HUMAN-AI COLLABORATION IN THE PUBLIC SECTOR

NTNU Master Thesis

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Summary of Master Thesis

As part of my master's degree in Industrial Economics and Technology Management (INDØK), I examined how public-sector employees perceive and approach human-AI collaboration within creative and innovation processes.

Artificial intelligence is rapidly becoming part of everyday work in the public sector. But how do employees actually use AI when developing ideas, solving problems, and driving innovation? Do they see AI as a tool, a collaborator, or something else entirely?

To answer these questions, I conducted a qualitative study across three Norwegian public organizations and interviewed 13 employees with experience using AI in their work.

Study at a Glance

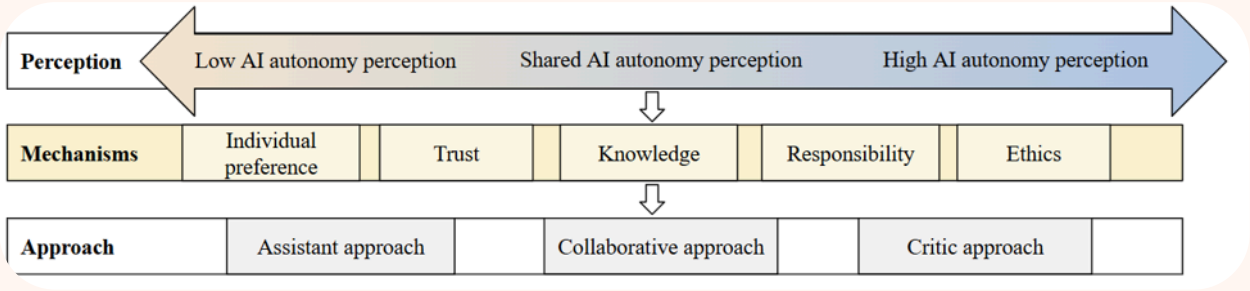
- 13 interviews
- 3 Norwegian public organizations: Municipality, government agency, and public broadcaster
- Focus: AI in creativity and innovation work

Key Findings

The following pages summarize the most important findings from my research

Perception-Mechanism-Approach Model

The Perception-Mechanism-Approach Model was developed to help explain how employees' perceptions of AI influence the way they use and collaborate with the technology in practice.



Perception determines how much autonomy users assign to AI. It exists on a continuum from low to high.

- Low Autonomy → AI as a *Tool*
- Shared Autonomy → AI as a *Partner*
- High Autonomy → AI as an *Independent Actor*

Mechanisms explain how perceptions translate into behavior.

- Individual Preferences: Personal habits and preferred ways of working.
- Trust: Willingness to rely on AI outputs.
- Knowledge: Understanding of AI capabilities and limitations.
- Responsibility: Human accountability for decisions and outcomes.
- Ethics: Moral concerns regarding AI use and consequences.

Approach reflects the practical role assigned to AI.

- Assistant: AI supports routine tasks while humans retain control.
- Collaborator: AI acts as a sparring partner in creative and innovation work.
- Critic: AI is used to challenge assumptions and validate work. Used for verification, reflection, and quality control rather than ideation.

Pattern Groups of Human-AI Collaboration

From the perception-mechanism-approach model, three distinct pattern groups emerge. These groups describe different ways public-sector employees perceive and approach human-AI collaboration.

Pattern Group A: Low Autonomy Perception → Assistant Role

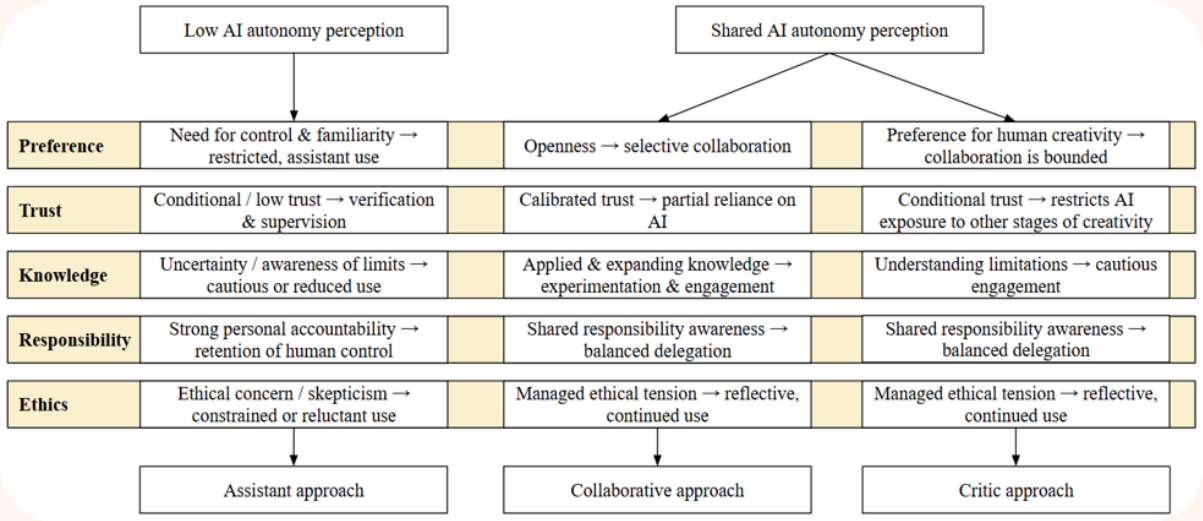
Users in this group perceive AI as having low autonomy, viewing it primarily as a supportive tool while humans retain final authority and control. They adopt an assistant approach, using AI to improve efficiency, organize information, and generate initial drafts. This was the most common group among interviewees. AI reduces cognitive workload for routine tasks, such as summarizing reports, but does not significantly influence the creative direction of the work.

Pattern Group B: Shared Autonomy Perception → Collaborator Role

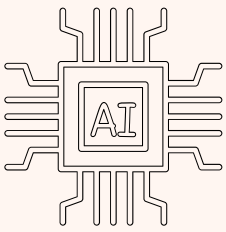
These users perceive AI as having shared autonomy, treating it as a sparring or thinking partner that contributes to the creative process. They adopt a collaborator approach, engaging in iterative exchanges where both the human and AI influence the outcome. This group is more likely to use AI for idea generation and rapid prototyping, relying on their expertise to refine and challenge AI suggestions rather than simply verify them.

Pattern Group C: Shared Autonomy Perception → Critic Role

Like the collaborator group, these users perceive AI as having shared autonomy. However, they adopt a critic approach, positioning AI as an impartial reviewer rather than a creative contributor. Represented by a single interviewee, this group uses AI selectively to test assumptions, identify blind spots, and evaluate specific technical principles. AI is often excluded from the early inspiration stage to preserve human-led creativity.



The Accountability Ceiling



The accountability ceiling is a structural upper limit on AI autonomy in the public sector. Because AI cannot be held legally, ethically, or professionally accountable, responsibility must remain with human employees. This creates a non-negotiable boundary that prevents AI from operating independently, regardless of its capabilities or the trust users place in it. While AI can support and influence decision-making, it cannot replace human judgment in accountable public-sector decisions. The accountability ceiling therefore defines the maximum permissible role of AI and constrains the implementation of AI-driven innovation.

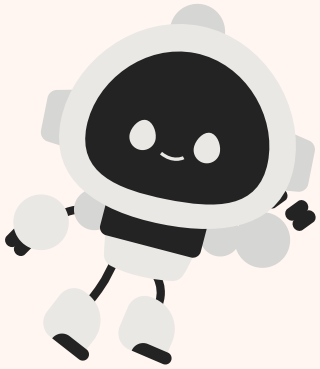
AIs Impact on Creativity and Innovation

AI reshapes how creativity and innovation occur in practice. For example, rather than appearing as a final stage, idea evaluation becomes a continuous process embedded throughout idea generation as users repeatedly expand, test, and refine AI outputs.

While AI accelerates activities such as ideation, drafting, and prototyping, it provides limited support for implementation, where innovations must be institutionalized, justified, and trusted.

AI also reduces the need for the difficult early stages of creative problem-solving. Although this improves efficiency, it may weaken the sense of ownership, engagement, and motivation traditionally developed through working through a problem from the beginning.

Managing premature convergence emerges as a new creativity-relevant skill. Because AI often generates conventional solutions, users must actively encourage exploration and alternative perspectives to maintain creative openness. Contrary to concerns in the literature, the study found little evidence of uncritical acceptance of AI outputs, as accountability requirements and professional standards encourage continuous verification and human judgment.



The common assumption that AI saves time is also questioned. In practice, time gained through automation is often reinvested into additional work or consumed by verification processes. As a result, AI may increase capacity and output rather than reduce workload.

Key Takeaway

Throughout this study, one message emerged consistently: AI may change how we work, but people will remain central to creativity, innovation, and decision-making.

A sincere thank you to all interview participants for sharing your experiences, reflections, and perspectives. Your openness and willingness to contribute made this research possible.