2018	cross-sectional study n=67	nurse managers from 19 US hospitals	Higher levels of middle manager affective commitment to a quality improvement programme are associated with higher levels of programme implementation success.	r=.69 ß=.40	no serious weaknesses	D
Fu, 2020	cross-sectional study	consulting project teams from a global	1. The manager's degree of HRM implementation is not related to individual job performance. 2. The manager's consistency of HRM implementation is positively related to individual job performance.	1. ns 2. ?* 3. r=.19(o) /.28(s)	no serious weaknesses	D

		professional services firm	3. The manager's individual responsiveness (to individual differences) of HRM implementation is positively related to individual job performance.	*Only unstandardised betas are reported		
	n=171 members of 60 teams					
Gilbert, 2011a	cross-sectional study n=1,362	employees and line managers from Belgian/Luxembourg divisions of three large international service companies	H1. Employee perceptions of effective enactment of HR practices by their line manager are positively related to employees' affective commitment. H2. Employee perceptions of effective relations-oriented leadership behaviour by their line manager are positively related to employees' affective commitment. H4. Employee perceptions of the HR department's service quality does NOT moderate the effects of line manager's HR enactment (H4a) and relations-oriented leadership behaviour (H4b) on employees' affective commitment. The positive effect of the perceived HR department's service quality is NOT larger where line managers undertake the HRM role ineffectively.	H1: r=.52 ß=.19 H2: r=.50 ß=.20 H4: < .05 ns	no serious weaknesses	D
Gilbert, 2011b	Longitudinal study (n=169	frontline managers from 47 Belgian and Luxembourg organisations	1. The number of devolved HR tasks is positively related to perceived HR role ambiguity (a) and HR role overload (b). 2. The level of support from the HR department is negatively related to perceived HR role ambiguity (a) and HR role overload (b). 3. The presence of formal organisational incentives to reinforce the HR role of frontline managers is NOT related to perceived HR role ambiguity (a) and HR role overload (b). 4. The possession of HR competencies by the frontline manager is negatively related to perceived HR role ambiguity (a) and HR role overload (b). These results suggest that the execution of a high number of HR tasks does not lead to the occurrence of HR role stressors among frontline managers. However, for the HR department it is important to create an appropriate environment in terms of giving HR support	1a r=-.12 ns 1b r=-.10 ns (beta's ns) 2a r=-.46 ß=-.29 2b r=-.42 ß=-.31 3a. r=-.28 b. r=-.14 ns (beta's ns) 4a r=-.60 ß=-.48 4b r=-.43 ß=-.30	data collection procedure unclear convenience sample (line managers)	C

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			and advice to line managers, and training line managers regarding their HR competencies.			
Glaser, 2021	cross-sectional study n=383 + 72	middle managers and top managers working in 34 business units of a Fortune 500 company in the logistics industry	1. The more extensive a middle manager's political-support relationships with top managers of other units (x), the stronger the relationship between that manager's brokerage (a) and personal initiative (b). 2. The business unit's social context moderates the positive interaction effect of a manager's brokerage and support relationships with top managers on personal initiative such that this interaction effect is stronger in weak social contexts. 3. The business unit's connectedness moderates the positive interaction effect of a manager's brokerage and support relationships with top managers on personal initiative such that this interaction effect is stronger when unit connectedness is higher.	1. zero order correlations x > a: r=.20 x > b: r=ns b > a: r=ns 1. ß=-.30	mainly based on self report small effect sizes	D

Grimpe, 2019	Longitudinal study (7-year panel study) n=2,431	German high-tech start-ups founded	Start-ups with middle managers are more likely to introduce product innovations (establishing a middle management level frees up attention for innovation).	r=.12 marginal effect=.04	no serious limitations	C
Henderson, 2014	quasi-experimental study n=336	nurse managers from four general surgical and four general medical inpatient matched units in two settings in South East Queensland, Australia	Middle managements' supports for a (workplace) intervention increases: - staff support for the intervention - positive perceptions - behaviours that promote learning (learning climate).	not reported (only M and SD)	no serious limitations	B
Heyden, 2017	cross-sectional study n=3,200	managers, frontline supervisors, and internal consultants of 602 organisations	1. Change initiated and executed by top managers is negatively related to employee support for change. 2. Change initiated by top managers and executed by middle managers is positively related to employee support for change. 3. Change initiated by middle managers and executed by top managers will be positively related to employee support for change. 4. Change initiated and executed by middle managers will be positively related to employee support for change.	1. ß=.04 ns 2. ß=.01 ns 3. ß=.49 4. ß=.25	no serious limitations	D

Huo, 2020	cross-sectional study n=357	frontline workers in a Chinese FMCG manufacturer	1. Intrinsic work motivation (x) mediates the positive relationships between (a) line manager support and (b) job satisfaction, (c) work engagement and (d) physical health. That is, employees who perceive greater managerial support also experience greater intrinsic motivation, which in turn is linked to higher levels of wellbeing (job satisfaction, work engagement and physical health). 2. Distributive justice mediates the positive relationships between line manager support and (a) job satisfaction, (b) work engagement and (c) physical health. That is, employees who perceive greater managerial support report greater distributive justice, which in turn is linked to higher levels of wellbeing (job satisfaction, work engagement and physical health).	1. zero-order correlations a > b: r=.49 a > c: r=.50 a > d: r=.26 Only SEM coefficients are provided	no serious limitations	D
Huo, 2022	longitudinal study (1-year interval) n=315	frontline workers in a Chinese FMCG manufacturer that adopted lean management	1. The negative relationship between emotional exhaustion and job satisfaction is weakened by stronger line manager support. In addition, the indirect relationship between work intensification and job satisfaction via emotional exhaustion is moderated by line manager support such that the negative indirect effect becomes weaker as line manager support increases. 2. The negative relationship between emotional exhaustion and physical health is weakened by stronger line manager support. In addition, the indirect relationship between work intensification and physical health via emotional exhaustion is moderated by line manager support such that the negative indirect effect becomes weaker as line manager support increases.	only SEM coefficients and unstandardised betas are reported, but the zero-order correlations suggest the effects are small	no serious limitations	C
Jaoua, 2016	cross-sectional study n=350	CEOs of large Tunisian companies	Line managers have a central role in the relationship between creativity in strategy and organisational performance.	not reported (only SEM coefficients)	mainly self-report, highly anecdotal	D –
Jaoua, 2018	cross-sectional study n=364	Tunisian companies	Middle manager roles (facilitating adaptability, implementing strategy, championing alternatives, but not synthesising information) has a direct positive effect on strategy implementation and organisational performance.	not reported (only SEM coefficients)	same study as Jaoua 2016	D –

Johansen, 2016	Longitudinal study (4-year panel study) n=250	public schools in Hawaii	1. Organisations with middle managers who engage in tasks related to setting clear goals experience better organisational performance. 2. Organisations with middle managers who engage in communication tasks experience better organisational performance. 3. Organisations with middle managers who engage in human resources management tasks experience better organisational performance. 4. Organisations with middle managers who engage in participative management tasks experience better organisational performance. 5. Organisations with middle managers who engage in resource distribution tasks experience better organisational performance. 6. Organisations with middle managers who have a higher level of engagement in management tasks experience better organisational performance.	only unstandardised b's are reported	no serious limitations	C
Kerstin, 2013	cross-sectional study n=1,796	employees and line managers from large service companies in the UK	H2: Perceived line manager behaviour is positively related to (a) employee engagement and (b) self-reported performance. H4a: Employee engagement is positively related to task performance and mediates the relationship between perceived line manager behaviour and task performance. H4b: Employee engagement is positively related to innovative work behaviour and mediates the relationship between perceived line manager behaviour and innovative work behaviour.	H2a: r=.34 H2b: r=.18 H4: supported betas round .2/.3	- mostly self-report - employee engagement is more defined as work engagement	D

Leisink, 2011	cross-sectional study n=160	frontline managers from various (Dutch) organisations	The study failed to find evidence that the social support that line managers provide is influenced by negative stereotypical attitudes about the lack of flexibility and the performance of older workers.	–	no serious limitations	D
Lundmark, 2017	longitudinal (before-after) study n=180	employees from a white-collar organisation in Sweden	1. Line managers' attitudes and actions during the intervention process positively predict changes in (a) self-rated health and (b) work ability among employees. 2. Line managers' general transformational leadership during the intervention process positively predicts changes in self-rated health and work ability among employees.	1a. $r=.23$, $\beta=.23$ 1b. $r=.22$, $\beta=.25$ 2a. $r=.16$, $\beta=ns$ 2b. $r=.12$, $\beta=ns$	no serious limitations	C
Mustafa, 2022	cross-sectional study (2 wave) n=151	middle managers from eight 4- and 5-star hotels in Malaysia	1. Middle managers' psychological empowerment ((a) competence, (b) meaning, (c) self-determination and (d) impact) is positively related to their innovative work behaviour. 2. Middle managers' psychological empowerment ((a) competence, (b) meaning, (c) self-determination* and (d) impact) is positively related to their personal initiative. 3. Middle managers' personal initiative is positively related to their innovative work behaviour. 4. Middle managers' personal initiative mediates the relationships between their psychological empowerment ((a) competence, (b) meaning, (c) self-determination and (d) impact) and their innovative work behaviour.	1a. $r/\beta=ns$ 1b. $\beta=.12$ 1c. $r/\beta=ns$ 1d. $\beta=.37$ 2a. $\beta=.20$ 2b. $\beta=.22$ *2c. $\beta=.ns$ 2d. $\beta=.36$ 3. $\beta=.51$ 4a. $R^2=.25$ 4b. $R^2=.25$ 4c. $R^2=ns$ 4d. $R^2=.35$	no serious limitations	D+

Mair, 2005	Longitudinal study (3-year panel study) n=119	area units from a Dutch financial service company	1. Enacted strategy – actual behaviour of middle managers that is aligned with the company's strategy – has a positive and significant effect on unit performance over time. 2. The background of the middle manager in charge of a unit has a significant effect on the performance of that unit over time. Middle managers with a variety of work experience perform better. 3. The educational level of the middle manager in charge of a unit has an effect on the performance of that unit over time. Middle managers with a high level of formal education perform worse.	only SEM path coefficients are reported, but all zero-order correlations are small	no serious limitations	C
Meissner, 2015	cross-sectional (descriptive) study n=199	middle managers from three aged care organisations in Australia	Middle managers perceived the need to develop their communication skills, self-awareness, change management, conflict resolution and leadership skills. This study demonstrated that provision of training needs to go beyond clinical skills development and further investigation into managers' needs is necessary, particularly considering the diversity of this critical group in organisations. Future training opportunities provided to middle managers need to address the 'softer' skills (eg communication) rather than 'technical' skills (eg clinical skills). The provision of training in these skills may improve their performance, which may also lead to increased job satisfaction, continuity in leadership and management and ultimately improvements in the quality of care provided.	na	no serious limitations	na
Ndlovu, 2021	cross-sectional study n=148	employees and middle managers in the financial services sector of South Africa	1. The relationship between line manager communication during a merger and affective organisational commitment is mediated by employee trust. 2. The relationship between line manager communication during a merger and affective organisational commitment is mediated by job satisfaction.	only SEM path coefficients are reported – all small to moderate	no serious limitations	D

O'Shannassy, 2014 n=72	cross-sectional and qualitative study	Australian executive master of business administration students working in a range of industries	Line managers are the 'doers' of strategy, with important 'analyst', 'coordinator', 'information source' and 'communicator' roles.	n.a.	no serious limitations	D
Ouakouak, 2014 n=372	cross-sectional study	managers from 372 companies from 33 different European countries	1. Middle managers' involvement in the strategy formulation positively affects organisational capabilities. 2. Middle managers' involvement in the strategy implementation positively affects organisational capabilities. 3. Middle managers' autonomy positively affects organisational capabilities.	only SEM path coefficients are reported – all small to moderate	no serious limitations	D
Pappas, 2003 n=88	cross-sectional study	managers from a medium-sized hospital in an urban setting located in the northeastern United States	Line managers' knowledge of the (1) internal resources and capabilities and the (2) external competitive environment of an organisation and (3) his/her position in the social management structure significantly affect the realisation of strategic consensus.	1. r=.34 2. r=.34 3. r=.15	no serious limitations	D
Pombo, 2022 n=95	cross-sectional study	line managers and employees of the Portuguese Air Force	1. Leader–member exchange does NOT mediate the effect of human resources policies on organisational performance.	1. ns	small sample size mediation was tested with Baron and Kenny's method	D

Ryu, 2013	Longitudinal study (3-year panel study) n=119	450 Korean firms that employ more than 100 workers	First-line managers' HR involvement is positively associated with HR effectiveness.	r=.15 ß=.18	no serious limitations	C
Schaefer, 2016	cross-sectional study n=164	Large German firms	1. Implementation success is more strongly positively related to organisational performance when top managers (relative to middle managers) dominate participation in the strategic planning process. 2. Strategic planning effectiveness is more strongly positively related to organisational performance when middle managers (relative to top managers) dominate participation in the strategic planning process.	only SEM path coefficients are reported	no serious limitations	D
Sukoco, 2022	cross-sectional study n=89	11 top universities in Indonesia	1. Middle managers' capabilities (MMCs) have a positive effect on the organisation's capacity for change (OCC). 2. OCC has a positive effect on performance. 3. The positive effect of the middle managers' capabilities on performance is (fully) mediated by the OCC.	only SEM path coefficients are reported (1. ß=.70; 2. ß=.35)	non-random sample	D
Teague, 2013	cross-sectional study n=360	360 enterprises in the private sector and state-owned commercial enterprises employing 50 or more employees in the Republic of Ireland	Line and supervisory management engagement in conflict management affects key organisational outcomes of concern to employers: the employment relations climate, voluntary staff turnover, absence rates, productivity and the capacity to achieve organisational change.	small betas	population somewhat unclear (single-survey respondents)	D

Tsuda, 2020 n=2,183	cross-sectional study	middle managers at Japanese firms	1. A large proportion (87%) of middle managers are engaged in non-managerial work. 2. The proportion of time that middle managers spend on non-managerial work is less when the team is large and more when the team is small. 3. The more time a middle manager spends on non-managerial work the worse the team's performance. 4. Team performance is best when middle managers are spending 20–30% of their time on non-managerial work.	only percentages are reported	external validity may be limited	A (freq)
Van Dam, 2021 n=326	cross-sectional study	middle managers and employees from two Dutch health insurance companies that were involved in a merger	1. LMX relates positively to change information. 2. LMX relates positively to change participation. 3. Change information relates positively to trust (a) and control (b), and negatively to cynicism (c) and uncertainty (d). 4. Change participation relates positively to perceived control (b) but NOT to trust (a) cynicism (c) and uncertainty (d). 5. Trust (a) and control (b) relate negatively to resistance to change, and trust (a), cynicism (c) and uncertainty (d) relate positively to resistance to change. Thus, middle managers can facilitate change by developing high-quality relationships with their subordinates, and addressing employees' affective perceptions of the change through change information and change participation.	1. β=.32 2. β=.28 3a. β=.56 3b. β=.26 3c. β=−.52 3d. β=−.36 4a. β=−.03 ns 4b. β=.34 4c. β=−.01 ns 4d. β=−.04 ns 5a. β=−.29 5b. β=−.09 5c. β=.20 5d. β=.28	no serious limitations	D
Yang, 2021 n=195	cross-sectional study	34 organisations in Korea	1. Frontline managers' (FLMs') commitment HR attributions are positively associated with their implementation of commitment HR practices. 2. FLMs' implementation of commitment HR practices are positively associated with work group employees' perceptions of commitment HR implementation by FLMs.	1. β=.33 2. β=.45	no serious limitations	D

| | | | *Commitment HR practices=decentralised work organisation, employee involvement, employer investments in employee training, career development.

** High levels of commitment HR attributions: FLMs strongly believe that their organisation adopted the intended HR practices to promote employee wellbeing and to offer high-quality products or services to the relevant markets. Low levels of commitment HR attributions: FLMs do not believe that their organisation has a genuine interest in benefiting employees or fulfilling customer expectations with high-quality products or services. | | | |

Overview of excluded studies

Author and year	Reason for exclusion
Alegbeleye, 2020	Unclear how the sample was obtained.
Bayo-Moriones, 2021	Not relevant: examines whether there are differences in association between the effect of AMO – HR practices on manufacturing for line managers compared with frontline workers (note: effect sizes and differences found were rather small).
Boutcher, 2022	Critical interpretive synthesis, merely descriptive, no pooled quantitative outcomes are reported.
Gunnarsdottir, 2009	Not relevant: after controlling for nurses' personal characteristics, job satisfaction, emotional exhaustion and nurse-rated quality of care were found to be independently associated with perceptions of support from unit-level managers, staffing adequacy, and nurse–doctor relations.
Lasbech, 2018	Provides an overview of the most relevant articles, according to the citations, in research on SAP and the role of the MM inside organisations – no research findings or outcomes are reported.

Longenecker, 2003	Qualitative study, type of manager unclear.
Naz, 2022	Risk of biased sample, mediation was tested with Baron and Kenny's method.
Purwaningrum, 2022	Examines the effect on middle managers' participation in organisational change on their commitment to change – constructs remain unclear, unclear what the nature is of the tested relationships, substantial risk of bias.
Purcell, 2007	Mainly qualitative study, sectors very remote from healthcare (eg ladieswear and household departments).
Rohlfer, 2022	Limited relevance: examines the mediating role of middle managers with a collectivist orientation on the relationship between CEOs' empowering leadership behaviour and perceived management innovation in a Moroccan sample of small and medium-sized enterprises.
Shipton, 2016	Outcome is only partly relevant (employees' affective commitment). Note: correlations are all < .1
Wooldridge, 2008	Traditional literature review, no (pooled) effect sizes reported.
Wai Kwong, 2001	Unclear what the main effect is (measures include type of strategy: cost-leader, differentiation, etc).

CIPD