

The Adoption of Artificial Intelligence in Agriculture: Impacts on Job Security, Well-Being, and Worker Identity

VICTORIA LOZANU, University of Twente, The Netherlands

The adoption of artificial intelligence (AI) in agriculture is transforming the sector, addressing critical challenges such as population growth, urbanization, and climate change. While research has been done on the technical and financial advantages of AI in agriculture, little is known about its social consequences, especially as it affects agricultural labourers. The impact of new technology adoption in agriculture on workers' job security and well-being is examined in this study, along with whether they see AI as a challenge to their jobs or a chance for advancement. The study adopts a mixed methodology, starting with a thorough literature analysis. In accordance with the findings, two agricultural experts who operate in AI-integrated contexts participated in semi-structured interviews as part of a qualitative research strategy that included a thorough literature analysis. Major concepts regarding workers' perceptions of AI, including changes in the skills needed, perceived risks, and its impact on job security and well-being, will be identified through a thematic analysis. The study aims to give a deeper understanding of the social aspects of AI adoption in agriculture, particularly its impact on labor dynamics and worker perceptions. The investigation intends to give a brother perspective on the adoption of artificial intelligence in the agricultural field by ensuring that the implementation of these new technologies is socially inclusive and helpful to the agricultural workforce by identifying labourers' concerns.

Additional Key Words and Phrases: Artificial Intelligence (AI) in Agriculture, AI Adoption, Job Security in Agriculture, Worker Well-being, Professional Identity

1 INTRODUCTION

Over the past decade, artificial intelligence has become a controversial topic for the public and a promising innovation for businesses. Considering that agriculture represents 'the backbone' of every nation which contributes to the global economy, the integration of AI into agriculture was inevitable [17]. The adoption of artificial intelligence (AI) in agriculture may raise questions or skepticism, such as the necessity and relevance of implementing such advanced technologies in farming practices. However, current production systems face challenges in meeting global demand as urban civilizations expanded and drastically changed their dietary habits, particularly choosing items that are more energy, land, and greenhouse gas demanding, such as meat and dairy products. Additionally, studies show that the global population is expected to reach 9.7 billion by 2050 and 10.4 billion by 2100, accompanied by a significant urban shift, with 70% of people living in urban environments [12]. These changes put further pressure on the farming industries, which also must cope with the loss of arable land as a result of urbanization, an issue that has a direct impact on food production by decreasing the amount of fertile agricultural land available as cities grow, frequently into some of the most productive farmland [27]. Nevertheless, the need for creative and effective agricultural practices has become urgent due to the growing global demand for food production, the challenges posed by climate change,

and the scarcity of arable land. Addressing these challenges requires innovative approaches, Smart Farming Technology (SFT) powered by AI [5] and other advanced technologies such as Automated Guided Vehicles [15], precision genetic modifications in crops [7], Smart Greenhouse Farming [24] and the integration of quantitative trait loci mapping [31], have been recognised as a potential solution to these threats.

While studies on the adoption of artificial intelligence in agriculture have been conducted, plenty of this work focuses on its technical, environmental, and economic impact. Research highlights that beyond numerous benefits, significant barriers to adoption persist, collectively hindering farmers from embracing AI technologies [5]. The research discusses why farmers are resistant to adopting recent technologies, with more than half of respondents stating that the technologies are too expensive, making pricing the biggest obstacle. Concerns regarding data security and privacy are another critical issue. Farmers are worried about other parties accessing their personal information or not getting sufficient recognition for the information they contribute. Another significant obstacle is internet connectivity, especially in rural regions outside of Europe where inadequate infrastructure restricts the application of digital farming technologies. A further reason given by farmers for not embracing AI technology is a lack of assistance and training, many believing that they do not have the time or expertise to properly understand how to use these intricate systems [5]. Nevertheless, there is still a significant knowledge gap regarding the social aspects, particularly how agricultural workers view and adjust to new technologies. While theories have been employed to evaluate adoption trends, they do not take into consideration the identity, well-being, and job security of the labourers.

The workforce in agriculture is often characterized by financial risks, informal or semi-formal organizational structures, and a tendency to rely on traditional techniques. Understanding how employees view the deployment of AI adds to the academic discussion of technology adoption in labor-intensive industries. The study's findings can enhance current ideas and provide a more comprehensive understanding of how AI affects workforce dynamics. The implementation of new AI technologies within firms could shift the former workflow, which shall change job roles, skill requirements, and labor-management interactions [26]. Studies have highlighted how digitalization and AI-driven technologies are transforming traditional farming practices, often shifting labor demands from manual, hands-on tasks to more data-centric and technology-driven roles [1,2]. Although current theories address AI adoption by pointing out challenges such as cost, infrastructure and personnel training [5], they mostly focus on adoption at a company level rather than from the viewpoint of individual workers. Consequently, it remains underexplored how agricultural workers interpret these

changes in relation to their responsibilities, job security and professional identities. Do they see these changes as chances to improve their skills and adjust to new technologies, or do they see them as dangers to their job, identity and well-being? Studies show that adoption decisions are influenced by social norms, cultural factors, and perceptions of "ease of use" and "relative advantage" [25,9], underlining the significance of comprehending employees' perspectives. Considering that AI systems are emerging in the agricultural field it is especially important to look at the social aspect of this shift, especially on how employees and employers manage and view new technologies. Either as an opportunity for skill improvement and better working conditions or as a danger to their jobs. I derived the following research question, that seeks to bridge the gap between AI adoption and workforce willingness to change. To enhance the context of the research topic, two additional sub-questions were created. The first sub-question investigates if agricultural workers see AI as a threat or an opportunity, which directly influences the second sub-question on how these views affect well-being and job security. Combined, these questions help us understand how AI adoption influences labourers personal and professional life.

2 RESEARCH QUESTION

'How do agricultural workers perceive the adoption of artificial intelligence in terms of its impact on their job security, well-being, and identity?'

2.1 Sub-questions

1. Do workers perceive AI as a threat to their roles or as an opportunity for improvement?
2. How does the introduction of AI impact workers' sense of job security and well-being?

3 RELATED WORK

Many studies have examined the impact of new technologies in agriculture, becoming a topic of growing academic and industry interest.

3.1 Artificial Intelligence Adoption in Agriculture

The literature on agricultural technology adoption identifies numerous factors influencing the uptake of innovations, including education, capital, income, farm size, and access to information [19,22]. Recent studies also focus on farmers' motivations, values, and behavioral influences, recognizing that social norms and beliefs significantly impact technology adoption decisions [25]. Other studies emphasise how important it is to comprehend how workers feel about adopting new technologies and the social fundamentals that affect their acceptance, furthermore, examining the larger networks and innovation systems that influence these technologies, highlighting their coevolution with social and institutional settings, going beyond the effects at the individual farm level. Workers' perceptions generally affect their technology adoption decisions, including how easy it is to use the technology [5,6]. In the context of AI specifically, adoption is shaped by factors such as cost, potential benefits, ease of use, and compatibility with farmers' needs and characteristics [9]. Corresponding benefits, risks, and

environmental effects of innovations that affect adoption are studied. Important aspects such as "relative advantage" and "ease of learning," can be utilised to frame how workers perceive AI adoption in terms of threats or opportunities. The "relative advantages" include the perceived benefits (productivity, efficiency, or working conditions) of using AI technologies in the detriment of traditional techniques, viewed by the workers. Along with, the "ease of learning" which refers to how simple it is for employees to learn the necessary skills they need in order to use AI technologies efficiently. By highlighting all the benefits that artificial intelligence can bring to the agricultural sector; while ensuring a clear and proper learning environment for employees, firms can foster a setting where labourers see AI as a means to enhance their roles rather than replace them and they are more likely to adopt a positive outlook. These findings underline the complexity of technology adoption in agriculture and the need to consider social and cultural dimensions alongside technical and economic factors.

3.2 Effects of AI Adoption for Companies

Digital technologies are changing farming culture by replacing experiential, hands-on management methods with data-driven, algorithmically mediated procedures. Questions remain up for debate about how digital technologies affect plants and animals, transforming them into "digital agents" that affect human reactions [14]. Consequently, concerns regarding the balance between digital knowledge and intuition as well as confidence in machine-generated information are also brought up by these discussions, building up farmers' skepticism in adopting new technologies.

Additionally, companies are more likely to adopt new technologies after witnessing the success of their peers. This is seen in Australia's adoption of automatic milking systems (AMS), where farmers' objectives and values led to a greater willingness to accept new technology [28]. Moreover, some employees saw AI as a chance to further their careers, highlighting the possibility of upskilling and moving into positions that require more technological expertise. They agreed that more training was necessary to be competitive in the changing agriculture industry [11]. On the same note the presence of a well-established agricultural knowledge system in Norway facilitated quick farmer-to-farmer interaction, simple idea exchange, and the availability of technical knowledge, culminating as a significant adoption factor [8]. These studies illustrate that for complex technologies to be successfully developed and adopted, a cooperative and observational approach [6], with thorough training periods is necessary.

3.3 AI Perception and Worker Resilience

Social perception of artificial intelligence (AI) adds another layer of complexity to technology adoption. Studies such as [13] provide an in-depth analysis of global attitudes toward AI, categorizing public sentiment into four main themes: excitement, usefulness, worry, and futuristic aspirations. Skepticism is prevalent in wealthy nations like the United States and Australia, where worries about ethical implications, privacy, and employment displacement are the main issues. On the other hand, AI is frequently viewed as a tool for innovation and societal advancement in emerging countries like Nigeria and India.

Public conversations on AI are often dominated by worries about job security. Individuals frequently believe AI puts at risk their professional duties and sense of self, which causes disengagement and identity crises. Research shows that higher acceptance rates and fewer worries about job insecurity are seen in agricultural companies that prioritize the progressive integration of AI and offer consistent assistance to employees [11].

Many people worry that AI will displace human jobs, resulting in mass unemployment. Others, on the other hand, view AI as a chance to improve their abilities and transition into more technologically advanced positions. These results demonstrate both sides of AI perceptions, highlighting optimism and fear, which are essential to comprehending how agricultural laborers may see the deployment of AI.

3.4 Well-being, Job Displacement, and Identity Threats

Workers' concerns regarding their well-being, job security and identity represent another important aspect that emerges as a response to AI adoption in the agricultural sector. Many employees are worried about job instability, as research already conducted shows that automation and digitalization have the potential to reduce the skill needed or replace agricultural workers, especially in repetitive tasks [11]. Additionally, other studies show that this concern is specifically present in people who lack digital literacy, which could worsen inequality and marginalize particular populations, such as migrants [14].

According to studies, agricultural workers may experience severe identity threats and psychological stress from AI-driven automation. Research discusses that identity concerns may be eased or exacerbated by workers' perceptions of AI as an essential component of their jobs. AI-driven changes in the workplace may cause employees to lose their sense of competence, authenticity, and self-esteem [18]. Furthermore, the study also discovers that employees' perceptions of AI identity threat remain despite their familiarity with AI technologies, suggesting that experience by itself does not allay these worries. These concerns have a direct impact on workers' well-being, as they pose a greater mental strain on the employees to adjust to the new systems. Although AI-driven technologies have been shown to increase productivity and decrease physical labor, potentially improving well-being by lowering workload and minimizing workplace injuries [11], they can also worsen mental health issues, increasing resistance to change and decreasing motivation [18].

Given all previous studies, it becomes evident that while much research has focused on the technical and economic factors influencing technology adoption in agriculture, social aspects such as the specific perceptions of agricultural workers regarding their job security, well-being, and professional identity remain limited. While some studies address these topics, they frequently do so in an indirect manner or concentrate on more general labor market patterns rather than the unique experiences of agricultural laborers. As a result, this study seeks to address this gap by investigating how agricultural workers perceive the adoption of artificial intelligence, particularly regarding its impact on their job security, well-being, and identity.

4 METHODS OF RESEARCH

4.1 Literature review

In order to complete this study, I used the following methodology. Firstly, a comprehensive literature review was conducted, as it provides a strong foundation for the entire study. Using search terms like "AI in agriculture," "job security and AI," "agricultural workforce and automation," and "AI-driven farming practices," the studies were identified using Google Scholar. The website "Connected papers" was then used to find additional papers that address the same subjects. Studies were chosen based on credibility, recency, and topic relevance. The literature review covers existing studies on AI adoption in agriculture and other relevant sectors, identifying how workers' perceptions have been previously studied. Additionally, by synthesizing prior research about AI adoption in agriculture, it can identify gaps in the literature, such as the lack of studies focused on the social dimensions of AI adoption among agricultural workers, specifically focused on their: job security, well-being, and identity. This results in a fundamental comprehension of the factors to consider and the areas one should focus on during the content analysis process [3,23]. Additionally, the interview questions and analysis framework were formed by a general classification of the acquired insights from the literature.

4.2 Semi-structured Interviews

Secondly, an empirical qualitative method was conducted, utilizing semi-structured interviews to explore agricultural workers' perceptions of artificial intelligence (AI) adoption and its impacts on their job security, well-being, and identity, in an effort to get authentic perspectives and knowledge from experts in the field. This methodology is appropriate for this study as it enables the investigation of employees' perceptions and opinions about the adoption of artificial intelligence in their field. Qualitative approaches enable a deeper understanding of workers' thoughts, feelings, and worries around the adoption of AI, in contrast to quantitative methods that could overlook subtle insights [4]. To guarantee the inclusion of a broad range of viewpoints, a purposive sampling technique was employed. Since it enables the inclusion of individuals who have direct experience with AI technologies or their possible adoption in agricultural contexts, the use of purposive sampling is appropriate [29]. In order to find patterns and common themes in employee answers about identity, well-being, and job security, the study employs thematic analysis.

Participants were selected based on their professional qualifications, willingness to participate and openly discuss their views, and direct experience in agricultural operations using AI-powered technologies. Considering the practical limitations, two participants who work in a Smart Greenhouse were interviewed, one manager with administrative oversight of AI integration and an agronomy engineer, with technical experience in greenhouse operations, reflecting a range of viewpoints within the agriculture industry. With the participants' permission, the semi-structured interviews were conducted in person or using online conferencing apps, each interview was recorded and lasted between twenty-five and fifty minutes. A flexible guide was used for the interviews, which ensured uniformity throughout participants while permitting in-depth discussion of important subjects. The questions addressed several

topics, including perceived benefits and risks of AI, shifts in skills needed, and how AI affects wellbeing and job security. The information was properly transcribed and categorised in order to identify key themes related to workers' perceptions of AI in the agricultural sector [16]. Due to the limited number of transcripts, relevant findings were manually highlighted and sorted. Key aspects of the research will include perceived risks or opportunities concerning AI, shifts in the skills needed, and effects on well-being and job security. To ensure a thorough and open analytical process, the data was organized and systematized using qualitative analysis software. By examining these topics, the study hopes to offer a comprehensive grasp of how agricultural workers perceive and adjust to the adoption of AI, identifying both obstacles and enablers to their adoption of new technology.

4.3 Study Limitations

Considering that the study is constrained by the small sample size of two individuals, it might hinder the generalizability of findings. The qualitative method, on the other hand, enables a more thorough examination of individual viewpoints and offers insightful information about the social aspects of AI adoption in agriculture. To confirm and broaden the present findings, future studies could increase the number of participants.

5 FINDINGS

The findings of this study are shaped by the comprehensive methodology employed to explore agricultural workers' perceptions of artificial intelligence (AI) adoption and its implications on job security, well-being, and identity. Key themes were identified by an analysis of the semi-structured interviews, which revealed genuine insights from a limited sample of agricultural laborers, who already work in a technologized environment. This section summarizes the findings of this thorough approach, highlighting the opportunities, threats, and revolutionary effects of adopting AI as seen by people who will be most impacted.

5.1 Attitude towards AI adoption

As seen in previous studies, artificial intelligence adoption is highly driven by the attitude and perception of workers towards it [5,6,9]. Considering these studies, the interviews sought to find the genuine opinion of labourers towards these modern technologies.

Participants expressed a positive view of AI-powered automation in agriculture. Saying that *"It definitely brings advantages... it makes our work easier, and it's helpful in day-to-day tasks."* (Manager), *"It is a big help for us; we can't imagine working without these automation systems anymore."* (Engineer). They emphasized the accuracy and efficiency that AI and automated systems offer, pointing out that crop quality is maintained while a large portion of the physical work required for climate, temperature, and irrigation monitoring is reduced, *"The main benefit is that it notices details much faster than I do. On a normal workday, I can't always focus solely on the plants... it notifies me with an alert on my phone so I can react, or it could automatically solve the problem if I give it permission."* (Engineer).

The positive attitude towards AI is also supported by the reliability of the systems, and the minimal risks associated with crop production. When asked about the challenges that these new technologies bring, the participants answered: *"No significant problems. Any errors were quickly solved... nothing that caused major damage or had a major impact with huge losses for the crops."* (Manager). They agreed that while there are occasionally minor technical problems, errors are quickly addressed and rarely have catastrophic effects on crop yield. The main issue linked with the system failure and the necessity to replace hardware components is their high cost and lengthy delivery time, *"When something breaks, it can be costly—everything related to the greenhouse tends to cost thousands of euros. Parts might come from France and take time to arrive. But we always find a way to fix it."* (Engineer).

5.2 Impact on Job Security and Required Skill

According to previously mentioned research, automation and digitization have the potential to replace or lower the skill requirements for agricultural workers, particularly those who lack digital literacy [14]. While other studies showcase that a thorough training program is required in order for complex technologies to be successfully adopted and used [6,8]. Considering these findings, the participants were asked about the coaching needed to work in this industry and if they fear for the stability of their employment.

A key takeaway from the interviews is the shift in skill sets needed to work in such AI-enabled environments. When switching from either traditional agriculture or recently learned theoretical knowledge (graduates of the University of Agronomy), individuals pointed out a substantial learning curve: *"We had to learn how to interpret the data, how the climate controls work, and how everything is connected."* (Manager); *"You can't do your job here if you don't understand the software. I needed about a year and a half to really learn it."* (Engineer). Managing duties, including software configuration, technical troubleshooting, and data monitoring have become essential to daily work in these highly technologized environments, in contrast with traditional agriculture. Moreover, it was noted that in order to completely comprehend the systems and learn how to operate them, the training period typically takes a lengthy time: *"...it took over a year and a half. It's impossible to learn it all faster because one full plant cycle is about a year. You need at least two cycles to really understand the planet from A to Z. In the first year you might see everything but not truly grasp it. In the second year you start piecing it together, and by the third year you can make your own decisions."* (Engineer).

Another concern that individuals have with regards to the adoption of AI in agriculture, is their job security. Although participants agreed that AI simplifies processes, they also understood how it could impact worker structure and job security: *"On one hand, it's extremely helpful, making faster and more accurate decisions than a human in many cases. On the other hand, ... if AI is heavily implemented, some people might lose their jobs."* (Engineer); *"...the investment is high, but ultimately, we need fewer people to manage the greenhouse compared to a normal field."* (Manager). Despite the large initial capital costs, it should be emphasized that greenhouse operations can quickly become more efficient, which occasionally lowers the overall number of low-skilled workers required. On the

other hand, one participant highlighted the difficulty of replacing highly skilled positions, such as engineers and agronomists: *"We have a saying in greenhouse work that 'the best sensor you have is your own eyes'—the human eye. Sure, there are sensors... It makes your job easier. But I'm convinced no automation, or AI can exist without a human operating it—someone has to feed it prompts."* (Engineer). Additionally, even if there aren't as many manual laborers in AI-driven greenhouses as there are in traditional fields, some individuals still need to pick the produce and clean the plants, consequently making their position essential for companies, while also not needing to much training: *"The entry-level staff mostly do repetitive tasks: picking tomatoes, leaf removal, etc. They don't need to analyze or adapt in the same way..."* (Engineer). However, participants acknowledged that as AI and robots advance, it may eventually be plausible for new technology to replace manual laborers: *"With future AI, like robots for harvesting, maybe we wouldn't need that many pickers. But for now, we still need people who understand both the plants and the tech."* (Engineer).

5.3 Work Environment and Well-Being

As recalled in previous studies, AI's use in agriculture has improved control over operational procedures and reduced physical strain, both of which have had a substantial impact on the workplace. According to the literature, AI-driven automation can reduce repetitive tasks and enhance working conditions [11], while other studies claim that the need to interpret complex data and respond to technical failures may result in stress and anxiety for the workers [18]. Consequently, participants were asked how they view their work environment and how their well-being has changed, in this highly technologized workplace.

Participants cited improved working conditions in a climate-controlled setting, and immediate alerts, about the factors that influence the plants, which eliminate uncertainty: *"It's definitely less physically strenuous. We're not in the sun, and we can react quickly if something goes wrong."* (Manager); *"Before, you had to measure or test everything manually. Now, we have sensors, and we only intervene when something is off."* (Engineer). They emphasized how AI frequently reduces mental and physical stress, enabling more regular work schedules and a decreased demand for overtime. However, an engineer happened to observe a distinct kind of technical pressure since staff members must respond quickly to system issues or interpret complicated data: *"Sometimes the system breaks or an alarm goes off, and we have to fix it fast. That can be stressful, but without the system, it would be worse."* (Engineer). This distinct viewpoint supports earlier research showing that workers are experiencing new types of strain associated with system monitoring and problem-solving. According to the findings, which are consistent with previous studies, employees face new kinds of stress and anxiety connected to the software. While artificial intelligence provides observable advantages including climate-controlled settings and real-time alerts. These observations highlight how AI affects well-being in two ways: it can improve physical comfort while also putting mental toughness to the test.

5.4 Worker identity

According to earlier studies, the adoption of AI may cause identity concerns for agricultural workers since it calls into question their

established skills and fosters a sense of disassociation from conventional farming practices [18].

The impact of AI on workers' professional identities and their adoption of a more data-driven farming approach was a further topic. Both participants observe a slow transition from horticulture that is entirely manual and experience-based to a hybrid approach that is based on data analysis: *"At first, I didn't know anything about these automated systems or sensors... but now I realize you have to adapt. It's the future of agriculture."* (Engineer); *"We're open to it, but some people from older generations might be skeptical. Luckily, we started with these technologies from the beginning."* (Manager). They emphasized that workers who welcome learning new technology appreciate that they are growing professionally and stay relevant in a field that is changing quickly, while also admitting that since they had already started with an AI-powered smart greenhouse and didn't need to modify their employees' roles, it was simpler for them to adjust to these new developments.

6 DISCUSSION

The findings confirm and extend insights from broader literature on AI's role in agriculture. Both participants recognized that the automation of tasks leads to greater efficiency [5,6], confirming the "relative advantage" theory, where workers perceive a clear benefit in productivity and reduced physical labor [25].

The interviewees acknowledged that AI could reduce the necessity for specific manual and repetitive activities, such as picking or regular monitoring, which is consistent with studies warning about potential job displacement [14,11]. But they also show that there may be an increase in the number of jobs for skilled engineers or operators, which supports the claim made by previous studies that modern agriculture generates new specialized professions [26].

In line with research on wellbeing in digitalized [1], greenhouse workers reported better working conditions and decreased physical strain. However, they also have to overcome a technical learning curve, which might put mental strain on them to maintain system functionality. Additionally, the results also support research that emphasises the psychological strain associated with AI adoption by indicating that AI creates additional types of workplace stress connected to system monitoring and troubleshooting [18]. Over time, workers may experience mental exhaustion as a result of feeling pressured to understand complicated data and react promptly to system problems. The idea that technology can reduce some forms of stress while creating new ones is supported by this distinction [2].

The experiences of the participants demonstrate how a data-driven attitude and traditional "intuition-based" agricultural identities coexist [2]. They illustrate how AI is changing professional identities by bringing up the transition to sensor monitoring and algorithm interpretation, which can be both a source of pride and a possible obstacle for people who do manual work. The results are consistent with previous studies that indicate the use of AI may pose identity challenges by questioning conventional knowledge and professional self-concepts [18]. While employees who are reluctant to change

may find it difficult to adjust to new technological models, those who embrace AI see it as a chance for career advancement and future significance.

Implications:

Given the circumstances, these interviews provide validity to the body of knowledge regarding the interaction between labor restructuring, cultural adaptability, and technical innovation in agriculture. AI raises valid concerns about future job security for less specialized professions, continuous upskilling, and the redefining of what it means to be an agricultural worker, even though it is viewed as a beneficial force for efficiency and better working conditions.

The results point to useful ramifications for agricultural professionals. Firstly, ongoing training initiatives are crucial for assisting employees in acquiring the technical expertise required to successfully manage AI-driven systems. To facilitate the shift and reduce opposition, employers ought to fund efforts for organized learning. Furthermore, addressing the psychological effects of AI adoption by offering stress-reduction techniques and mental health support might enhance employee wellbeing. Lastly, to ensure a seamless and inclusive transition to AI-powered agriculture, stakeholder involvement and clear communication are essential for controlling expectations and gaining worker acceptance.

7 CONCLUSION

This thesis examined the adoption of AI in the agricultural sector, discussing the impact it has on workers job security, identity, and well-being. The results reinforce existing literature on the technological shift in agriculture and highlight the significance of addressing the social problems involved in AI adoption. Workers recognize that AI-driven automation simplifies their work and offers chances for advancement, but they are also concerned about the risk of losing their traditional positions and the need to constantly adjust to new technical requirements. Additionally, while AI is typically seen as a useful tool that improves working conditions, lowers physical labor, and increases productivity, the findings indicate that it also raises worries about job displacement and changes in required skills. By addressing the research question the thesis reveals a double perspective. Workers perceive AI as both an opportunity and a threat.

Consequently, the research provides a foundation for future research to explore broader worker perspectives and develop strategies for better AI adoption. Overall, this thesis emphasizes the necessity of a well-rounded strategy for AI adoption in the agricultural sector, that encourages innovation while addressing the real worries of agricultural workers about their general well-being, professional identity, and job security.

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APPENDIX

Interview Script

Introduction

"To start, could you briefly introduce yourself and describe your position and tasks in your workplace?"

Follow-up questions:

"How long have you been working in this role?"

"What has been your general work experience in agriculture?"

"What is your educational background?"

"How old are you?"

"What is your gender?"

Questions:

"What technologies or tools come to mind when you think of AI in your field?"

"How familiar are you with these technologies?"

"What is your overall attitude towards AI in agriculture?"

"Do you see it as a positive or negative development? Why?"

"What benefits do you think AI brings to agriculture?"

"What concerns or challenges do you associate with AI adoption?"

"How do you think AI technologies are affecting your daily work tasks?"

"How have your responsibilities or workflows changed since AI tools were introduced?"

"Are there any skills you've had to learn or improve because of AI adoption?"

"Do you feel that AI technology has made your job easier or more difficult? Could you provide examples?"

"What new skills do you believe are essential to thrive in a workforce increasingly influenced by AI?"

"Have you or your colleagues needed to retrain or upskill due to the adoption of AI technologies?"

"Do you think AI creates more opportunities for career growth or poses risks to job security? Why?"

"In your opinion, does AI benefit certain job levels (entry-level, managerial) more than others? Why?"

"Do you think AI adoption is creating a divide between those who can leverage the technology effectively and those who cannot? How can this gap be addressed?"

"How do you feel AI impacts your overall well-being at work?"

"Do you feel more or less stressed with the introduction of AI tools?"

"Does AI help or hinder your ability to achieve work-life balance?"

"Do you feel that it adds value to your role, or do you feel it diminishes the importance of human skills in agriculture?"

"What are the biggest challenges you've faced when working with AI technologies?"

"Are there specific tools or systems that you find particularly difficult to use?"

"What kind of support or training would help you feel more confident using AI technologies?"

Closing Questions

"Is there anything about AI in agriculture that we haven't discussed but you feel is important to mention?"