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**THE PERCEPTION OF ARTIFICIAL INTELLIGENCE AND
OTHER TECHNOLOGICAL INNOVATIONS AMONG HUMAN
RESOURCES SPECIALISTS**

Master's thesis

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I declare that I have compiled the paper independently and all works, important standpoints and data by other authors have been properly referenced and the same paper has not been previously been presented for grading.

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TABLE OF CONTENTS

ABSTRACT..	4
INTRODUCTION ..	5
1. THEORY ..	8
1.1. Artificial Intelligence.....	9
1.2. e-HRM	14
2. METHODOLOGY	16
2.1. Participants.....	16
2.2. Data analysis	25
3. DISCUSSION	26
3.1. Manifestation of e-HRM.....	27
3.2. Attitudes towards HR	28
3.3. Ambiguity of AI	30
Limitations and Recommendation for Future Research.....	31
CONCLUSION.....	32
LIST OF REFERENCES	34
APPENDICES	37
Appendix 1. Questionnaire	37

ABSTRACT

Human Resource department is one of the curtail business units in each organization. With the development of new technologies and software applications, it is important to realize that people who work in HR have to be familiar with the notion of e-HRM and other technological trends. One of the promising technologies that may change the face of Human Resources administration is Artificial Intelligence. The current study investigates the perception of Artificial Intelligence and other e-HRM technologies among practicing HR professionals who work in the fields of consultancy, leadership, recruitment and other areas. The results of the study show that participants have mixed feelings towards new technologies, being from one hand excited about possibilities of reducing manual work, and from another hand being cautious about providing too much functionality to computing machines. Additionally, besides the functionality of e-HRM applications, the participants paid much attention to the interface and price of the technology. Nevertheless, the analysis of the interviews revealed several phenomenons that are more or less related to the technological innovations but mostly presented as a representation of participant's reality of work with the matter of Human Resources.

INTRODUCTION

Whether the result of technological advancement and its involvement in every sphere of our lives is positive or negative, the one thing we know for sure. It is inevitable. The computing machines took such areas as medicine, finances, education, business and many more. It is hard to imagine completing our daily tasks without the help of the smartphone or laptop. Ongoing development of computing algorithms have not only changed our lives but also provided us with the possibility to work with huge amount of data. Being able to collect, store and analyze information from different parts of the world in the short amount of time have granted us with endless opportunities to change the way we live. According to PR newswire's article (2017), Artificial Intelligence (AI) will mostly likely to replace about 10% of jobs on the market in the recent 10 years. Same article presents the result of the research provided by the Allegis Group, which in one study interviewed 300 Human Resources professionals who hold at least senior level positions. The research showed that participants had "mixed feelings" about the impact of AI on the future workplaces and labor market situation.

Research Problem and Objective

The implementation of new technologies has always been accompanied with a lot decision making. Academics as well as practicing professionals are still debating on whether the usage of AI in HR will be useful or it will remove "Human" from "Human Resources". The AI enthusiasts are full of hopes for the endless possibilities that AI may provide in the future. Nevertheless, we are not sure completely what consequences AI will have on business and society in general. According to Business Management Daily (2017), 35% of HR managers who participated in the Career Builder survey responded that AI "makes them nervous, because it could threaten their jobs". Even more interestingly, 7% of participants said that learning

algorithms may eventually completely replace HR jobs. There is no clear understanding of how HR professionals may use AI and what effect it would have. At this point, when talking about decision making in HRM, we often refer to HR analytics and sometimes to Artificial Intelligence. Zielinski (2017), talks about the danger of growing popularity of AI and its “overhype” around its analytical possibilities at this stage of development. The technology is definitely promising; however, Zielinski implied that there are cases when companies are using AI terminology for the purpose of attracting new customers or investments by “exaggerating the role of AI in their products”.

The aim of this research is to understand the perception of Artificial Intelligence among Human Resource professionals and draw a picture of current state of HRM by comparison of the interviews taken from the active HR professionals and the available articles in the scientific databases as well as open online materials.

Although the research is focused on the participant’s perception of AI, the important component of the study is to understand the current practices of technologies in Human Resources departments in generally. The objective of this paper is to focus on the unique experiences of the participants and draw the picture of their perspective towards technological advancements. The study is aimed to answer following research questions:

1. Do HR professionals see AI as a threat or they are excited about the opportunities it may provide?
2. How familiar Human Resources professionals are with e-HRM? What particular areas are they practicing?
3. What are the current challenges the participants are facing? And what are the solutions of those problems they see?

In order to investigate the subject and answer the research questions the paper provides two hypotheses to be tested.

Hypothesis 1: Human Resources Specialists have mixed feelings towards new technologies, specifically, from one hand, they see Artificial Intelligence as something that can benefit recruitment process rather than replace humans in HR departments, and from another hand being cautious about quality and legalities of AI technology.

In the PR newswire's article (2017), the results of the Allegis Group's research showed that Human Resources practitioners had "mixed feelings" about the impact of AI on the future workplaces and labor market situation. Specifically, participants perceive AI to be 21% exciting, 17% disrupting. Generally, the research made by Allegis Group shows that HR professionals are excited about AI and they do not believe AI will replace the current jobs on the next decade. Another interesting statistics from the same study estimates that talent management will be affected by AI in the following proportions: "training talent (26%), screening talent (24%) and workforce planning (22%)." There are a lot of new emerging technologies and the competitive advantage is in hands of those who are able to adapt faster to the changing criteria. For example, Newman, D. (2017) provided the case of HR platform development company - Prosky, that collaborated with a tech recruiting firm, ZipRecruiter, to develop Artificial Intelligence based recruitment and management application. In their case, AI algorithms help match the jobs to the right candidates making selection process more accelerated.

Finance Snapshot, in FRTP research implied that State bank of India (SBI), is currently working with IBM's developed machine Watson. Watson assists employees by serving as a chat bot and bringing up conversational backing. The same article suggests that the bank is using AI's speech recognition ability to accompany employees on a daily manner. The author of the article

advocates that bots are not there to replace customer support but to complement them with a rich experience (Banks, 2017). One of the aims of the current study is to understand whether HR specialists see AI as a complimentary tool or a threat towards their jobs. Opinions on this matter differ.

According to Etzioni, 2017 AI is able to demolish various professions such as blue-collar jobs, white-collar jobs and other professions such as legal and HR staff. Etzioni provides the results of the Bureau of Labor Statistics' research where they found that from 2000 to 2001, 1,1 million secretary jobs disappeared; 500,000 accounting and clerks jobs have been “obliterated by technology”; and number of other jobs as travel agents and data entry workers have declined.

Hypothesis 2: E-HRM application is practiced among Human Resource practitioners. Operational, relational and transformational e-HRM is widely used by application of different technologies from payroll to knowledge management, in order to reinforce better performance in HR.

Marler (2016), provides the result of the research made among 5665 companies in 32 countries. The results of the study showed that managers who are involved in strategic decision making consider e-HRM as an important determinative tool in their organizations. Even though, the author implied that it is difficult to give a precise definition of e-HRM, the study defined it as: “E-HRM consists of configurations of computer hardware, software and electronic networking resources that enable intended or actual HRM activities (e.g. policies, practices and services) through coordinating and controlling individual and group-level data capture and information creation and communication within and across organizational boundaries.” (Marler, 2016).

The aim of the hypothesis number two is to understand what application are most commonly used and for what purposes. There are different areas of e-HRM such as e-recruitment and selection, e-training, and performance management. We are interested in figuring out, what areas are generally more subjected to digitalization and technological reformation and how the participants see the use of it.

1. THEORY

1.1 Artificial Intelligence

The history of Human Resources department has been relatively well recorded since it came to a development around 1960. We've observed how HR and its functions have been changing through the time. From dealing with documents only to branding and talent coordination, HR has been gaining new perspectives throughout the years. From the other hand, there is relatively less information about rise of Artificial Intelligence, especially, when we are talking about its usage in such units as Human Resources. There are a lot of misconceptions around the AI and many more negative thoughts about its overuse of power. Kazuo 2017 emphasized that the HR department has "access and possession of most organizational data such as behavioral activity of employees" and that is why AI might be particularly useful in this case.

According to (Kaplan 1984), unrealistic expectations about actual capabilities of the technology are one of the main misconceptions out there. We do not know yet what it is capable of and we will probably be learning about it in the upcoming years. The author calls it "AI fever" that more or less is a condition that affected the reader and the writer. Another aspect pointed out by the author is "charlatanism". When companies claim that their products use AI to seem more technologically developed and modern. AI researchers have to understand not only academical and scientific side of the technology but also the business side and the needs of the

companies. If we will keep calling AI “this machine will replace human” there will miss on a lot of opportunities that are waiting for u to be discovered. Not only the technology itself but also the people working with it, in other words researchers and scientists will be gratefully influenced by the commercialization of the field.

According to Hardik (2010), besides being an academic discipline, Artificial Intelligence will quickly become an inevitable part of the commercial filed as well. The profit-making interest to AI has been exponentially growing for the past decade. Kazuo (2017), breaks down theoretical model, the essential form of the AI, by three parts. Firstly, the determination of the numerical values in order to indicate the areas of improvement. Secondly, the collection of data to allow AI relatively weight each factor and predict most likely outcome. Thirdly, applying the created formula to make real life decisions. Ezioni (2017), believes that AI will eventually achieve “technological singularity” and be unpredictable to the humanity, meaning that we will most likely be not able to control them anymore. Referring to Oxford University, author addresses the difficulty of controlling such intelligence structures either by the team that created the intelligence or international regulatory system.

Zielinski (2017), defines Artificial Intelligence as systems that are capable of adapting their functions on their own. The main feature of such system is an ability to learn and perform without being previously programmed to act in the specific situations. In order to be capable of such complex actions, AI has to obtain, store and analyze large amounts of data. There are industries that are more commonly associated with AI such as robotics, voice and visual recognition technologies. Zielinki proposes that by 2020 AI will be “virtually pervasive in almost every new software product and service.”

Possibly, one of the most apparent ways AI is manifested in our everyday life is through software applications and analytics. Why apparent? Because applications (apps) are used not only by the specific group of people interested in IT. Apps are used by billions of people who use smartphones. Recruitment apps are relatively new for the market but they rapidly gain amount of users (recruiters/applicants). Conversational platforms or in other words chatbots are quickly taking over the market and become one of the most convenient ways of communication.

One of the business units that have recently adopted the idea of Artificial Intelligence stepping into the practice is Human Resources Management (HRM). According to Jensen-Eriksen (2016), since 1960 there has been dramatic change in the understanding of what HR department is and what it is responsible for. A lot have changed since manufacturing jobs were dominating occupations and scientific management proposed by F. Taylor was a very popular approach to help us maximize the productivity of an employee. The values have changed and the workers themselves have higher demands regarding the work conditions, company culture, growth opportunities and other factors.

Wright, A. D. (2018) proposed that future workplaces will be dramatically reshaped by the Artificial Intelligence. The key factor to it according to Wright is that AI will be able to adopt according to the user's needs and preferences. In the same article, Wright is quoting Raleigh, N.C “AI is already learning more about our individual roles, behaviors and actions to personalize how we use HR and other business software.” There are six trends that will be most influential in the upcoming year. One of them is Blockchain. Generally blockchain technology is a popular trend right now and it seems like almost fashionable. In the context of the HRM, blockchain could serve the same purposes as it it does in banking or crypto currency. Verification of the candidate profiles through blockchain is predicted to become the common practice in the next 2

years. Additionally, blockchain can be used for the payroll purposes and other compensation management structures. Wright brings up a data collected from at least 2020 Gartner reports. The data states that systems capable of learning adopting and acting autonomously will be the main focus of the technological development.

Gylton (2017) implied that Amazon's new echo technology called "Alexa" has been sold to over five million customers worldwide. Voice activated, Alexa is connecting user's requests to an internet and searching for the optimal solutions for the given requests. Gylton also assumed that we are not too far from combining Alexa's interactive abilities to Human Capital Management (HCM) Software. The author provides an example of a woman who is supposedly on a maternity leave. The woman wants to register the arrival date, however, she does not have access to internal systems. By activating software verbally, she easily could report important information for the human resources department. Templeton (2017) notes that the essential potential of using AI in HR is speech recognition. The author lists companies such as Amazon, Microsoft and their products Alexa and Watson technologies that are able to process natural language and provide the desired information.

Xander is an example of speech recognition AI specifically created for the need of Human Resource departments. Ultimate, S. (10) provides an overview of the "Natural Language Processing (NLP) and advanced machine learning technology" called Xander. The company claims that Xander is able to analyze data elements, process employees' feelings in real time and drive the conclusions based on it. The outcomes of the data processing is supposed to help managers improve organizational performance and make right decisions. Here is a quote provided by the Ultimate, S. (10): "With the capability to understand virtually all HCM data, whether it's a structured data element like tenure or an open-ended text survey response, Xander helps

leaders understand not only what their employees are saying, but how they're actually feeling. These insights help leaders accurately gauge employee sentiment in real-time, and make informed decisions while proactively developing, coaching, and engaging their teams.” It is not clear whether it is ethical to make career choices based solely on the data analysis of AI, however, it seems like we are moving towards it. Xander has been presented on 2017 HR Technology Conference in Las Vegas, Nevada.

PR newswire (2017), emphasized the impact of AI on employee engagement in the following areas:

1. Post-Offer Acceptance and New Hire Onboarding.
2. Re-Engagement
3. Skills Development
4. Career Development
5. Employee Relations
6. HR Compliance and Case Management
7. Attrition and Mitigation

In all of the mentioned above areas of Human Resource practices the main feature AI is able to provide is efficient communication and knowledge sharing. Serving as a communicator between prospective candidates, current employees and HR department, AI is capable of calculating best career decisions, writing follow up emails and providing legal advices. (PR newswire, 2017)

The Association for the Advancement of Artificial Intelligence assigned a panel to study “the value of formulating guidelines for guiding research and of creating policies that might constrain or bias the behaviors of autonomous and semi-autonomous systems so as to address concerns.” (Etzioni, 2017). Etzini also raises the concern that legal issue of AI is underestimated

since it is not clear when AI will gain the amount of autonomy to be considered as a threat. The community still has no reason to worry about the legal side of AI since there's no concrete timeline of its development. Etzini (2017) sees the greatest challenge in the change of community's hearts and minds before the policies will be adopted and we will live in a world full of autonomous machines.

1.2 E-HRM

Computer software that helps Human Resources department to be more productive and automated is generally referred to as Human Resources Information Systems (HRIS) and it has played a dramatic role in the automatization of HR daily processes. HR professionals now have automated the recruiting processes by using Application Tracking Systems (ATS), documentation and other processes are now being digitized. Unnoticed by the end users, HR professionals, the systems have been evolving and becoming intelligent. Computers take over the routine work, therefore, providing more time to focus on the strategic development and learning opportunities for the companies.

According to Iqbal (2018), e-HRM has an observably high positive effect on "managers' perceptions of labor productivity". Additionally, Iqbal advocates that practices of e-HRM influence the quality of HR services and help managers to stay on the same page with HR specialists. Johnson (2016), defines e-HRM as "an organizational strategy" which serves with the purpose of coordinating employee behavior to align with strategic HRM by the usage of appropriate technologies. The main purpose of e-HRM, according to Johnson is to "connect employees, applicants, managers, and the decisions they make." Also, Rahman (2018), proposes that active usage of e-HRM will help promote more successful leadership and employee management which will inevitably lead to achieving goals more efficiently. Obeidat (2016),

addresses positive effect of e-HRM on the productivity of Human Resource departments at implementation of new policies and their practices.

Bhadoriya (2017), points out that there are several factor that influence the efficiency of e-HRM such as support from the management and environmental characteristics. Both should not be neglected as they influence the perception of technology and its performance quality. Bhadoriya proposes, for the successful implementation of e-HRM it is necessary to cooperate between IT and HR departments. Ruël (2012), proposes that the value of e-HRM is dependent on three factors: “efficiency, effectiveness, and HR service quality.” The author further explains that the efficiency actually means the handling HR documentation and any form of personnel data.

Bondarouk (2017), notes that e-HRM can possibly improve qualities of the services Human Resources departments provide and more specifically, the experience of HR practitioners. Bondarouk provides the results of the study which examines the impact of e-HRM on HRM service quality among 140 employees in administrative units. The author identified strong positive relation between the strength of HRM and strength of e-HRM, however, the study showed that e-HRM is acting as an efficient tool if only HRM is capable of using it proactively. Particularly, if organization is not have HRM systems to use the technologies, the author asserts: “they should not implement e-HRM: it will fail.” (Bondarouk, 2017).

Marler (2016), explained that the main purpose of e-HRM is to “automate and replace low-value administrate tasks with higher value skilled tasks”. Even though, there are certain skills required to be able to operate the systems, it is more efficient to be competent in their usage, rather than focusing on performing the tasks that might be automated. Marler emphasized, the time that is no more wasted by administrative routine, might be spent to improve HR policies, strategic business planning an employee relations. Nonetheless, the opinions differ in

the matter of automatization. Gyton (2017), adds that with the rise of automatization, HR specialists are facing another challenge of deciding whether to reskill or redeploy human workforce. The author calls this challenge ethical decision that managers will be facing in the near future.

2. METHODOLOGY

The following research is conducted on the basis on deductive/inductive approach by using semi structured in-depth interviews. The data was collected during March 2018 and analyzed the following month. The data from the interviews has been comprehensively studied, categorized by the method of open-ended coding and categorizing. The data was further put in themes, categorized, compared and put in the hierarchical order. The connections between the emerged themes and it's comparison to the research hypothesis are presented in the data analysis section of the paper. Questionnaire consists of open-ended questions that are aimed to study the participant's perception of the subject and also to expound the topic and add individual opinions, feelings and concerns on the matter. Question used in the study are presented in the Appendix1.

2.1 Participants

In this section of the paper, the brief introduction to the participants' profiles and their description will be given. In order to represent each participant's perceptions and unique points of view, the quotes from the interviews and the summary of the whole interviews will be presented as small cases. The mapping of major concepts and theories, however, will be presented in data analysis section of the paper.

Five people participated in the study, two of them currently work as HR managers, one works as IT Recruiter, one is a Chief Operating Officer (COO) and one HR/IT consultant. Selection criteria for participants did not include specific demographical or ethnographical

characteristics such as age or gender. The interviewees were selected on the basis of professional background and work experience in the field of Human Resources Management. Additionally, all of the participants are either worked or currently working in Human Resource departments. The participants were asked to be interviewed on the voluntary basis and were not offered any financial reinforcement.

The sample consists of 3 females and 2 males. Their educational and work backgrounds varies but most of them are working in the Information Technology related companies. All of the participants were interviewed individually. Case studies were composed on the basis of their personal and professional background.

Interviews were structured in the way that every participant was able to share information about their background and their present work. Questions involved topics regarding their attitudes towards the present status of HRM, and suggestion for the better development; the challenges and problems that exist in the of HR field. The focus of the interview was on the technological side of HRM and their perception of Artificial Intelligence as a new trend.

Interview topic guide consist of multiple open-ended questions that were the same for every participant. Due to the diverse background of the participants and their individual approaches toward management the questions varied for each participant. The phone tape recorder was used during the interview to document the answers for further transcription and analysis.

Firstly, the participants of the research were contacted and told about topic of the research. They were told that the study describes the perception of Artificial Intelligence among HR professionals by looking from their point of view. The participants were informed beforehand that the interview was individual and would be recorded and used further as the

research material. The average interview took about 40 minutes, but there were no specific time limitations. The participants were interviewed at their workplaces and audio recordings were made.

The participant 1

The participant number one is a female who is currently working as an HR Business partner in one of the financial companies. The participant has not particularly studied Human Resources however took HR courses at Estonian Human Resource Management Association (PARE). The organization provides the trainings on Human Resources Management and other related topics. The participant mentioned that she started her career as an office assistant. She further was hired as an HR assistant. Here is a quote that interestingly represents her attitude towards her personal experience: “Somehow I ended up in HR”. Throughout the data collection process, we can see this trend will be repeated. Other participants have similar experiences joining HR department after taking some other administrative positions in the company. The participant has around 10 years of professional experience in international organizations. Currently, she is working in financial company where she is responsible for HR daily operations and recruitment.

There are several HR and recruitment systems that the participant uses for HR operations: “PeopleHR”, “Workable”. Google environment including a lot of Excel spreadsheets. She has mainly experience working with different application systems such as “Workbuster”, “Fairsail”, payroll systems such as “Dakar” and accounting programs such as “Navision”.

The participant finds those systems particularly useful and important for daily HR activities. The advancement of such systems are especially advantageous in the sense of onboarding processes when different departments such as accounting or Information Technology

department have to be involved. E-Recruitment process is happening in the company where she works throughout the “Workable” system. Once job add is posted in there, it is automatically published on LinkedIn, Glassdoor and other specific channels for Estonian job boards. As mentioned during the interview, the main amount of applications coming via LinkedIn and Glassdoor. The participant specifically emphasized the pipeline for each candidate life cycle. Depending on the stage of the application process, the stage is represented in the pipeline and as she says: “All end up in Workable and it is very convenient”.

The participant said that she has “mixed feeling about Artificial Intelligence”, here is a quote that represents the thought on AI: “I don’t understand exactly how it works”. She mentioned that she is familiar, some recruitment companies are using AI for the e-recruitment. Particularly stands out the phrase of the participant: “It’s a little bit scary”. She brings an example of a video interview made by machines. Even though the machines are reading the facial recognition and little emotional patterns “I do not like that there is no human touch. It is going away. It may influence the candidate experience and make they feel less important and not worthy of a recruiter time. I can’t imagine this happening in a company like ours”. The participant number one pays a lot of attention to the human interactions at the works space and feels like Artificial intelligence is a threat towards it. The quote from the interview: “If we take away human factor and automate more than we should, it will affect the company because the are people who work in the company, business side as well.”

Participant 2

The participant number two is a male who has a broad experience in the business development sphere, business software building, HRMS applications and analytics. He is working as a technology consultant and an owner of a company with about 15 years of

experience in IT sphere. Half of that time he was highly involved in the development of different infrastructures for Human Resource departments as HRM software developer. And for the last two years he has been working as a consultant for the companies to help HR team choose HR systems. Here is a quote from the interview: “HR tools are complex including recruitment, employee development and payroll. I help companies to choose what tool they specifically need”. When asked about the size of the companies he is working with the participant said “I believe the size of companies does not matter because everyone needs a proper tools to use”. According to the participant, HR managers have to be strong enough to push their needs to management and insist on using HR tool if the amount of employees is more than they can handle. The participant pays high attention to HR as a business unit and sees HR as a fundamental part of the organization and sometimes, according to him, the role of HR is underestimated as well as functions it performs. Having experience in software development, he believes that HR managers do not always know what they need specifically: “There is a difference between what HR manager wants and what HR manager needs. HR managers are not mathematicians, they don't know how to collect and deal with data”.

This quote represents perceived lack technological knowledge or formal education in HRM among practicing HR professionals. During the recent years, the competencies HR managers need to obtain have changed and broaden. HR team has to be technologically competent to be able to handle large amounts of applicants and other concern. As mentioned above, such organizations as PARE have taken the role of educators and with their help HR education is now available to interested people.

When asked about AI, the participant said: “I think there is a future for AI and especially it's usage along with people analytics, however, I do not think that it will happen any time soon

in Estonia.” He represents the concerns of the local HR community being not ready for the technological changes and educational steps required to take if the changes will take place.

In contrast to the first participant, he sees AI as a useful addition to HR which will not represent any danger to its “human side”. Here is the quote from the interview: “HR should be all about people but realistically it is most of the time about doing administrative job, that is hated by HR managers, so when AI comes in, it may completely take us away from it. Focus on talking with people, talent development programs and consulting. Only the areas that do not require creativity or empathy can be automated”.

Second participant has more experience in Information Technologies, therefore he was able to expand the topic of AI and other systems and shared his opinion on its implementations: “I don’t think HR is ready for AI and even if it is, it’ll be too expensive for some time”.

Participant 3

The Participant number three is a female who has more than four years of experience in Human Resource department, more specifically as being Tech Recruiter. She works in IT Industry and responsible for recruitment management, sourcing and onboarding. Before that she has been involved in sales for about 10 years. She has unique point of view on recruitment saying: “Recruitment is all about sales”. She strongly believes that good employer branding is one of the core strategies now a days, because perspective candidates not only look at monetary compensation but at the employee brand, company’s culture and other internal and external factors. She studied communication management and journalism which also helps a lot, because as she says a lot of marketing is involved in recruitment: “Quite logical, I started doing employee branding and moved to recruitment”. Having experience building an onboarding from scratch, she realized that it is something she liked. The participant also organizes HR conferences in

Tallinn with a purpose of building community and inviting not only innovative HR specialists, but also those who work using more traditional ways to share the new trends and technologies with them.

As per her daily use of technologies, she is using different HR systems, LinkedIn and other recruitment channels. She refers to AI as: “For me AI is something that helps you deal with work that you simply have no time to deal with. Everybody wants to be even better, do the job faster and it can actually help.” She does not express any fears or concerns about AI but rather seems to be excited about the opportunities it can provide. Here is another quote: “They are maybe afraid that technologies will take away their jobs, but it is not true, it is the biggest misconception”. Here she refers to more traditional HR managers who according to her are “very old school”. The participant states that the aim of the technologies is to help people not to get rid of them and that humans are irreplaceable. She puts emphasized that a lot of manual work should be done by the system and that technology is particularly helpful for being more accurate with data.

Third participant is particularly interested in the gender inequality topic and has mention the pay gap between man and woman and a glass ceiling that is a big issue, according to her. She says the communities have to be created to overcome those issues and therefore, she organized different events such as conferences for open discussions.

Participant 4

The participant number four worked in people management for more than 10 years and specifically as a part of HR department for 7-8 years. Her title is People and Organization Manager, however, she is also internationally accredited Coach-Facilitator and CIPD qualified HR professional. She is responsible for onboarding, recruitment, building the culture and internal

as well as external relation of the company. Fourth participant shares some of the views with the previously described cases, however, she has a strong opinions on the role of technologies in HR department. She also believes that people are no more looking only at the financial reimbursements but at the culture of the company and it's brand on the market. She seems to be particularly interested in the individual approach to each company recruitment processes, turning recruitment in a game form for the company she works in. Here is a quote that represents her style at work: "I'm not and administrative worker, I'm more like strategist and culture builder and employer brand establisher". Currently she is working as a People and Organization manager in the company who is in the sphere of online entertainment. All the HR procedures and other project management tracking is happening via one program called "Wrike".

For the recruitment she uses mainly LinkedIn, company website, meet frank and Jobbatical. "I'm a people person, I have different feeling when you say Artificial Intelligence". She would like an assistant from AI but not a substitute for the human being. The participant has a strong opinion about AI having no ability to replace humans in HR department: "AI can definitely support recruitment but human need is definitely needed. Only human with emotional intelligence can carry for of the tasks? Can AI possibly learn mimic emotional intelligence? And Data driven HR seems a little bit bad to me". The participant number four has in a way outstanding personal view on the development of AI. As described in the interview, she is cautious about the technology and she sees a threat of the "human touch" the the Artificial Intelligence.

Participant 5

The participant number five has educational background in Social Psychology as well as Psychotherapy. He has more than twenty years of work and managerial experience in Human

Resource filed. Currently, he is holding COO position in a financial company. While pursuing his Doctoral degree, he has also been working as a lecturer in one of the Tallinn universities.

The participant started his career as a Communication Manager and further moved to Human Resources, when he was hired as an HR development manager. At the moment, he holds a title of COO and one of his responsibilities is overlooking the activities of HR department.

The participant has a positive view regarding new technologies and especially Artificial Intelligence, however, he raises the concerns of ambiguity of the field. Here is a quote to represent his feelings toward AI: “It is hard to talk about it because the terms are not well established and accepted, I think people understand them very differently.”

As other participants, he mostly expressed the possible usage of AI in recruitment: “If you could collect specific data and let’s say what personality traits are needed to be successful at our company, the machine could have done pre selection for us. Learning how we are operating behaviorally and somehow use it for decision making in recruitment.”

When asked about technologies they currently use in HR department, he pointed out that they use four different applications and different ways for measuring employee attitudes, wellbeing and behavior: 360 degree feedback, surveys, performance appraisals, daily meetings. For example, attitudes, wellbeing and behavior are tracked through “Blue Monday” application. Daily, employees are able for further analysis of team metrics and individual meetings with discussions. Additionally, he mentioned that with upcoming General Data Protection Regulation (GDPR) they have been using a lot of e-training courses related to data protections. The courses are held in the company to not only prepare HR department but any other structure that is dealing with personal information.

2.2. Data analysis

In the following section of the paper, the data collected from five interviews were summarized and categorized into themes. The aim of this research was to understand the perception of Artificial Intelligence and e-HRM among Human Resource professionals and draw a picture of current state of HRM from emic perspective. Each theme represents the reality seen by participants and gives analysis of their perception of Artificial Intelligence, e-HRM and other emerged topics. The evidence from the study suggests that depending on the topic of the discussion, the opinions of Human Resources specialists either varies greatly or remain relatively similar. Despite the research topic and interview questions, there are some other interesting topics that emerged during the interviews that represent the participants' reality, however, not related with the general topic of the research. The Table1. Presents the general themes emerged from the interviews and the categories that stand by them.

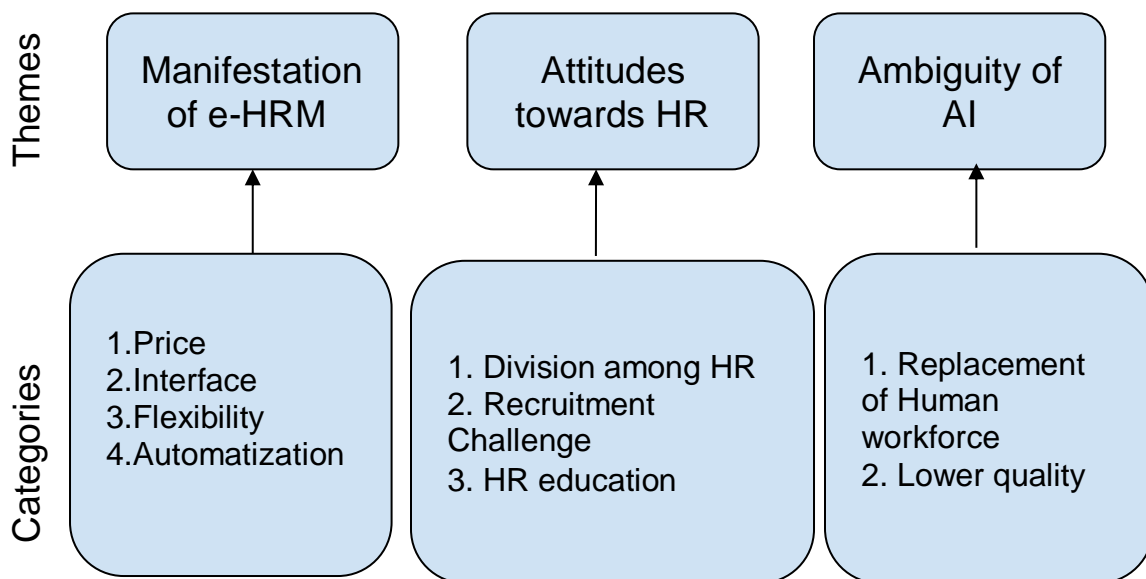


Table1.

Different and even contrasting ideas and topics emerged through the data analysis, however, there were similar trends that were represented in each interview. Relevant phrases, sentences and words were highlighted into codes and further grouped into categories. The categories helped conceptualize the data and present in into more general themes. There are three themes: Manifestation of Artificial Intelligence, Attitudes towards Human Resources as a field and Obscure Artificial Intelligence as a challenging yet fascinating phenomena. We are going to discuss each theme and draw the hierarchical connections among them.

3. DISCUSSION

Business Management Daily (2017) proved the results of the survey done among HR specialists. The results are following: 13% of see AI as a regular part of their daily work; 55% say it will happen in the next five years, 35% say AI makes them nervous, 7% of HR managers think, a robot can do all their job. When drawing connections to our research we can see that he results are quite similar. Despites small sample of the research, we were able to understand that our participants have mixed feelings towards AI, being either excited about it or seeing it as a threat to a quality of HR services. One similarity is observable throughout the data analysis is that HR specialists do not see AI as being something that is widely used nowadays. It is more the phenomena of the near future.

The hypothesis number one suggests that Human Resources Specialists have mixed feelings towards new technologies, being cautious an excited about it at the same time. The results of the interviews showed that participants have positive perception of AI but they do have concerns on how AI will be implemented, manifested and executed in everyday life. Qualitative analyses of in-depth interviews have proven the hypothesis number one, however, due to the small sample of the research it is hard to draw the statistical conclusions and provide percentage of the responses.

The case studies were aimed to represent the realities of the participants' unique experiences, perceptions and points of view.

The hypothesis number two suggested that e-HRM applications are widely used and valued in HR departments along with playing valuable role in executing everyday HR tasks. More specifically, e-HRM is used for training and e-learning, performance management, selection and e-tests, recruitment and onboarding. The participants of our research have totally named twelve applications that they use for HR operations: four of them HR operation software to manage current employees, time-offs and payroll; seven of them are recruitment applications. The majority of the automated tasks are predominantly in the sphere of recruitment, such as posting open positions, selection of profiles and communication with candidates.

In the following part of the paper, we are going to discuss each theme more comprehensively and link the findings to the available theoretical background.

3.1 Manifestation of e-HRM

When talking about the “face” of new technology, whether it is AI or another application for e-HRM, few aspects of it seems to be more important than others. More specifically, price of the technology and its interface. When the participants described the software, the first thing came as a concern is the price for the management of the system. In order to receive better program the company has to pay bigger price for its use. Even if the price is affordable, the additional features have to be additionally paid. This factor seems to be important criteria when management is choosing the applications. Considering individual need of each organization, the software, especially smart one, has to be easy to use and flexible to adopt.

Flexibility of the program is just as important as its interface. Depending on the company's need, size and business specifics, HR managers want to be able to adopt new

technologies toward their unique needs. Interface has to be easy and understandable. As one of the participants said, HR managers are not mathematicians. The main feature the participants seem AI doing is operational HR, documentation and more specifically recruitment. Singh (2018) acknowledges that many organizations are already using chat bots usually for live chats with customers and sometimes with press. Albinus (2017) observed that people who work in HR want to use easy manageable software such as platforms that integrate several applications and available to all employees on computer or mobile devices. Besides, recruitment applications, HR professionals are paying attention towards managing current employees and doing it efficiently. Additionally, Albinus suggests that HR is seeking for feedback from employees on their services, and by using AI applications is easier to do so.

AI performance can be measured by different metrics to be used as measurements for the effective candidate sourcing: hiring velocity, productivity, time to hire, current pipeline, referrals, activity, candidate breakdown. Being able to measure the effectiveness of AI and compare it longitudinally would be an important feature when plus when choosing the software to use.

3.2 Attitudes towards Human Resources

Under the theme “Attitudes towards Human Resources” we have put the concept that are relevant to the personal challenges of the participants their view on the field and emerging technologies in Human Resources Management.

Firstly, through the analysis of the interviews we figured out that one of the most prominent challenges that HR professionals face is recruitment. Each participant expressed personal struggles concerning recruitment of professional staff. There are several reasons, participants find recruitment more difficult than the other areas of HR filed. Firstly, companies

want to hire professional staff with years of experience; however, they are not always able to afford the salary expectations of such individuals. There are candidates who have required technical skills that are in high demand; therefore, competition for qualified IT professionals is high. Nowadays, companies are not afraid to hire internationally. One of the participants mentioned that they flew one perspective candidate from North America, so he would be able to see what it is like to live in Estonia and possibly accept a job offer in their company.

Another challenge for the recruiters is employee branding. Each of the participants has a knowledge or experience in recruitment and its processes. Besides traditional pipeline of the recruitment, the recruiters have to act as creative marketers to promote the benefits of working in a particular company. Here is a quote from the interview: “People not only work for money”. The participants expressed their struggles of having constantly search for new ways for promoting their organization by either participating in Start-up events, conferences and other public seminars.

Secondly, the participants of the research see the lack of formal education in the field of Human Resources as a current problematic situation. One of the participants come from office manager background, one from marketing, one from IT and two have specifically received formal psychological or HR related education. Human Resources education is relatively not as popular as other business fields such as economics, IT or legal. As it was mentioned previously in the paper, the importance of HR department as a business partner is sometimes underestimated and that may lead to the negative consequences such as high turnover and therefore money loss.

Thirdly, the participants have expressed the perceived division among the Human Resources community, more specifically, young and open minded HR specialists who are ready to try new trends and learn new technologies, and the group of the professionals that is more

traditional, so called “old generation” of managers who have difficulties switching to automatization, new approaches to leadership and employee management.

3.3 Ambiguity of Artificial Intelligence

One of the most important findings in the research is that HR specialist or people who are related to HR operations and recruitment, have little understanding of what AI is and how it may affect future workplaces. However, it is one of the misconceptions that they have to understand the technicalities of AI to be able to operate with it. Here are two quotes from two interviews, regarding one of the famous recruitment applications from Estonian market:

1. “Maybe one day Meetfrank will move from pseudo AI to real AI”
2. “For example Meetfracnk, very classical and typical example of AI, I really like what they created.”

The participants see the same application in a different way, explaining the way it works as either being based on AI technology or “pseudo” AI. Different opinions and understandings on how recruitment applications are functioning may create misconceptions and confusions among HR community. Even though, as it was mentioned previously in the paper, HR managers are not IT engineers and they do not have to obtain technical knowledge regarding the functionalities of the software, they do need to understand the principals behind the work of the applications based on it. One of the participants, who is more familiar with the sphere of innovations provided a case: if AI based recruitment app has learned that engineers are mostly males, then to find, for example QA engineer, AI will provide higher score to males, therefore listing males firstly as potential candidates. Artificial intelligence and all the promising stories about it are in the heart of todays’ pop culture (Sumser, 2017). Sumser implies, self-driving taxies are ready to pick us up from home, fast learning robots are taking over manufacturing and

financial sectors, intelligent assistants are ready to answer any inquiry. The same author describes HR intelligent software as one that self-corrects own mistakes: “gets better with a usage.” Importantly, he raised the question of responsibility of the machine learning. In other words, who will be responsible for the wrong learning outcomes of Artificial Intelligence? The author further explains that learning algorithms base their decision-making on culture. It makes sense, but it is impossible to set the culture as something accountable for example for biased or sexist’s recruitment decisions.

Having basic knowledge about functionalities of e-HRM and AI behind it, is a necessity of our time. Additionally, being able to choose proper software based not only on the requirements and size of the organization but also on the technical background of it.

The solution towards more open minded Human Resources departments is a critical mass of people whose minds are changed and directed more towards new technologies. Even though, the opinions on the matter of Artificial Intelligence vary among each participant, several trends have been noticed throughout the interviews. One of the concerns regarding AI is whether it will replace HR specialists or not. Some of the participants reacted negatively towards the idea of AI taking over HR and some of the participants did not see AI as a replacement but rather help to people. According to Albinus (2017), AI and data drive HR will be “the most powerful new disruptor, as almost every HR product is now using AI and algorithms to give managers and HR professionals more intelligence about their organization.” The author implies that AI will greatly change the face of Human Resources and help organizations be more rational and efficient.

Limitations and Recommendations for Future Research

There are several limitations to the study that needs to be considered. Firstly, the research is a pilot project that involves only five participants. Even though, the participant profiles were

analyzed and presented as cases, the analysis of larger participants sample will better represent the realities of Human Resources departments. Secondly, the study has been limited geographically; all the participants have been selected and interviewed in Tallinn, Estonia. Larger pool of participants from different countries would benefit the research by adding unique experiences and backgrounds to overall resultants of the study.

Additionally, the nature of qualitative research supposes the analysis of the data to be done by the author. Despite study's deductive/inductive approach the research is subject to biases of the author's representation of the participant's points of view. The data from the interviews was studied, categorized by the method of open-ended coding and categorizing. The data was further put in themes, categorized, compared and put in the hierarchical order.

Future research may include both quantitative and qualitative aspects of the research. By adding questionnaires regarding participant's attitudes towards emerging technologies and Artificial Intelligence, additionally the current practices. The qualitative part of the research would be focused on the unique experiences and perceptions of each individual.

CONCLUSION

Artificial Intelligence is predicted to have great impact on Human Resources field: "AI is able to read resumes, compare them, create job and identify well-description's, New software can read résumés, compare them to job descriptions and identify well-qualified applicants from a sea of online résumés. It promises greater objectivity and greater expertise than managers can bring to the process" (Business Management Daily, 2017). The goal of this research was to create an understanding of how people who work in Human Resources or specifically related to HR perceive new technologies and more specifically Artificial Intelligence. As a valuable business unit, HR need to be ready to adopt to a fast changing environment and take advantage

of emerging technologies for better productivity and more efficient daily operations. Despite the differences in the perceptions of the participants, there were several trends that followed up throughout the interviews and were highlighted in the discussion part. In order to understand how familiar the sample of participants is with new technologies, we have been also focused on the current practices of technologies in Human Resources departments in general.

The interviews have been analyzed and presented as cases. The results of the interviews showed that the participants are generally familiar with the notion of e-HRM and have been actively practicing e-recruitment. Nonetheless, the other areas of e-HRM have not been so prominently functioning among the participants' daily routines. Lastly, we discussed several challenges that the participants are facing, the challenges seem to have similar dynamics and repeat through the cases. The current reality suggests that there are major difficulties in recruitment processes, despite the usage of numerous applications and candidate sourcing channels, recruitment has been highlighted as one of the most difficult parts of the current HR practices.

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Appendix 1

The questions during semi structured interview:

1. What is your educational and work background?
2. What does your daily routine looks like?
3. Are you familiar with e-HRM? What it is and how it works?
4. What programs, applications and other technologies you use for HR operations?
5. What is your opinion regarding current HR practices?
6. Are they efficient? If not, what particularly?
7. What do you think about Artificial Intelligence in general? Are you familiar with it?
8. What do you think about the usage of AI in Business?
9. Do you think there is a use of AI in HR?
10. How do you think HR could benefit from AI?
11. Can AI potentially harm HR? If yes, in what ways?
12. Do you have experience of using AI at your work?
13. Have you ever used HR analytics for business planning?
14. Are you familiar with the notion of data driven HR?
15. What are the current challenges HR is facing? How they can be overcome?
16. How do you think HR will look like in the future?