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THE ROLE OF AI IMPLEMENTATION IN THE OPTIMIZATION AND
AUTOMATION OF PERSONNEL RECRUITMENT AND SELECTION PROCESSES

Bachelor Thesis

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I have written this Bachelor Thesis independently. Any ideas or data taken from other authors or other sources have been fully referenced.

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Introduction

The growing integration of Artificial Intelligence (AI) tools into Human Resource Management (HRM) has significantly transformed personnel recruitment and selection processes and offered solutions to address inefficiencies and enhance decision-making (Dadaboyev, Abdullayeva, Abbosova, Suleymenova, & Mamadjanova, 2025). Nowadays, many organizations face increasing pressure to streamline their hiring processes while maintaining fairness, especially in competitive job markets (Rigotti & Fosch-Villaronga, 2024). AI tools such as predictive analytics, machine learning algorithms, and natural language processing have the potential to significantly improve efficiency, accelerate and streamline workflows, reduce human biases, and enhance the overall recruitment experience for both employers and candidates.

AI in recruitment and selection is a relatively new but rapidly growing phenomenon. Based on the current trends and data, it is evident that AI's role in HR, especially in recruitment, has been significant and is continuously evolving. The adoption of AI in recruitment began gaining considerable traction over the last decade, with significant developments noted in the past few years. It's reported that 87% of companies now use AI recruitment practices, with a remarkable 99% of Fortune 500 companies utilizing these methods (Kumar, 2024). This widespread adoption highlights AI's key role in enhancing recruitment processes by automating tasks, thereby saving time and improving the quality of hires.

In recent years, there has been an explosion of academic and industry interest in AI-enabled recruiting. Virtually no scholarly articles addressed AI in hiring in the early 2000s, but by the late 2010s the topic gained significant traction (Hmoud & Laszlo, 2019). Until the mid-2010s, automation in hiring was limited to basic Applicant Tracking Systems (ATS), but recent advances in machine learning have led to a proliferation of AI tools for hiring. As noted, academic publications on AI in R&S have accelerated in the past decade (Asif, 2024). A bibliometric review of AI-HR literature by Úbeda-García, Marco-Lajara, Zaragoza-Sáez, and Poveda-Pareja (2025) finds publications dating back to the early 2000s, with an exponential increase in publications since 2016 (p.1).

This mirrors trends in industry. Surveys show an increasing number of organizations experimenting with or adopting AI in their HR practices. According to a LinkedIn global survey of 8,800 talent professionals, 35% identified AI as a top trend impacting how they hire, and a majority saw AI as helpful in sourcing candidates (58% of respondents) and screening resumes (56%) (LinkedIn Corporate Communications, 2018). By 2023-2024,

studies indicate that between one-third and nearly half of companies have incorporated some form of AI into hiring (SHRM Labs, n.d.). However, the adoption of these technologies also introduces challenges, including ethical concerns about algorithmic bias, transparency, and data privacy (Mujtaba & Mahapatra, 2019).

The literature review of this thesis synthesizes existing knowledge on the role of AI in optimizing and automating R&S. By identifying what has already been studied and highlighting remaining gaps and inconsistencies this literature review establishes the research gap that this thesis addresses. In particular, prior work has tended to focus on technical capabilities or general perceptions of AI in hiring. However, fewer studies qualitatively capture the nuanced perspectives of HR professionals and decision-makers regarding AI's impact on their recruitment and selection workflows. Malin, Kupfer, Fleiß, Kubicek, & Thalmann (2023) observe that studies focusing on HR practitioners' views are underrepresented in the literature. Likewise, Warriar (2025) states there is a dearth of qualitative insights into how recruiters experience AI in hiring (p.520). This thesis is distinct in its qualitative exploration of those human perspectives and organizational contexts. It adds depth to a field often dominated by technological narratives.

The aim of this thesis is to explore how AI-driven tools contribute to the optimization and automation of recruitment and selection practices in contemporary organizations. Examining both perceived benefits and limitations of AI implementation, this thesis seeks to provide actionable insights for HR professionals looking to implement AI responsibly and effectively.

To achieve this aim, the thesis is guided by the following tasks:

- To conduct a comprehensive literature review on AI applications in recruitment and selection.
- To define key concepts related to AI, optimization, and automation in the context of personnel recruitment and selection processes.
- To analyze the benefits of AI tools in enhancing personnel recruitment and selection processes.
- To analyze the challenges and ethical considerations associated with the use of AI in personnel recruitment and selection.
- To develop and conduct interviews with HR professionals who utilize AI tools.
- To apply thematic analysis to identify key patterns and insights from the interviews.

- To formulate the results of the thesis and suggest future research directions.

The structure of this thesis is designed to ensure a logical flow and comprehensive coverage of the research topic. The first section provides a theoretical foundation by defining key terms and reviewing relevant literature on AI's role in recruitment. This is followed by an analysis of the benefits of AI tools. Next, the challenges and ethical considerations associated with AI adoption are examined based on previous empirical studies.

Following the theoretical framework, the methodology section outlines the qualitative research design, including participant selection, data collection methods, and the thematic analysis approach based on Braun and Clarke's (2006) model. The empirical results are then presented, organized around four major themes derived from the data: AI-driven efficiency, human oversight, AI limitations and challenges, and future expectations. These themes are supported by direct participant quotations and compared against prior research to ensure analytical depth. The thesis concludes with a critical discussion of the findings, highlighting practical implications for HR professionals, addressing study limitations, and proposing directions for future research.

Keywords: Artificial Intelligence, recruitment, selection, optimization, automation.

1. Theoretical framework of Artificial Intelligence in Human Resource Management

1.1. Definitions and key concepts

The implementation of AI in recruitment and selection processes represents a significant evolution in HRM. Understanding the role of AI in R&S automation and optimization requires clear definitions of key terms and concepts, including Artificial Intelligence, automation, optimization, and the recruitment and selection processes. This section defines these terms and explores how they interconnect in the context of AI-enhanced HR practices.

Artificial Intelligence refers to the simulation of human intelligence processes by computer systems. AI encompasses machine learning (ML), natural language processing (NLP), and data analytics, which allow machines to learn from data, make decisions and perform tasks autonomously (Russell & Norvig, 2021). In the context of HRM, AI enables systems to process large datasets, recognize patterns, and perform tasks that traditionally required human decision-making, such as resume screening and candidate matching (Mujtaba & Mahapatra, 2024). The definitions AI in HRM presented in Table 1 focus primarily on automation and optimization, which are central themes in this thesis.

Table 1

“AI in HRM” definitions

Author(s)	Year	Definition
Alnsour, Kanaan, Salah, Alfayyad, Hijazi & Alsharifm	2024	“Artificial intelligence (AI): a computer system capable of performing routine duties that necessitate human intelligence, such as learning, reasoning, and self-correction.” (p. 3)
Jangbahadur	2024	“AI-enabled HRM is the technology that automates HRM tasks to achieve strategic employee involvement and long-term sustainability.” (p. 7)
Duan, Edwards, & Dwivedi	2019	“[AI is] the ability of a machine to learn from experience, adjust to new inputs and perform human-like tasks.” (p. 63)
Tambe, Cappelli, & Yakubovich	2019	“AI conventionally refers to a broad class of technologies that allow a computer to perform tasks that normally require human cognition, including adaptive decision-making.” (p. 16)

Source: Compiled by author based on the sources presented in the table

Across these definitions, several shared themes emerge. The definition by Alnsour et al. (2024) characterizes AI as a system capable of carrying out routine, repetitive tasks that would normally demand human intelligence. Jangbahadur (2024) extends this idea by highlighting the strategic importance of AI in HRM as a technology that automates tasks to achieve strategic employee involvement and long-term sustainability. This perspective aligns closely with this research's focus on optimization, as it underscores how AI can support broader organizational goals while enhancing process efficiency.

Duan, Edwards, and Dwivedi (2019) define AI as the capacity to adjust to new inputs and perform human-like tasks, highlighting its potential to take over traditionally human-led functions. Similarly, Tambe, Cappelli, and Yakubovich (2019) present AI as a broad class of technologies designed to perform cognitively demanding tasks. Their framing reflects AI's technological scope and decision-making capabilities, reinforcing its relevance to operational deployment in HRM systems.

For this thesis, the definitions by Alnsour et al. (2024) and Jangbahadur (2024) are particularly relevant. Together, they provide a comprehensive foundation for exploring AI's transformative potential in recruitment and selection processes, with a focus on both operational efficiency and strategic alignment. Table 2 reveals the varying focus areas among the definitions in Table 1.

Table 2

“AI in HRM” definitions comparison

Author(s) & Year	Task automation	Strategic integration	Employee experience	Sustainability
Alnsour et al. (2024)	+	-	-	-
Jangbahadur (2024)	+	+	-	+
Duan, Edwards, & Dwivedi (2019)	+	+	+	-
Tambe, Cappelli, & Yakubovich (2019)	+	+	-	-

Source: Compiled by author based on the sources presented in the table

Relevant to this thesis is the subset of AI known as machine learning, which uses algorithms to analyze historical hiring data and predict which candidates may be successful based on predefined performance metrics (Smelyakov, Hurova, & Osiiievskiy, 2023).

Automation refers to the technology-driven process of minimizing human intervention in performing repetitive tasks (Groover, 2015). In recruitment, automation has primarily focused on tasks like resume screening, interview scheduling, and communication with candidates. According to Davenport and Ronanki (2018), automation in HR can be divided into three types: rule-based, where straightforward tasks follow set protocols; robotic process automation (RPA), where software bots handle structured and semi-structured tasks; and cognitive automation, which uses machine learning to handle complex decision-making.

Optimization in recruitment refers to the systematic improvement of hiring processes to achieve specific goals, such as reducing time-to-hire, improving quality-of-hire, and enhancing candidate experience (Grabara, Kot, & Pigoń 2016). Optimization is achieved by using AI to analyze data and streamline workflows, identifying inefficiencies, and suggesting improvements based on predictive analytics (Al-Amin, Ewim, Igwe, & Ofodile, 2024). Optimization also includes using AI to enhance the accuracy of assessments, improve diversity in hiring, and reduce costs associated with manual screening processes (Zhang, 2024). Researchers emphasize that optimization goes beyond automation by ensuring that recruitment processes not only function more efficiently but also align closely with organizational goals. In this way, optimization reflects a continuous improvement approach, where data insights drive decisions to refine recruitment strategies.

The recruitment and selection process involves attracting, evaluating, and hiring qualified individuals to fill job vacancies within an organization. Traditionally, this process includes stages such as job analysis, sourcing candidates, screening resumes, conducting interviews, and making hiring decisions (Breaugh, 2009). Recruitment and Selection are often mentioned together as a combined HR function, but they represent two sequential stages in hiring. Recruitment generally refers to the process of attracting and identifying potential job candidates, whereas selection refers to evaluating and choosing the best candidate(s) for employment. One classic definition by Edwin Flippo characterizes recruitment and selection broadly as “a process of searching for prospective employees and stimulating and encouraging them to apply for jobs in an organization” (as cited in Raghavendra, Charitha, & Rajitha, 2017, p. 420). Another source defines recruitment as “the process of attracting individuals on a timely basis, in sufficient numbers, with appropriate qualifications, to apply for jobs within an organization” (Mondy & Noe, 2008, p. 110). This highlights that recruitment is about generating a large and qualified applicant pool efficiently. In contrast, selection is commonly defined as the process of deciding, from a pool of applicants, which individual or individuals will be offered a job (Mondy, 2013). Thus, if recruitment focuses on attracting a broad pool of qualified applicants, selection is about identifying the best candidate(s) from the pool – it involves screening applicants, assessing their qualifications through interviews, tests, background checks, and then making a hiring decision.

It is important to note that while conceptually distinct, recruitment and selection are interdependent. Effective recruitment sets the stage for effective selection by ensuring a strong candidate pool. According to ThiruvengkataRaj & Nirmal Kumar (2018), recruitment and selection are concurrent processes and are void without each other, meaning that one cannot select good hires without good candidates, and recruitment without a selection decision is incomplete.

For this thesis, we consider R&S together as a continuum: from initial job advertising and sourcing of candidates through to assessment and hiring decisions. This holistic view is relevant because AI applications often blur the line between recruitment and selection. For instance, an AI-powered ATS might automatically source candidates (a recruitment task) and also screen or rank them (a selection task). Therefore, definitions that encompass the entire talent acquisition funnel are most useful. We adopt the view that R&S covers all stages of hiring, from attracting applicants to making final hiring choices, consistent with how both researchers (Chen, 2023) and practitioners approach the hiring workflow.

1.2. Beneficial contribution of AI tools on recruitment and selection processes

AI has developed as a significant changing factor in the field of recruitment and selection. It streamlines processes that were traditionally time-intensive and resource-consuming. The integration of AI tools has improved the efficiency of recruitment practices by automating routine tasks, optimizing decision-making, and reducing time-to-hire (Alnsour et al., 2024). Many studies suggest the various ways in which AI can contribute to enhancing recruitment outcomes.

AI significantly reduces the time and resources required for recruitment by automating routine tasks. Companies, especially large ones, face thousands of applicants for each opening. AI tools promise to process large applicant pools quickly, saving recruiters time. Parsing resumes or scanning LinkedIn profiles for potential candidates can be done in seconds by an AI, whereas it would take a human recruiter many hours. This efficiency motive is consistently cited: 85% of employers in a 2022 survey reported that AI saved them time in hiring (Roppelt et al., 2025). For instance, Biradar (2024) highlights how Hilton Hotels achieved an 85% reduction in recruitment time through AI tools, while IBM reported a 30% cost savings. These tools streamline operations by automating resume screening, scheduling interviews, and tracking applicants, allowing HR professionals to focus on strategic decision-making. Similarly, Gupta, Fernandes, and Jain (2018) found that AI-driven ATS and predictive analytics not only save time but also improve the hiring decisions.

A significant benefit of AI in recruitment is its ability to automate repetitive administrative tasks such as CV screening, interview scheduling, and initial candidate communication. AI tools enable recruiters to process vast amounts of data in real time, thus reducing the workload and minimizing the time spent on manual reviews (Rathnayake & Gunawardana, 2023). Automated systems equipped with natural language processing (NLP) and machine learning algorithms allow recruiters to sift through large volumes of resumes and shortlist candidates based on predefined criteria (Shettigar, 2024). For example, platforms like HireVue utilize AI-driven video interview analysis to evaluate candidates' speech, facial expressions, and tone, offering insights into suitability based on predefined models (Zhou, 2024). Similarly, LinkedIn Talent Insights employs AI algorithms to match job requirements with candidate profiles, identifying top talent from a global database (Saliu, 2025). These tools can reduce the average time-to-hire by automating the initial stages of candidate evaluation, without compromising the accuracy of the assessments (Alnsour et al., 2024). Gupta, Fernandes, & Jain (2018) observed that AI-enabled innovative learning tools like app-based games that are part of robotic process automation (RPA) can enhance

recruitment workflows by providing real-time insights into candidate performance metrics, thereby allowing HR managers to make informed decisions.

As competition for qualified talent continues to intensify, employers are seeking any advantage to find and secure the best candidates. AI is seen as a way to optimize talent acquisition and gain a competitive edge (Hmoud & Laszlo, 2019). Black and van Esch (2020) suggest that the use of AI in recruitment has become an increasingly important managerial capability, as human capital becomes a key differentiator. Simply put, organizations fear being left behind if they do not leverage the latest tools to recruit effectively. Also, the digital transformation of HR means more data is available on candidates, and AI thrives on big data. Modern recruitment involves parsing complex information such as social media, resumes, psychometric tests, which AI can analyze more holistically. Studies note that as hiring processes generate more data, AI and analytics have moved from the periphery to centre stage in HR (Black & van Esch, 2020).

AI improves hiring accuracy by matching candidates' skills and qualifications to job requirements with greater precision than traditional methods. Unilever's integration of predictive analytics, as discussed by Biradar (2024), resulted in a 16% improvement in employee retention. Such tools analyze large datasets to predict candidate success, minimizing the risk of mismatched hires. Moreover, Smelyakov, Hurova & Osiievskiy (2023) demonstrate that Random Forest algorithms achieved a 78.6% accuracy rate in identifying the best candidates for specific roles, underscoring AI's potential for data-driven recruitment.

Predictive analytics, another core component of AI, positively impacts recruitment efficiency by providing insights into candidate suitability. By analyzing historical hiring data and correlating it with performance metrics, AI systems can predict which candidates are likely to excel in a specific role (Rathnayake & Gunawardana, 2023). Such predictive capabilities not only improve the quality of hires but also reduce costs associated with poor recruitment decisions. Studies show that organizations relying on predictive analytics in recruitment report improvements in retention rates and employee performance (Gupta, Fernandes, & Jain, 2018). Research by Soni (2024) indicates that this targeted approach reduces the likelihood of mismatches, saving time for both recruiters and candidates. This optimization allows HR departments to allocate resources more effectively.

Additionally, AI systems can mitigate unconscious bias in recruitment, fostering more diverse and inclusive workplaces. According to Biradar (2024), Google's AI-driven hiring processes emphasized fair evaluations, reducing bias and improving diversity outcomes.

However, as noted by Mujtaba and Mahapatra (2024), achieving fairness requires careful attention to training datasets and algorithm design.

AI-powered tools such as chatbots and automated communication systems enhance candidate engagement by providing instant feedback and streamlining application processes. For example, Unilever's use of AI-driven chatbots improved the candidate experience by offering real-time updates and personalized responses (Biradar, 2024). Additionally, Gupta, Fernandes, and Jain (2018) emphasize the role of gamified assessments in creating an interactive and engaging recruitment process, further improving employer branding.

AI can touch every stage of the R&S pipeline. The recruitment process often begins with sourcing. Traditionally, this involved posting jobs and searching through networks or databases. AI has significantly expanded sourcing capabilities. Modern recruitment platforms use AI-driven algorithms to scan online profiles such as LinkedIn and GitHub and large resume databases to find candidates who match a given job description, including passive candidates who aren't actively job hunting. Research by Hmoud & Laszlo (2019) noted that AI can take over time-consuming tasks like sourcing by automatically crawling professional networks and job boards for relevant talent. In the searching stage, AI systems act like specialized search engines. They parse job requirements and then comb through web content to identify individuals with the right skills or keywords. For example, an AI sourcing tool might automatically identify software engineers on LinkedIn whose profiles suggest a fit for a hard-to-fill Python developer role, then invite them to apply.

Empirical studies highlight these capabilities. Allal-Chérif et al. (2021) conducted a qualitative multiple-case study on how digital technologies improve successive recruitment stages. One case in their study was a professional social network LinkedIn used as an AI-enabled sourcing tool. They found that AI algorithms on such platforms can analyze profiles and match candidates to jobs far more efficiently than manual searching. AI doesn't just perform keyword matching, it can learn patterns of what a successful hire's profile looks like and search for similar profiles. Another example is AI-driven programmatic advertising. Algorithms decide where to post job ads for optimal exposure. Chatbot head-hunters have also emerged. These are automated agents that approach potential candidates on messaging platforms. They initiate conversations about job opportunities.

After sourcing, the next challenge is screening the inflow of applicants to determine who is qualified. AI has been widely applied to resume screening and candidate shortlisting. Traditional screening which involves manually reading resumes, checking qualifications is labour-intensive and prone to human bias or error. AI-based screening tools aim to evaluate

candidates more objectively and quickly. For instance, machine learning models can be trained on past hiring decisions and employee performance data to predict which applicants are likely to succeed in a role, effectively scoring or ranking incoming resumes. Research by Bogen & Rieke (2018) and others have described how AI-driven Applicant Tracking Systems use natural language processing to parse resumes and match them to job criteria (as cited in Chen, 2023). In the screening phase, AI assists recruiters by scoring candidates and evaluating their competencies against job requirements (Bogen & Rieke, 2018). The system might look at education, skills, experience, and even semantic context of descriptions. It can then automatically filter out candidates who don't meet basic criteria, for example, missing a required certification, and rank the remaining candidates in order of likely fit. This not only saves recruiter time but, in theory, also surfaces non-obvious candidates who might be a good fit, for example, someone with an unconventional background but skills matching the role.

Empirical evidence supports the effectiveness of AI screening to an extent. Black & van Esch (2020), note that AI tools are commonly used in four sets of recruiting activities: outreach, screening, assessment, and coordination. Screening is thus a core pillar of AI use. Interviews with HR professionals indicate that many trust AI for initial screening of high-volume, entry-level roles, where the criteria are clear-cut (Malin et al., 2023).

Another AI application at the screening stage is game-based assessments and psychometric testing. Some companies use AI to administer and score online tests or games that evaluate cognitive abilities, personality traits, or skills, thereby screening candidates on qualities beyond the resume. Allal-Chérif et al. (2021) describe a case of a game called *Reveal* used by L'Oréal for recruiting. This game engages candidates in simulated business challenges while AI analyzes their decisions to infer traits like innovation or strategic thinking. Such AI-powered assessments can filter candidates by who performs best in the game as a proxy for job-relevant abilities. This gamification of screening shows AI's capabilities not just to read resumes but also interpret candidate behavior data at scale.

Overall, AI-enabled screening is credited with improving efficiency and consistency. It applies the same criteria to all applicants, which can reduce human inconsistencies. Hmoud and Laszlo (2019) concluded that AI "provides promising solutions for recruiters to optimize talent acquisition by taking over time-consuming repetitive tasks such as sourcing and screening applicants, improv[ing] the quality of the hiring process and neutraliz[ing] human biases" (p. 26). This highlights a hopeful view that by automating initial screening, AI could both speed up hiring and make it fairer by focusing on meritocratic criteria.

The interview stage, especially the initial interviewing or testing of candidates is also being influenced by AI. Traditional interviews are one-on-one or panel conversations, which limit how many candidates can be interviewed and can introduce interpersonal biases. AI tools here include video interview analytics, chatbot interviews, and scheduling automation. In the interview phase, fully automating a personalized interaction is challenging as interviews remain the most individual stage of the selection process and thus unlikely to be fully automated (Ahmed, 2018). However, certain aspects can be facilitated by AI. For instance, many companies now use asynchronous video interviews (Torres & Mejia, 2017). Candidates record answers to standardized questions on camera, and AI software analyzes these recordings. The AI can evaluate speech (keywords, language proficiency), tone of voice, facial expressions, and even microgestures to assess aspects like confidence, emotional intelligence, or honesty. Platforms like HireVue gained popularity for using AI to score video interviews. Ahmed (2018) and others have noted that AI tools enable recruiters to conduct video interviews efficiently and analyze candidates' reactions, voice tones, and facial expressions in a data-driven way (as cited in Chen, 2023).

Another AI application is chatbot-based interviewing. These are text or voice chatbots that ask candidates pre-screening questions and use natural language processing to evaluate responses. A case from Allal-Chérif et al. (2021) involved a chatbot named ARI from TextRecruit that converses with candidates. The chatbot can ask a series of role-specific questions and instantly evaluate the answers or forward the transcript to recruiters. This automates the initial HR phone screen. Candidates often don't even realize when an AI is conducting the chat interview, if designed well.

AI also helps in interview scheduling and coordination, which is a significant administrative burden. Tools like x.ai's scheduler or Microsoft's Calendar.help use AI to find optimal interview times, send invites, and handle rescheduling, thus optimizing the coordination aspect of interviews.

Some quantitative studies show that candidates appreciate the speed and flexibility of AI interviews. For example, a study of applicants' perceptions found that a decrease in response time is the most important benefit of AI in recruitment from the candidate perspective (Horodyski, 2023). AI tools get back to candidates faster and move them through stages quicker, which includes quick scheduling of interviews and chatbot responses.

In summary, AI's role in interviewing is about scale and data augmentation. It allows more candidates to be assessed in initial rounds via automated interviews and provides more data points via voice/facial analysis to inform hiring decisions. But complete automation of

interviewing is rare; instead, AI tends to assist or filter, handing off refined information to human decision-makers for the final call.

Finally, at the selection stage, AI can act as a decision support system. It might aggregate all candidate data such as resume scores, interview scores, test results, recommend the top candidate, or even predict likely job performance or tenure for each finalist. Bogen & Rieke (2018) observed that in the final selection stage, AI systems can do things like calculating remuneration and benefit packages for a chosen candidate or anticipating the risk that candidates would violate workplace rules. That means algorithms can assist in making the job offer optimal for example, suggesting a competitive salary based on market data and the candidate's profile and perform risk analysis such as checking if candidate's background or psychometric patterns suggest they might be a retention risk or a compliance risk. These uses are less documented in literature but are conceivable extensions of AI analytics. Most organizations still rely on human judgment for the final hiring decision and AI recommendations remain just recommendations. However, as AI tools become more sophisticated, some companies have trailed letting algorithms make the final call for specific high-volume, low-stakes roles like selecting which warehouse associates to hire from a pool of pre-approved candidates based purely on algorithmic fit scores. Hmoud & Laszlo (2019) foresee augmented intelligence approaches dominating, where AI does not fully replace HR managers but works alongside them to produce better outcomes. In their vision, routine hiring decisions, especially where data points to one candidate being the best, could be mostly automated, whereas strategic or borderline decisions involve human managers.

It's evident that different AI tools are tailored to different stages of R&S. To consolidate this understanding, Table 3 presents a synthesis of the key stages of recruitment and selection, the AI applications commonly used at each stage, and their primary purposes, based on the studies and examples discussed.

Table 3

AI applications in R&S processes

Stage	AI tools/applications	Purpose(s)	Function(s)
Sourcing	<ul style="list-style-type: none"> – AI-driven candidate sourcing platforms – Programmatic job ads and targeting algorithms – Chatbot head-hunters 	Expand the talent pool quickly and efficiently.	AI scans large networks to find matching profiles, parses online data to find passive candidates and optimizes job ad placement for high visibility and relevance.
Screening	<ul style="list-style-type: none"> – Resume parsing and ranking algorithms integrated in ATS – ML models predicting candidate-job fit – Gamified AI-scored assessments 	Filter and shortlist applicants from the pool by automatically evaluating qualifications and fit.	AI reads CVs and application answers to score or rank candidates against the job criteria. It can also administer online tests or games and score them objectively to identify top performers.
Interview	<ul style="list-style-type: none"> – Asynchronous video interview platforms – NLP chatbots – Interview scheduling assistants 	Assess candidates at scale, streamline interviews, handle many interviews quickly, and augment human judgment with data	AI video interview systems analyze speech and facial cues to evaluate soft skills or competencies. Chatbots conduct initial Q&A sessions to provide a consistent interview experience for all candidates. Scheduling tools automate coordination.
Selection decision	<ul style="list-style-type: none"> – Decision-support algorithms (score aggregators) – Predictive hiring analytics – Offer optimization tools 	Help hiring managers make objective, data-informed final decisions.	AI can predict which candidate is likely to perform best or stay longest based on historical data. It can also recommend optimal salary/benefit offers to win the candidate. The AI's role is advisory in most cases. It helps decision-makers choose objectively and informed by data.

Source: Compiled by author based on the literature review

In summary, the adoption of AI in recruitment and selection has revolutionized efficiency by automating repetitive tasks, enhancing candidate-job matching, and leveraging predictive analytics to improve decision-making. These tools enable HR professionals to streamline their workflows, reduce costs, and focus on strategic initiatives, ultimately transforming how organizations approach talent acquisition.

1.3. Challenges and ethical considerations

The growing adoption of AI in R&S has sparked extensive debate regarding the ethical issues and implementation challenges it brings. While AI-driven tools promise efficiency and objectivity in hiring, empirical studies consistently show that these technologies also introduce ethical concerns, privacy risks, and unclear accountability. AI-driven tools also face significant practical challenges in implementation. This section provides a review of these challenges and ethical considerations, drawing on findings from qualitative and quantitative studies as well as prior literature reviews.

Despite growing interest, actual implementation of AI in R&S is still in early stages for many organizations. Malin et al. (2023) note that despite the high potential of AI, its actual adoption in recruiting is low, and many HR professionals have only vague knowledge about AI tools. Their exploratory interviews with 25 HR professionals found that uncertainty about AI's capabilities and distrust of its outcomes contributed to cautious adoption. Similarly, Hewage (2023) observed a reluctance to use AI in certain recruitment phases even when other phases were automated. All in all, awareness and interest are high, but full-scale adoption is uneven, it is influenced by many factors.

One of the primary issues of AI systems is the potential for algorithmic bias, which can lead to discriminatory practices. AI systems can perpetuate or even amplify human biases if not carefully managed. AI systems are trained on historical data which may contain inherent biases, so they might keep these biases in candidate evaluation and selection. For example, if a company historically hired mostly men for engineering roles, the AI may learn patterns that disfavor underrepresented groups in predictions. For instance, Soni (2024) highlights how algorithms, if not carefully designed and monitored, can reproduce systemic biases, such as gender or racial disparities, already present in organizational data. This concern is proven by Rigotti & Fosch-Villaronga (2024), who emphasize the need for transparency in AI systems to prevent unintentional discrimination during hiring processes.

Studies confirm that algorithms can unintentionally encode biases present in society. Chen (2023) states "algorithmic bias results in discriminatory hiring practices based on gender, race, color, and personality traits" if AI is unchecked (p. 1). The source of this bias could be limited or unrepresentative training data and biased algorithm design (Chen, 2023). The ethical danger is that such bias is harder to detect than human bias. They are hidden in code and may go unnoticed until significant damage is done. This concern is so prominent that many researchers explicitly call for bias audits and algorithmic fairness measures when deploying AI in R&S (Chen, 2023).

A notable example of bias in AI provided by Meyer (2018) is the case of Amazon's recruitment algorithm, which inadvertently favored male candidates for technical roles due to the historical predominance of male employees in such positions (as cited in Mujtaba & Mahapatra, 2024). While the algorithm was no longer used, it shows the importance of ensuring that AI systems are trained on diverse and representative datasets to mitigate biases. Similarly, O'Brien (2024) emphasizes how AI hiring tools may unknowingly create homogeneous candidate pools by favoring characteristics that align with an organization's existing workforce. Bias also extends to indirect discrimination, where proxy variables such as education or location reflect protected attributes like gender or ethnicity, inadvertently disadvantaging underrepresented groups (Mujtaba & Mahapatra, 2024; Rathore, 2023). Tools like IBM's AI Fairness 360 have also proven effective in increasing fairness and accountability in AI hiring systems (as cited in Mujtaba & Mahapatra, 2024).

In addition to bias, the lack of transparency and accountability in AI-driven recruitment is a significant ethical challenge. Many AI algorithms operate as "black boxes," where their decision-making processes are opaque and difficult to interpret (Ajunwa, 2020). This opacity makes it difficult to explain to candidates why they were screened out or selected, which can lead to perceptions of arbitrariness. At present, job applicants typically have no right to demand an explanation of an algorithm's decision, and vendors are often not legally required to disclose their models (Mori, Sasseti, Cavaliere & Bonti, 2024). This lack of clarity can undermine trust among job applicants and HR professionals. Rigotti & Fosch-Villaronga (2024) suggest that organizations should prioritize algorithmic transparency by providing clear explanations of how AI systems evaluate candidates and make decisions. This approach not only enhances trust but also ensures compliance with emerging legal frameworks, such as the EU AI Act, which mandates accountability and fairness in automated decision-making processes.

Tools like SHAP and LIME have been proposed to explain AI decisions, allowing stakeholders to better understand and trust the outcomes of these systems (Soni, 2024). Providing at least a basic level of transparency, for example, informing candidates what criteria an AI uses can significantly improve perceptions of fairness and acceptance of AI decisions (Mori et al., 2024). Langer, König, Back & Hemsing (2023) found that when organizations clearly communicated their use of AI in hiring and demonstrated ethical safeguards, candidates' perceptions of the process improved, which in turn enhanced the organization's attractiveness as an employer. This finding underscores the interplay between

ethics and practical outcomes. Ethical AI practices can yield tangible benefits by building trust with applicants.

The use of AI in hiring affects stakeholder perceptions of fairness. Candidates are concerned whether the process and outcomes are just (Mori et al., 2024). Research indicates that if candidates perceive an algorithmic selection process as unfair or arbitrary, it erodes their trust and engagement (Hunkenschroer & Kriebitz, 2023). In a recent experiment, Koch-Bayram and Kaibel (2023) found that candidates were more accepting of AI resume screening when adequately informed in advance about it, yet their acceptance dropped sharply for AI-driven interviews, especially if an algorithm made an error. Participants judged algorithmic errors more harshly than human errors, perceiving them as less acceptable. This aligns with the phenomenon of algorithmic aversion, where people are less forgiving of mistakes by AI than of human mistakes. Procedural justice may suffer if AI decisions are unexplained or perceived as biased (Mori et al., 2024). Moreover, if outcomes reflect biased patterns, applicants will view the system as inequitable. Even when AI aims to be objective, the “black box” effect can make outcomes feel inscrutable and thus unfair. Ensuring fairness is critical, as negative perceptions can deter qualified candidates and harm employer reputation.

Privacy concerns further complicate the use of AI in recruitment. AI tools often rely on large volumes of personal data to assess candidate suitability. It raises questions about data protection and the ethical use of sensitive information. HR professionals must find a balance between leveraging data for improved decision-making and safeguarding candidates' privacy (Shettigar, 2024). Al-Amin et al. (2024) identify SMEs' vulnerability to cyberattacks and emphasize the importance of aligning with data protection regulations like GDPR. Furthermore, Biradar (2024) points out that the collection and processing of sensitive candidate data require clear guidelines to prevent misuse or breaches. Studies warn that candidates may feel their privacy is violated by AI analysis, especially if algorithms infer traits (e.g., personality, emotional state) from video or audio (Rigotti & Fosch-Villaronga, 2024). Ensuring compliance with data protection regulations such as the GDPR is essential to maintain ethical standards in AI-driven recruitment practices.

The regulatory landscape for AI in employment is still emerging which causes uncertainty for organizations. Laws and guidelines have not fully caught up with AI capabilities. For example, as of 2025, few jurisdictions have specific statutes on the use of algorithms in hiring, beyond general anti-discrimination law. This lack of clear regulation creates a gray area. Companies are unsure what standards they will eventually be held to, or

what audits might be required. Prikshat, Islam, Patel, Malik, Budhwar, & Gupta (2023) note that firms face a dilemma between innovation and caution, as forthcoming regulations could impose strict requirements on transparency and bias mitigation. Some organizations choose to hold back on AI adoption due to fear of potential legal repercussions if the AI's decisions were challenged (Mori et al., 2024).

Additionally, AI's introduction blurs accountability in hiring decisions. Traditionally, human recruiters could be held responsible for biased hiring, but with AI, it becomes unclear who is answerable if something goes wrong. Algorithmic accountability gaps arise when a hiring decision is influenced by a model that no single person fully controls or understands. Researchers note that while managers technically make the final decision, in practice the power shifts to those who design and train the algorithms, since the AI's recommendations strongly shape outcomes (Mori et al., 2024). This raises questions of liability and legal frameworks are only beginning to deal with this issue. For instance, proposed regulations and scholars have suggested algorithmic impact assessments and audits to assign responsibility (Yam & Skorburg, 2021). Empirical studies call for clearer guidelines and shared accountability between developers and employers. In summary, ensuring someone can be held accountable for AI-driven hiring decisions is crucial for trust and governance, yet current practice often lacks clear accountability structures.

The over-reliance on AI in recruitment can lead to the dehumanization of the hiring process. While AI enhances efficiency, it may overlook critical qualitative aspects of candidate evaluation, such as interpersonal skills and cultural fit. The absence of human oversight in AI-driven recruitment processes can result in decisions that are purely data-driven, potentially neglecting the holistic evaluation of candidates (Hunkenschroer & Kriebitz, 2023). Shettigar (2024) notes that while AI-driven candidate assessments provide accurate screening, the absence of human interaction can lead to a less personalized candidate experience. Eddy et al. (2024) suggests maintaining a hybrid approach where AI complements human oversight, particularly in final evaluations, to ensure a balanced and fair recruitment process.

Introducing AI into R&S processes is not only an ethical minefield but also an organizational and technical challenge. Companies often encounter significant hurdles when implementing AI tools, from resistance by hiring professionals and job candidates to technical limitations and regulatory ambiguity. Organizational resistance is often the first barrier to emerge when implementing AI in R&S. A recent study by Almeida, Junça Silva, Lopes & Braz (2025) used interviews and surveys with recruiters to examine their acceptance

of AI. It found a mix of enthusiasm and concern. While recruiters appreciated AI's potential to automate tedious tasks and improve efficiency, a notable proportion raised ethical and practical concerns that made them hesitant. Specifically, 15% of recruiters in their sample highlighted bias and discrimination as a worry in using AI (Almeida et al., 2025), echoing the ethical issues discussed earlier. Additionally, many recruiters felt that essential human elements in hiring like empathy and personal interaction must be preserved, cautioning against a purely machine-driven process. This aligns with other qualitative research Köchling et al. (2023) showing that HR professionals may feel that their expertise and intuition cannot be wholly replaced by AI.

Nevertheless, some HR personnel resist AI out of fear of job displacement or of being unable to develop the new technical skills required. This highlights the need for training and change management. For example, a company implementing an AI screening tool has to run workshops to upskill recruiters in interpreting AI outputs and to reassure them that the AI was a tool to enhance, not eliminate, their role. When organizations invest in such training and clearly define the roles of AI vs. humans in the hiring workflow, acceptance tends to improve. (Almeida et al., 2025)

Candidates' trust represents an important dimension of resistance to AI-based recruitment. Candidate perceptions and reactions can directly influence the success of AI implementation, as concerns about automated decision-making may discourage qualified applicants from participating in the hiring process, thereby reducing the effectiveness of such tools. Research by Mirowska and Mesnet (2022) indicates that some candidates prefer the involvement of human judgment in evaluation processes and may avoid AI-mediated hiring despite the known limitations of human decision-making. This highlights the need for organizations to carefully consider the applicant experience when introducing AI in recruitment. In response, some organizations have adopted greater transparency by providing clear information about their AI hiring systems on career websites and by offering mechanisms for human review or appeal of AI-based decisions to foster candidate trust.

Another challenge is the technical limitation of current AI capabilities. AI tools in R&S have succeeded in parsing text and even analyzing video, but they are far from perfect. For instance, text-based algorithms might have trouble with unconventional CV formats or innovative self-descriptions that don't match their keyword database. Some AI systems used in recruitment for example video interview analyzers or chatbot assessors remain technologically immature, with questions raised about their accuracy and reliability (Nawaz, 2019). Video analysis tools which claim to assess traits from facial cues or speech patterns

have been criticized in academic studies for lacking scientific validation and potentially reacting to irrelevant factors like lighting or camera quality (Horodyski, 2023). Many specialists have held off on using such advanced AI until they mature. Instead, simpler AI applications like keyword-based resume ranking or chatbot Q&A are more common, but even they need monitoring for errors.

To sum up, while AI tools offer transformative potential for recruitment and selection processes, addressing ethical and practical challenges is crucial. Organizations must implement robust measures to reduce bias, enhance transparency, protect candidate privacy, and maintain human involvement in decision-making. Incorporating fairness metrics, enhancing transparency, safeguarding data, and maintaining human oversight are critical steps to mitigate these challenges. These considerations are vital for leveraging AI responsibly and equitably in HR practices.

2. Empirical analysis on evaluating AI implementation in recruitment and selection

2.1 Methodology

This thesis employs a qualitative research design to explore the role of AI in optimizing and automating personnel recruitment and selection processes. Given the nuanced nature of the research problem, qualitative research is appropriate because it enables an in-depth understanding of human perceptions, contextual factors and organizational dynamics that quantitative methods may overlook. By capturing the lived experiences and expert insights of HR professionals, this approach provides a rich, contextualized exploration of AI implementation in R&S.

To visually represent the methodological design of this thesis, Figure 1 presents a structured overview of the research process. This framework served as the operational blueprint guiding the entire research procedure and ensured alignment between the aim, data collection, and analytical outcomes.

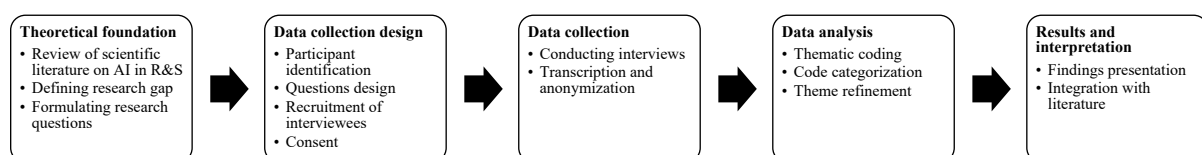


Figure 1. Methodological framework of the study

Source: Compiled by author

Previous literature has emphasized the transformative potential of AI while simultaneously highlighting ethical challenges, such as bias and transparency (Gupta et al., 2018; Rathnayake & Gunawardana, 2023; Shettigar, 2024). However, many of these studies have relied on quantitative surveys or algorithmic analysis, leaving a gap in understanding the subjective perspectives of HR professionals on how these tools are integrated into real-world practices. Qualitative interviews address this gap by uncovering how practitioners perceive and navigate AI's benefits and challenges, thus contributing original insights to the discourse.

The empirical component of this thesis addresses the following aim: to investigate how AI tools contribute to the automation and optimization of recruitment and selection processes based on the experiences and perceptions of HR professionals.

It specifically answers:

1. How do HR professionals use AI tools to automate and optimize R&S processes?
2. What are their experiences and perceptions of the benefits and limitations of AI tools?
3. What specific recruitment tasks are most successfully automated, and where does human intervention remain critical?
4. What ethical concerns and practical challenges do HR professionals encounter in AI-driven recruitment?

A purposeful sampling strategy was used to identify participants with direct experience in using AI tools in R&S. Participants were sourced using the following channels:

- Personal LinkedIn connections
- HR professional groups on Facebook and LinkedIn platforms
- Publications and posts related to AI in HR
- Boolean search: (“recruiter” OR “talent acquisition”) AND (“AI” OR “artificial intelligence”) AND (“hiring” OR “recruitment”)

This strategy resulted in seven eligible participants, each having direct involvement with AI in recruitment. They represent diverse industries and geographic locations. Full profiles and transcripts were anonymized and stored securely. Participant roles include talent acquisition specialists, HR managers, business founders and freelance recruiters from both SMEs and large enterprises with 2-10 years of experience in R&S practices and 1-5 years of AI-assisted talent acquisition. To provide contextual background on the interview participants and enhance the transparency of the qualitative findings, a participant profile table is included. Table 4 summarizes the professional roles, industry contexts, years of experience in R&S and with AI tools.

Table 4

Participant profiles

Participant ID	Role	Industry	Years of experience	Years of AI usage
Interviewee 1	Talent Acquisition Specialist	Education	3	1
Interviewee 2	Recruitment Lead	Corporate	5	2
Interviewee 3	HR Generalist	Construction	4	2
Interviewee 4	Freelance/volunteer Recruiter	ERASMUS Student Network	2	2
Interviewee 5	Talent Acquisition Business Partner	Fintech	10	5
Interviewee 6	Founder/President	IT/Information security	4	3
Interviewee 7	Recruitment Specialist	Consulting	5	3

Source: Compiled by author

Prior to conducting the main data collection, a pilot interview was carried out to assess the clarity, relevance, and operational functionality of the semi-structured interview guide developed for this study. The purpose of the pilot interview was to ensure that the questions would elicit rich, meaningful responses aligned with the objectives, and to identify any potential issues related to question formulation, flow, or technical execution.

The pilot interview was conducted with an HR professional who met the target participant criteria: a practitioner with practical experience using AI tools in recruitment and selection processes. The interview took place via Google Meet, lasting approximately 45 minutes. The session was recorded, with prior consent from the participant, and later transcribed to facilitate evaluation. During the pilot, particular attention was given to assessing the comprehensibility and sequence of the interview questions and the overall pacing of the interview. Feedback was solicited from the participant at the end of the session regarding the clarity of the questions, the perceived relevance to the topic, and the comfort level with discussing potentially sensitive topics such as bias and fairness in AI systems.

The pilot interview revealed that the interview guide was generally effective in eliciting in-depth responses. However, minor adjustments were made based on insights gained. Specifically, three questions were removed and some questions were slightly rephrased to improve clarity. Furthermore, a minor modification was made to the interview introduction to better reassure participants about confidentiality and the voluntary nature of their participation.

Overall, the pilot interview enhanced the validity and reliability of the data collection instrument by ensuring that the questions were well-calibrated to the study's aims, fostering a smoother and more productive interview process during the main study phase. The pilot interview data were excluded from the main thematic analysis to maintain consistency, as recommended in qualitative research practices (Braun & Clarke, 2006). The pilot served solely to validate and refine the interview guide.

Data was collected through semi-structured interviews, which allowed flexibility in probing participants' experiences while maintaining a consistent framework. Each interview lasted between 20–40 minutes and was conducted via Zoom and Google Meet. The interviews took place between March and April 2025. Interviews were recorded using both voice recorder and an AI-powered transcription and note-taking tool (FireFiles.ai) with participants' consent and later transcribed for analysis. The interview guide included open-ended questions about AI tools used, perceived benefits and limitations, ethical concerns, and views on human oversight (Appendices A-B).

In this study, given the semi-structured design of the interviews, where the guiding questions were directly aligned with the overarching thesis aim namely, exploring automation, optimization, and ethical considerations in AI-driven recruitment, thematic saturation was observed early in the data collection process. Recurring patterns and consistent themes emerged already after the third interview, with subsequent interviews further validating but not significantly expanding the thematic structure. This early saturation reflects the purposeful alignment between the interview guide and the study's conceptual framework, rather than a limitation of sample size or variability.

Prior to participation, all interviewees received an information sheet (Appendix C) outlining the study's purpose, their rights, and data protection measures. Informed consent was obtained in writing (Appendix D) and reaffirmed verbally at the beginning of each interview. Participants were offered the option to remain anonymous or have their role and affiliation cited. All respondents chose to remain anonymous.

Data were anonymized, securely stored on encrypted, password-protected devices, only the researcher had access. Data were used exclusively for academic research purposes in compliance with GDPR and the University of Tartu's research ethics guidelines.

The data collected through seven semi-structured interviews was analyzed using qualitative thematic analysis, following the reflexive and iterative approach outlined by Braun and Clarke (2006). This method was chosen because it enables a flexible yet rigorous

examination of patterns across the dataset. It captures not only what participants explicitly say but also how they construct meaning around the use of AI in recruitment and selection.

The process consisted of the six systematic steps, adapted from Braun and Clarke's (2006) model:

1. Familiarizing with the data
2. Generating initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

All interviews were transcribed verbatim and reviewed multiple times by reading and re-reading transcripts, making initial margin notes and analytical memos to capture early impressions, particularly focusing on remarks related to automation and optimization in R&S.

A combination of manual coding and AI-assisted coding was used. Initially, coding was done line-by-line to identify meaningful segments of text. A manual coding process was applied to each transcript using Microsoft Word and Excel. Coding focused on meaning-rich segments related to the research questions, especially concerning AI-enabled automation, optimization, perceived benefits, limitations, and ethical concerns in recruitment. Initial codes were descriptive and grounded in participants' language (in vivo codes). Also, at this stage, ChatGPT (OpenAI, 2025) was used as an assistive tool to accelerate the initial identification of recurring patterns and provide code suggestions based on prompt-guided review of transcript excerpts. ChatGPT (GPT-4) was used to assist in:

- Suggesting candidate codes based on provided transcript excerpts
- Clarifying potential semantic overlaps
- Improving code labels and theme names
- Offering exploratory interpretations that were then critically evaluated

The final coding structure was always verified, refined, and interpreted to ensure human oversight and academic integrity. This aligns with emerging research ethics standards for AI-assisted research (Davison et al., 2024).

Then, codes were grouped into broader interpretive clusters based on semantic and conceptual similarities. These groupings formed preliminary candidate themes representing recurring patterns across participants ("efficiency gains," "skepticism toward AI Autonomy," "fairness and accountability," etc.). Each candidate theme was systematically reviewed in

relation to the coded data and the full data set. This phase ensured internal and external homogeneity. Redundant or overlapping themes were refined, merged, or discarded. The goal was to ensure thematic coherence, depth and meaningful representation of participant narratives. Themes were clearly defined with concise scope statements and supported by illustrative quotations. Subthemes were introduced where appropriate to capture nuances or variations within broader thematic categories. Theme definitions were continually refined to ensure alignment with the research objectives and empirical insights. The finalized themes served as the foundation for the Results chapter. Each theme is supported by direct quotations, aligned with prior literature, and analyzed for theoretical and practical significance in the context of AI adoption in recruitment.

While the qualitative nature of the study provides rich, in-depth insights, it also poses several limitations. The sample size of seven participants, although sufficient for thematic saturation, limits the generalizability of the findings. Additionally, the purposive and self-selection-based sampling approach, primarily involving HR professionals already using AI tools and recruited through professional networks, may have introduced a bias toward more digitally engaged or favorable views of AI. Finally, despite the researcher's efforts to remain neutral, manual coding inherently involves subjective interpretation. Despite these limitations, the study provides valuable qualitative insight into real-world AI usage in R&S, contributing to the evolving discourse on ethical and strategic HR technology integration.

2.2 Results

This chapter presents the empirical findings derived from seven semi-structured interviews with recruiters and HR professionals actively engaged in AI-assisted recruitment and selection processes. The goal of the analysis was to explore how AI contributes to the automation and optimization of recruitment activities, as well as to uncover potential challenges, limitations, and ethical considerations associated with its implementation.

To guide the reader through the empirical material, four major themes were identified based on the coding process:

1. AI-driven efficiency
2. Human oversight
3. AI limitations and challenges
4. Future expectations

Each theme reflects core dimensions of how AI is currently reshaping recruitment practices and to what extent it can be integrated into human decision-making processes. The thematic structure and associated coding logic are summarized in Figure 2. This coding

framework served as a foundational lens for analyzing and synthesizing participant responses in relation to the study's research questions.

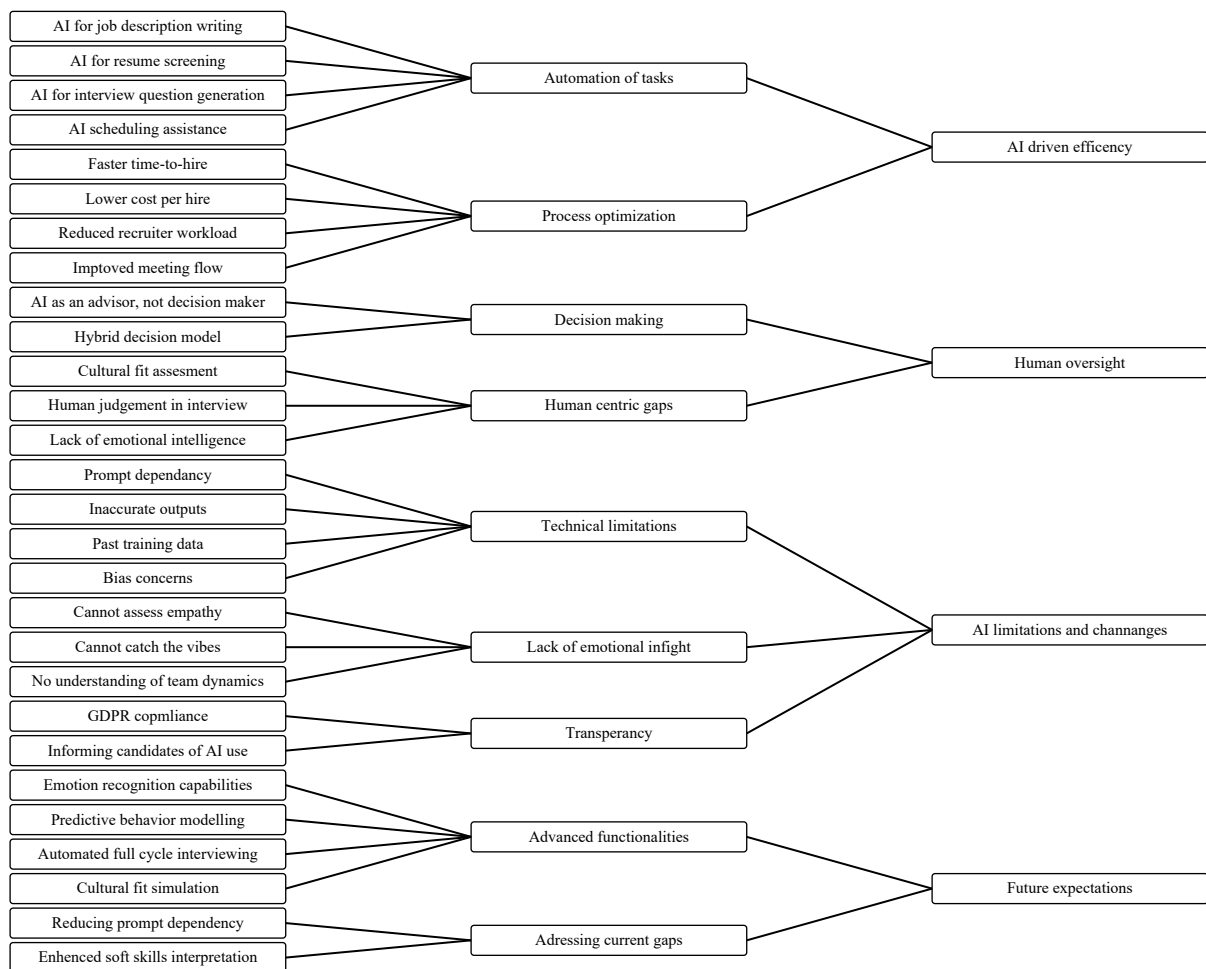


Figure 2. Summary of themes, categories, and codes identified in thematic analysis

Source: Compiled by the author based on the interview analysis

One of the most prominent themes emerging from the interviews is AI-driven efficiency, which refers to the enhanced productivity, time- and cost-saving capabilities brought about by AI implementation in R&S processes. This theme encompasses two core categories: automation of tasks and process optimization. Participants consistently described how AI tools streamline labor-intensive activities such as job description writing, resume screening, interview scheduling, and initial communication with candidates. As a result, recruiters could focus on more strategic and interpersonal aspects of hiring.

Automation of tasks emerged as a foundational benefit. Tools like ATS-integrated AI modules, Microsoft Copilot, and platforms such as HireVue and ChatGPT were frequently

mentioned for automating repetitive tasks. One participant emphasized the relief AI brought to their overwhelmed schedule:

“My time is limited to conduct all the screening... so the AI tool can screen all the applications so I can only remain with the most suitable candidates” (Interviewee 1).

Another noted,

“Screening automation filters out unqualified applications early. It’s transformative” (Interviewee 2), underscoring how AI reduces recruiter workload and enhances throughput, especially in high-volume hiring contexts.

These insights align with existing literature that consistently identifies time savings and resource optimization as core benefits of AI in recruitment. Biradar (2024) reported that Hilton Hotels achieved an 85% reduction in recruitment time through AI, while Gupta et al. (2018) confirmed that automation tools allow real-time data processing, reducing manual burden and enhancing candidate filtering.

In addition to automating routine tasks, participants widely reported process optimization, which included improving the quality of shortlists, accelerating time-to-hire, and refining coordination. As one recruiter put it:

“It saves us a lot of time, especially with high-volume roles. The candidate ranking helps prioritize who we look at first and can reduce unconscious bias to an extent” (Interviewee 5).

Another participant stated:

“With the data that ChatGPT or Deep Seq already have, we select the personalized questions for them. It was more productive” (Interviewee 4).

This optimization is not merely operational but affects strategic decision-making by improving recruiter readiness and meeting flow. Such patterns echo the literature where predictive analytics and AI-facilitated tools are credited for enhancing hiring accuracy (Smelyakov, Hurova, & Osieievskyi, 2023), reducing recruiter cognitive load, and enabling more holistic assessments (Zhang, 2024).

Notable exceptions included AI’s limited contribution beyond early-stage filtering. While most participants praised automation during sourcing and screening, few relied on AI at the final selection stage. This suggests that, despite efficiency gains, recruiters remain cautious about over-automation in decisions requiring nuanced human judgment.

“Human oversight” theme captures the persistent and crucial role of human judgment in AI-assisted recruitment processes. While artificial intelligence significantly optimizes and automates many recruitment functions, participants emphasized that human oversight remains

essential, particularly in tasks involving interpersonal evaluation and final decision-making. The categories of decision making and human-centric gaps reflect two areas where human input continues to shape recruitment outcomes alongside or in response to AI recommendations.

Across all interviews, there was a shared understanding that AI functions best as a supportive tool rather than a replacement for human decision-making. Participants consistently described recruitment as a hybrid process, where AI performs automation and provides data-driven insights, but human recruiters retain authority over critical judgments. One respondent framed this relationship clearly:

“We view AI sort of as an advisor, not really a decision maker.” (Interviewee 2)

This perception of AI as a decision support system aligns with the practical approach adopted by most HR professionals. For instance, a participant noted:

“AI gives us the data, but the final judgment still comes from people who understand the role and the culture.” (Interviewee 2)

This stance was echoed in Interview 7, where the recruiter emphasized a balanced model of collaboration:

“We still manually review shortlisted candidates and use human judgment in final decisions.” (Interviewee 7)

Additionally, human-centric gaps, particularly in the interview stage were highlighted as an area where AI tools fall short. Participants stressed the irreplaceable value of face-to-face interaction, body language assessment, and emotional resonance. One respondent explained:

“We need to see and validate just the posture... bodily language... character before you hear someone talk.” (Interviewee 1)

Similar sentiments were echoed by Interviewee 3, who stated, *“We have to get to know the candidate from the personal point of view,”* highlighting the importance of body language, emotional responses, and spontaneous interaction during interviews.

AI tools, in their current state, are not capable of replicating these interpersonal evaluations. This reflects broader scholarly concerns about AI’s limitations in understanding context, emotional tone, and authenticity which are the key aspects of assessing cultural fit (Hunkenschroer & Kriebitz, 2023).

Another participant also noted the inadequacy of AI in understanding cultural fit and empathy:

“AI doesn’t understand soft skills or culture fit, these are uniquely human judgments.” (Interviewee 2)

These reflections suggest that while AI contributes to structured, rule-based tasks, it struggles with subtleties such as emotional nuance and team dynamics. The inability to interpret “vibes,” gestures, or personal chemistry remains a key limitation of current AI systems.

These findings resonate strongly with earlier studies emphasizing the importance of human oversight in AI-supported recruitment. Black and van Esch (2020) stress that AI should not replace human recruiters but rather augment their capabilities through data enrichment. Similarly, Ahmed (2018) found that interviews remain the least automatable stage of the selection process, requiring empathy, adaptability, and contextual understanding. These studies support the view that human-AI collaboration, rather than substitution, yields the most effective recruitment outcomes.

While most participants emphasized human authority, some expressed openness to expanding AI’s role in preliminary assessments, particularly for entry-level roles or high-volume recruitment. However, none advocated for fully automated final decisions. Interestingly, Interviewee 4 reported using AI to summarize post-interview feedback but insisted:

“We don’t think that right now it’s fair to use AI to evaluate a person.”

This underscores a widespread ethical boundary: AI may guide but not judge. Even in organizations embracing AI, human oversight is seen not as a fallback, but as a strategic and ethical imperative.

The analysis also revealed notable limitations and challenges regarding the use of AI in R&S processes. These primarily included technical constraints and AI’s inherent limitations in emotional and interpersonal evaluation. Participants consistently highlighted “prompt dependency,” noting that the quality and specificity of AI outputs heavily depend on the clarity and detail of the input provided by recruiters. Interviewee 6 particularly emphasized this, explaining that *“prompt quality determines output, and you have to sometimes fact-check information because it isn’t always completely accurate or complete,”* pointing to the ongoing need for human validation despite AI support.

Several participants voiced concerns about the accuracy and dependability of AI outputs. One recruiter noted:

“AI can sometimes misinterpret or rank candidates strangely. It’s hard to know why one person was ranked higher than another.” (Interviewee 5)

This reflects what is commonly referred to in literature as the “black box problem” in AI which refers to the lack of transparency in how algorithms arrive at conclusions (Ajunwa, 2020). Technical issues also included dependence on historical or biased training data and limitations in prompt engineering. A recruitment specialist explained:

“AI is trained on past data and when you feed AI with the wrong data it gives you wrong output if there is a problem with the input.” (Interviewee 7)

These findings align with Soni (2024), who highlights the unpredictability of AI tools when trained on flawed datasets or when used without adequate human input.

Another prominent challenge raised by interviewees is AI’s inability to interpret human emotions, cultural dynamics, and interpersonal cues. Participants across multiple interviews described how AI lacked the ability to assess soft skills or cultural fit. One respondent emphasized:

“During interviews we evaluate not only candidates’ qualifications and skills and stuff like that, but we also pay attention to emotions, empathy, openness, kindness...we can see the cultural fit of the person during the interview...AI here might not feel what human beings can and might not notice what human beings can” (Interviewee 7)

Similarly, a business owner commented:

“I’m looking at the fonts of the resume – what’s the vibe or the energy of the person...in terms of fitting into our culture and how is that presented in their resume, whether it’s font or language. And I find that AI isn’t always able to help me with those nuances.” (Interviewee 6)

This limitation reflects concerns from Hunkenschroer and Kriebitz (2023) and Black and van Esch (2020), who argue that AI cannot replace intuitive, interpersonal judgment necessary in nuanced hiring decisions. The perceived absence of empathy and relational sensitivity underscores the enduring importance of human oversight in candidate evaluation.

Transparency in AI processes emerged as a major concern. Although some participants reported informing candidates about AI involvement, others admitted to lacking clear disclosure protocols. One participant shared:

“We anonymize applications before the AI ranks them - names, photos, and even addresses are masked.” (Interviewee 5)

This practice is meant to mitigate bias, but it also indicates a concern with the opacity of AI processes. The inability of many systems to explain their decisions not only raises ethical red flags but may affect candidate trust and employer branding. Research by Rigotti

and Fosch-Villaronga (2024) emphasizes the need for transparent algorithmic systems to ensure procedural justice and compliance with regulations like the GDPR.

Overall, these findings highlight significant constraints that continue to shape the role of AI in recruitment. Technical limitations, coupled with inherent gaps in emotional intelligence, reinforce the necessity of maintaining a balanced human-AI collaboration rather than pursuing complete automation. This perspective strongly aligns with existing literature that advocates for strategic human oversight to mitigate potential biases and errors (Chen, 2023; Rigotti & Fosch-Villaronga, 2024). Notably, despite recognizing these limitations, participants expressed openness towards future AI developments that could address these current shortcomings.

The theme “future expectations” encompasses participants’ aspirations regarding the advancement of AI in recruitment and selection. It reflects desires for features that go beyond current capabilities, especially in terms of emotional insight, behavioral interpretation, and addressing technological limitations like prompt dependency and surface-level analysis. Participants discussed both the need to improve AI functionalities and the importance of resolving existing shortcomings to maximize AI’s strategic value in recruitment workflows.

Participants frequently expressed a desire for AI capabilities that go beyond basic automation to encompass sophisticated analytical and interpretative tasks. A prominent expectation among respondents was the incorporation of emotional recognition abilities within AI tools, as many felt this would significantly enhance candidate assessment accuracy:

“It should be able to check someone apart from the data... maybe human feelings or good or bad vibes” (Interviewee 3).

Another interviewee underscored the need for predictive behavior modeling, suggesting AI could become more proactive by forecasting candidates’ future performance based on intricate behavioral analytics:

“If AI could predict candidate behaviors or their likely future performance, it would dramatically improve our hiring quality” (Interviewee 7).

Participants also mentioned fully automated interviewing systems as a key future functionality, seeing potential in AI not just to assist but to fully manage initial interviews:

“Ideally, AI could conduct preliminary full-cycle interviews autonomously, allowing us to focus exclusively on top candidates” (Interviewee 2).

Participants also identified areas for improvement where current AI technologies fall short. A frequent issue highlighted was the reduction of prompt dependency. Users felt AI tools currently require excessively precise instructions, limiting efficiency and ease of use:

“Right now, AI needs very detailed prompt... reducing that dependency would make these tools significantly more user-friendly” (Interviewee 6).

Enhanced interpretation of soft skills emerged as another critical area of desired improvement. Several participants noted current AI systems’ inability to accurately assess subtle interpersonal dynamics or soft competencies:

“AI should better interpret communication styles, soft skills, and team dynamics, aspects crucial to candidate-job fit” (Interviewee 5).

Lastly, improving cultural fit assessment capabilities was emphasized, recognizing that current AI lacks sufficient nuance to make culturally sensitive judgments accurately:

“Cultural fit assessments remain largely human-driven; if AI could more effectively analyze and interpret cultural nuances, it would transform our recruitment processes” (Interviewee 4).

The aspirations expressed by interviewees align well with contemporary literature on AI in recruitment. The need for emotional and predictive analytic capabilities is echoed by Gupta, Fernandes, and Jain (2018), who stress that next-generation AI systems must move beyond basic automation toward nuanced emotional and predictive analytics to significantly enhance recruitment quality. Similarly, literature supports participants' calls for reducing prompt dependency and improving soft skill interpretation. Rathnayake and Gunawardana (2023) highlight prompt dependency as a current major limitation that future advancements in AI must address, whereas Shettigar (2024) emphasizes that sophisticated AI interpretation of soft skills and cultural nuances could substantially optimize candidate assessments.

The findings reveal a clear consensus among participants regarding the desire for advanced predictive and emotional intelligence features. However, notable variations existed in the level of AI autonomy envisioned; some respondents expressed enthusiasm for fully autonomous processes, while others consistently reinforced the need for ongoing human oversight even with advanced systems. This pattern underscores the ongoing tension in perceptions about the balance between AI autonomy and human control within recruitment practices.

To illustrate how the findings relate to the core objectives of this study, Table 5 below presents the alignment between each of the four major themes and the corresponding research questions (RQ). This mapping ensures that the empirical analysis is clearly focused on addressing the central inquiries of the research and demonstrates how thematic insights emerged in response to specific aspects of the study’s aim.

Table 5

Theme relation to RQ

Theme	Description	Relation to RQ
AI-driven efficiency	Explores how AI automates and optimizes R&S workflows, including task automation and process improvements.	RQ1: How do HR professionals use AI tools to automate and optimize the R&S processes?
Human oversight	Highlights the enduring importance of human judgment in decision-making, especially in interviews and selection.	RQ3: What specific R&S tasks are most successfully automated, and where does human intervention remain critical?
AI limitations and challenges	Examines technical and ethical constraints such as prompt dependency, bias, and emotional insensitivity in AI tools.	RQ4: What ethical concerns and practical challenges do HR professionals encounter in AI-driven R&S?
Future expectations	Captures participants' aspirations for improved AI capabilities and reduced current limitations in R&S applications.	RQ2: What are their experiences and attitudes regarding the benefits and limitations of AI tools?

Source: Compiled by author based on empirical research results

The thematic analysis of the seven interviews provides nuanced insights into the evolving role of AI in R&S processes. The results confirm that AI-driven tools significantly enhance efficiency by automating routine tasks and optimizing workflow management. However, participants emphasized that human oversight remains indispensable, particularly in areas requiring interpersonal evaluation, cultural fit assessment, and ethical judgment. Although AI demonstrates considerable value in improving hiring speed, accuracy, and resource allocation, the findings also reveal ongoing technical limitations, ethical risks, and transparency challenges that restrict full automation. Furthermore, participants expressed future expectations for AI systems to evolve towards more sophisticated emotional recognition, predictive behavioral analysis, and reduced prompt dependency. Overall, the results underscore a balanced vision where AI serves as a strategic enabler rather than a substitute for human expertise, aligning closely with the study's research questions and providing a robust foundation for the subsequent discussion and recommendations.

In addition to the core thematic findings, the analysis revealed three distinct models of AI integration within recruitment and selection processes across participants' organizations.

These models demonstrate varying degrees of formalization, transparency, and strategic control over AI adoption.

The first model, termed “individual-level AI usage” or “shadow AI use”, reflects a bottom-up, decentralized approach. In this model, individual recruiters autonomously employed general-purpose AI tools to assist with tasks like resume summarization, interview question generation, or communication drafting, without formal organizational policies or candidate disclosure. As observed in several interviews, this informal use of AI enhances personal efficiency but introduces ethical concerns around transparency, consistency, and GDPR compliance. One participant described using AI personally to improve documentation and resume analysis without broader organizational guidelines:

“I like to put things to pen and paper... and then I will use ChatGPT to help me with job descriptions...or understanding better the context of resumes.” (Interviewee 6).

Another noted:

“We receive lots of candidatures. So we look at the resumess and cover letters...we needed to sum them up a bit because we don't have enough people... we just send them to ChatGPT and DeepSeek and we just compare the results so we could be more prepared before the interview” (Interviewee 4).

This decentralized model highlights an innovation-risk paradox. Time-saving gains are accompanied by potential accountability and trust issues if unregulated use becomes public.

The second model, labeled “organizational AI integration”, represents a top-down, management-led adoption of AI tools into recruitment and slection workflows. Organizations following this model implemented externally developed AI solutions after strategic evaluation and vendor vetting. Clear ethical guidelines, candidate disclosure policies, and internal training procedures were common features. Participants working within such systems emphasized how transparency reinforced fairness perceptions and procedural justice:

“We inform candidates via email that most processes will be done through AI” (Interviewee 2).

Standardized workflows, bias mitigation strategies, and regulatory alignment were characteristic advantages of this model, supporting broader organizational goals of efficiency, diversity, and employer brand enhancement.

The third model identified was “proprietary AI development”, where organizations invested in building custom, in-house AI systems tailored to their specific recruitment and selection needs. In these cases, AI tools were often developed in collaboration with data

science teams or specialized vendors, trained on organization-specific datasets, and fine-tuned to reflect internal hiring priorities and cultural values. A participant described:

"We have the application tracking system that my colleagues and I developed for our company... with AI tools integrated there" (Interviewee 7).

Interviewee 5 noted:

"We ran a series of pilot programs comparing external tools with a beta version of our own system...our internal solution consistently outperformed the rest, so we moved forward with refining and scaling it."

While offering greater flexibility and control over bias auditing and performance metrics, this approach demanded considerable technical expertise, financial resources, and governance structures.

To support the clarity of these findings, a visual scheme summarizing these three models is provided in Figure 3.

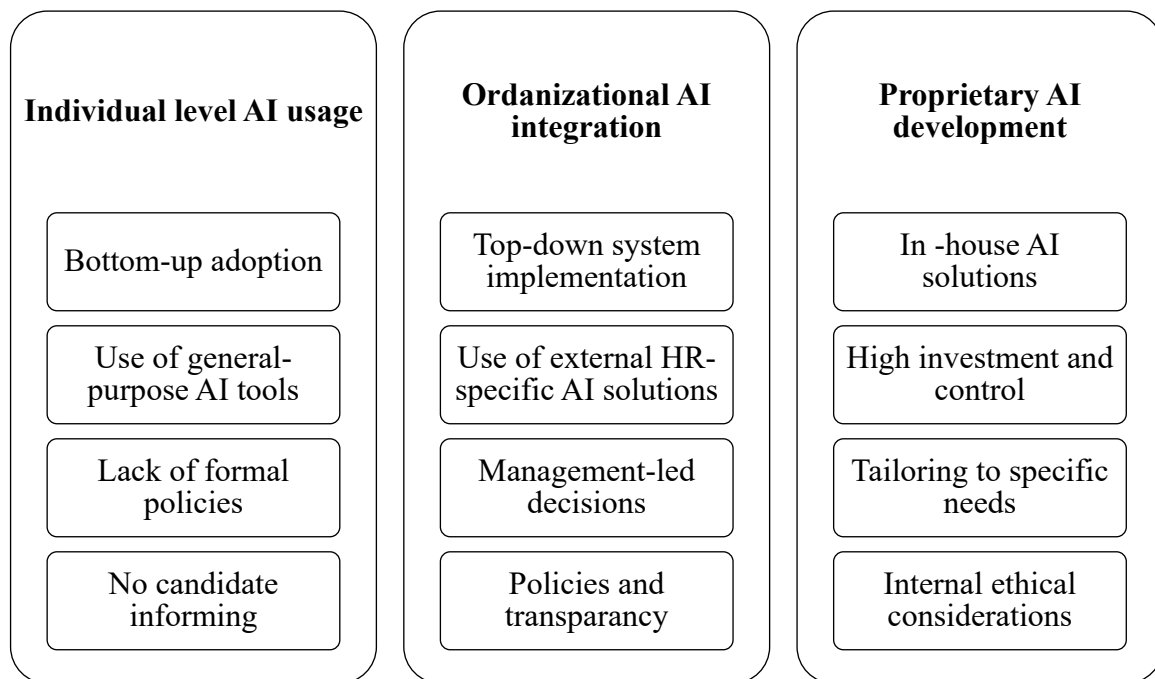


Figure 3. Three organizational models of AI usage in R&S

Source: Compiled by author based on empirical research results

Collectively, these three models illustrate the diversity of AI adoption pathways across organizations. They range from informal individual use to structured corporate integration and in-house technological innovation, each presenting unique implications for transparency, ethical standards, recruitment efficiency, and regulatory compliance.

In relation to the thesis aim, the findings show that AI tools contribute to the automation and optimization of R&S processes in a selective and conditional way. First, AI is mainly used to automate early-stage, high-volume and routine tasks, such as drafting job descriptions, sourcing candidates, screening CVs and scheduling interviews. This automation reduces manual workload, shortens time-to-hire and helps recruiters prioritise candidates, thereby optimising workflow efficiency in the initial stages of the funnel.

Second, the optimisation effect is bounded by the need for human oversight. Interpersonal evaluation, assessment of cultural fit, and final decisions remain firmly human-driven. Recruiters use AI primarily as a decision-support tool rather than a decision-maker.

Third, technical and ethical limitations including prompt dependency, biased or opaque models, lack of emotional understanding and concerns about fairness, transparency and data protection constrain the extent to which recruitment and selection can be fully automated. These constraints require organisations to design governance mechanisms and maintain human control, which in turn shapes how far optimisation can realistically go.

Finally, the study identifies three organisational models of AI use in recruitment and selection. These models differ in how systematically AI is embedded, how much process optimisation is achieved and how ethical and regulatory risks are managed. Together, they illustrate that AI-driven optimisation is not uniform but depends on organisational strategy, resources and governance choices.

Conclusion

This thesis explored the role of AI implementation in the automation and optimization of personnel R&S processes through a qualitative empirical investigation. The literature review systematically analyzed the evolving role of AI in optimizing and automating personnel R&S processes. It began by defining key concepts such as AI, automation, optimization, recruitment, and selection, drawing from contemporary academic sources to establish a clear theoretical foundation. The review then synthesized empirical findings from recent global studies, critically examining how AI is applied across different stages of the hiring process from candidate sourcing and screening to interviewing and selection decision-making. Particular attention was given to the dual impacts of AI: its capacity to enhance efficiency, precision, and objectivity on one hand, and the ethical, technical, and practical challenges it introduces on the other.

Key takeaways from the literature emphasize that AI offers substantial benefits, particularly in automating repetitive administrative tasks, improving hiring speed, and reducing certain forms of unconscious bias when carefully implemented. However, the

review also highlights significant concerns regarding algorithmic bias, transparency deficits, privacy risks, and the critical need for ongoing human oversight in decision-making. While AI can optimize workflows and augment human capabilities, complete automation remains neither technically feasible nor ethically advisable at this stage. The literature thus advocates for a hybrid approach, where AI acts as a strategic enabler but final judgment remains firmly with human recruiters. This synthesis of benefits and challenges provided a robust basis for the empirical analysis, which sought to explore how these theoretical insights manifest in real-world recruitment practices.

Overall, the literature review reveals a clear gap in qualitative, practitioner-focused research, as most prior studies have predominantly emphasized technical performance metrics or generalized perceptions. By focusing on the lived experiences and critical reflections of HR professionals, the present study addresses this gap, contributing a richer, more contextualized understanding of how AI tools are reshaping R&S practices in organizational environments.

Building upon these theoretical insights, the empirical component of the study aimed to investigate how these patterns and challenges are experienced by HR professionals in practice. Through thematic analysis of seven semi-structured interviews with HR professionals utilizing AI tools, the thesis provided rich, nuanced insights into current practices, perceived benefits, challenges, and future expectations regarding AI in R&S.

The findings confirm that AI technologies significantly contribute to enhancing efficiency within recruitment workflows by automating repetitive tasks, improving the speed and quality of initial screening processes, and supporting recruiters with data-driven insights. Participants consistently emphasized the time-saving and resource optimization capabilities afforded by AI, aligning with broader trends in the academic literature.

However, the study also highlights that despite these advancements, human oversight remains crucial, particularly in the evaluation of interpersonal qualities, cultural fit, and final hiring decisions. Recruiters demonstrated a strong preference for maintaining human judgment where emotional intelligence, ethical considerations, and contextual understanding are critical. This cautious approach reflects a balanced and responsible integration of AI into existing HR practices rather than full automation.

The results also revealed several persistent limitations and challenges, notably the technical constraints of current AI systems, issues of transparency, prompt dependency, and the inadequacy of AI in assessing nuanced human behaviors. Ethical concerns regarding bias,

fairness, candidate privacy, and accountability were underscored as significant barriers to the wider and deeper adoption of AI in recruitment processes.

Finally, the study captured participants' aspirations for the future development of AI, particularly the desire for systems capable of emotional recognition, predictive behavioral modeling, reduced prompt dependency, and improved analysis of soft skills and cultural dynamics. These future expectations point toward a trajectory where AI evolves not merely as an efficiency tool but as a more sophisticated, ethically-grounded partner in human resource management.

By combining theoretical analysis and empirical insights, this thesis provides a comprehensive, practice-oriented understanding of the role of AI in transforming recruitment and selection processes. It enriches the current academic discourse by centering the lived experiences and strategic reflections of HR professionals at the forefront of AI adoption.

Despite its valuable contributions, this study is subject to several inherent limitations. First, the relatively small sample size of seven participants, though sufficient for thematic saturation in qualitative research, limits the generalizability of the findings across different organizational contexts, industries, and cultural settings. Second, participants were primarily individuals already engaged with AI tools, which may introduce a selection bias toward more favorable or technologically progressive viewpoints. Third, the reliance on self-reported data inherently carries the risk of subjective bias, both from participants and during the interpretation stage, despite efforts to maintain reflexivity and methodological rigor.

Moreover, while AI-assisted coding was ethically applied to complement human analysis, the use of AI tools during the research process introduces its own emergent methodological considerations, warranting critical reflection in future studies.

Future research could address these limitations by expanding the sample size and diversity, incorporating multinational comparisons, and adopting longitudinal designs to track changes in perceptions and outcomes over time. Quantitative or mixed-methods studies could complement these findings by statistically testing the relationships suggested by this qualitative work, such as the impact of specific AI functionalities on recruitment and selection outcomes. In addition, future research should explore the evolving regulatory landscape and its implications for ethical AI adoption in HRM, as well as investigate how AI systems might better incorporate emotional intelligence, fairness metrics, and cultural sensitivity into recruitment workflows. By addressing these avenues, future studies can deepen and broaden the understanding of AI's role in R&S to ensure that its integration into human-centered organizational practices remains both effective and ethically sound.

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Appendices

Appendix A

Interview questions for HR professionals

1. Can you briefly describe your role in the recruitment and selection process?
2. How long have you been using AI tools in your R&S practices?
3. What were the reasons for adopting AI in your recruitment and selection processes?
4. Which specific AI tools or technologies are you currently using to automate and optimize your recruitment and selection processes?
5. How did you determine which AI tools to implement?
6. At which stages of the recruitment and selection processes do you use AI tools?
7. Could you explain how AI-driven automation has changed or improved the recruitment and selection workflows in your organization?
8. In your opinion, how effectively do AI tools automate candidate screening and matching compared to traditional methods?
9. Have you encountered any issues related to bias in AI-driven recruitment and selection tools?
10. How do you ensure fairness and transparency in AI decisions?
11. Are there stages where human intervention is still critical despite AI involvement?
12. Are there any features or capabilities that current AI tools lack but would significantly enhance your recruitment and selection processes?

Source: Compiled by the author based on the literature review

Appendix B

Question justification

Question	Justification
Q1	Establishes contextual background for the participant's experience, necessary for interpreting role-specific use of AI tools
Q2	Addresses the recency and maturity of AI adoption, reflecting trends where many companies only recently began using AI
Q3	Links to drivers such as time savings, cost reduction, and competitive hiring advantage (Biradar, 2024; Black & van Esch, 2020)
Q4	Builds on literature noting diverse AI applications across the hiring pipeline e.g., ATS, video analytics, chatbots (Shettigar, 2024; Gupta et al., 2018).
Q5	Reflects the need for strategic alignment and customization discussed in the context of organizational fit and decision-making (Jangbahadur, 2024).
Q6	Based on research showing varying levels of AI involvement across sourcing, screening, interviewing, and decision-making (Chen, 2023; Allal-Chérif et al., 2021).
Q7	Directly tied to documented efficiency and workflow improvements through automation (Alnsour et al., 2024; Smelyakov et al., 2023).
Q8	Addresses core optimization benefits, such as improved quality of hire and faster time-to-hire (Gupta et al., 2018; Rathnayake & Gunawardana, 2023).
Q9	Responds to major ethical concerns raised in literature on algorithmic bias, fairness, and discrimination (Soni, 2024; Mujtaba & Mahapatra, 2019).
Q10	Relates to procedural justice and transparency deficits highlighted by Rigotti & Fosch-Villaronga (2024) and Ajunwa (2020).
Q11	Supported by arguments on AI's emotional limitations and the continued need for human judgment (Ahmed, 2018; Hunkenschroer & Kriebitz, 2023).
Q12	Encourages future-oriented insights, consistent with literature on evolving expectations and identified limitations in emotional intelligence or cultural fit (Shettigar, 2024; Black & van Esch, 2020).

Source: Compiled by author based on the sources presented in the table

Appendix C

Participant Information Sheet

Title of the study: “The role of AI implementation in the automation and optimization of personnel recruitment and selection processes”

Researcher:

Yevhen Okhota – BBA student
School of Economics and Business Administration
University of Tartu

Purpose of the study:

This research explores how artificial intelligence tools influence the automation and optimization of recruitment and selection processes. The study seeks to understand HR professionals’ and recruiters’ experiences, perceived benefits, limitations, and ethical concerns related to AI use in hiring.

Why you have been invited?

You have been invited to participate because of your professional experience in recruitment or human resource management, particularly involving AI tools or platforms. Your insights will provide valuable empirical data for this academic study.

What participation involves?

- You will take part in a semi-structured interview lasting approximately 20–40 minutes.
- The interview will be conducted online (e.g., via Zoom or Google Meet) and audio-recorded with your consent.
- Your responses will be anonymized and used solely for academic purposes.

Voluntary participation and right to withdraw

Your participation is entirely voluntary. You may refuse to answer any question and are free to withdraw from the study at any time without providing a reason or facing any consequences.

Confidentiality and data protection

- All information you provide will be kept strictly confidential.
- Audio recordings will be stored securely and deleted after transcription.
- Your name and organization will not be revealed in any part of the thesis or related publications.
- Data will be anonymized and stored in compliance with the EU General Data Protection Regulation (GDPR).
- Only the researcher will have access to raw data.

Contact information

If you have any questions or concerns, you may contact the researcher:
Yevhen Okhota – okhota@ut.ee

Source: Compiled by author

Appendix D

Consent form

Title of the study: “The role of AI implementation in the automation and optimization of personnel recruitment and selection processes”

Researcher:

Yevhen Okhota – BBA student
School of Economics and Business Administration
University of Tartu

INFORMED CONSENT STATEMENT

You are being invited to take part in a research study exploring the use of artificial intelligence in recruitment and selection processes. Please read the following statements carefully and indicate your voluntary agreement to participate.

Consent statements:

- I confirm that I have read and understood the Participant Information Sheet provided to me.
- I understand the purpose of the study and what my participation involves, including that the interview will last approximately 20–40 minutes.
- I understand that my participation is voluntary and that I am free to withdraw from the interview at any point without any consequence.
- I give permission for the interview to be audio-recorded for transcription and analysis purposes.
- I understand that all personal data and responses will be anonymized and handled confidentially in accordance with GDPR and academic research ethics.
- I understand that the data collected will be used solely for academic research purposes, including possible publication in the researcher's bachelor's thesis and related academic presentations or publications.
- I have been given the opportunity to ask questions and have received satisfactory answers.

Participant declaration

By signing below, I confirm that I voluntarily consent to participate in this study.

Full Name: _____

Signature: _____

Date: _____

Researcher declaration

I confirm that I have provided the participant with adequate information about the study and answered all their questions.

Researcher Name: Yevhen Okhota

Signature: _____

Date: _____

Source: Compiled by author

Resümee

TEHISINTELLEKTI RAKENDAMISE ROLL PERSONALI VÄRBAMIS- JA VALIKUPROTSSESSIDE OPTIMEERIMISEL JA AUTOMATISEERIMISEL

Yevhen Okhota

Käesolev bakalaureusetöö käsitleb tehisintellekti (TI) rakendamise rolli personali värbamis- ja valikuprotsesside automatiseerimisel ja optimeerimisel kaasaegsetes organisatsioonides. Teema aktuaalsus tuleneb tööjõuturu kasvavast konkurentsist ning organisatsioonide vajadusest muuta värbamisprotsessid tõhusamaks, objektiivsemaks ja kuluefektiivsemaks, säilitades samal ajal eetilised põhimõtted ja inimkeskse otsustamise.

Töö eesmärk on uurida, kuidas tehisintellektil põhinevad tööriistad mõjutavad värbamis- ja valikuprotsesside automatiseerimist ja optimeerimist ning millised on nende kasutamisega seotud eelised, piirangud ja eetilised väljakutsed HR-spetsialistide vaatenurgast. Eesmärgi saavutamiseks püstitati järgmised uurimisülesanded: analüüsida teaduskirjandust TI kasutamisest värbamises ja valikus; määratleda peamised mõisted nagu tehisintellekt, automatiseerimine ja optimeerimine; hinnata TI kasutamise kasulikkust ning tuvastada sellega seotud eetilised ja praktilised probleemid; ning koguda ja analüüsida kvalitatiivseid andmeid HR-praktikute kogemuste põhjal.

Metodoloogiliselt põhineb töö kvalitatiivsel uurimismeetodil. Empiirilised andmed koguti seitsme poolstruktureeritud intervjuu kaudu HR-spetsialistide ja värbajatega, kellel on praktiline kogemus tehisintellekti kasutamisel värbamis- ja valikuprotsessides. Andmete analüüsimiseks rakendati temaatilist analüüsi. Analüüsi käigus tuvastati neli keskset teemat: TI-põhine efektiivsus, inimlik järelevalve, TI piirangud ja väljakutsed ning tulevikuootused.

Uurimistulemused näitavad, et tehisintellekti tööriistad aitavad märkimisväärselt kaasa värbamisprotsesside tõhustamisele, automatiseerides ajamahukaid rutiinseid tegevusi nagu kandidaatide otsing, CV-de sõelumine ja intervjuude ajastamine. See võimaldab HR-spetsialistidel keskenduda strateegilisematele ja inimkesksetele ülesannetele. Samas rõhutavad intervjuueeritavad, et inimlik otsustusvõime on endiselt asendamatu, eriti lõppvaliku tegemisel, kultuurilise sobivuse hindamisel ja eetiliste kaalutluste arvestamisel.

Töö toob esile ka mitmeid piiranguid ja probleeme, sealhulgas algoritmilise kallutatuse riski, läbipaistvuse puudumise, andmekaitsega seotud küsimused ning TI suutmatuse adekvaatselt hinnata emotsionaalseid ja sotsiaalseid aspekte. Tulevikku vaadates ootavad HR-praktikud tehisintellektilt arenenumaid funktsioone, nagu parem pehmete oskuste ja käitumismustrite analüüs, väiksem sõltuvus täpsetest sisendkäskudest ning suurem selgitatavus.

Kokkuvõttes järeldab töö, et tehisintellekt toimib värbamis- ja valikuprotsessides eelkõige strateegilise abivahendina, mitte inimliku otsustamise asendajana. Tõhus ja vastutustundlik TI rakendamine eeldab tasakaalustatud lähenemist, kus tehnoloogiline innovatsioon on ühendatud inimliku järelevalve, eetiliste põhimõtete ja organisatsioonilise vastutusega.

Märksõnad: tehisintellekt, värbamine, valik, automatiseerimine, optimeerimine

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The role of AI implementation in the optimization and automation of personnel recruitment and selection processes,

supervised by Anne Reino

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Yevhen Okhota