INTEGRATION OF ARTICIFIAL INTELLIGENCE INTO RECRUITING DIGITAL
NATIVES IN FINLAND

The Perceptions of 20-23-Year-Old Students

Sara Hekkala

International Business
Bachelor's Thesis
Supervisor: Kate Black
Date of approval: 8 April 2019

INTEGRATION OF ARTIFICIAL INTELLIGENCE INTO RECRUITING DIGITAL NATIVES IN FINLAND

The Perceptions of 20-23-Year-Old Students

Sara Hekkala

AALTO UNIVERSITY
SCHOOL OF BUSINESS
Mikkeli Campus

ABSTRACT OF
BACHELOR'S THESIS

Author: Sara Hekkala
Title of thesis: Integration of Artificial Intelligence into Recruiting Digital Natives in Finland: The Perceptions of 20-23-Year-Old Students

Date: 8 April 2019

Degree: Bachelor of Science in Economics and Business Administration

Supervisor: Kate Black

Objectives

The main research problem of this study was to find out to what extent companies in Finland could utilize artificial intelligence (AI) in recruiting digital natives. The first research objective aims to answer to what extent companies are already using AI in their recruiting activities, or what literature perceives as the useful integration of AI into recruitment. The second research objective looks at digital natives to see what their perceptions on the successful integration of AI into recruitment are. Combining the findings of these two objects answers the third research objective, which is to see how the integration of artificial intelligence into recruiting digital natives in Finland could be done effectively.

Summary

Using a qualitative approach in which 20-23-year-old students, as applicants that might be subject to AI in recruitment, were consulted using focus groups. The exploratory study found that digital natives see AI as the future face of recruitment despite its challenges. The study had very similar findings with the literature review, however differences arose within how profitable digital natives perceive AI and how AI should be used in recruitment

Conclusions

To conclude, and to answer the main research problem, the framework for the integration of artificial intelligence into recruiting digital natives in Finland was presented. The framework states that AI is useful in all stages of recruiting, yet to different extents in different phases. AI is most useful in phases where grunt work is present, and despite the integration of AI the human touch should still be present in recruiting activities.

Key words: Artificial Intelligence, Digital Natives, Human Resources, Recruiting, Recruitment Activities,

Language: English

Grade:

TABLE OF CONTENTS

1. INTRODUCTION

This bachelor's thesis discusses the integration of artificial intelligence into recruitment practices. This thesis will approach the topic first from an organizational perspective, analyzing what previous literature has contributed to the topic. Secondly, this thesis will assess the integration of artificial intelligence into recruitment practices from the applicant's perspective, with a focus on digital natives. Thirdly, this thesis will discuss utilizing artificial intelligence in recruiting activities in Finland. The findings of this thesis will introduce a framework for recruiting digital natives with artificial intelligence.

1.1. Background

Utilizing artificial intelligence (AI) in recruitment is a growing trend among HR professionals (Upadhyay & Khandelwal, 2018; Van Esch et al., 2019). Currently, HR professionals are using AI to do the tedious and repetitive tasks, the grunt work, for them (Zielinski, 2017). However, Upadhyay and Khandelwal (2018) argue that AI is making its way into becoming one of the cornerstones of the recruitment industry. This is not the case yet, even though AI is a quickly emerging trend (Zielinski, 2017; RES Forum, 2019). AI is used primarily in the first steps of recruitment (Van Esch et al., 2019), where the grunt work happens.

Researchers are not yet unanimous on how much AI is already applied into the recruitment processes. Leong (2018) foresees potential for AI in the near future as opposed to Upadhyay and Khandelwal (2018) and Van Esch et al. (2019), who already claim to see AI's impact on recruitment.

When looking at issues related to recruitment it is not enough to analyze those issues from the recruiter's perspective (Barber, 1998). Van Esch et al. (2019) believe that understanding applicants' attitudes towards recruiting with AI will help integrate AI into recruiting activities seamlessly. Moreover, a generation called digital natives is entering the workplace, and it is vital to understand the differences between the mindsets of digital natives and the already existing workforce (Dumeresque, 2012).

Parnas's (2017) take on intelligent machines is that they should be created for the purposes of substituting those areas of life where people do not excel. Computers and AI systems that are programmed properly remove the concept of human error from operations. Human limitations and biases are not as much present when recruiting with AI than they are present when recruiting with people (Benfield, 2017; Scherer, 2017). Because prejudices are eliminated with the usage of AI, AI powered programs are unbiased (Upadhyay & Khandelwal, 2018). However, this is not as good as sounds. AI powered programs are also self-learning, and therefore prone to learn biases (Zielinski, 2017; Ryan, 2018). Additionally, these programs that utilize AI are capable of doing solely those things they are programmed to do (RES Forum, 2019). This is why it is important to research the usage of AI in recruitment and to understand how the machines work to avoid contradicting what AI is ideal for – unbiased recruiting.

The rumor surrounding AI is that it is here to replace people in the workplace whilst leaving them unemployed (Dennis, 2018). However, LinkedIn Talent Solutions (2018) argue the opposite: according to them the more organizations invest in technologies, the more they have time and assets to invest in the people of the workplace. The rumors about AI replacing jobs can be a result of the prevailing negative associations that employees have towards new technologies they have to work with (Baraniuk, 2015; PricewaterhouseCoopers, 2017). To dispose of these negative attitudes towards AI technologies, and to enable the seamless integration of AI into the workplace, organizations need to understand what AI is as well as what it is not (RES Forum, 2019).

1.2. Research problem

Based on the introduction above, the problem that this research is trying to answer is how can AI be utilized in recruitment effectively from the organizational perspective and from the perspective of digital natives as applicants. A lot of current research focuses on the benefits of using AI in recruitment, but there are hardly any guidelines for how to do this successfully. Therefore, the aim of this thesis is to provide a framework for the successful integration of AI into recruitment practices from the organizational and applicant perspective.

Furthermore, as is discussed above, it is also important to look at recruiting from the applicants' perspectives. To approach the research problem, effective integration of AI into recruitment is dependent on how the future employees sees its potential. Thus, the framework this thesis provides is for recruiting digital natives with AI in Finland.

1.3. Research questions and objectives

To guide the research problem, the following questions seem appropriate in building a framework for the successful integration of AI into recruitment practices.

1. To what extent have companies integrated AI into their recruitment processes already?
2. How do digital natives perceive the integration of AI into recruitment?
3. To what extent can AI be utilized in recruitment in Finland to recruit digital natives?

The reasoning behind the first question is to see, how companies already use AI in their recruitment. This gives guidelines to how AI can be applied, or what has been detected to be useful. Although, due to AI being a relatively new trend in recruitment, how companies use AI in recruitment now is not necessarily a presentation of the full potential of AI in recruitment. To investigate the true potential of AI other perspectives, in this case the digital natives' perspective, must be considered, hence the second research question. Furthermore, the third research question attempts to incorporate the findings from the first two research questions.

Drawing upon the reasoning behind the research questions, the research objectives are a summary of what the research questions are trying to answer. The research objectives are:

1. To find out how companies utilize AI in their recruitment practices today.
2. To examine, how digital natives feel about using AI in recruitment and whether this is compatible with how companies see the benefits of AI, that is, how well do the digital natives' perceptions fit the findings of research objective 1.

3. To assess to what extent AI can be integrated into recruitment practices whilst providing a framework for the useful integration of AI into recruitment from the organizational and applicant perspective, focusing on Finland.

1.4. Definitions

The major subjects that are discussed and analyzed in this thesis are artificial intelligence, recruitment and digital natives. Therefore, it is useful to define these concepts to provide prior knowledge and tools for interpreting the text. Furthermore, the definition for AI is a complicated one, which is why there is discussion preceding the definition. This section provides a rudimentary definition for recruitment, and successful recruitment as a concept will be explored further in the literature review.

1.4.1. Definition of Artificial Intelligence

Artificial intelligence (AI) belongs to computer sciences (www.techopedia.com) and it is software with the ability to learn from the information that it has been given (Zielinski, 2017). This means that AI driven programs can create algorithms, observe patterns and combine data by themselves (Scherer, 2017; Dennis, 2018). AI driven programs have the ability to learn from themselves as well without being programmed to do this, which makes them gradually more and more efficient and smarter (Scherer, 2017; Zielinski, 2017; LinkedIn Talent Solutions, 2018). Due to the AI programs' abilities to reflect on their input, AI programs are often described as machines that possess human-like intelligence (McCarthy, 2007; LinkedIn Talent Solutions, 2018; RES Forum, 2019; www.techopedia.com). However, Parnas (2017) believes that in order to create machines that operate optimally, imitating humans is not the key to success – hence the word human-like intelligence. Even though machines can have human-like intelligence, they are not a replacement for humans due to the machines' inability to understand situational context (Ross, 2018).

AI is present already in people's daily lives (Parnas, 2017; Agrawal, 2018). Oftentimes people are not even aware that the devices they are using are a part of artificial intelligence (RES Forum, 2019). Applications that use AI in day-to-day life are, for

4

example, smart cars (LinkedIn Talen Solutions, 2018), smartphones, drones, social media feeds, Siri, Alexa, and Google Assistant (Agrawal, 2018). Furthermore, AI is making its way into human resources (RES Forum, 2019), specifically into recruitment (LinkedIn Talent Solutions, 2018). Perhaps because of AI's wide applicability, Parnas (2017) argues that AI has no real definition and uses vague concepts.

However, for the purposes of this research, AI will be defined as any computer programs and systems, software or machines that can be described as intelligent, smart, self-learning or self-correcting. Essentially this means machines or programs that can operate and develop on their own without human intervention.

1.4.2. Definition of Recruitment

The Cambridge Business English Dictionary defines recruitment as "the process of finding people to work for a company or become a new member of an organization" (Cambridge Business English Dictionary, 2019). Swider et al. (2015) on the other hand define recruitment from the applicant's perspective as "a decision-making process whereby applicants gather information about alternatives to facilitate a job choice decision." (Swider et al., 2015: 891)

Based on the few definitions above, for this thesis the definition of recruitment is the process of acquiring new suitable employees into an organization and the process of applicants searching for a position that is a best-fit for them. To summarize, recruitment in this thesis is considered the application process. The definition also implies that recruitment must be considered from both perspectives, which are the viewpoint of the recruiter as well as that of the applicant.

1.4.3. Definition of Digital Natives

The terminology of digital natives and digital immigrants were first introduced by Marc Prensky (2001), who established the two concepts to distinguish between generational differences in their familiarity with digital technologies. Digital natives are people who are accustomed to using digital technology, such as smartphones, computers and

social media, because they have been using them from an early age (Presnky, 2001; Dumeresque, 2012; Cambridge Business English Dictionary, 2019). According to Dumeresque (2012) digital natives were born between 1980 and 1999, which means that they are the generation to be most affected by the digital revolution. However, it is not evident why individuals born after 1999 could not be considered digital natives. The generation born between 1960 and 1980 are called digital immigrants (Dumeresque, 2012), which means that they are a generation that have been forced to learn to utilize digital technologies later on in their lives (Prensky, 2001; Dumeresque, 2012). Generally speaking, this means that digital natives are better at using digital technologies than digital immigrants (Prensky, 2001; Dumeresque, 2012).

2. LITERATURE REVIEW

This literature review will look at literature concerning different aspects of recruitment and artificial intelligence. Firstly, this literature review will look at recruitment and staffing practices in general, and then specify what conventional recruitment practices are. Secondly, it will critically analyze what has been written about artificial intelligence, focusing on artificial intelligence in recruitment. This literature review will also analyze literature about using artificial intelligence in recruitment from the individual's viewpoint and artificial intelligence in recruitment in Finland. Furthermore, the final section will provide a conceptual framework based on the reviewed literature for the utilization of artificial intelligence in recruitment from the organizational perspective. In addition, it should be mentioned that this literature review is limited to the organizational and applicant point of view.

2.1. Recruitment and Staffing practices

The following section will discuss relevant research on recruitment and staffing practices. It will point out why recruitment and staffing practices are important, and how organizations practice them. This section will concentrate on the "conventional" ways of recruiting, which rely heavily on a humane approach. This means that this section

will not yet go in depth in addressing the matters about the use of technology in recruiting.

2.1.1. Recruitment as a Part of Human Resources

Human Resources (HR) is responsible for all things related to the human capital of a company – HR includes areas such as recruiting, selection, employee rewarding, staff training and the well-being of the workforce (www.humanresourcesedu.org). Recruitment is the process of acquiring new employees through multiple stages into an organization (Martin, 2016), which makes it a key feature of gathering valuable human capital into organizations (Barber, 1998).

Martin (2016) defines recruitment in human resource management (HRM) as attaining new employees into a company, whilst making sure that they fit for and are fully qualified for the job they are applying for. Furthermore, according to Martin (2016) this process should be done both time- and cost-effectively. Dalgleish (2005), on the other hand, emphasizes the importance of thoroughness in the interview section of the recruitment process. Investing time and resources into recruitment correlates positively with future job performance (Dalgleish, 2005).

It is apparent from the literature that it is important to invest in proper recruitment operations. However, there seems to be slight controversy as to what is good recruitment. Additionally, for example Martin (2016) mentions that it is important for recruiters to possess the skills required for attaining new talent – yet he does not mention what these skills are.

2.1.2. Conventional Ways of Recruiting with People

Successful recruitment is a multidimensional concept and different definitions and interpretations of it are presented. The impression of successful recruitment has seemingly changed since 2005. Nevertheless, all articles are consistently vague when it comes to terms like successful recruiting and its standards. This can be linked to the claims by Martin (2016) about skills recruiters should have: the articles in this literature

review do not seem to know what the criteria for good recruiters or good recruitment are. This suggests that organizational recruiting is a difficult concept to manage.

Because the focus of this thesis is on recruiting with artificial intelligence, it is first useful to look at how recruiting is done without the integration of technological tools. Even more so, because "technology without people is just technology." (Edwards, 2016: 45) This is why it is important to understand the tools behind the technology. Similarly to the definition of recruitment for this thesis, Barber (1998) acknowledges that the two most important sides in recruitment are the company that is recruiting and the person applying for the job. Therefore, people are the core of recruitment processes.

Recruiters have a few conventional means of hiring people for open positions. Edwards (2016) argues that HR professionals use internal hiring as their primary way of hiring new applicants. The second mean of recruitment is looking at candidates referred by other employees (or networking techniques) – only after this do recruiters use direct recruitment (Edwards, 2016). Contrary to other literature, Edwards (2016) separates online recruitment from direct recruitment. Recruiting via online applications is applied only if no other method has worked (Edwards, 2016). This is odd considering that Edwards (2016) calls technology an essential part of recruitment today.

The traditional perception of the recruitment process is that resumes come in for the recruiters, which have to be examined manually (Leong, 2018). Furthermore, it is encouraged that all recruiters go through the incoming applications (hr.ucr.edu). In a study by Leong (2018), he found that recruiters can spend as long as eight and a half hours studying 100 resumes that have applied for one specific job – this would mean that the recruiter can spend an entire work day simply studying resumes. Surely, if all recruiters repeat this process, there is an unreasonable number of hours put into filling one vacancy. Especially, when Benfield (2017) claims that up to 80% of the applicants for each job are unsuitable.

However, using several hours for screening does abide by the claims that Dalgleish (2005) made about investing time and effort into recruitment. Notwithstanding, Faliagka et al. (2015) address the traditional way of analyzing candidates' personalities through analyzing their social presence manually. This traditional assessment method

is slow and ineffective because not all candidates are online as themselves (Faliagka et al., 2015). Inevitably, this raises the question of how many hours do recruiters put into studying resumes when there are a thousand applicants for one job. Drawing upon how Leong (2018) and Faliagka et al. (2015) use the term time-consuming with a negative connotation, it can be deducted in contrast to Dalgleish (2005) that putting excessive hours into recruitment does not necessarily mean successful recruitment.

2.1.3. Recruitment Processes

Much of the literature as well as the text above refer to recruitment processes and recruitment stages, and consequently numerous different approaches to recruitment processes exist. However, the definitions for these processes are ambiguous. One definition for the recruitment processes by Barber (1998) distinguishes the phases of recruitment by the status of the applicant. This means that the phases are defined by the stages where firstly, the organization is actively looking for applicants; secondly, when the applicants are actively working to get the job in question; and thirdly, when the selected applicants are persuaded by the organization to take the offered job (Barber, 1998). This definition is very general and does not guide the recruiters regarding time or steps to be taken within these phases. However, the phases are adequate guidelines for the process of recruitment. Furthermore, despite Barber being an outdated source (more than 20 years), the majority of the literature regarding recruitment referenced in this literature review refer to Barber's definitions and ideologies about recruitment. Thus, it is only appropriate to introduce the ideas which the references base their viewpoints upon.

Other more current sources follow the general idea of Barber's framework but add more steps and complicate the process further. This would imply that the perceptions of recruitment from 20 years ago have evolved to be more and more complex. Generally, the guidelines for successful recruitment processes begin with realizing the need for a new job opening and defining that job, and end with welcoming the new employee into the organization (Martin, 2016; hr.ucr.edu). A website entitled 'Recruitment & Selection Hiring process' (n.d.) defines nine different steps for recruitment, whereas Martin (2016) has narrowed them down to five.

Nonetheless, the steps for recruitment provided by alternate sources are compatible with each other when comparing the nature of the activities. For example, the website called 'Recruitment & Selection Hiring Process' (n.d.) identifies nine different steps for recruitment. The steps are, (1) recognizing there is an open job, (2) putting together a job description, (3) coming up with a recruitment plan, (4) deciding on the recruiting committee, (5) making the vacancy know to everyone, (6) reviewing candidates, (7) interviewing, (8) selecting the new employee, and (9) finalizing the recruitment process (hr.ucr.edu). The five steps according to Martin (2016) are (1) conducting a job description, (2) sourcing, (3) screening, (4) finalizing, and (5) integrating the new employee into the workplace.

Furthermore, LinkedIn Talent Solutions (2018) recognizes six different procedures of recruitment, which are sourcing, screening, nurturing, scheduling, engaging and interviewing applicants. The source does not mention whether these steps are successive or overlapping, but based on what other sources have to say, it can be assumed that the steps are successive in the presented order. Furthermore, it is evident that different organizations perceive the recruitment processes differently. This could be because recruitment practices differ between large and small enterprises (Tanova & Nadiri, 2005). Large organizations are more lenient towards hiring people from within their existing workforce and (Tanova & Nadiri, 2005) and use comprehensive recruitment processes, and smaller organizations, on the other hand, rely on simple processes (Martin, 2016).

However, there are a few apparent common factors and similarities within these descriptions. The first one is building a job description. Secondly, the articles mention sourcing and screening. What is more, the sources are unanimous about interviewing and engaging being a part of good recruitment practices. These stages will be the basis of recruiting activities in the framework that will be presented in section 2.4.

2.1.4. Challenges of Conventional recruiting

Academic literature on the true challenges of conventional recruiting appears to be sparse. However, pitfalls are evident is some texts. Firstly, as was stated above, the conventional ways of recruiting with people can be immensely time-consuming.

Secondly, the most common mean for recruiting is internal hiring (Edwards, 2016), which would imply that organizations may miss out on potential new applicants simply because internal hiring may be easier and probably less time-consuming. Thirdly, companies often resort to employee referrals in their recruiting activities (Edwards, 2016), which could result in claims of nepotism.

Furthermore, there is plenty of administrative work present when recruiting the conventional way (Leong, 2018). In addition, more often than not, CVs are inaccurate representations of the people applying for jobs (Pitt, 2009):

> "The most common distortions include bogus or exaggerated qualifications, changing the dates of employment to hide career gaps and exaggerating the pay received in a previous job. But there are also instances of applicants covering up criminal convictions, fraud against their previous employer and even terrorist links." (Pitt, 2009)

To add to the time-consuming factor, Pitt (2009) advises recruiters to perform thorough background checks on applicants. This would inevitably increase the time spent on analyzing resumes – presumably even more time than the estimated eight and a half hours per 100 resumes by Leong (2018).

Additionally, the literature seems to be oblivious to the most substantial problem in recruitment that is biases towards demographic details. This is evident in the literature on utilizing AI in recruitment. Upadhyay & Khandelwal, 2018 see AI's applicability for removing biases from recruitment processes: "AI-powered systems can ignore primary sources of bias like names; schools attended, gender, age, and race." (Upadhyay & Khandelwal, 2018) Therefore, the biases must currently exist in the conventional ways of recruiting if they ought to be removed with AI.

2.2. Artificial Intelligence

John McCarthy is referred to as the father of artificial intelligence (jmc.stanford.edu). In his article 'What Is Artificial Intelligence?' (2007), he defines AI as "the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence,

but AI does not have to confine itself to methods that are biologically observable." (McCarthy, 2007: 2)

Because of McCarthy's (2007) definition, the following section will look at what other authors have said about AI in different settings, whilst considering all intelligent machinery (or systems) to be a part of AI. McCarthy (2007) identifies several branches of AI which are: *logical AI, search, pattern recognition, representation, inference, common sense knowledge and reasoning, learning from experience, planning, epistemology, ontology, heuristics,* and *genetic programming*.

2.2.1. Artificial Intelligence in Human Resource Management

There is general reluctance from people when it comes to utilizing new technologies (Benfield, 2017), which is also the case with HR professionals and the usage of AI (Baraniuk, 2015; PricewaterhouseCoopers, 2017). Some workers are afraid of AI taking over their jobs (Zielinski, 2017). It is true that technology has replaced some jobs and reformed processes as well as forced companies to adapt their strategies to technological advancements (Apatean et al., 2017). However, it should be noted that due to developed technologies, such as AI, these routine jobs and processes that have been replaced have been either tedious, repetitive and automated to begin with (PricewaterhouseCoopers, 2017; LinkedIn Talent Solutions, 2018; RES Forum, 2019).

Leong (2018) argues that AI is not a utopic subject anymore, but it is rather an already integrated part of the workplace. This is challenged by Benfield (2017), as he refers to AI as "an emerging technology in HR" (Benfield, 2017). Many sources identify how convenient AI is for modern organizations, yet only 40% of today's companies use AI in their HR applications, of which most are in the United States (PricewaterhouseCoopers, 2017). A study by The RES Forum (2019) found out by interviewing global mobility professionals globally about the usage of AI in their HR activities that organizations recognize the potential of AI, but they have not yet begun the actual integration of AI into their operations.

Nonetheless, despite the wary integration of AI practices (RES Forum, 2019), according to Marler and Parry (2016) the past few years have been favorable for

evolved applications of technology, such as information technologies, in human resource management. Using information technologies (a subcategory of AI) is the driving force of strategic HRM (Marler & Parry, 2016). HR functions are oftentimes one step behind the rest of the organization when it comes to technological developments, and the integration of AI driven systems could be key in assuring that HR functions are up-to-date (RES Forum, 2019). PricewaterhouseCoopers (2017) suggest that AI is the stepping stone for the integration of HR processes into the technology-dominant today. If HR professionals learn to use AI effectively in their processes, the possibilities for analyzing and keeping track of current employees are endless (Scherer, 2017) as well as the possibilities for developing employees' innovative skills and creating something new (PricewaterhouseCoopers, 2017; RES Forum, 2019). In addition to managing the current workforce, using AI in HR functions reduces the time spent on routine jobs, such as applicant screening, applicant tracking and other steps related to the recruitment process (PricewaterhouseCoopers, 2017; Leong, 2018).

Despite all the opportunities that the literature points out, there are some problematic features of AI that the literature fails to highlight. For example, Scherer (2017) goes as far as stating that using AI in HR has implications on civil rights. Scherer (2017) states that AI systems are prone to be biased, because even if the AI program itself is objective (Upadhyay & Khandelwal, 2018), the data that has been put into the system will be subjective (Scherer, 2017). Upadhyay and Khandelwal (2018) argue that AI systems are programmed to avoid being biased in their decision making, but because AI learns from patterns, it may learn a biased pattern (Zielinski, 2017).

The differences between authors' opinions may be because of the different years of publication, or because some are more critical towards new technology – or perhaps both. It is, however, important to realize that even though AI machinery can be programmed to avoid bias, the program will be only as good as the data that is put into it and as good as the mechanism that runs it (Scherer, 2017; Zielinski, 2017; Dennis, 2018; RES forum, 2019). Scherer (2017) states, despite his criticism, that applying AI into HR is not though impossible – it is a matter of training the HR professionals to use the machines right (Scherer, 2017; RES Forum, 2019). By being slightly cynical and recognizing the limitations that technology has, AI can be useful in HR, although it will not replace the human aspect in HR for some time (Scherer, 2017). However, Scherer

(2017) does not mention, like many of the other articles, how these professionals should be trained and what are the key features of good usage of AI in HR.

2.2.2. Artificial Intelligence in Recruitment

The usage of AI is quickly moving away from theoretical approaches to being available to everyone (Zielinski, 2017; LinkedIn Talent Solutions, 2018). This means that instead of reflecting on the possibilities that AI can have in the future, the integration of AI into recruitment practices is slowly, but steadily in progress. Using AI in recruitment has been the forte of large companies, especially those specialized in recruitment (Baraniuk, 2015). Within the HR sector, AI tools have been made mostly for the recruitment and hiring activities (Baraniuk, 2015; PricewaterhouseCoopers, 2017). In recent years, the interest for using AI in recruitment has grown not only among the large corporations but among smaller companies as well (Baraniuk, 2015; Van Esch et al., 2019). Apatean et al. (2017) challenge this by introducing a CV screening application for which the ideal users would be medium and large sized companies due to the vast amounts of applicant CVs. AI is applicable primarily in the first steps of the recruitment process, such as sourcing and screening (Van Esch et al., 2019).

The literature is unanimous about artificial intelligence being one of the biggest trends in recruitment today (LinkedIn Talent Solutions, 2018; Upadhyay & Khandelwal, 2018; RES Forum, 2019; Van Esch et al. 2019). Despite being a trend, the companies actually utilizing AI in their recruitment and HR are the vast minority (Upadhyay & Khandelwal, 2016; PricewaterhouseCoopers, 2017; RES Forum, 2019). As with the usage of AI in HR, using AI in recruitment comes with both negative and positive impacts. Firstly, to add to the negative implications of AI in HR, not much of the literature focus on the problematics of recruiting with AI. According to Baraniuk (2015), systems that use artificial intelligence in screening applicant CVs (applicant tracking systems) are unfair for those with nontraditional CVs. The program uses keywords preselected by the recruiter relating to capabilities, education or previous employment (Ryan, 2018). If an applicant does not have those specific words in their resume, then the CV might never make it through the screening process to be read by a human (Baraniuk, 2015). Furthermore, according to Ryan (2018), the challenge with the

applicant tracking systems (ATS) is making CVs that are favorable for both the ATS and the human reader.

Zielinski (2017) considers that the biggest problem in recruiting with AI is the inefficient data that is used in the AI programs. For example, there are programs that utilize AI in the screening process with using tools that pick out the best CVs among the many applicants (Leong, 2018). However, according to Dalgleish (2005) people tend to exaggerate their positive attributes on their CVs. Naturally, this could result in the machine picking out CVs of people that might not be competent for the job after all. This enhances the point made above about AI being only as good as the data it is programmed with.

Many authors agree that whilst integrating AI into recruitment processes, the human aspect should not be forgotten (Scherer, 2017; Zielinski, 2017; Dennis, 2018; Ross, 2018; Ryan, 2018; Ylä-Outinen, 2018). According to Ryan (2018), the effect that people have on the recruitment processes should not be underestimated. By this he means that despite technological advancements, people should still be involved in HR issues (Ryan, 2018). According to an extensive survey by LinkedIn Talent Solutions (2018), recruiting and hiring professionals do not see AI as something that can replace the phases of recruitment where people are most present – such as, building relationships, interviewing and phases where emotional intelligence is required. The study by The RES Forum (2019) abides by this idea and claims that people are needed for the complex issues, and machines are good for the repetitive, simpler tasks.

2.2.3. Benefits of Artificial Intelligence in Recruitment

Regardless of the conflicts that the literature brings up about the usage of AI, the profits of AI are over-exceedingly more apparent than the conflicts. The survey by LinkedIn Talent Solutions (2018) found that close to 80% of recruitment professionals believe that AI will have a somewhat significant effect on recruiting. The same survey finds that more than half of these same professionals think that using AI will be most helpful in sourcing, screening and nurturing candidates. Furthermore, most recruiting professionals agree that using AI in recruitment will be time-saving (Faliagka et al., 2015; LinkedIn Talent Solutions, 2018; RES Forum, 2019). Upadhyay and Khandelwal

(2018) also believe that AI will make the hiring process faster without having to make up for it in quality.

According to Benfield (2017), AI is not only useful in making the recruitment process faster, but with the other phases of recruiting as well. "A.I. can assist in all aspects of recruitment from advertising, managing applications, filtering, screening and application communication." (Benfield, 2017) Martin (2016) argues furthermore that using smart technologies in recruiting can save monetary assets. This would make sense considering the point made earlier by Leong (2018) and the excessive hours used by recruiters in screening applicants. Leong (2018) points out that if time is eliminated from assessing irrelevant resumes, hiring professionals have more time for the truly potential applicants.

Due to the freed-up time and money that using AI gives recruitment managers, they have more assets for implementing strategic recruiting (Benfield, 2017). Upadhyay and Khandelwal (2018) agree with this point, as they believe that using AI will change the currently dominant strategies for recruiting. Eventually, by using AI properly, hiring professionals will grasp a better view of how the programs can be used effectively and without human bias, to ensure the most fitting candidate choices (Scherer, 2017).

Based on the literature, the main benefits of using AI in recruitment are how fast AI can process data compared to humans and how easily AI is able to attain and reorganize this data (Upadhyay & Khandelwal, 2018). AI systems can go from as far as analyzing candidates' honesty and emotional intelligence just by analyzing video interviews (Zielinski, 2017) to assessing the candidates' personality through their online and social media presence (Ryan, 2018). The literature seems to almost exaggerate the benefits of using AI in recruitment, but Tolan (2018) reminds that despite AI being a useful tool, it does not live up to the expectations of HR professionals. This may be because many perceive AI as advanced, even dystopic robots taking over the workplace (LinkedIn Talent Solutions, 2018). Disappointingly for them, AI will not replace the recruiter, it will simply assist in the process of recruiting (Benfield, 2017). Furthermore, Tolan (2018) emphasizes the work that hiring managers put into nurturing the human relationships in the hiring process and using AI in that process will not wondrously change that process.

Actual applications of AI in recruitment that authors bring up are, for example, social media websites (Kronz, 2014; Baraniuk, 2015; Faliagka et al., 2015; Edwards, 2016; Martin 2016; Scherer, 2017; Zielinski, 2017; Kunes, 2018; Ryan, 2018; Upadhyay & Khandelwal, 2018). LinkedIn is the most referenced social media website among the literature (Kronz, 2014; Baraniuk, 2015; Edwards, 2016; Martin 2016). Social media platforms are ideal for efficient communication between applicant and recruiter (Edwards, 2016; Kunes, 2018). Social media platforms are also remarkable databases of information about the applicants (Faliagka et al., 2015; Edwards, 2016; Zielinski, 2017; Ryan, 2018), and in some cases about the hiring company (Scherer, 2017; Upadhyay & Khandelwal, 2018; Banks et al., 2019) as well. This would mean that an active social media presence can act as marketing yourself for both the applicant and the organization that is recruiting (Banks et al., 2019). Martin (2016) argues that it can be useful for the employee to have a website dedicated to recruitment processes.

2.2.4. Benefits of Artificial Intelligence in Recruitment from the Applicant's Perspective

Even though researchers recognize the effect that AI has on recruitment today, not much has been studied from the individual's perspective of using AI in recruitment (Van Esch et al., 2019). It is critical to view the transformation of recruitment processes form the applicant's point of view in order to understand organizational recruitment wholly as a concept (Barber, 1998). Even more so, the future of the workforce is a generation who is accustomed to doing things online and advanced technology – it is essential for recruiters to be aware of this to be able to recruit the best applicants (Kunes, 2018).

Through the usage of AI, applicants can receive real time feedback when applying for jobs, and furthermore that feedback is unbiased due to the nature of AI (Leong, 2018). Although, the promise of unbiased AI programs should be assessed critically, because they are self-learning and therefore prone to learn prejudicial patterns (Scherer, 2017).

Van Esch et al. (2019) found out in their research of applicants, that the applicant's motivation to use technological devices has a positive effect on how willing the applicant is ready to apply for a job that uses AI in their recruitment. This means that

Van Esch et al. (2019) have established that the applicant's attitudes towards AI affect the recruitment process. The study also found that other factors affecting applicant's willingness to apply for a job are attitudes towards the organization and the applicant's level of anxiety with using AI applications. However, Van Esch et al. (2019) clarify that "anxiety is just naturally present because AI in the hiring process is not really understood by people yet, and the anxiety doesn't really affect the application process" (Van Esch et al., 2019: 220). However, it is not clear whether companies that use AI in recruitment should be completely transparent in their activities with AI in recruitment. Should the usage of AI be mentioned, for example, in the job posting?

On another note, social medias and utilizing AI in that way are effective panels for interaction between the recruiter and applicant. Adequate communication between both parties is important and perceived as useful (Tolan, 2018). Therefore, adding AI into the communication between hiring staff and candidates can be profitable. Tools that can be used for this are AI powered interactive chatbots on the companies' webpages or social media sites (Upadhyay & Khandelwal, 2018) that answer questions for the candidates and even provide feedback in real time (Leong, 2018; LinkedIn Talent Solutions, 2018). Chatbots that operate around the clock are useful especially when communication happens across several time zones (RES Forum, 2019).

2.2.5. Challenges of Artificial Intelligence in Recruitment from the Applicant's Perspective

Because the integration of AI into recruitment is not recognized widely by applicants, they may miss out on potential job offers. Edwards (2016) claims that several people applying for jobs do not have or fail to update their LinkedIn profiles, which results in missed opportunities as LinkedIn is one of the most used websites by recruiters. Faliagka et al. (2015) present an e-recruitment system that assesses candidates' personality and their fit for a certain position by analyzing their social media presence. If organizations apply systems like these into their recruitment, surely active social media presence is important to assure a diverse image of the applicant. Usually applicants have vast amounts of information about themselves online (Scherer, 2017).

However, applicants' online presences relate to the issue on civil rights brought up by Scherer (2017). Scherer (2017) argues that using AI in HR will result in the violation of the applicant's civil rights. Scherer (2017) has a valid point to his argument, because people often have private profiles online that are private for a reason. If applicants know that recruiters will be looking at their social media presence, this could result in demotivation to update their profiles. Profiles that have little or dated information are not trustworthy presentations of the applicants' personalities. In addition, if applicants feel that AI devices are invading their privacy, according to Van Esch et al. (2019) these negative feelings will affect the applicants' overall motivation to apply for jobs. In addition, it would seem over-excessive to require applicants to have a social media presence at all – especially digital immigrants that are not as accustomed to technical devices as digital natives are.

2.2.6. Artificial Intelligence in Recruitment in Finland

According to an article in *Human Resource Management International Digest* called 'Recruitment goes virtual' (2013) profitable recruitment is dependent on precision and speed, which is why recruiters need efficient ways to explore through the pools of candidates that ensure choosing the best-fitting candidates. AI accomplishes both precision and speed, especially in creating a job description, screening and searching (Benfield, 2017). It would therefore make sense to integrate the usage of AI into recruiting. It is estimated that companies operating in Finland will adopt AI into their recruitment processes within a couple of years (Ylä-Outinen, 2018). Much of the technology used in recruitment in Finland has to do with automatization, which does not equal to using AI (Ylä-Outinen, 2018).

Recruiters in Finland have begun to emphasize skills relating to emotional intelligence in applicants for managerial positions (Varis et al., 2018). Earlier in the literature review it was established that AI will not be a probable replacement for positions in recruitment where, for example, emotional intelligence is required. This would implicate that AI programs would not be able to analyze emotional intelligence as well as human recruiters. However, Zielinski (2017) points out that AI programs can analyze the emotional intelligence of applicants from video footage. Dagmar and Björn (2018) introduce a concept called artificial emotional intelligence (AEI), which is an AI driven

program that has the ability to recognize, generate and augment human-like emotions. However, Dagmar and Björn (2018) conclude that AEI driven programs will not have authentic emotions, such as the ones humans have. This highlights the importance of maintaining the human touch in recruitment.

No literature exists that would discuss which companies in Finland are using AI in their recruitment, and whether there is divergence between how international companies and domestic enterprises are using AI. Furthermore, literature focusing on specifically Finnish recruitment is sparse. However, the relevance of AI for recruitment today is recognized by several authors, and therefore, in order to stay current, Finnish companies should begin to think about how to integrate AI into their recruiting.

2.3. Relevance of the Integration of Artificial Intelligence

The underlying reason why companies should be concerned with the integration of AI into their recruitment is competitive advantage. An article in *Human Resource Management International Digest* called 'Recruitment goes virtual' (2013) emphasizes the necessity of modern organizations learning how to use the latest technological advancements in their general operations as well as recruitment activities. Tools like AI have changed the outlook on strategic recruiting, because utilizing technology is giving smaller companies the same opportunities that larger enterprises have regarding how much to invest in recruiting processes (Edwards, 2016; Martin, 2016). This is making the competition between large and smaller companies healthier. Because of this, the companies first utilizing AI, regardless of their size, are at the forefront of gaining competitive advantage in strategic recruitment.

It is safe to state that recruiters and researchers agree on the potential of AI in recruitment. AI is also considered a recruiting trend. As this is the case, it is surprising that the number of companies utilizing AI is so little. A plausible explanation for the careful integration of AI into recruitment can be the generational differences between digital natives and digital immigrants. Not understanding how AI can be integrated into the workplace can cause employees to be sceptic about the new technologies and therefore attribute several other negative emotions to AI (RES Forum, 2019). The

majority of senior managers in organizations today are digital immigrants, and the generation entering the workforce are digital natives (Dumerseque, 2012).

Prensky (2001) claims that there is a digital language barrier between the digital natives and digital immigrants, which causes significant problems in communication in education and educational tools used. Dumeresque (2012) takes this further by stating that the clash of the two generations will affect the way business is conducted. The way digital natives process information, communicate, and are accustomed to doing things are considerably different from those ways in which digital immigrants do them, which can result in disputes between the two generations. Prensky (2001) argues that in order to overcome the language barrier in education, it should be the digital immigrants who need to make an effort, because it is very unlikely that the new generation would be willing to take steps back. The impact of new technologies and digitalization is one of the major problems currently facing organizations (RES Forum, 2019) Dumeresque (2012) states that the entire infrastructure of businesses must be changed by realizing the potential of the technological revolution and therefore assuring a good fit for digital natives into the world of business.

Presnky (2001) and Dumeresque (2012) are not directly talking about the usage of AI among digital natives, but Dumeresque (2012) does mention the technological revolution, which entails AI related technologies. Therefore, perhaps there is reluctance from today's senior managers to use AI in their HR and recruitment processes, because they are overall unaccustomed to technological devices.

2.4. Conceptual Framework

This conceptual framework (see Figure 1) is based on the how the literature review above has discussed the relationship between recruitment and artificial intelligence. This conceptual framework is built based on the organizational perspective, as the literature from the applicant's perspective is sparse. The conceptual framework around AI is built based on the branches of AI recognized by McCarthy (2017) – however, the literature would suggest that not all of the branches are relevant in recruitment. Out of the twelve branches that McCarthy (2017) identified, the most relevant for recruitment seem to be *logical AI* (making decisions based on achieving a specific goal)*, pattern*

recognition (for example, face recognition, recognizing profitable patterns)*, representation* (stating facts)*, inference* (deduction from facts)*, learning from experience* (machine intelligence) and *planning* (creating strategies). These conclusions are based on the current applicability of AI, which not to say that other branches of AI will never be useful in recruitment

The conceptual framework around recruitment is be based on the similarities found in recruitment practices between different sources. These factors are building a job description, sourcing, screening, interviewing and engaging. The relationships between the recruitment stages and artificial intelligence are indicated with connecting lines, i.e. where AI can be helpful in recruitment. What can be deduced form the literature, that due to the importance of the human touch and human interaction in recruitment, AI cannot yet be as helpful in interviewing and engaging candidates as in the other areas of recruitment (Upadhyay & Khandelwal, 2018).
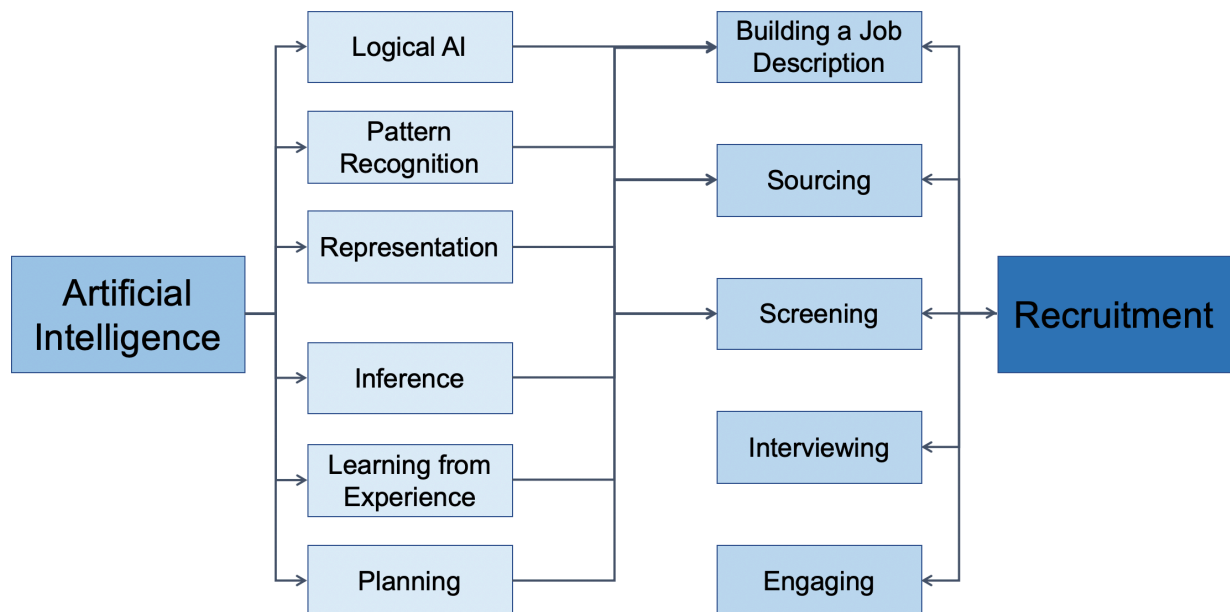

Figure 1: Conceptual framework for how artificial intelligence can be utilized in recruitment from an organizational perspective

Essentially, the framework attempts to explain how the different areas of AI can be used in recruitment. Because AI was earlier divided into different branches and

recruitment into different processes, they are useful to look at individually. Simply stating that AI is useful in recruitment does not say much. However, the conceptual framework states that *logical AI, pattern recognition, representation, inference, learning from experience,* and *planning* are useful in the initial phases of recruitment. This means that where there is the least need for communication and emotional intelligence, AI can be of use. These areas of recruitment are building a job description, sourcing, and screening. AI can and is sometimes utilized in the interviewing and engaging part of the recruitment process, but the literature does not support the profitability of using AI there.

3. METHODOLOGY

The gathering of secondary data for this thesis by means of the literature review attempted to answer research objective 1, which is to find out how companies utilize AI in their recruitment practices today. The literature review presents a framework for how AI can be used in recruitment from the organizational perspective. Gathering primary data, on the other hand, attempts to answer research objective 2, which is to examine, how digital natives feel about AI as being a useful part of recruitment and whether this is compatible with the findings from research objective 1. Therefore, what the primary data research is trying to contribute to, is to find out how digital natives see the potential benefits and pitfalls of using AI in recruitment.

Propositions that were present when planning and conducting the focus groups were that due to digital native's familiarity with AI, as discussed in the preceding chapter 2.3., they would have a generally positive perception of utilizing AI in recruitment. What this means, is that they were expected to be pro AI rather than completely against it.

Combining the findings for research objectives 1 and 2 will allow to answer the research objective 3. Combining the data will result in a framework for the integration of AI into recruitment practices from both the organizational and applicant perspective.

3.1. Research Methods and Design

Because digital natives are the future of the workforce it is important to be aware of and understand their attitudes and thought processes (Dumeresque, 2012). Especially so, because Dumeresque (2012) argues that digital natives process information and think differently than digital immigrants.

The primary data for this thesis was collected through semi-structured focus groups. Focus groups are good for examining the thought processes of individuals when forming their opinions and attitudes (Rabiee, 2004). This suits the purposes of this research, because the objective of this research is to explore the underlying perceptions digital natives have on recruiting with AI, instead of looking for statistical data about their experiences with AI. As this study is exploring the views of digital natives on utilizing AI in recruitment and creating a framework based on the newfound information, the research is inductive in nature rather than deductive, as it is not testing pre-existing hypotheses and theories (Bengtsson, 2016).

Due to the exploratory nature of the research, focus groups were a good approach as opposed to individual interviews, as focus groups give insights on the group dynamics and how people form their opinions as a group (Rabiee, 2004), and therefore, enable the researcher to form a social understanding of the concept being studied. Forming a social understanding of utilizing AI in recruitment is useful as the defining key feature of this research is to understand how digital natives as a group perceive integrating AI into recruitment. Furthermore, due to the lack of literature on recruiting with AI from the digital natives' viewpoint, developing relevant questions for, for example, a survey approach would have been difficult.

The approach for the focus groups was informed by Krueger's (2002) framework for conducting focus groups. The framework has proven to be useful and easily applicable by both students and researchers (Rabiee, 2004). Krueger (2002) suggests using five to ten people when conducting focus groups, but for this thesis it seemed more suitable to have smaller groups of participants to encourage more input from each individual. As Krueger's framework encourages, the participants were carefully selected, and they were recruited based on important connecting features. The following section 3.2.

describes the sampling processes further. Additionally, as Krueger (2002) proposes, the focus groups were repeated to ensure that findings can be contrasted and compared between different focus groups. By doing this, it is easier to determine whether the findings are exclusive to one group or generally applicable.

Krueger's framework also advices to use two people to be responsible for the focus groups (the interviewer and the moderator), but as this thesis is an individual project, it was decided that one interviewer is enough, especially because the group sizes are relatively small. Several other advices from Krueger's framework were implemented into the focus groups, such as requesting the participants sit in a circle, encouraging communication and asking open-ended questions.

3.2. Sampling and Data Collection

The participants for the focus groups were recruited based on a few defining characteristics. Firstly, the participant had to be a digital native (someone born between 1980 and 1999), and they were required to have experience in applying for jobs. Furthermore, participants were all Finnish, since the focus of this thesis is on AI in recruitment in Finland, and it was assumed that Finnish participants would have applied for jobs within Finland. Participants were gathered by convenience sampling, which means that the participants are all undergraduates from the same university.

The focus groups were conducted in person between three participants and one interviewer. The focus groups were repeated three times with different people. Therefore, the total number of participants was nine. Despite the small sample size, saturation in the focus groups was reached already during the second group. Theoretical saturation means that no new meaningful data was collected, which means that the findings were repetitive of each other (Rabiee, 2004): all three focus groups were very similar in their findings and insights. The demographic details of the participants are summarized table 1.

Participant	Focus group	Age	Gender	Nationality
1	1	22	Female	Finnish
2	1	21	Male	Finnish
3	1	21	Male	Finnish
4	2	21	Female	Finnish
5	2	22	Male	Finnish
6	2	23	Male	Finnish
7	3	21	Female	Finnish
8	3	20	Male	Finnish
9	3	21	Male	Finnish

Table 1: Focus group participants' demographic details

The focus groups were semi-structured, which means that there was a set of standard questions, but defining questions were also asked to clarify points. See Appendix 1 for the general format of the focus groups. The focus groups were recorded electronically, instead of relying simply on a written verbatim record. The interviewer firstly told the participants why they have been selected, and then defined what AI is. Then, the participants were asked about their initial thoughts on recruiting with AI. After their initial thoughts, they were shown a YouTube video about the usage of AI in recruitment, in which the advantages of AI in recruitment are emphasized. Especially the elimination of biases is seen as a major advantage of using AI in recruitment. In the YouTube post by Canadian HR Reporter (2018) two professionals very familiar with the usage of AI talk about how AI is profitable in recruitment and how it is actually used.

The URL link for the YouTube video shown is as follows:
https://www.youtube.com/watch?v=MwBLutG-ZOo

After seeing the video, the focus group were asked more questions about the usage of AI in recruitment and whether they have experienced AI in applying for jobs. Furthermore, when asking demographic details about the participants, they were inquired about their presence on LinkedIn, as literature showed LinkedIn to be the most used social media website by recruiters (Edwards, 2016).

3.3. Data Analysis

Because the subjects of the focus groups were not experts, the focus of the analysis is on how the participants feel about the usage of AI in recruitment instead of what they may be aware of and what they know of. As the research objective that the primary data is trying to answer is aimed at finding out the perceptions and attitudes digital natives have on utilizing AI in recruitment, the analysis of the focus groups was done accordingly. This means that the when analyzing the focus groups, a thematic analysis approach was used, and within finding themes the focus was on finding the underlying attitudes about using AI in recruitment. Thematic analysis as a form of analysis and how it is applicable for this research is explained further in the next section.

3.4. Thematic analysis

Thematic analysis is one of the key methods for analyzing qualitative data (Braun & Clarke, 2006). Thematic analysis is beneficial due to its wide applicability and flexibility – it is easy to learn and since there are no right answers for interpreting data it provides the analysist with theoretical freedom to make findings (Braun & Clarke, 2006; Joffe, 2012). Focus groups are most often analyzed with thematic analysis (Joffe, 2012). The most important feature in explaining how certain findings were made is to provide the reader with a clear path of how the analysis process was conducted and why specific actions were taken (Braun & Clarke, 2006; Joffe, 2012).

Thematic analysis is a useful tool for analyzing qualitative data, because it helps with pointing out repetitive patterns from a data corpus (Scharp & Sanders, 2018). These patterns that the thematic analysis points out form the data are themes. Themes are recurrent throughout the data and are essential in answering the research questions (Braun & Clarke, 2006). Themes can be based on manifest content or latent content (Joffe, 2012). Manifest content in themes are explicit information that is stated by for example the participants in the transcript, whereas latent content is information that is implicit, and is derived from the content by the analysist and attempts to find underlying ideologies behind the manifest content (Braun & Clarke, 2006; Joffe, 2012).

Even though there is no clear-cut theory for thematic analysis, Braun and Clarke (2006) have created six phases for conducting thematic analysis. The six phases are also recognized by Joffe (2012), and Scharp and Sanders (2012). The phases and their descriptions are summarized in the table by Braun and Clarke (2006) below (Table 2).

Phase	Description of the process
1. Familiarising yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Table 2: Phases of Thematic Analysis (Braun & Clarke, 2006: 35)

Braun and Clarke (2006) also provide a 15-point checklist for making sure the phases for thematic analysis are done accordingly. The table for the 15-point checklist is found under appendix 2. It was used in the process of doing the thematic analysis for this thesis. For this thesis, the thematic analysis followed the six steps by Braun and Clarke (2006), and the focus was on finding the latent content from the focus group transcripts.

Abiding by the phases by Braun and Clarke (2006) the data analysis for this thesis begun with transcribing the focus groups. Transcribing was done according to Krueger's framework, which suggests transcribing as soon as possible after the focus groups. Following this, the full transcripts were read through repeatedly, whilst

simultaneously generating initial ideas about similarities among focus groups. After this, the transcripts were coded physically according to what may be interesting or useful for the research objectives, focusing on the manifest content (Excerpt 1).

#9: Yeah, I think it depends on the point of view, from the, like the, recruiter's point of view, it can add value in the sense that a person doesn't need to go through maybe all of the applications. I mean AI can find the, uh, most suitable ones, but from the, applicant's point of view it can be maybe discouraging, because your application may not be read by an actual human being and maybe you wrote it in a, a different manner or something that the AI doesn't understand, or there on the, like the keywords or whatever the AI is looking for, or something.

#7: Yeah, I also think it's like really useful for the recruiters cause like there can be hundreds of different applications to one position and it's basically like impossible to go through them all like in an objective way. So, it would be nice to like, use artificial intelligence in the like beginning phase, but then when you're actually choosing the person it's really important to have like somebody actually looking at your applications and everything. Isn't there already like keyword scanning systems that like work [inaudible].

#8: So, I think it depends how you use the artificial intelligence so to the, not to the extent that like it does like all the recruiting and there's no persons – people involved.

Hekkala Sara
Organizational perspective

Hekkala Sara
Time saving aspect

Hekkala Sara
AI may be useful

Hekkala Sara
Applicant perspective

Hekkala Sara
Applicant perspective: AI is discouraging

Hekkala Sara
Human touch

Hekkala Sara
No room for personalization in recruiting with AI

Hekkala Sara
Importance of the right keywords

Hekkala Sara
Organizational perspective: useful

Hekkala Sara
Time saving aspect

Hekkala Sara
Use AI in the screening phase

Hekkala Sara
Importance of having the human touch

Hekkala Sara
AI can be either good or bad depending on how it is used

Hekkala Sara
AI is useful in the screening phase; the human touch needs to be present at some point

Excerpt 1: Coding the focus group transcripts

After the initial coding, the codes were assessed to look for similarities (the latent content) which would later on become the themes. After several identified themes and assessing the potential themes, five dominant themes were identified from the codes. The five biggest themes are efficiency, impartiality, conformity, human interaction, and uncertainty. A color was assigned to each theme and the focus group transcripts were color coded to visually show where each theme is present (Excerpt 2). The codes were left on the document for guidance in finding the right codes for each theme.

- Efficiency
- Impartiality
- Conformity
- Human interaction
- Uncertainty

#9: Yeah, I think it depends on the point of view, from the, like the, recruiter's point of view, it can add value in the sense that a person doesn't need to go through maybe all of the applications. I mean AI can find the, uh, most suitable ones, but from the, applicant's point of view it can be maybe discouraging, because your application may not be read by an actual human being and maybe you wrote it in a, a different manner or something that the AI doesn't understand, or there on the, like the keywords or whatever the AI is looking for, or something.

#7: Yeah, I also think it's like really useful for the recruiters cause like there can be hundreds of different applications to one position and it's basically like impossible to go through them all like in an objective way. So, it would be nice to like, use artificial intelligence in the like beginning phase, but then when you're actually choosing the person it's really important to have like somebody actually looking at your applications and everything. Isn't there already like keyword scanning systems that like work [inaudible].

#8: So, I think it depends how you use the artificial intelligence so to the, not to the extent that like it does like all the recruiting and there's no persons – people involved.

Hekkala Sara
Organizational perspective

Hekkala Sara
Time saving aspect

Hekkala Sara
AI may be useful

Hekkala Sara
Applicant perspective

Hekkala Sara
Applicant perspective: AI is discouraging

Hekkala Sara
Human touch

Hekkala Sara
No room for personalization in recruiting with AI

Hekkala Sara
Importance of the right keywords

Hekkala Sara
Organizational perspective: useful

Hekkala Sara
Time saving aspect

Hekkala Sara
Use AI in the screening phase

Hekkala Sara
Importance of having the human touch

Hekkala Sara
AI can be either good or bad depending on how it is used

Hekkala Sara
AI is useful in the screening phase; the human touch needs to be present at some point

Excerpt 2: Color coding of themes found in codes from focus group transcripts

The findings section of this thesis will discuss the themes more comprehensively and give more insights as to how the themes are evident in the focus groups. It will define each theme further and analyze them in relation to the codes and transcript material.

3.5. Limitations of Methodology

As is mentioned above, the framework for conducting focus groups was not followed perfectly, which can cause limitations in the gathered data. In addition to this, the methodology had several other limitations, that should be taken into consideration when analyzing the data. Firstly, because the focus groups were done in person between the same age people, there is the possibility of respondents not being as honest as they could be. This can be affected by peer pressure, which was evident in the tendency of the participants to agree with each other.

Another limitation for the research is the language that was used. The focus groups were conducted in English, but as the respondents were Finnish, some respondents found it difficult to express their thoughts in English. This means that in some cases

some phrases or sentences were said in Finnish to get the point across. The other participants at times consulted to translating the other person's speech for them, which can result in mistranslations and distortions in the individual's original message.

Furthermore, a limitation for the research is the participants' primary knowledge levels. Although the purpose of the focus groups was to introduce recruiting with AI to those, who are not experts in the area of recruiting with AI, the lack of knowledge can result in reluctance to answer questions at all. Furthermore, the participants can be falsely informed about what AI looks like in recruitment, and therefore think they have seen AI in recruitment when it may or may not have been AI itself.

However, all digital natives participating in the focus groups were university students majoring in International Business, which makes them possibly more aware of things related to conducting business (such as HR activities and recruiting), and therefore they may have more prior knowledge than the average digital native about recruitment activities. What is more, time constraints can affect the methodology, as the focus groups were not planned and conducted over a long time period. The total time from planning the focus groups, conducting and analyzing them was approximately one month.

In addition, as this data was interpreted by one person only, the data is prone to misinterpretations. Krueger's framework for focus groups states that the assistant moderator (secondary interviewer) should give feedback on the data analysis and reports of the primary interviewer. Braun and Clarke (2006) also suggest using an additional point of view to ensure the fit of the themes to the data. A secondary point of view was not possible here. Moreover, it should be mentioned that due to the small sample size (nine participants) the findings of this study are not widely applicable. The findings are not representative of the whole population of digital natives, as that would require much larger samples, further focus groups and even alternating approaches to finding out the perceptions of digital natives on using AI in recruitment.

4. FINDINGS AND ANALYSIS

The following section will discuss the findings from the thematic analysis more in-depth than the methodology section. Each theme that was found will be first discussed and analyzed individually, after which additional findings are presented.

4.1. Theme 1: Efficiency

Efficiency was one of the first themes that stood out from the transcripts. In this context efficiency means making the recruitment process more streamlined and cost-effective by utilizing AI. The participants recognized the effectiveness of using AI in recruitment both from the organizational and individual perspective. This was interesting, as none of the participants are experts in recruitment, yet they were able to realize that recruiting requires a great deal of resources and input from organizations. Recurrent aspects of efficiency were the reduced amount of time spent on recruiting for an open position, and the money-saving aspect of recruiting with AI. However, some participants felt that even though AI makes the recruitment process faster, it would still cost the organization money to hire people to program and monitor the AI systems.

> *"If you have certain requirements and the AI just goes through everything and finds what you need, that is not exactly a perfect way of doing things, but it's still much faster, much more efficient"* – Participant #5

The time-saving aspect of efficiency was realized from the applicant's perspective also. Compared to the time-saving aspect form the organizational perspective, which was recognized by all focus groups, the individual perspective was evident in only one.

> *"It feels so frustrating - - I won't get any replies for like a month or something after I've sent the application, so the AI could help with this"* – Participant #9

Recognizing the efficiency of using AI in recruitment means that digital natives are aware of the potential benefits of using AI. However, the way that the focus groups talked about the time-saving aspect was with regard to job posts that have a notable number of applicants would suggest that they see AI as being useful for larger

companies. One focus group pointed out that AI does not add value to the recruitment process if there are only a handful of applicants for a position.

4.2. Theme 2: Impartiality

The theme impartiality attempts to describe how the focus groups recognized the importance of impartial recruiting systems. The video that they were shown talked about biases and their negative effects on minorities applying for jobs. The focus groups realized the benefits of AI due to it being impartial: AI treats all applicants equally. This means that in using AI powered programs, applicants would have, technically, the same chances of getting interviews.

Nonetheless, all three focus groups were sceptic about the elimination of biases. Participants realized that even if AI programs are able to recruit without bias towards demographics, those biases would still be present in the recruiters themselves. The focus groups also realized that AI programs can be built to replicate biases. Biased employers or biased AI programs were generally deemed as unacceptable.

> *"It's nearly impossible to delete all of the biases through AI, but I find it might delete some. But it does require the person, who, for example, sets the parameters to consciously understand the biases that they have"* – Participant #4

> *"I think one point to consider is that if your employer has a bias towards you, then well, at least from my perspective, I wouldn't necessarily want to work for the people"*
> – Participant #8

However, one focus group noted that bias in recruiting is not necessarily a bad thing.

> *"It could be fitting to your company culture to have a certain, certain attributes and such. So, being biased towards that kind of thinking, for example, if you are a very strict hierarchy, you definitely want people who can actually follow orders and such"*
> – Participant #5

Despite the notion that bias may not be a bad thing, the focus groups were unanimous about the benefits of removing bias towards people's names, backgrounds and personal life. Therefore, using AI to understand and remove demographic biases from the recruiting process is beneficial and should be applied.

4.3. Theme 3: Conformity

Conformity as a theme in the focus groups had a slightly negative connotation. The impartiality-theme overlaps with some of the features of conformity. Impartiality as a theme is wanting equal treatment for all applicants regarding their demographics, and conformity, on the other hand, is not wanting to be treated like everyone else. Essentially, conformity as a theme means that through using AI programs the participants felt that aspects of their personality were lost due to generalizations. It would seem that the participants believe that they cannot express themselves by using these generic words that they are supposedly required to have in their applications.

> *"A general opinion about the AI is that it* sucks *that when you're filling up your CV you have to use generic terms and you can't put your personality in the CV, right?"*
> – Participant #2

Conformity was evident especially when the participants were talking about keyword scanning programs that pick out the best applicants by skimming through CVs whilst searching for the right buzzwords. All focus groups mentioned the keyword scanning programs as a part of recruiting with AI. It was interesting to see that all focus groups also pointed out keywords that the programs are looking for, that is, those generic keywords that they should be using.

> *"Good at problem solving, and the most generic: my worst quality is that I'm a perfectionist"* – Participant #3

> *"Everybody needs to be innovative and creative and energetic - - Everybody has to be entrepreneurial"* – Participant #5

"If you're looking for self-initiative, active, anything, then you're probably going to put those qualities in your application if you have them" – Participant #7

This would suggest that the focus group participants want to be recognized for their differences and personal attributes. Furthermore, the focus groups recognized that machines may not be able to assess candidates' personalities that well. The participants also state that if they knew that a certain job application process would be using AI to recruit, their behavior in the application process would change. This means that if they knew that a company is using AI in the recruitment process, they might not get recognized if they use personalized CVs, which requires them to use the generic keywords that will be picked up by the AI programs. This may also be why all focus groups stated that they would want transparency from companies on whether they are using AI in recruitment or not. It would seem that the focus groups believe that a person is more competent to judge an applicant's personality than a machine is.

4.4. Theme 4: Human interaction

Despite the benefits that the focus groups saw in using AI in recruitment, it was clear that maintaining the human touch in recruitment is important. The desire to have people present in the recruitment process can be due to either a general mistrust in machines or because the participants feel that machines are not capable of judging certain characteristics as well as people. This would suggest that judging personality and judging character are something that machines are not capable of.

For example, the focus groups pointed out that machines cannot tell how effective people can be at communicating in the workplace or that machines cannot tell what a person is like. This is also evident in the conformity theme. Applicants need to generalize themselves in order to succeed in the application process with AI.

"Can you, you know, get the same level of interaction between the worker and the employee in the hiring process [when using AI]" – Participant #3

"In essence like, how do you appear - - what kind of image you leave behind when you talk to someone, and I think machines cannot interpret that" – Participant #9

The human interaction as a theme was also evident in how much importance the focus groups placed on the interview section of the recruiting process. All focus groups stated that using AI in recruitment is acceptable from their perspectives as long as they get an interview. The importance that was placed on the interview may be because of the human interaction aspect that is not present elsewhere in the recruitment processes. Surely, interviews are essential for the recruiter in determining the personality of the applicant, which seems to be important for the digital natives as well.

"I think the key is to try to get the interview" – Participant #6

The interview appeared to be important to the focus groups because of the possibility of talking to an actual human. This was emphasized in the way that the focus groups discussed the importance of receiving feedback from the recruitment process and developing as a person.

"If there's no level of feedback, you send in your application and it doesn't make it to the actual person, you have no idea what went wrong" – Participant #5

4.5. Theme 5: Uncertainty

The final recurring theme in the focus groups was uncertainty towards several aspects of recruiting with AI. For example, the participants seemed to be unsure of how AI programs actually work and to what extent they can be used. In addition, as is mentioned above, the participants felt that they had to change how they behave in the recruiting process when AI is involved – perhaps because they are not sure what the AI is looking for. Uncertainties were also present in how profitable the participants saw AI programs. They were not necessarily convinced about utilizing AI in recruitment. The participants were sceptic about how well the AI programs could actually work, and therefore mistrust was present in how they discussed the applicability of AI.

Furthermore, several participants felt that AI is still a developing technology and that AI is still in its primitive phase. Due to the underdevelopment of AI, the focus groups felt that AI is not profitable in the recruitment process in its current form. This can,

however, be because the participants seemed to be unaware of the full capabilities of AI. Participants reported that they were, among other feelings, concerned, sceptic and intimidated by AI powered programs.

"Very pessimistic, like I would like, think that I probably wouldn't get an interview or something, I don't know why but I'm sceptic…" – Participant #1

"And now, if the AI is just on the level that look for these keywords on the application form, it doesn't really change the method just to medium. That it just happens on a different platform" – Participant #5

"I'm not sure if I understood the face recognition thingy correctly, but it seemed a bit intimidating to me - - something is going to scan your face and see, like, your deeper soul" – Participant #7

There also seemed to be general uncertainty among the applicants as to what is a good job application for a company that uses AI in recruitment. This was also looked at from the organizational perspective: what if the recruiter themselves fails to recognize important features that the applicants have? This creates confusion for the applicant as to how they should generate their application so that the AI systems come across their applications. The participants as applicants would want to know the parameters that recruiters set for the open positions.

"If the recruiter themselves does not identify certain keywords that are synonyms, or antonyms, or whatever - - it can actually damage the recruitment process quite a bit" – Participant #4

"There was this advice for applying for jobs now that there is AI: always copy the texts from the recruitment advertisement, or whatever, make it white*, and add it to your CV so the computer [snaps fingers] picks it up"* – Participant #2

4.6. Further Themes Identified

In addition to the thematic analysis, there are a few findings that should be noted. These ideas emerged in the focus groups but were not as dominant as those discussed

above. The first and foremost issue that should be mentioned is the inactivity of digital natives on LinkedIn. The literature review found that recruiters use LinkedIn as one of their main social media websites. It would seem, that if recruiters want to source applicants online, specifically digital natives, LinkedIn is not a useful media for that.

All nine participants had LinkedIn profiles, yet only one of them is active on it. Four stated to be somewhat active on their LinkedIn profile, and the remaining four are not active. Therefore, the clear majority of the participants are not active on LinkedIn.

Participant	LinkedIn profile	Activity
1	Yes	Somewhat active
2	Yes	Not active
3	Yes	Not active
4	Yes	Active
5	Yes	Not active
6	Yes	Somewhat active
7	Yes	Somewhat active
8	Yes	Not active
9	Yes	Somewhat active

Table 2: LinkedIn activity of focus group participants

Furthermore, it should be stated that all focus group participants felt that despite the disadvantages of AI, it will be the future face of recruitment. Therefore, the participants feel that the integration of AI into recruiting activities is inevitable.

5. DISCUSSION

This section will discuss the findings from section 4. and their importance and relevance. Firstly, each theme identified from the findings will be discussed separately in the light of the literature reviewed in section 2., after which the initial framework from section 2.4. will be developed according to the findings from the focus groups.

5.1. Assessment of Theme Efficiency

The theme efficiency came up frequently in the focus groups and it was evident in the literature as well. Efficiency as a theme encompassed those views that suggested that AI would make the recruitment process more streamlined and cost-effective by utilizing AI. The focus groups recognized the time-saving and money-saving aspect of AI in recruitment. According to the literature the conventional ways of recruiting are very time-consuming (Faliagka et al. 2015; Leong, 2018), and AI is useful in reducing the unnecessary hours spent on recruiting processes (Faliagka et al., 2015; PricewaterhouseCoopers, 2017; LinkedIn Talent Solutions, 2018; RES Forum, 2019).

The reason for naming the theme efficiency, is because despite the reduced amount of time spent on recruiting, the quality of the recruitment process will not be reduced (Upadhyay & Khandelwal, 2018). In addition to this, because AI is efficient in recruiting, HR professionals have more assets for other jobs, such as strategic recruiting (Benfield, 2017), or concentrating on their employees and their strengths (Leong; 2018, LinkedIn Talent Solutions, 2018). Furthermore, as the theme efficiency points out, utilizing AI in recruitment saves monetary assets (Martin, 2016). Reducing time and money may be subsequent events, as the hours spent on recruiting are mitigated, the amount of resources put into recruiting may be reduced as a result. However, it should be stated that the focus groups recognized the money-saving aspect more than the literature did. Although, the findings would indicate that HR professionals and digital natives have similar views when it comes to the efficiency of utilizing AI in recruitment.

5.2. Assessment of Theme Impartiality

Impartiality was another theme that emerged from the focus groups, which is supported by the claims in the literature about the possibility of eliminating bias through AI powered programs (Benfield, 2017; Scherer, 2017; Canadian HR Reporter, 2018; Upadhyay & Khandelwal, 2018). Reducing biases in recruitment appeared to be an important topic for the digital natives. Within the focus groups the perceptions of biases diverged, yet, the focus groups felt that the negative aspects of reducing bias were more prominent than the positive aspects of reducing bias. The focus groups realized that eliminating biases was a good thing but eliminating biases in the screening phase

of recruitment is not enough. The groups additionally pointed out that AI powered programs are generated by people and therefore prone to err. Many articles pointed out as well that AI powered machines are only as good as the programs that run it (Scherer, 2017; Zielinski, 2017; Dennis, 2018; Ryan, 2018; RES Forum, 2019).

However, an issue that was brought up by the focus groups, was that having biases may not necessarily be bad. It may be fitting to have your recruiting systems biased so that it selects those personalities from the pool of applicants that suit the hiring organization. This was not addressed in the literature – the word bias has a negative association throughout the articles and is deemed usually a harmful thing. Nevertheless, both the literature and digital natives see the positive effects that using AI to eliminate biases may have – impartiality seems to be an important factor for both.

5.3. Assessment of Theme Conformity

One theme found in the focus groups that is not as apparent in the literature is the theme conformity. Conformity as a theme means that through using AI programs digital natives felt that the aspects of their personality were lost due to generalizations. The lack of discussion around this subject may be because of the sparse literature from the applicant's perspective. The focus groups felt that parts of their personality are lost in the recruitment process due to the compulsory generic keywords in their resumes. Combining the theme efficiency and the participants' need to express their personality and the point about biases not being all-bad, it can be deduced that it is important for digital natives that their personalities fit the organizations they are applying to.

The discussion of conformity in the literature is cursory. For example, as the focus groups pointed out, people who fail to include the right keywords in their resumes may not be picked up by the applicant tracking systems (Baraniuk, 2015; Ryan, 2018). Additionally, there are programs, for interpreting applicant personalities. For example, assessing applicant personalities based on their social media presence (Faliagka et al., 2015; Ryan, 2018) or analyzing video interviews (Zielinski, 2017). The focus groups were doubtful of machines judging character. Furthermore, as was stated in the findings section, the focus groups felt that they would appreciate transparency from the recruiter if they are utilizing AI in recruitment. This is supported by the findings by

Van Esch et al. (2019) where applicants' favorable attitudes towards AI and successful recruiting with AI correlate positively. Digital natives seem to be more pro AI in general, and thus they may have positive attitudes towards utilizing AI in recruitment. Therefore, if recruiters were transparent about the usage of AI, they could, in fact, support the recruitment process of digital natives with AI.

5.4. Assessment of Theme Human Interaction

Human interaction as a theme is something both the digital natives and literature are unanimous about. Both see and argue for the importance of it. The focus groups made clear that human interaction should not be lost in the recruitment process. The articles also argued that maintaining human interaction in recruitment processes is vital (Scherer, 2017; Zielinski, 2017; Dennis, 2018; Ross, 2018; Ryan, 2018; Tolan, 2018; Ylä-Outinen, 2018). As was mentioned above, digital natives do not believe that machines are capable of the same type of interaction as people are, and the literature agrees with this. Tasks that require interactive skills or emotional intelligence, such as interviewing and engaging applicants, are not tasks that should be done by AI (LinkedIn Talent Solutions, 2018; RES Forum, 2019).

However, the focus groups relate the issue of human interaction to the interview part of the recruitment process as well as to being assessed by a human being, which is not something that the literature discusses. The literature approaches the concept of human interaction form a different perspective: the texts see complex tasks machines cannot replace. These are tasks that are not repetitive or simple in the way that, for example, scanning keywords is. The digital natives on the other hand see humane features that the AI cannot replace, such as judging character, interaction or interviews. Therefore, the literature's take on the human interaction theme is looking at tasks that are not effectively done by machines, whereas digital natives see the harm that is caused to them as applicants when human interaction is not present.

5.5. Assessment of Theme Uncertainty

What is present in much of the discussion above, is the theme uncertainty. Uncertainty in this context is the combination of underlying unfavorable feelings, such as mistrust,

skepticism and concern, towards generally applying AI into recruitment. Examples of where uncertainty is present in the focus groups is how AI powered programs work, how should applicants apply when AI is used, the profitability of AI, and the overall applicability of AI. Many of these causes of uncertainty are justifiable, as they are the same causes that the literature points out.

Firstly, when new technologies are introduced into the workplace, employees are usually unwilling to integrate the technologies into their work instantly (Baraniuk, 2015; Benfield, 2017; PricewaterhouseCoopers, 2017). Secondly, the literature does not provide instructions for the applicants for how to apply when AI powered systems are in charge of, for example, screening. Thirdly, AI powered programs are limited as such and not yet widely accepted by employees, perhaps because they are concerned about losing their jobs to AI (Zielinski, 2017; Dennis, 2018; LinkedIn Talent Solutions, 2018). Finally, the overall applicability of AI is controversial within the literature as well, as other texts believe that AI powered machines are not suitable tools for the workplace, at least as such (Baraniuk, 2015; Parnas, 2017; Ryan, 2018; Tolan, 2018), whereas others are convinced of their profitability (Marler & Parry, 2016; PricewaterhouseCoopers, 2017; Scherer, 2017; Zielinski, 2017; Leong, 2018; LinkedIn Talent Solutions, 2018; Upadhyay & Khandelwal, 2018; RES Forum, 2019).

5.6. Assessment of Further Themes Identified

Additionally, in the study by LinkedIn Talen Solutions (2018) they found that almost 80% of recruitment professionals believe that AI will have a somewhat significant effect on recruiting, whereas 100% of the digital natives in the focus groups thought that AI will be the future face of recruiting. Although, it should be stated that the digital natives perceived AI as being potentially useful for recruiting activities that have to deal with a large number of applicants, which was not specified in the study by LinkedIn Talent Solutions (2018). Furthermore, it was found in the focus groups that the vast majority of digital natives as applicants are not active on LinkedIn, whereas the literature found that LinkedIn is the prevalent social media website used by recruiters (Kronz, 2014; Baraniuk, 2015; Edwards, 2016; Martin 2016).

Overall, the perceptions that arose from the focus groups were surprisingly similar with those from the literature. This was unexpected, as the digital natives were assumed to be non-experts in the area of utilizing AI in recruitment.

5.7. Development of framework

The initial framework that was presented in the literature review was derived from the organizational perspective. This section will try to combine the perceptions from the focus groups and further develop the framework from the literature review. This means that the second framework will look at utilizing AI in recruitment from an organizational perspective and from a digital native's perspective. To make sure that the framework is more generally applicable, AI will not be categorized into different branches as it is in the first framework. The new framework is illustrated in Figure 2.
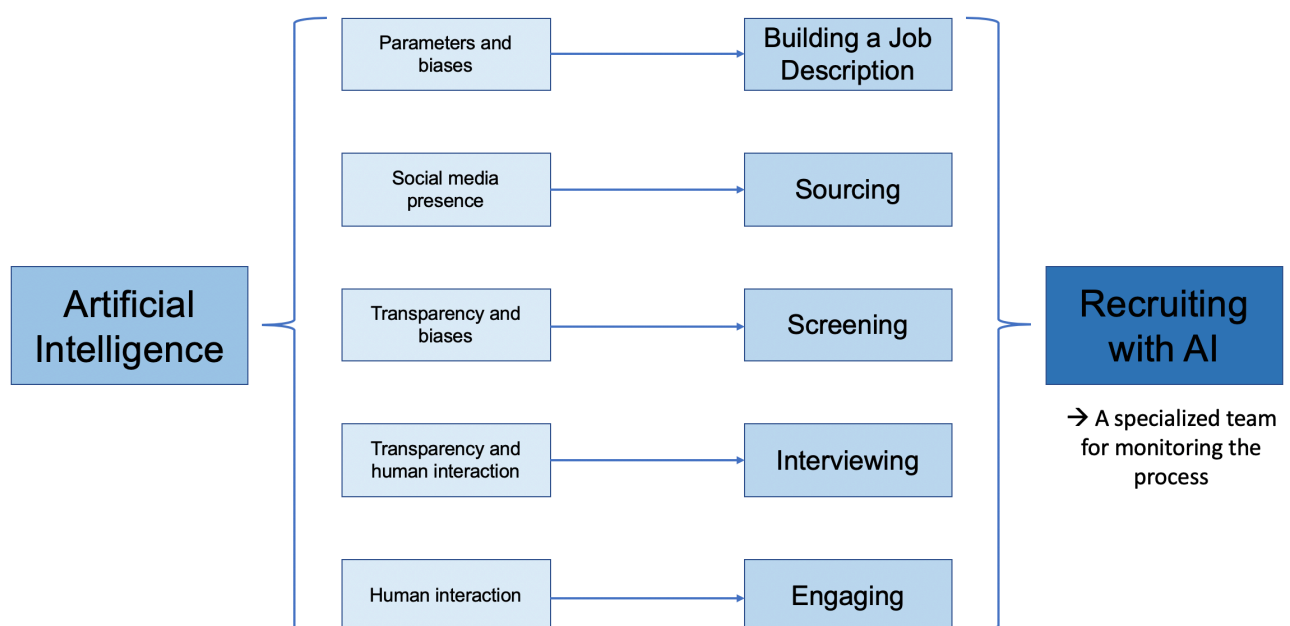

Figure 2: Framework for the integration of artificial intelligence into recruiting digital natives in Finland

In the revised framework, the phases or recruitment are the same as in the initial framework, which are building a job description, sourcing, screening, interviewing and engaging. However, the utilization of AI is categorized according to each phase of recruitment instead of the branches of AI. The framework attempts to give guidelines

as to how AI should be used in each of the stages. In addition, the framework notes under the entity "Recruiting with AI" that this process should be conducted and monitored by a specialized team that understands recruitment and especially AI.

Firstly, in the building a job description stage, AI can be utilized in finding the right keywords, parameters and standards that can be visible from, for example, previous hiring data within the organization. However, in this stage, the people monitoring the AI programs that go through the old data should be actively aware of all the possible biases that may emerge. For example, if a certain position has previously been occupied by middle-aged white men, this is a feature that the AI may pick up on as it is repetitive – however, it should not be one of the requirements in the job description. Other demographic biases should be mitigated in this stage as well. The parameters should also be set so that the applicants do not have to alter their behavior when applying for jobs that use AI in recruiting: there should be room for personalization.

In the second section, in sourcing applicants, the literature advised recruiters to build a social media presence. This may be useful, especially because digital natives are accustomed to working with technologies, but it should be pointed out, that digital natives do not seem to be present on the traditional recruiting medias, such as LinkedIn. Therefore, utilizing AI in the sourcing stage should be attempted by other social media presences. A useful AI tool in this phase is, for example, a chatbot that answers the applicants' questions.

After sourcing applicants comes the screening phase. This section of the recruitment process had the most negative associations from the digital natives. However, this is the stage of recruitment where AI is most useful, especially for those job postings that have hundreds or more applicants. The recruiter should be transparent in this phase about their parameters and requirements for the open post, as in the job description phase. This section should also try to provide the unsuitable applicants with possible feedback about why they were not chosen. Using AI in generating the feedback may be useful and more time-effective than replying individually to each applicant. Using AI in the screening process should also eliminate possible demographic biases.

The next phases of recruitment are where the AI is least useful. The digital natives as well as the literature felt that it was important to have human interaction present in the final stages. If the recruiter is using initial video interviews, and using AI to interpret those, the organizations should be transparent about this. In the interview, since it is the phase with the most human interaction, digital natives claimed it was important that their personality was judged by a human. The engaging phase of recruitment should also maintain its human interaction, as it is the introduction of a person into their new position. However, the chatbots may be applicable in this phase as well. The feelings and associations that digital natives, and people in general have about technological devices are still too negative to be able to digitalize recruitment completely.

6. CONCLUSION

This section will conclude the main findings of this thesis. The renewed framework and its applicability will also be analyzed. The implications of this research for international business and suggestions for future research will also be discussed.

6.1. Main Findings

The findings of the research for this thesis attempted to answer three research questions. Those research questions were

1. To what extent have companies integrated AI into their recruitment processes already?
2. How do digital natives perceive the integration of AI into recruitment?
3. To what extent can AI be utilized in recruitment in Finland to recruit digital natives?

To answer the first research question, the literature review provided a thorough analysis of what AI looks like in recruitment at the moment. The analysis of the literature pointed out that AI is still an emerging technology in the HR sector, and it is not integrated extensively into the processes relating to recruiting activities. Despite

AI's pitfalls, the benefits of AI seem to overrule the negative attributes. It was, in addition, found that companies see the future potential of AI, but tend to be reluctant in adopting AI into their processes. Companies were found to have integrated AI in the initial phases of recruitment rather than into the process as a whole, and that HR professionals see AI's potential in doing the grunt work for them.

In an attempt to answer the second research question, a qualitative study of digital natives was undertaken. It was assumed that majority of the authors of the literature as well as HR managers today are digital immigrants, and therefore what is said about AI currently is from a digital immigrant's perspective. Focus groups conducted for this thesis looked for the underlying attitudes and ideas that digital natives have on recruiting with AI. Based on these findings and the findings from the literature review, the third research question was answered. The answer for the third research question was a development of the conceptual framework presented in section 2.4.

The themes that were identified from the focus groups are a representation of the underlying feelings and perceptions that digital natives have toward utilizing AI in recruitment. What was peculiar about the findings for research question 2, was that despite the focus group participants being non-experts in the areas of AI and recruiting, they were able to identify relevant features of AI and they were able to see the same implications of AI for recruitment as the literature did. Therefore, the differences in the perceptions between generations may not be as large as was suspected initially.

Based on the findings from the first two research questions, the third research question, which was to look at to what extent AI can be utilized in recruitment in Finland to recruit digital natives, was answered with explaining and providing the framework for the useful integration of AI into recruiting digital natives in Finland. The main finding of the framework is that AI is in fact a useful tool for recruiting today. The framework claims that AI is most useful in the beginning phases of recruitment, that is, those phases that currently are the most time-consuming parts of the recruitment process. However, the developed framework presented in section 5.7. does state contrastingly to the initial framework provided in 2.4. that AI is applicable in all phases of recruitment – only to different extents.

6.2. Analysis and Limitations of Framework

The framework presented in Figure 2 attempts to guide recruiters for the successful integration of AI into recruiting digital natives. This is useful because it is based on the theoretical applicability of AI into recruitment and modified according to the perceptions that digital natives have on the topic. It is important to realize these perceptions that digital natives have, as they are the future of the workforce, and the integration of AI into recruitment and other areas of business is inevitable.

However, it should be stated that the framework is based on a small sample of digital natives, and therefore may have limitations. The framework cannot be generalized, as it is based only on a very small sample of students at one small institution in Finland. Digital natives consulted elsewhere may have different perceptions on the topic. Furthermore, it should be mentioned that it was not clear whether the participants had actually experienced AI in recruitment, and they were informed mostly by the discussion and the video shown. Therefore, their perceptions may be different if they had factually known to have experienced AI in practice. In addition, the framework attempts to guide recruiters in Finland, but the literature that the framework is based on is not specifically on recruitment in Finland. It is also evident from the literature and the focus groups that the profitable applicability of AI is in recruiting for positions with many applicants. Therefore, the utilization of AI in recruitment is the concern of larger organizations, at least for now.

6.3. Implications for International Business

It was established earlier that the digitalization of the workplace is a prevailing topic, which is why it is important to consider things such as the integration of AI into recruitment practices. Even though this thesis attempts to contribute to the literature on recruitment in Finland, the technological revolution is a global matter. Therefore, the findings of at least the literature review of this thesis are useful for recruiters elsewhere than Finland. Due to the globalized nature of doing business, it is important for Finnish recruiters to consider how they are able to maintain their competitive advantage. AI is a useful tool for strategic HR, as the literature pointed out. Thus, in

order to stay relevant, both Finnish and international corporations need to consider the effects and possible benefits that utilizing AI in recruiting activities has.

Furthermore, the generation of digital natives is entering the workplace globally, which is why businesses around the world should be assessing their ways of doing business from the digital native's perspective.

6.4. Suggestions for Future Research

In order to be able to develop the framework presented in this thesis further research is required. Firstly, more data should be collected from Finnish companies regarding how they use AI in their HR activities at the moment. In general, further research on recruitment in Finland should be made, as that portion of literature was vague. Furthermore, it would be useful to study Finnish companies and their perceptions of using AI in recruitment.

In addition to studying Finnish recruiters, the viewpoints of digital natives should be studied more. The framework, as it is now, is based on a very small sample in relation to the whole population of digital natives in Finland. More focus groups should be conducted to see if the underlying themes are evident in other focus groups as well. To ensure a wide range of viewpoints, digital immigrants should be consulted as well. It would be interesting to see how findings from similarly conducted focus groups on digital natives and digital immigrants would differ. To add to the applicability of the framework, the study should be tried to verify using a quantitative approach in addition to the quantitative approach.

It is important to study the integration of AI into recruitment further, as the technological revolution is unstoppable. Despite the reluctance of HR professionals to use AI in their processes, the usage of AI in business activities in growing exponentially. Thus, it is critical to research, understand and familiarize oneself with this new technology that is making its way into the core of the management of organizations.

REFERENCES

Agarwal, R. (2018) *10 Examples of Artificial Intelligence You're Using in Daily Life.* Available from: https://beebom.com/examples-of-artificial-intelligence/ [Accessed on 11 November 2018].

Apatean, A., Szakacs, E., Tilca, M. (2017) 'Machine-Learning Based Application for staff recruiting.' *Acta Technica Napocensis*; 58 (4): 16-21. Retrieved from: Aalto Finna Database [Accessed on 8 January 2019].

Artificial Intelligence (AI). (n.d.) Available from: https://www.techopedia.com/definition/190/artificial-intelligence-ai [Accessed on 11 November 2018].

Banks, G.C., Woznyj, H.M., Wesslen, R.S., Frear, K.A., Berka, G., Heggestad, E.D. and Gordon, H.L. (2019) 'Strategic Recruitment Across Borders: An Investigation of Multinational Enterprises.' *Journal of Management*; 45 (2): 476-509. Retrieved from: Aalto Finna Database [Accessed on 21 January 2019].

Baraniuk, C. (2015) 'The AI headhunters.' *New Scientist*; 228 (3045): 20-21. Retrieved from: Aalto Finna Database [Accessed on 26 November 2018].

Barber, A.E. (1998) *Recruiting Employees: individual and organizational perspectives*. Thousand Oaks: Sage Publications, Inc.

Benfield, S. (2017) 'How Artificial Intelligence Is Improving Talent Acquisition.' *Talent Acquisition Excellence Essentials*. Retrieved from: Aalto Finna Database [Accessed on 27 December 2018].

Bengtsson, M. (2016) 'How to plan and perform a qualitative study using content analysis.' *NursingPlus Open* [Online]. 2: 8-14.

Braun, V., Clarke, V. (2006) 'Using thematic analysis in psychology.' *Qualitative Research in Psychology* [Online]. 3 (2). Available from:

https://www.researchgate.net/publication/235356393_Using_Thematic_Analysis_in_Psychology [Accessed on 14 March 2019].

Cambridge Business English Dictionary (2019) Cambridge, UK: Cambridge University Press.

Canadian HR Reporter (2018) 'Using AI for recruitment' [Video Recording]. *YouTube Post*, 5 June. Available from: https://www.youtube.com/watch?v=MwBLutG-ZOo [Accessed on 20 February 2019].

Dagmar, S., Björn, W.S. (2018) 'The Age of Artificial Emotional Intelligence.' *Computer*; 51 (9): 38-46. Retrieved from: Aalto Finna Database [Accessed on 26 February 2019].

Dalgleish, S. (2005) 'Recruiting Quality.' *Quality*; 44 (6): 14. Retrieved from: Aalto Finna Database [Accessed on 5 January 2019].

Dennis, M.J. (2018) 'Artificial intelligence and recruitment, admission, progression, and retention.' *Enrollment Management Report*; 22 (9): 1-3. Retrieved from: Aalto Finna Database [Accessed on 21 January 2019].

Dumeresque, D. (2012) 'The net generation: its impact on the business landscape.' *Strategic Direction*; 28 (9). Retrieved from: Aalto Finna Database [Accessed on 26 February 2019].

Edwards, D.C. (2016) 'PEOPLE and TECHNOLOGY: A Winning Recruiting Combination.' *Career Planning and Adult Development Journal*; 32 (3): 45-50. Retrieved from: Aalto Finna Database [Accessed on 20 January 2019].

Faliagka, E., Rigou, M., Sirmakessis, S. (2015) 'An e-recruitment system exploiting candidates' social presence.' *Lecture Notes in Computer Science*; 9396: 153-162. Retrieved from: Aalto Finna Database [Accessed on 27 November 2018].

Great Britain: RES Forum (2019) *Shiny New World? Global Mobility in The Age of Artificial Intelligence and Robotic Process Automation.* The RES Forum.

Joffe, H. (2012) 'Thematic Analysis.' *Qualitative Research Methods in Mental Health and Psychotherapy: A Guide for Students and Practitioners* [Online]. Available from: https://www.researchgate.net/publication/230000572_Thematic_Analysis [Accessed 14 March 2019].

Kronz, E. (2014) 'Acquiring and developing leaders on a global or multinational scale.' *Strategic HR Review*; 13 (6): 249-254. Retrieved from: Aalto Finna Database [Accessed on 7 February 2019].

Krueger, R.A. (2002) 'Designing and Conducting Focus Group Interviews.' *Focus Group Interviewing* [Online].

Kunes, N. (2018) 'The Advantage of Technology in Recruiting Property Management Talent.' *Journal of Property Management*; 83 (4): 33. Retrieved from: Aalto Finna Database [Accessed on 18 January 2019].

Leong, C. (2018) 'Technology & recruiting 101: how it works and where it's going.' *Strategic HR Review*; 17 (1): 50-52. Retrieved from: Aalto Finna Database [Accessed on 18 January 2019].

LinkedIn Talent Solutions (2018) *Artificial Intelligence: Your Secret Workhorse.* LinkedIn. pp. 1-13.

Marler, J.H., Parry, E. (2016) 'Human resource management, strategic involvement and e-HRM technology.' *The International Journal of Human Resource Management*; 27 (19): 2233-2253. Retrieved from Aalto Finna Database [Accessed of 4 December 2018].

Martin (2016) *What is Recruitment? Definition, Recruitment Process, Best Practices.* Available from: https://www.cleverism.com/what-is-recruitment/ [Accessed on 28 December 2018].

McCarthy, J. (2007) 'What Is Artificial Intelligence?' [Online]. Available from: http://jmc.stanford.edu/articles/whatisai/whatisai.pdf [Accessed on 1 February 2019].

Parnas, D.L. (2017) 'The Real Risks of Artificial Intelligence.' *Communications of the ACM*; 60 (10): 27-31. Retrieved from: Aalto Finna Database [Accessed on 11 November 2018].

Pitt, M. (2009) 'Ways to avoid some common recruitment pitfalls.' *Human Resource Management International Digest*; 17 (1). Retrieved from: Aalto Finna Database [Accessed on 21 March 2019].

Prensky, M. (2001) 'Digital Natives, Digital Immigrants.' *On the Horizon* [Online]. 9 (5): 1-6.

PricewaterhouseCoopers (2017) *Artificial Intelligence in HR: a No-brainer.* Netherlands: PwC. pp. 1-8.

Professor John McCarthy (n.d.) Available from: http://jmc.stanford.edu/artificial-intelligence/index.html [Accessed on 1 February 2019].

Rabiee, F. (2004) 'Focus-group interview and data analysis.' *The Proceedings of the Nutrition Society*; 63 (4): 655-660. Retrieved from: Aalto Finna Database [Accessed on 27 February 2019].

Recruitment & Selection Hiring Process. (n.d.) Available from: https://hr.ucr.edu/recruitment/guidelines/process.html#top [Accessed on 4 December].

'Recruitment goes virtual.' (2013) *Human Resource Management International Digest*; 21 (3): 19-21. Retrieved from: Aalto Finna Database [Accessed on 18 January 2019].

Ross, J. (2018) 'The Fundamental Flaw in AI Implementation.' *MIT Sloan Management Review*; 29 (2): 10-11. Retreived from: Aalto Finna Database [Accessed on 4 December 2018].

Ryan, B. (2018) 'Applying technology in hiring.' *New Hampshire Business Review*; 40 (23): 12. Retrieved from: Aalto Finna Database [Accessed on 28 November 2018].

Scharp, K.M., Sanders, M.L. (2018) 'What is a theme? Teaching thematic analysis in qualitative communication research methods.' *Communication Teacher* [Online]. Available from: https://www.researchgate.net/publication/328675228_What_is_a_theme_Teaching_thematic_analysis_in_qualitative_communication_research_methods [Accessed on 14 March 2019].

Scherer, M. (2017) 'AI in HR: Civil rights implications of employers' use of artificial intelligence and big data.' *Scitech Lawyer*; 13 (2): 12-15. Retrieved from: Aalto Finna Database [Accessed on 28 November 2018].

Swider, B.W., Zimmerman, R.D., Barrick, M.R. (2015) 'Searching for the Right Fit: Development of Applicant Person-Organization Fit Perceptions During the Recruitment Process.' *Journal of Applied Psychology* [Online]. 100 (3): 880-893.

Tanova, C., Nadiri, H. (2005) 'Recruitment and training policies and practices: The case of Turkey as an EU candidate.' *Journal of European Industrial Training*; 29 (9): 694-711. Retrieved from: Aalto Finna Database [Accessed on 8 January 2019].

Tolan, T. (2018) 'Why A.I. Will Never Replace Recruiters.' *Healthcare Informatics*; Third Quarter: 44. Retrieved from: Aalto Finna Database [Accessed on 28 November 2018].

Upadhyay, A.K., Khandelwal, K. (2018) 'Applying artificial intelligence: implications for recruitment.' *Strategic HR Review*; 17 (5): 255-258. Retrieved from: Aalto Finna Database [Accessed on 26 November 2018].

Van Esch, P., Black, J.S., Ferolie, J. (2019) 'Marketing AI recruitment: The next phase in job application and selection.' *Computers in Human Behavior*; 90: 215-222. Retrieved from: Aalto Finna Database [Accessed on 27 November 2018].

Varis, K., Majaniemi, N., Wilderom, C.P.M. (2018) 'Recruiting Happy, Socio-emotionally Balanced and Mature Managers in Finland and Elsewhere.' *Journal of Leadership, Accountability and Ethics*; 15 (3): 147-162. Retrieved from: Aalto Finna Database [Accessed on 26 February 2019].

What is Human Resource? (n.d.) Available from: https://www.humanresourcesedu.org/what-is-human-resources/#main [Accessed on 28 December 2018].

Ylä-Outinen, J. (2018) 'Tekoäly muuttaa rekrytoinnin: työnhakijan kannattaa satsata verkkoprofiileihin' (Artificial intelligence changes recruiting: the job applicant should put effort into online profiles). *Kauppalehti* [Online]. Available from: https://www.kauppalehti.fi/uutiset/tekoaly-muuttaa-rekrytoinnin-tyonhakijan-kannattaa-satsata-verkkoprofiileihin/39d16410-8d6f-38f5-9864-d5384a380995 [Accessed on 28 January 2019].

Zielinski, D. (2017) 'Recruiting Gets Smart Thanks to Artificial Intelligence.' *HRNews*. Retrieved from: Aalto Finna Database [Accessed on 27 November 2018].

APPENDICES

Purpose of the focus group:

This group interview aims to see how digital natives perceive the integration of AI into recruiting activities. Because this is a group interview, I encourage you to communicate with each other. The interview will be recorded.

Definition of AI for the purposes of this research:

For the purposes of this research, AI will be defined as any computer programs and systems, software or machines that can be described as intelligent, smart, self-learning or self-correcting. Essentially this means machines or programs that can operate and develop on their own without human intervention.

1. Very generally, what are your initial thoughts on the usage of AI in recruitment?
2. Show video here https://www.youtube.com/watch?v=MwBLutG-ZOo
3. How do you feel about the video and what it has shown you?
4. Have you experienced AI in applying for jobs?
   a. YES: What was the post and how was it used? Was it a Finnish company or something else?
   b. How did this make you feel about applying for this particular post?
5. How would you feel if you knew that your job applications weren't seen by a human until the very end of the recruiting process? For example, your application was seen by a human only before the interview section of the recruiting process.
   a. Would this influence your decision to make an application?
6. Do you think that this type of technology will be the future 'face' of recruitment? How do you feel about that?

Age

Gender

Nationality

Do you have a LinkedIn page and are you active on it?

Process	No.	Criteria
Transcription	1	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for 'accuracy'.
Coding	2	Each data item has been given equal attention in the coding process.
	3	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive.
	4	All relevant extracts for all each theme have been collated.
	5	Themes have been checked against each other and back to the original data set.
	6	Themes are internally coherent, consistent, and distinctive.
Analysis	7	Data have been analysed – interpreted, made sense of - rather than just paraphrased or described.
	8	Analysis and data match each other – the extracts illustrate the analytic claims.
	9	Analysis tells a convincing and well-organised story about the data and topic.
	10	A good balance between analytic narrative and illustrative extracts is provided.
Overall	11	Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.
Written report	12	The assumptions about, and specific approach to, thematic analysis are clearly explicated.
	13	There is a good fit between what you claim you do, and what you show you have done – i.e., described method and reported analysis are consistent.
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis.
	15	The researcher is positioned as *active* in the research process; themes do not just 'emerge'.

Appendix 2: A 15-Point Checklist of Criteria for Good Thematic Analysis (Braun & Clarke, 2006: 36).