EXECUTIVE SUMMARY

Rapid Evidence Assessment (REA)

FACTORS ASSOCIATED WITH KNOWLEDGE WORKER PERFORMANCE

a summary of research literature

July 2019

Culture Review **Implementation**

our journey of positive change

ACT Government

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What is a Rapid Evidence Assessment (REA)?

Rapid Evidence Assessments (REAs) use a specific research methodology to comprehensively identify the most relevant studies on a given topic, and select appropriate studies based on explicit criteria. In addition, two independent reviewers assess the methodological quality of the studies. In contrast to a conventional literature review, REAs are transparent, verifiable, and reproducible, and as a result, the likelihood of bias is considerably smaller.

Background

In mid-2013 this REA was commissioned by the Center for Evidence Based Management (CEBMa) for a group of eight companies to understand the factors that determine knowledge worker performance. In July 2019, the REA was updated and funded by Novartis and Advanced Workplace Associates (AWA).

What this REA assesses

This REA attempts to confirm the factors associated with knowledge worker performance. It also considers the following supplementary questions:

1. **What is 'knowledge work'?**
2. **Which of the factors that have an impact on the performance of knowledge workers are most widely studied and what is known of their effect?**
3. **Which eight factors have the biggest impact on performance?**

Main findings

1. What is ‘knowledge work’?

Defined in 1959 by Peter Drucker, the term ‘knowledge work’ describes work that occurs primarily because of mental processes rather than physical labour. In the last century, the proportion of the global workforce engaged in ‘knowledge work’ has increased dramatically as organisations have moved from manual production to more knowledge-driven production, as the following estimates suggest:

1920: 30% (Davenport, et al., 2002).

1956: 50% (Naisbitt, 1982).

1980: 70% (Thomas & Baron, 1994).

Since then many definitions and publications on the topic have been put forward. When examined in more detail the definitions have the following common elements:

- Distribution of application of knowledge.
- Highly educated, autonomous professionals.
- Use of information technology as an integral part of the work process.
- A work process that is difficult to standardise
- Complex and intangible outcomes.

To assess the level of knowledge work in a particular job, the following aspects of the role need to be examined:

- **Autonomy** – the degree of worker control over how a task is done.
- **Structure** – the degree of established rules, policies, or procedures about how a task is done.
- **Knowledge** – the degree to which having previous knowledge and executing cognitive processes are part of the task.
- **Complexity** – the degree to which a task offers difficulty in understanding or has confusing interrelated sub-tasks.
- **Routine and repetitiveness** – the degree to which a task is part of a regular or established procedure characterised by habitual or mechanical performance of tasks.
- **Physical effort** – the degree to which a task requires body strength, coordination, and skill in order to be performed.

2. Which of the factors that have an impact on the performance of knowledge workers are most widely studied and what is known of their effect?

A total of 85 factors were identified, accounting for more than 145 effect sizes. More detail is provided in Annex III of the REA.

The following eight factors demonstrated a large effect on performance – for more details refer to the table under Question 2 in the complete version of 'Rapid Evidence Assessment (REA) Factors related to Knowledge Worker Performance – a summary of research literature, July 2019':

- Social cohesion.
- Perceived Supervisory Support and Perceived Support for Innovation.
- Information Sharing.
- Vision and goal clarity.
- External communication.
- Team Empowerment.
- Psychological Safety.
- Group Goals.

3. Which eight factors have the biggest impact on performance?

Factor 1 Social cohesion

Social cohesion refers to a shared liking or attraction to the group, emotional bonds of friendship, caring and closeness among group members and enjoyment of each other's company (Chiocchio, 2009). Whilst social cohesion is dynamic it is unlikely to change dramatically in the short term.

Social cohesion can enhance performance when there is high levels of psychological safety. This means that members of a group feel free to explore new ways of doing things and are more able to take risks in situations in which they have a reliable bond with other significant team members. Knowledge workers who have strong feelings of belonging and attachment to their colleagues are more likely to cooperate and interact with each other and are therefore more able to exchange ideas and share information (Hulsheger et al., 2009). For example, operating room nurses are more likely to share innovative ideas to improve patient safety with surgeons when there is a high level of social cohesion between these two professional groups.

Factor 2 Perceived Supervisory Support & Support for Innovation

Perceived Supervisory Support (PSS) refers to how knowledge workers feel their supervisor helps them in times of need, praises them or the team for a task well done or recognises them for extra effort. A related term, Support for Innovation (SFI) refers to the expectation, approval and practical support of a worker's attempt to introduce new ways of doing things.

Both constructs are important in allowing workers to perform at high levels, to meet defined goals and objectives and therefore be of value to their supervisor and organisation.

Factor 3 Information Sharing (IS)

IS is the extent to which teams use each individual member's distinctive knowledge or expertise for the broader team's benefit. IS is particularly important to solve complex problems by individuals sharing their knowledge and past experiences to discuss ideas and generate new ideas.

An important concept related to IS is Transactive Memory System (TMS). This concept was first developed through the observation of dating couples. Researchers noted that dating couples in a close relationship treat their partners as an external memory device. TMS within a team refers to a form of knowledge that is embedded in a team's collective memory. This collective memory works like an indexing system that tells members who knows what.

It is believed that the more team members share information, the better the group decisions will be, and as a result the better overall group performance (Hackman, 1990). IS is also believed to increase the awareness of who knows what in a group (TMS). In addition, a well-developed TMS will enable teams to more effectively solve complex problems because they access and make best use of every team member's expertise.

Factor 4 Vision and Goal Clarity

Vision refers to an idea of a valued outcome which represents a higher order goal and motivating force at work (Kouzes & Pozner, 1987; West, 1990). Several studies support the finding that a clear vision at the team level tends to also have a positive effect on the performance of individual teams. Vision at the team level is also referred to as 'goal clarity.'

Vision and Goal Clarity can enhance performance as several research studies have confirmed that for a team to be effective individual members need to be committed to team objectives and share a sense of purpose and responsibility (Hulsheger et al., 2009). This shared commitment can help to point a team of knowledge workers in the same direction; enhancing cooperative and goal-directed behaviour. Clear goals also help knowledge workers see connections between their personal values and team values, which increases the degree to which they find meaning in their work (Wright & Pandey, 2011). A clear vision and commitment to long-term objectives, therefore, plays an important role in allowing knowledge workers the 'freedom to act' as well as ensuring they are responsible for producing results (Simon, Staschel, & Covin, 2011).

Factor 5 External Communication

External communication refers to the ability of teams to span boundaries (team and organisational) to seek information and resources from others. Research has shown that the more external communication knowledge workers experience with colleagues outside of their team or organisation, the more likely they are to be innovative (Hulsheger et al., 2009). A study of over 400 Californian hospitals over 10 years found considerable support for the relationship between inter-organisational links and innovation in hospital services and technology (Goes & Park, 1997).

External communication provides knowledge workers with new knowledge and perspectives. This triggers the development of new ideas or levels of creativity to adopt new ways of doing things (innovation). Knowledge worker teams who use external communication to solve creative tasks tend to enable enhanced performance and results.

Factor 6 Team Empowerment

Psychological empowerment refers to the perception that workers can perform their tasks competently and have autonomy to decide how to do their jobs, and that their behaviour makes a difference. Team empowerment therefore refers to the shared

perceptions among team members regarding the team's collective level of empowerment. Teams that are more empowered feel that they have more meaningful work, and as a group, have a higher degree of choice or discretion in deciding how they carry out their team tasks (Seibert, 2011).

Psychological empowerment enables teams to perform well because they have increased:

- Amounts of information and control over their own work.
- Work-related knowledge, skills and abilities.
- Motivation to achieve the goals of their organisation.

Factor 7 Psychological safety

In 1999, Amy Edmondson, a Novartis professor of leadership and management at the Harvard Business School developed the term 'psychological safety' - 'a shared belief held by members of a group that it is safe for 'interpersonal risk taking' – a sense of confidence that others will not embarrass, reject or punish someone for speaking up.' She notes that psychological safety is related to intra-team trust, and includes:

- Respect for each other's competence.
- Care for each other as individual people.
- Trust in each other's intentions.

She emphasises that psychological safety does increase by talking about the need for it or to urge others to trust, because it is determined by the group members' experiences.

Group learning is more effective when a high level of psychological safety is present in the group. If members of a group feel psychologically safe, they will be more willing to ask for help, admit errors and seek feedback. And the responses they receive will foster learning in the group and improve team performance.

Factor 8 Group goals

In people's personal lives, a goal is something they are trying to do or achieve. In management, a goal can be defined as an observational or measureable organisational outcome to be achieved within a specified time limit (Locke & Latham, 2002). Organisational goal setting can refer to desired work or business outcomes, as well as the intention or plan to act towards them.

Goal setting is one of the most highly researched topics in the field of industrial and organisational psychology. A large number of high-quality studies have consistently demonstrated that specific, difficult goals yield higher performance than non-specific goals, and specific, difficult goals yield higher performance than specific, easy goals. Several studies also reveal that setting goals at the group level may yield higher performance than individual goals (Kleingeld, 2011). Additionally, group goals tend to trigger unique motivational mechanisms such as planning, cooperation, morale-building communication, and collective efficacy within a team.

According to goal-setting theory, goals affect performance through the following four causal mechanisms (Latham, 2004):

- Goals serve a directive function. The focus a worker's attention and effort towards goal-relevant activities.
- Goals have an energising function. High goals lead to greater effort than low goals.
- Goals affect persistence. When workers are allowed to control the time they spend on a task, hard goals prolong effort.
- Goals affect action indirectly by leading to the arousal, discovery and/or use of task-relevant knowledge and strategies, which increases the odds for success.

Conclusion

Knowledge worker productivity is widely studied, with the available evidence rich in quantity and quality. There is a wide range of factors that are associated with knowledge worker productivity of which all eight factors referenced in this REA demonstrates the largest positive correlations.

More information

You can access more information in the *Rapid Evidence Assessment (REA) - Factors related to Knowledge Worker Performance – a summary of research literature, July 2019.*

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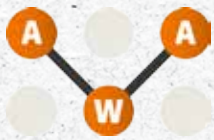

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