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EMPLOYEE PERCEPTIONS OF TRANSITIONING FROM
PRIVATE TO OPEN OFFICE
ON THE EXAMPLE OF ICT COMPANY

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I hereby declare that I have compiled the paper independently and all works, important standpoints and data by other authors has been properly referenced and the same paper has not been previously presented for grading. The document length is 13552 words from the introduction to the end of conclusion.

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ABSTRACT

A qualitative study is performed in global ICT company in Estonia to explore employee perceptions of transitioning from private office to traditional office which had taken place one and half years prior to the research. This study is concentrating on most common factors influenced by the open layout which are cost, noise, privacy, sense of community and communication. Decreased cost and a higher sense of community being positive factors and higher noise and lack of privacy negative factors. There are contradicting findings on how communication is influenced.

A qualitative study in a form of semi-structured focus group interviews is performed and in addition, quantitative study and a semi-structured interview with the chairman of the board are conducted to complement the results. Results show, that noise and privacy are most negatively impacted and communication and sense of community mildly impacted. Interviews also reveal additional factors such as dissatisfaction with the need to move to the meeting room in case of phone calls and conversations and the growing trend of working from home due to that. Recommendations are given to develop working conditions in an open office environment.

Keywords: Open office benefits, private office, office communication, open office risks

INTRODUCTION

Technological advancements have led the world to change in various ways and have forced business owners to constantly seek for new opportunities to increase profitability. One key aspect of a successful business is the people working there and therefore attracting and maintaining key talent is a crucial skill for a successful organisation. There are various ways of attracting talent who, through achievements and personal growth, would be empowered to succeed and grow the business, and providing pleasant working conditions is one of them. This encouraging environment needs to be achieved with as low cost as possible and is forcing business owners to find a balance between cost and comfort. Decades ago a trend of removing walls in the offices started which has led to the continuous rise of open office environments. Besides lower cost also enhanced communication was considered as one of the key benefits of working without walls and doors. But despite the various researches there is still not sufficient evidence proving open layout also being good for the business in general, considering different types of jobs and characters. On the other hand, cost saving seems to be easily justified due to space-saving aspect, so the trend continues.

This leads to the following **research problem: lack of evidence on the impact of open office to employee satisfaction and productivity.**

The subject of this research paper is one multinational ICT company in Estonia. One and half years ago its Tallinn office moved from an older office building in Järvevana tee, where the majority of the employees were sitting in private rooms with 2-3 persons, to Ülemiste City modern open layout type of office building.

The goal of this research is to find out, which factors and in which magnitude are impacting an employee in an open office who has moved there from traditional office based on the example of an ICT company.

This research aims to answer the following questions:

1. What is the history and reasons behind the evolution of office type?

2. Based on previous studies what are the different factors that play a role in employee's satisfaction and ability to perform in an open office environment?
3. In the chosen company what are employee perceptions of those predefined factors based on the quantitative and qualitative survey?
4. What are the consequences of moving to open an office in the chosen company?
5. Based on employee perceptions what are the possibilities to improve the open office environment?

In the first chapter brief history and background about office developments are given and most important positive and negative factors based on previous researches in the last 50 years are explained. According to literature, main benefits are decreased cost and an increased sense of community, and risks are higher noise levels and lack of privacy. Earlier researches on the field used in this paper date back to 1970s, where mainly topics such as privacy and personal well-being seemed to be of interest for researchers. There have been several studies exploring how communication is impacted and therefore both positive and negative discoveries are brought up in this paper.

Chapter 2 explains research methodology and the reasons behind choosing current approach, also how sample was chosen, data collected and analyzed. This research paper is using mainly qualitative approach conducting semi-structured focus group interviews with employees who used to work in private rooms in the old office and today are in the open seating area in the current office. In parallel quantitative approach was used to gather numerical data using a short questionnaire that was sent out to the same pool of people. Interview results were discussed in a semi-structured interview form with the chairman of the board to get the chairman on the board point of view.

In chapter 3 the results from interview analysis are presented which are grouped based on main factors from theory. In addition to known factors, such as communication, noise, privacy, cost, and sense of community, another dimension of employee dissatisfaction and its consequences are revealed, which is increased use of home office due to "unsuitable" working conditions in the new office. Findings from qualitative research are flavored with results from the questionnaire and chairman of the board's view. The chapter ends with research reliability, validity and limitations.

Chapter 3 is followed by a conclusion.

Appendices contain a theoretical summary in table format, interview guidelines, link to interview transcriptions and questionnaire questions together with results.

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1. THEORETICAL FOUNDATION

In this section, the author gives a theoretical overview of the open plan office concept and background about the major milestones in office plan development and triggers behind it. This is followed by an analysis of positive and negative aspects of the open plan office type based on previous researches and other secondary sources. The researched components include open plan office type from a cost point of view and its role in employee communication, noise, privacy, and sense of community which are directly related to employee productivity and more broadly to company success and profitability.

Due to the connection between a company's success and people working there this research is connected to resource-based managerial framework theory which examines performance differences of organisations based on their resources (Miles 2012). Main idea behind this theory is that, instead of market power, collusion, or strategic behaviors, organisations are competing against each other on the basis of their resources and their capabilities, and the key to survive and thrive in competitive environment is to select most suited and efficient ones for the organisation (Miles 2012).

There are different types of office designs ranging from traditional and closed private offices, that accommodate one or a small number of people, to open plan offices where many employees are sitting in one large setting. Open plan offices also differ based on design complexity in spatial layout, "bull pen" being one of the most basic ones consisting of rows of neatly arranged desks, and "landscaped" offices that include "systems furniture" like panels of varying heights to separate the workstations (Brennan, Chugh and Kline, 2002). Theory part in this research does not differentiate between different types of open plan offices based on their complexity, therefore groups all open office types into one category.

Synonyms for traditional offices such as cellular offices and closed private offices are widely used in literature and will also be used in this research. Open office synonyms in literature and in this research are open layout office, open plan office, open design office.

1.1. Open office evolution

Open offices were first introduced in the 1950s and became more popular in the early 1970s when many companies started to change from traditional to open design type of offices primarily for economic reasons (Duffy, 1997). Also, open offices allowed business owners more flexibility to change the layout according to organisational and structural changes and, according to common beliefs at that time, enhanced communication and collaboration between employees (Brennan, Chugh and Kline, 2002).

When open offices were first introduced, the most dominant organisational mode was office as factory (Duffy, 1997). Interaction was low between employees, there was not much autonomy and work was individual in nature. Throughout the last century employees in offices were mostly filling clerical tasks, such as data processing and administrative operations (Peterson and Beard, 2004). This explains well the rise of open office popularity, it was important to be efficient in space and people were treated as machines because of the type of tasks they were fulfilling. It was also important to keep an eye on “machinery” to make sure they are working and an office with no walls was well suited.

Many researches were conducted at that time to evaluate the impact of the office environment on people and their productivity. For example Oldham and Brass (1979) proved that there is an impact on physical environment on employees work quality (Oldham and Brass, 1979); Wineman gave recommendations for planning and design of office spaces where worker satisfaction and job performance would increase (Wineman, 1982); Davis conducted research how physical settings influence office work (Davis, 1984). The trigger for these researches can be explained partly due to the technological shift in Information and Communication Technology which introduced new ways of working and moved the world towards automation allowing such tasks to be fulfilled by machines. Information era was followed by knowledge era, where the importance of people was rising and employers had to start thinking more consciously how to retain its employees and treat them in a way to achieve maximum efficiency and productivity because computers alone were, and still today, are not enough for company’s success.

According to Clements-Croome (2000) productivity at a workplace depends on following clusters such as personal characteristics (phase in career, profession and skills); social factors (relationships with colleagues, manager); organisational factors (structure and management style); and physical

factors (workplace layout, indoor climate, air quality). There are also external factors impacting employee productivity, like private concerns, globalization, employment market (Clements-Croome, 2000). In order to nurture employee productivity, all above areas, that can be influenced by the employer, should be considered in case achieving maximum results is the goal. Current research is to explore how the impact of physical factors, such as the change from traditional to open office environment, on employee productivity.

Today the trend of open office continues but it is done in a more thoughtful way. It is clear that the work environment impacts people and in order to get best results out of employees, office has to be set-up in a way that it supports the business objective. Globalization and growing competition push ambitious business owners to think creatively about office design, especially in areas where talent is scarce and well educated. One possibility for this, when designing an office, is to hire “workplace happiness consultant” to help to design most suitable office environment as described by Pryce-Jones, a professor at London Business School (Pryce-Jones, 2011).

1.2. Benefits of open plan office

There are high expectations towards open office impact on productivity, most mentioned one being the financial aspect as it allows to place more people into less space which will help the business to be more profitable (Heerwagen, 2004). The open layout is also believed to enhance communication and information sharing between people because there are no boundaries separating them (van der Voordt, 2004; and others), and this will help to speed up time to market processes (Haynes *et al.*, 2017) which in turn is also positive for productivity. Innovative office environment is also attractive when hiring professionals as it helps to convey the message of an innovative workplace.

In this chapter most mentioned open office benefits will be explained and those are: impact on cost, sense of community and improved communication.

1.2.1. Cost

There are two aspects in open office impact on company financials: how much does it help to increase profit and how much does it help to save cost. The BOSTI study (Brill, Margulis, Konar,

& BOSTI Associates, 1985) was the first significant study to bring out the connection between financials and office design improvements so that the company can perform cost-benefit analysis and calculate payback periods. Based on those experiences Brill (1993) explained how providing a supportive physical environment increases productivity benefit equal to at least 2 to 5 percent of a worker's annual salary across all job categories.

Since property cost is often the second highest cost after wages (Bootle, Kaylan, 2002), it is evident that business owners strive to decrease cost, and relocating its employees to open space caters that need efficiently. Open office also allows relocating different people and teams within the given space according to organisational needs in case there is re-structuring or other changes. Also in case of a new project, it is convenient to allocate people working for the same project to sit together to enhance communication within the team. More cost saving can be achieved through even smaller premises using "hot-desking" in which employees do not have their own desk and are only given one when they need it (Dictionary.cambridge.org, 2019). This can trigger a situation when there are fewer seats than employees in the office.

It is evident, that moving to open plan office will help to save cost, including on maintenance, rental, land, or build, and to achieve lower services and security charges (Duffy, 2000), when more people are fitted into less square meters. Office occupancy density and utilization study in Britain shows that average UK office density has increased rapidly since 1997 (from 16.6m² per person to 9.06 m² today; British Council of Offices, 2018). This proves that the space provided to one person has decreased over 45% during the last 20 years.

Above raises a question, how much smaller can an office go in order to maximise savings. Theorists differentiate here between two types of densities. Those are social density (occupants per office) and spatial density (m² per occupant) (Duval, Charles and Veitch, 2012). The two are clearly related: in case social density increases, spatial density decreases. It was found that employee satisfaction decreased in open plan offices as compared to traditional, also when social density increased and spatial density decreased (Duval, Charles and Veitch, 2012). According to this research, employees are more satisfied when they have more space per person and there are fewer people spread out in one office space.

Although moving to open office will help to save cost, there needs to be a thorough evaluation of the physical environment aspects so that the move will not have a negative impact on employee satisfaction and productivity.

1.2.2. Sense of community

Besides cost-cutting benefits, open office structure is also believed to have an impact on company culture. McElroy and Morrow (2010) researched employee reactions to office redesign and their findings show that the exposure to new, modern open office layout changed employee perception of the company: they see the culture as less formal, more innovative and it gives them a feeling of being able to monitor and solve own problems and collaborate more than respondents working in traditional offices. The people in new offices also tend to like their co-workers more and have a higher commitment to the organisation (McElroy and Morrow, 2010). Earlier research by Oldham and Brass (1979) pointed out the opposite where the employees felt their jobs had less significance after the move to open space. Apparently, when the employees were able to perceive the entire work process, they noticed that the actual impact of their work was less than anticipated. The difference between the earlier and later research could come from the environment and tasks the people were fulfilling.

Open offices are also proven to enhance a sense of community and shared mission (Davis, 1984). Hall and Ford (1998) followed a factory redesign which included the adoption of open office structure and removal of physical barriers between white collar and production teams. The results indicate that after the move company staff demonstrated greater empathy and understanding between teams which improved sense of community and cooperation. When physical barriers are removed, also social barriers will diminish and people become more visible to each other. This leads to an increase of group sociability (Brookes and Kaplan, 1972). Group sociability will impact noise levels which are seen as a distraction but according to Hedge (1982) noise has a social benefit of creating a sense of belongingness among office occupants.

Office design has an impact on company culture and sense of community. When the office is bright and open, also company culture is perceived as innovative, friendly, more laid-back and less hierarchical.

1.2.3. Communication

Open office environment is believed to enhance communication because it allows its occupants to interact in collaborative and spontaneous manner (Bell, Greene, Fischer and Baum, 2001; Banbury and Berry, 2005; van der Voordt, 2004). Also Zahn (1991) reported increased communication among co-workers when moving to open office environment. Furthermore, according to research open plan office changes patterns of interaction, with less time spent on formal meetings and more on informal communication (Brennan, Chugh and Kline, 2002). It is important to understand that this type of informal communication can be perceived by one party as distraction and it has positive impact on the performance only if the interruption is related to the task at hand (Mark, Gudith and Klocke, 2008).

The possibility of making contact with a colleague is directly impacted by his/her location in the office (Penn, Desyllas and Vaughan, 1999). According to Allen and Henn (2006) face-to-face communication decreases when the distance between subjects is more than 30 meters. When colleagues do interact with each other in the office then around 80% of those encounters are spontaneous (e.g. encounters in the corridor, canteen) (Backhouse and Drew, 1992). Frequency of contact is impacted by people's movement patterns and proximity; colleagues who are sitting close to each other have more face-to-face interaction (Keller and Holland, 1983). Evidently, it is easier to go to speak to someone if you can see the person and he/she is closeby rather than not even knowing if the colleague is on the premises or not. Therefore, if your colleagues know where you are sitting and you are easy to find, you will more likely be contacted face-to-face, hence the notable correlation with the number of social ties you might have (Kabo, 2018). Interestingly, increased visibility will also increase the possibility to be recognized by one's work and this gives a higher possibility to be placed on prestigious and innovative projects (Grippa and Gloor, 2009).

Considering office layout and how closer proximity increases the probability for face-to-face communication it is important to understand how it is applied to the study of office space. Peponis *et al.* (2007) outline two models of workspace design: the "flow model" and the "serendipitous model". The first model suggests that workspace should be designed to support the communication flow between colleagues, meaning those who work together should also be sitting close by. Thus interactions are encouraged between a small number of colleagues and "creative eavesdropping" can take place. The serendipitous model, on the other hand, encourages communication between a larger number of office occupants placing members from one team further apart so they have to

physically move from their seat in order to interact to one another. The effect of this model comes from “bumping” into another colleague on the way. This model is more time consuming and is slightly outdated because it does not consider the possibility to chat/call to the target instead of going over but according to Dobson *et al.* (2013), this type of cross-disciplinary team working is boosting creativity.

As a conclusion, open office will enhance communication and information sharing, especially with people close by and in addition by being in the manager’s range of sight might also positively impact one's career prospects. It is evidently proposed that open office arrangements that encourage spontaneous interaction do have a positive impact on perceived productivity (Brill and Weidemann, 2002) because problems can be solved quicker, and that increased communication could lead to more effective collaboration (Heerwagen *et al.*, 2004). Findings of negative sides related to open office and communication are described in chapter 1.3.3.

1.3. Risks of open plan office

Since open office layout started to gain popularity there has been in parallel with positive sides a constant discussion about negative aspects. There is growing evidence such environments cause increasing employee’s dissatisfaction (Bodin Danielsson *et al.*, 2015; Kim & de Dear, 2013). Earlier researches were concentrating on lack of privacy and decreased self worth (Oldham and Brass, 1979), as more recent researches reveal the negative impact of higher noise on ones work output (Frontczak *et al.*, 2012; Alker *et al.*, 2014) and shift in style of communication (Bernstein and Turban 2018, Sander *et al.*, 2019). Communication is impacted both by the open layout and development of information and communication technology.

Another fundamental flaw with open plan concept is to assume that all type of work can be done in the same office type (Haynes *et al.*, 2017) because open plan environments can be suitable for certain work activities but not for all. In case high excess of communication with peers is required open layout is beneficial, but in case of high concentration is needed then it might have the opposite effect. In the following chapter most mentioned factors in literature influenced by the open office are described such as communication, noise and privacy.

1.3.1. Communication

Enhanced communication and collaboration has been for long considered one of the positive outcomes of open plan office layout but it can also have negative consequences. Open office layout leads to increased exposure to sounds and interruptions which leads to an inability to concentrate. According to Ophir *et al.* (2009), people suffering most from distractions driven from open office are multitaskers, as they also need more time to concentrate on the task after being distracted. As a result office occupants tend to communicate less and they might become indifferent to their colleagues (Sander *et al.*, 2019). Sander *et al.* (2019) also explain that people who cannot concentrate become more withdrawn and hostile which leads to decreased ability to collaborate.

Bernstein and Turban (2018) researched how communication is impacted after spatial boundaries are removed and they proposed that the result is decreased collaboration and collective intelligence. Earlier researches on the impact on communication have been relying more on surveys and other self-reported measures due to the methods available that time but new ‘people analytics’ technology has opened up new opportunities (Bernstein and Turban, 2018). This enabled to equip the participants with wearable sociometric devices to measure how communication patterns change. Although the aim of the surveyed company was to increase face-to-face interaction the results show that it decreased and was replaced by electronic interaction like e-mails and instant messaging (IM) instead (Bernstein and Turban, 2018). The change in communication channel due to open layout also decreased performance as virtual communication did not seem to be as effective as face-to-face communication (Bernstein and Turban, 2018).

The understanding of open office impact on human communication has been contradictive since the open layout was introduced and this is partly due to the developments in communication technology meaning the channels people use to communicate. Instead of landline phone mobile phone is used, which means that personal calls can be taken to private surrounding; also use of personal computer and IM allows to communicate without actually speaking to someone face-to-face. This has enabled a new research wave to investigate how communication is changing due to developments in technology.

1.3.2. Noise

Among other aspects, open plan office employees seem to be least satisfied with noise (Frontczak *et al.*, 2012) and noise is reported to have a negative impact on office workers productivity (Hongisto, 2005). According to the World Green Building Council productivity research (Alker *et al.*, 2014) noise is one of the five elements among air quality, thermal comfort, lighting and office layout that affect employee productivity, and performance of office workers drops by 66% when exposed to disturbing noise. Besides productivity, office noise reduces the ability to focus and concentrate on a given task (Banbury and Berry, 2005) which as a result can lead to stress and frustration (Seddigh *et al.*, 2014). No employer wants to have stressed employees because it reduces their ability to work and can lead to burn-out.

Banbury and Berry (2005) differentiate between three types of noises an office worker can be exposed to ambient noise, distinctive or salient sound and background speech. Based on various previous researches they made following conclusions: firstly, office workers seemed to be least bothered by ambient noise; secondly, distinctive and salient sounds were considered as highly intolerable; thirdly, background speech is considered as number one distraction noise in an office environment. Rasila and Jylhä (2015) went deeper into investigating different aspects of noise by conducting qualitative research in a contact center in Finland. They concluded that employees differentiate between two types of background speech and their attitude towards those depends on the content: irrelevant intelligible noises were considered as most bothersome, whereas noises with relevant information were perceived positively.

It is evident that open office causes a higher level of noise due to increased communication but it is also important to understand that different people perceive noise differently as described by Frontczak *et al.* (2012). This can be due to the amount of ability to control noise, type of work one's doing but can also depend on gender and personality (Banbury and Berry, 2005). Besides the characteristics of noise "receiving" party, also the information itself that is passed on, plays a role. A simulation that was carried out among 779 open plan office occupants in the USA showed that higher speech intelligibility decreases employee satisfaction (Veitch *et al.*, 2007). This is backed up by Marsh *et al.* (2009) and aforementioned Rasila and Jylhä (2015) who found that higher distraction is caused by meaningful speech background. Based on this Haynes *et al.* (2017) brings out another element in open office design suggesting that people with contrasting jobs should be located together because irrelevant background noise helps to concentrate on one's job

tasks better. It can be concluded that working in another language environment where there is a significant amount of background noise will have less impact on the productivity of the foreigner, who does not understand the local language, rather than on local employee.

Concerning level of noise in the open office surrounding there is a habituation aspect that should be looked at since there are contradicting findings. Banbury and Berry (1997) observed significant habituation after 20 minutes of exposure to sounds, whereas Tremblay and Jones (1998) did not find evidence of habituation. This could be due to the different methodologies used, as in the first study participants were exposed to irrelevant sound, in second one exposure to sound was incidental. Further studies are needed in that field to understand if/how does habituation to noise impacts workers in an open office environment.

1.3.3. Privacy

Besides increased noise levels, privacy is another most mentioned aspect negatively influenced by an open office layout. There are findings that compared to traditional offices privacy in open-plan offices decreases (Oldham and Brass, 1979), which causes workplace dissatisfaction (Kim and de Dear, 2013), as people do not like their personal conversations nor discussions with colleagues and supervisors to be overheard by others (Bell *et al.*, 2001). This leads to decreased sharing of personal and confidential, but also work-related information in open-plan offices (Oldham and Brass, 1979). Above is in contradiction to a common understanding that open office layout enhances interaction as analyzed in previous chapters.

Researchers differentiate between architectural and psychological privacy (Sundstrom, Burt & Kamp, 1980), architectural being visual and acoustical isolation concerning the environment, and psychological privacy presenting the amount of control people feel they have over-regulation of their social interaction with others. Research by Sundstrom *et al.* (1980) shows a high correlation between the two, both among people with less complex and also more demanding jobs, though the latter one being most negatively affected by the conditions of open office concluding that people with more complex jobs require more privacy and quiet to perform their daily work. This is another proof of decreased privacy in open office environment, as people feel they have less control over their interactions when there are no physical barriers in place.

Open office layout has an impact also on visual privacy. Peterson and Beard (2004) define visual privacy as the ability to work without the feeling of being observed or without being distracted by sudden movement. Working in an open office gives managers and colleagues good view if someone is not at their desk working, also who comes late or leaves early and similar. This is a source for possible negative performance evaluation in case performance in this company is partially or completely measured by hours spent in the office.

According to Brill (1985), there are three conditions that contribute to privacy: first one is control over one's accessibility, second one visual distractions, and third one speech privacy. Control over accessibility was tested by Zweig and Webster (2002). They researched how employees are reacting to being monitored for availability after the implementation of the awareness monitoring system. When colleagues wanted to engage in communication with someone, then the system was taking pictures and recording videos of the colleague in interest and sending it to the requester. Zweig and Webster (2002) noted that as a result of this system implementation people felt their privacy was strongly invaded.

It is evident that there are different aspects that are impacting employee's privacy in the office and that people require different levels of privacy in different situations (Palen and Dourish, 2003). Following the trend towards more open spaces in the offices to enhance collaborative environment (Ding, 2008) business owners are under pressure to accommodate both, business and employees needs so that positive impact of new office design would be maximised.

1.4. Theory summary

There have been various researches conducted about open office impact on employees since the start of the trend. First of all open office has lower costs than a traditional office because more people can be fitted into less space. Research shows that employees will have less privacy in an open setting, there is a higher noise level which impedes concentration, but it can also affect culture to increase sense of community and belongingness. Open office changes the way people interact with each other, which can have both positive and negative consequences depending on the type of work and personality. The findings are presented in table format in Appendix 1, where relevant researches on this field are summarized based on conclusions.

2. RESEARCH

This research is designed to reveal how are different factors influencing an employee in open office compared to a traditional office. The research objects are global ICT company employees in Estonia who have moved from traditional office to open layout one and a half years ago. Research was designed using a concurrent mixed method which combines both quantitative and qualitative methods within one single phase of data collection and analysis. This helps to interpret both results together to provide a more comprehensive response to research question (Saunders *et al.*, 2009). Research design is explained in more detail in the following chapters.

2.1. Research design

A qualitative study was performed in the form of semi-structured interviews with focus groups. The reason for choosing semi-structured interviews is that it helps to explore and provide insights on the topic and to enhance the validity of data and theories, rather than statistical generalisations (Saunders *et al.*, 2009). It also enables to observe participants' expressions and gestures which enrich the research (Bogdan and Biklen, 2007). Another advantage is flexibility of research strategy, broad applicability and ability to gather data that is not possible to achieve through quantitative methods (Marshall and Rossmann, 2014).

The negative side is that forms of bias and cultural differences may impair research outcome, and it is also viewed for its time-consuming nature and excess of empirical data (Saunders *et al.*, 2009).

Interviews were performed with focus groups which were carefully selected with certain characteristics in mind that were relevant to the topic. Focus group interview focuses on a certain issue by encouraging discussions and experience sharing in an open manner (Krueger and Casey, 2015). It is suggested in the literature to use horizontal slicing through an organisation for group forming so that within each group, participants would have a similar status, background and work experience (Saunders *et al.*, 2009). Horizontal slicing will also encourage participants to open up rather than in case of vertical slicing where manager and subordinate might end up in one focus group. The size of the focus group varies according to the nature of the topic, and it is recommended to be rather smaller when emotionally sensitive topic is explored (Saunders *et al.*,

2009). There is limited guidance on how many interviews are sufficient, but the main guideline is to continue with the interviews until data saturation is reached (Saunders *et al.*, 2009).

The interview had two goals, first to test if the factors impacting office occupants in open plan layout, derived from previous researches, also have an impact on chosen company's employees; second to check whether there are any additional employee influencing factors which have not been analyzed in previous researches. Parallel to qualitative study also a questionnaire was sent out to the research population to either back-up or throw over quantitative data and to measure which factors are influencing employees the most. In the end, the semi-structured one-to-one interview with the chairman of the board was held to present results and get feedback to the findings.

2.1.1. Sampling and data collection

In order to pick a representable sample several steps were taken. First of all, a list of employees prior to moving from the old office in Q3 2017 was obtained from office manager and updated reducing to people working in the company today as of Q1 2019. This decreased the number of employees from 143 in 2017 to 65 persons today. Next step was to remove from the population everyone who was previously in the old office working in rooms with 4 people and more, in order to evaluate the impact of moving from private to open layout environment. This reduced the number of the target population from 65 to 43. The goal of this reducing exercise was to get applicable target population excluding everyone who did not have the experience of working in private office prior to moving to open office.

Non-probability and heterogeneous purposive sampling was used to choose a sample out of 43 persons and in order to pick people who would be most representable sample in the research, people from different job roles, seating areas in the office and seniority in the company were considered. When conducting invitations for interviews, homogeneous focus groups were conducted in order to go more in depth in the topic within the interview (Table 1).

Four face-to-face group interview invitations were sent out to take place during week 15 in the year 2019. By the end of the fourth interview, it was evident that information was starting to saturate and there was no more need for additional interviews.

Interview durations were one hour, 34 minutes, 32 and 29 minutes accordingly. Interview structure is given in Appendix 2. Questions were divided into four categories based on previously defined common aggressors which were the impact on communication, privacy, sense of community, noise level. Additional questions were asked to explore factors not mentioned in the given theory. At the end of the interview also suggestions were asked about how to improve the office environment it to be more pleasant and supporting for productive office work. Each interview was recorded with Voice Recorder mobile application (Appendix 3).

In general, the invitation to participate was received positively, many showed interest in seeing the results of this study and were asking if the changes proposed would also be implemented in reality. All interviews were face to face and participation via Skype link was prohibited due to different preconditions for involvement. Number of people who were invited and who showed up are presented in Table 1.

Table 1. Participation rate in focus group interviews

Group	Participant background	Invited	Participated
Group A	Sourcing specialists, 100% female	5	4
Group B	Account managers and team leads, 100% male	5	4
Group C	Mixed backgrounds, 50/50 male-female ratio	8	4
Group D	Engineers, 100% male	8	5
Total:		26	17

Source: Author's table

In parallel with the interviews, a questionnaire (Appendix 4) was sent out to all 43 employees to complement and refine interview results and understand which factors influence people the most, which have been improved and which have worsened. The questionnaire was consisting of three questions. The first question was to rank four different factors based on the impact they have, second was Likert scale for the employee to answer which factors have changed to positive, which one to the negative direction and which have not changed at all, third question was open text question.

The questionnaire was sent to all 43 people and 22 answered which make response rate 51%.

It was also relevant for this research to gather information such as rent cost in the previous and new office, and list of employees prior to moving and currently with the company. This was achieved through a discussion with the office manager who was one of the persons responsible for

arranging the move and had access to such data. People Strategy presentation was received from the HR manager and document analysis was performed.

Last but not least findings from the focus group interviews were discussed for additional comments and feedback with the chairman of the board, who during the move was a member of the board as one of the persons who decided to move and responsible for finding a new office.

2.2. Analysis

All interviews were transcribed and answers analysed using cross-case analysis, where text was classified and grouped based on topics from theoretical point of view and Grounded Theory Strategy, which aims to search for and recognize meanings in the data and to understand social context and perceptions of research participants (Saunders *et al.*, 2009). The interviews also revealed additional connections and aftereffects which were carefully analysed and are presented in the results section of this research.

Document analysis was performed either indirectly or directly depending if the data was provided by someone from the company and then analysed by the author (in case of chapter 3.1) or analysis was performed using the document itself like People Strategy in Appendix 6.

2.3. Case company

The objects of the research are global ICT company employees in Estonia who have moved in October 2017 from the traditional office, where the company had its premises since two decades, to open layout, where they have now been located for one and half years. In parallel employees from another unit were also located to the same physical location and the two teams were merged into one office. Today there are in total of 250 employees in the new premises: 65 from the “old office” and the rest from another unit.

At the same time with the move the company was going through global re-organisation and also local Tallinn office did not remain untouched by the layoffs. Layoff period was preceded by a few-year hiring freeze which means people in the research population have been with the current employer at least 5+ years.

The company is using matrix structure worldwide to emphasize efficiency, creativity, and innovation but its disadvantage is a conflict of loyalty between line managers and project managers over the allocation of resources. Many people in Tallinn office are part of a global team and often also working for a global project which means they do not necessarily have a local manager or team in Tallinn office.

Company HR strategy is called People Strategy which main goal is to have balanced leaders who care, listen and develop in change (Appendix 6). Key goals for 2019 are sustainable culture which emphasises on every individual being a brand ambassador; continuous development to prepare people for future business demands, and succession management to have the right people at the right place.

3. RESULTS AND DISCUSSION

In this chapter the author analyses the answers from focus group interviews and questionnaire using cross-case analysis and categorizes the results according to the theoretical part. The chapter is divided based on main benefits and risks from open office; in addition new dimension, employee recommendations on how to improve working conditions in open layout and results from the interview with chairman of the board are added. Chapter 3.1. is using data analysis to which input was provided by the office manager.

3.1. Impact on Cost

In terms of space and cost, there is clear evidence of cost-saving for the company when comparing old and new offices. The data for calculations input was provided by the office manager who had access to relevant documents which cannot be shared here due to a valid contract with Ülemiste City. Calculations were performed by the author.

Considering a slight decrease in number of employees from 106 to 85 during the move and total space available, office space had decreased by 51% per person (old office had 21 m² per person, new 10 m² per person). Comparing rent and utility costs, the new office had 37% higher cost per m² but 58% lower cost for utilities.

As a result, the company won in cost per employee when leaving the old office as rental costs immediately decreased by 47% per employee. What has not been considered here is that the people from “old office” were merged with employees from another business unit who occupy the majority of the new office space.

3.2. Impact on Communication

Changing office layout from traditional to open office has an impact on how people interact with each other. As described in chapters 1.3.3. and 1.4.1., there are different aspects of how the communication changes and in which circumstances it has positive and in which negative impact. It is highly depending on the type of work and the degree of how much communication with peers is required; workers seem to benefit more from positive impact in case collaborative work is more

encouraged than individual focussed work, and it has positive impact if office collaboration is what people do most of their time (Haynes *et al.*, 2017). Current research results support that when asked about the positive impact of open office on communication, especially reflecting from group A answers who happened to be all female, some of them are also working in the same team and interact with each other off-work too.

“The benefit of open office is that I can interact with my colleagues. I can ask them questions, and they can ask me questions.” (Group A)

“It is good that I do not have to search for people anymore.” (Group A)

“In open office you can accidentally hear some useful information and become part of this conversation and give your contribution. This is positive.” (Group A)

The “all engineers” all-male group D did not agree that communication is enhanced which seemed to be due to different “I don’t care” attitude towards the new setting.

“They are saying that in open office you speak more to people, but in my mind, this has not happened. Me, for example, I don’t know what those people are doing next to me. Maybe it’s my fault because I don’t care.” (Group D)

But there is also another angle depending with who were you sharing the room before and who is sitting next to you now, in some cases new seating brought more positive in terms of communication as answered by the most neutral mixed backgrounds but similar seniority level group C:

“Now I can just speak to I. and J. (because they are close by) when they are in the office. In the old office I had to skype with them. So this is now easier.” (Group C)

As described in chapter 1.3.3. Kabo (2018) proved that if your colleagues know where you are sitting and you are easy to find, you will more likely be contacted face-to-face. This came out also during the interview from group A who for work reasons have more interactions with people in the local office:

“Interestingly, if you are not in the office, then people don’t contact you, they will wait until you come to the building, ..., they say no rush when you come we will talk.” (Group A)

“I am also this type, if I know this person is in the office tomorrow, then I rather speak to him/her tomorrow, in case it can wait. But of course when the person is away for long then

you need to find another way. But for some reason I still prefer speaking face-to-face.”
(Group A)

Also, other groups indicated that if they need to collaborate with each other then open office makes it easier. But there was some concern about how the company is changing and how collaboration with local counterparts is not required these days anymore. These two groups are the ones who work mostly in global projects.

“It depends (question about how many people they need to interact with daily). For example, we are working currently on one proposal and I am not required to meet any of the team members face-to-face, because the majority of them are in India. The fact, if this person needs to be physically visible, does not have any impact at all.” (Group B)

“Since moving from old office the type of work has changed, everyone is working in some (international) project and does not have to interact with anyone locally.” (Group D)

Open office impact on communication is positive when people have to speak to each other due to work but it is also important that this type of direct communication in the office is enabled and does not disturb others. According to some, this is not the case in current office as described by the group with the most most senior level people in terms of job role.

“The functions around us are writing documentation, ..., I don't know more what they are doing. And when we start to speak to each other, then they are not happy and start to complain.” (Group B)

This shows the importance of well thought through seating plan of different functions in different parts of the office space. When people or teams who require silence for high concentration and teams who require heavy interactions with each other are seated together, then conflict may arise.

“Once we told to someone in our area, who was having a phone conference on his/her seat, to go to a meeting room instead, which made him/her angry. That's why sometimes you don't want to say anything and you suffer silently and just put your headphones on.” (Group C)

Besides the need to speak to colleagues in the office, many also have to attend several phone conferences a day. According to “good-will” rules communicated early in the moving process any type of phone or conference call should be done from phone booth or meeting room and not in the open seating surrounding. The fact, that speaking to someone on the phone while sitting by the

desk in open office is disturbing to others, has also had an impact on the way how people interact in surveyed office.

“Using phone calls for interaction has strongly decreased compared to old office,..., now I use Skype or e-mail.” (Group A)

“When I need to speak to someone in the office about work stuff, then sometimes I don’t go to this person to speak, because he/she sits in open office and there are people next to him/her, instead I write in Skype.” (Group B)

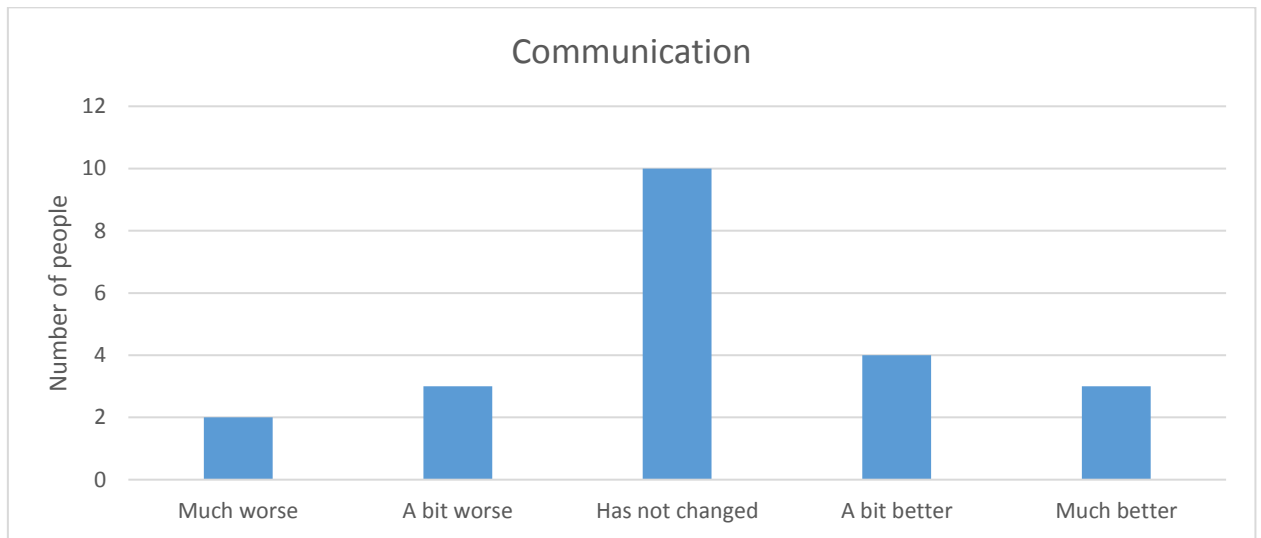
The change in a way people communicate could also be due to changes in communication technology as someone points out:

“This (communication) has not changed due to the new office, rather due to Skype. This (Skype) is so convenient, you just write to a person, are you there, let’s talk. Before that you had to go to someone in person. Also mobile phone is not used anymore, you just write on Skype.” (Group C)

As described in chapter 1.4.1. in the research by Bernstein and Turban (2018), open office decreased face-to-face interaction because it was replaced by electronic interaction. Aforementioned supports that finding. Negative side of this is that according to the same research electronic interaction is proven to be less productive than face-to-face.

People were also asked about how communication has changed in their view since moving from traditional to open office (Figure 1).

Figure 1. Employees view on communication



Source: Author's chart

The results from the questionnaire show that some think it has become worse, some think better, but the majority believes communication has not changed as a result of the move.

3.3. Impact on Privacy

According to questionnaire privacy was second most influenced since moving to open office. When asked about the impact on privacy from the interviewees then first thing almost everyone mentioned was about the importance of private working conditions as those can be different even in open space. For groups A and C it was more important than others. Interestingly those groups also had most females:

“My first seating place in this office was horrible. Since I came here from a small private office, I could not concentrate at all, I had headaches and it was really tough, people were walking around me all the time, ..., but currently I am very happy with my sitting place because it creates a sense of privacy for me.” (Group A)

“I have screen filter and a wall behind me (this is good); I also don't like when people are walking behind me and standing behind my back.” (Group A)

“The fact that people are passing by behind my back and are able to see my screen, was very annoying at the beginning. But then I moved with my back on the wall, and it's ok now.” (Group C)

Group D did not seem to be bothered by the screen being visible, this might be due to different job roles compared to other focus groups as group D consists of engineers:

“The fact that people see my screen does not affect me. We have shared responsibility anyway.” (Group D)

Almost all groups mentioned that they have less privacy now to do personal things at work such as bank transfers online but it did not seem to be a big issue. This is rather showing one’s commitment and attitude towards work.

“Compared to the old office I do not use internet bank here and I rather do my payments at home.” (Group B)

People saw an issue on having less “screen privacy” only when job requires so:

“When I would still be a team lead and I would handle sensitive data, then privacy would be an issue; at the moment I don’t handle such confidential data.” (Group C)

Besides “screen privacy” interviewees were also asked about speech privacy. Open office does not encourage sensitive conversations to be held in open space in case one does not want to be overheard by others. For personal and work-related conversations all groups indicated that they are holding those in meeting rooms or other private areas in the office like relaxation area near the kitchen. Compared to old office people see there is a change compared to the old office:

“In the old office, I liked that when I was having a private conversation, then I could just close the door” (Group D)

“In old times (previous office) you could just speak to your colleague privately in the cabinet, here there is no such thing. When there is an argument, it can happen that the whole office overhears.” (Group C)

Both sensitive conversations and intriguing arguments can be overheard when not handled privately and this is uncomfortable for the speaker as for the witness. Although the answers were indicating that people go to a separate room for private conversation there were answers concerning other persons having personal conversations in open space that one is “forced” to listen.

“We are all doing our own work, but there are some people next to us (another department), who are discussing meat diet that one person started. Now I know (unwillingly) where to buy the best meat.” (Group D)

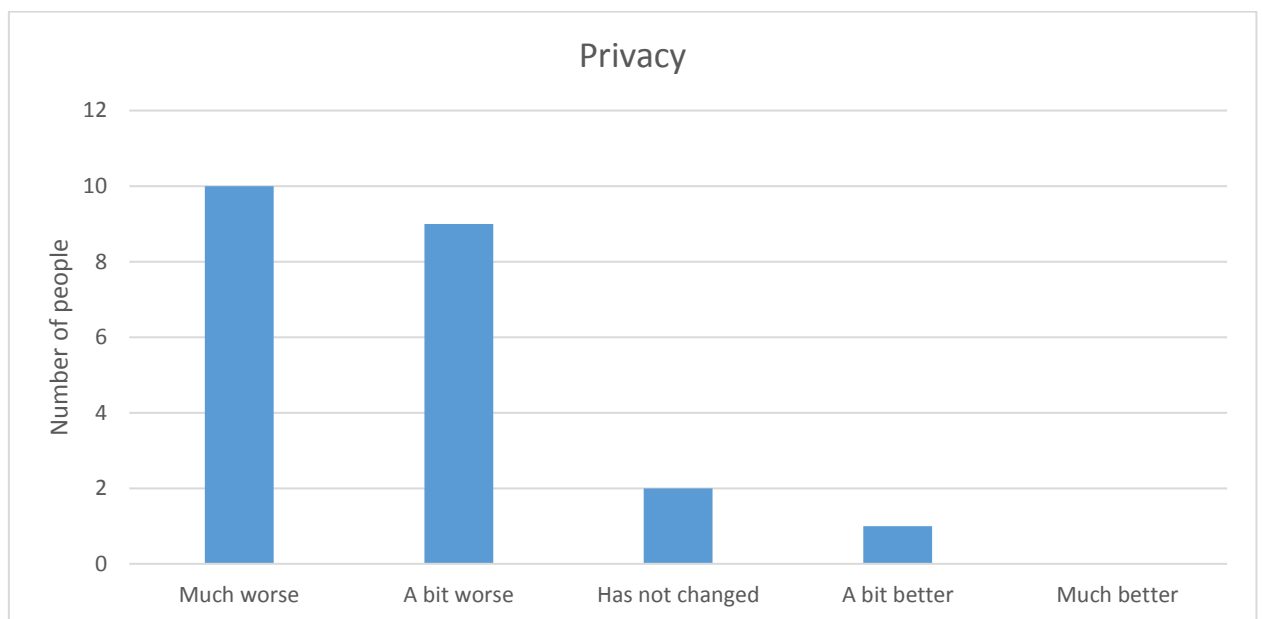
Privacy in open office is also described as the fact of being visually available and observable. Some researches, as described in chapter 1.4.3., show that moving to open office has a negative impact as people do not like to be observed. They feel uncomfortable when other people see them for example coming late, leaving early, or taking a longer break. All interviewed groups did not see this as a problem in current office:

“The fact, (that other see), when I come or go, does not interest me (no impact).” (Group B)

This could be due to company culture when it comes to trusting employees, respecting the work-life balance and not measuring one's performance based on hours spent in the office. Also, very few people have their direct managers located in the same office and they generally can decide themselves when/if they come to the office without being judged by anyone.

Based on questionnaire employees responses were clearly on the negative side as the majority declared privacy being much worse in the new open office setting (Figure 2).

Figure 2. Employees view on privacy



Source: Author's chart

High decline in privacy satisfaction can be directly driven by the fact that people had very convenient circumstances with high privacy in the old office before.

3.4. Noise level

Results from questionnaire present that noise was first highest factor that has been impacted since the move but during interviews it did not generate a heated discussion as most participants admitted that they have got used to different noises caused by the open office as compared to the old office. It emerged that noise levels are different in different parts of the building depending on the density of office workers in the area. Most satisfied seemed to be Group A and B. This could be explained that people from those focus groups are sitting in the same part of the floor.

“We are so few people in this area, that I don’t even notice (higher noise).” (Group B)

“I can’t say that some tasks cannot be done due to noise. When someone has a phone call, they usually go to a phone booth.” (Group B)

“Such conversations, that are not directly related to work, are usually not held by the desks.” (Group A)

“... Especially I like Fridays when here is total silence.” (Group A)

It seemed that people are more aware of noises they make themselves that might disturb others and it is a possible source for stress. It could be explained by Estonian culture in general where people are leaning towards self-consciousness.

“I don’t do any phone calls at my desk, I only call into a conference call in open office when I know that I don’t have to speak much. Otherwise, I do the calls in meeting rooms.” (Group D)

“I am not sure what X would be saying about higher noise. He/she was for long sitting alone until we moved to this area.” (Group C)

“I am not bothered when someone is having a (skype) meeting next to me, but I know that I bother others, ..., every noise bothers him/her (my neighbor), that’s why he/she doesn’t come to the office so much.” (Group C)

“My mouse makes very much noise when I click it, and I felt this bothers my neighbor; so I try to click less.” (Group C)

Besides getting used to others speaking next to you, people also mentioned that they had to get used to different noises such as eating and drinking sounds. It does not matter which is the source of the sound but there are three possibilities in blocking yourself from disturbing blare: working from home (more detailed in Chapter 3.6), working from a meeting room, or using headphones.

Headphones is a good alternative but not suitable for all and it also depends on what task the person is currently fulfilling.

“When I am doing a routine task, I can wear my headphones and listen to music. But when I need to focus, ..., then I cannot use my headphones. Then I go to a conference room.”

(Group D)

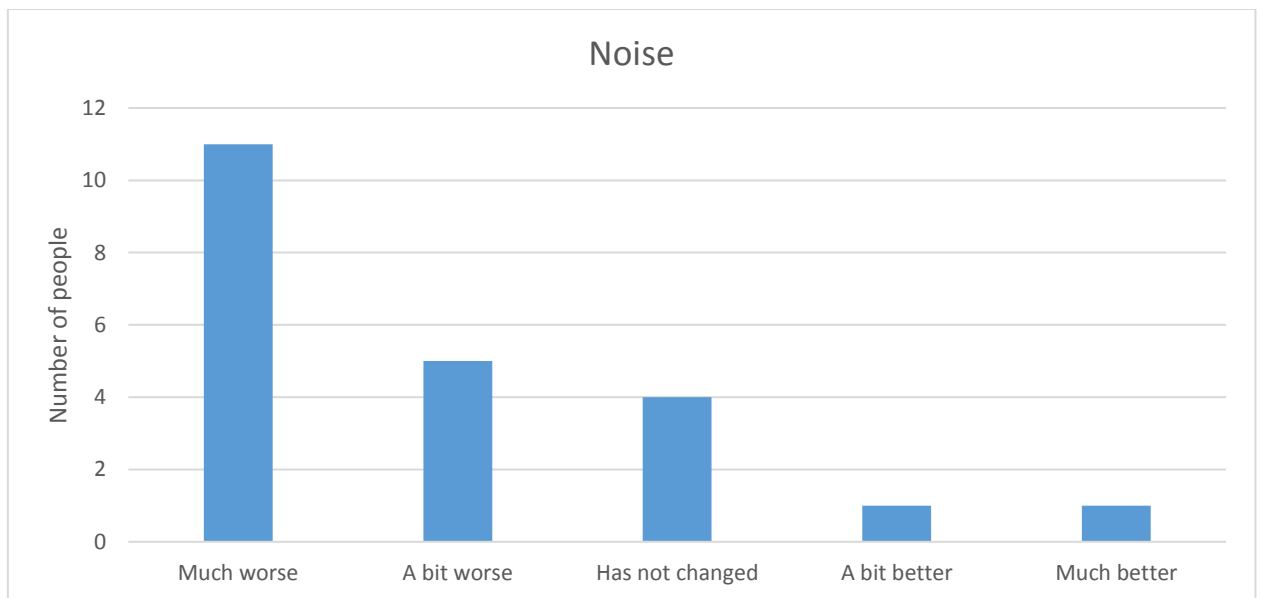
“It is not comfortable to use headphones” (Group D)

“(When I need to concentrate) I wear headphones and listen to music.” (Group C)

There were a few complaints about other people not respecting the open office rule and holding meetings or conversations at their desks but in general people did not seem to be bothered by noises too much, they understand that most of the time this is not done deliberately, and when one feels disturbed, he/she can always take a break and come back when conversation is finished, put on headphones or work temporarily from a meeting room.

Based on questionnaire majority expressed that noise levels have become much worse in the new office (Figure 3).

Figure 3. Employees view on noise



Source: Author’s chart

At the same time, people have had time to get used to higher noise levels but have become more stressed about creating noises themselves.

3.5. Sense of community

As described in chapter 1.3.2., there are various researches that explain how office layout impacts company culture and sense of community and belongingness. Two groups have noticed the same in current research and they believe the new setting has a positive impact:

“It’s good here that everyone has equal sitting possibilities, and it does not create a sense of inequality.” (Group C)

“I felt that in the old office we were more separated between two floors, ..., people on the 4th floor did not feel as appreciated as the one on the 5th floor. Now the new office standardized everything, everyone has equal opportunities and this is positive. “ (Group A)

“Many teams have only one person in Estonia. This office helps to prevent loneliness, here he/she can be with other colleagues together (and feel part of the team). This has good impact on this person.” (Group A)

At the same time, interviewees did not seem to mind if there are people who according to work specifics are afforded more private working conditions.

“It would be completely fine if board members would be sitting in private offices. This would not be a problem, rather the opposite. It should be this way.” (Group A)

Group C expressed that they have not become more unified with the company as a whole but rather with people in close seating proximity.

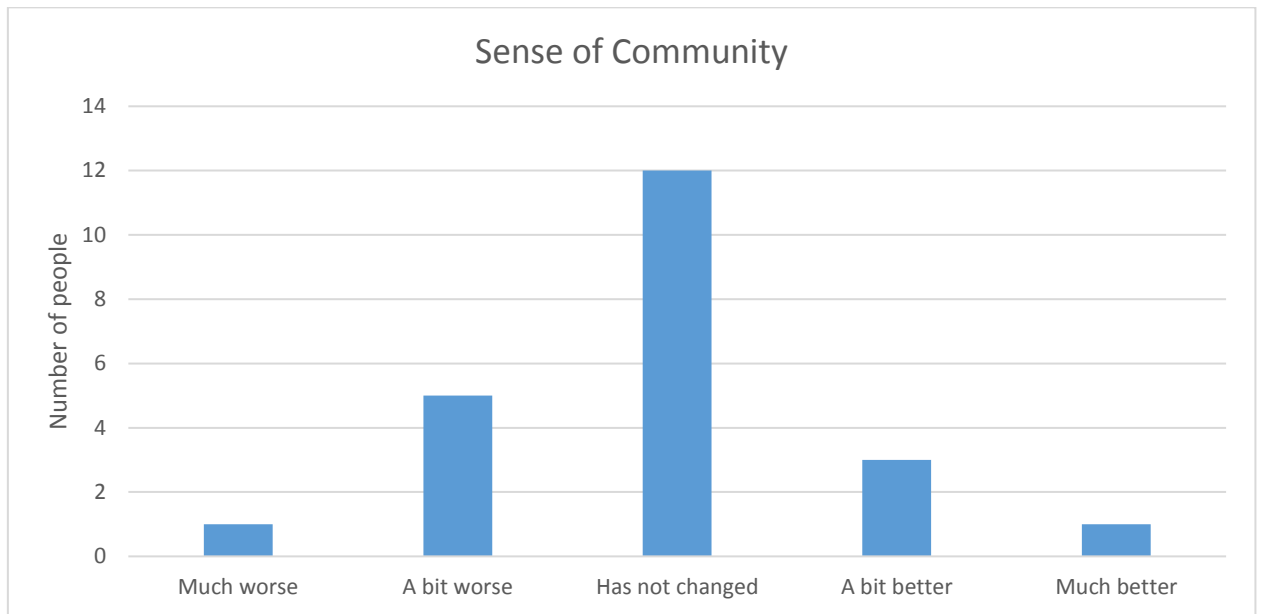
“Now I know who are the people around me. Before moving here I did not know them at all.” (Group C)

Engineers group declared that unity cannot be enhanced by the layout but instead by the management. This shows the importance to have balanced Leaders in local office and also globally, who care, listen and develop in change, as described in People Strategy.

“(Unity) Depends on the project manager. Sometimes when people are far away (in different countries), you feel more unified that you are working for the same goal rather than with people who are working here but staying more in the home office. It (sense of community) does not depend on the office.” (Group D)

The answers from the questionnaire indicate that the move had a very low impact on the sense of community and the majority of the people feel it has not changed (Figure 4).

Figure 4. Employees view on sense of community



Source: Author's chart

As a conclusion sense of community did not seem to be impacted so much with the move from private offices to open layout and it is depending more on leadership.

3.6. New dimension

During focus group interviews another consequence was revealed that is not mentioned in literature as characteristic for open office. Due to the changing nature of work employees are being treated not as local resources rather than members of a global organisation. This leads to many having more work done in virtual and global teams which leads to increasing Skype calls and conferences. This means that in order not to disturb others, they have to go to the phone booth/meeting room and take a personal computer with them. All office desks are equipped with two large screens but when they go to meeting rooms employees only have a small laptop screen available which makes information sharing and data management more challenging. This was mentioned as a stressor in all the groups:

“Basically I need to gather all my belongings and for every call I need to go to a separate room. It is polite to book a meeting room beforehand, but when I have five to six meetings a day, then I also book a meeting room for a whole day.” (Group B)

“The worse thing about open office is that you have to take your things with you all the time (when going to a conference call),..., it happens often that the small laptop screen is

not big enough to present comfortably, and questions might arise during the meeting, for what you need data from folders at your desk.” (Group A)

The constant need to find a private room for phone calls and meetings is stressful and time consuming for the employees.

“There is useless amount of time spent on finding the room, going there; this for sure takes 5 minutes longer compared to if you would have solved it (the problem) at your desk in your private room.” (Group A)

“It annoys me that when I have a phone call I have to quickly stand up and start looking for an empty room.” (Group B)

Therefore some people choose to stay at their desks for phone calls/meetings instead either on purpose or without noticing even, which in turn is disturbing others.

“For me negative part is that I spend 70% of my day on phone conferences and I really cannot bother to go to a meeting room every time and I am pretty sure that I am quite hated for that, especially by the people sitting nearby.” (Group C)

“Sometimes the customer calls unexpectedly. If you know you have a meeting, you can plan (going to a meeting room), but if you don’t know what the customer wants and how long the call will be, then you need to decide on the go.” (Group B)

Employees are aware their speech is disturbing other colleagues and at the same time they are disturbed by the ones who are speaking also. This has led to not coming to the office and working from home instead.

“I have tried to arrange this way, that I plan one day a week for conference calls and on that day I work from home.” (Group B)

During the interviews it appeared many have noticed the same that people have stopped coming to office:

“I have an impression in Järvevana (address for old office) around 80% of people were coming to the office, and here it’s around 30%. This already shows something (that new setting is not convenient).” (Group C)

“There are many people who were coming to office regularly in the previous office but now in the new office we don’t see them. Their statement is that the new office does not have conditions for working.” (Group A)

The purpose of coming to office is different for different people. Group D mentioned they come to office more for socialising purposes which might be due to the nature of engineering work which requires a lot of collaboration and discussions. Those tasks are easier to be handled at home via Skype.

“My work has changed since the move. I am now working on regional level, . . . , basically I don’t have to come to office. I only come here to socialise and go for lunches.” (Group D)

“Those times when I come to office, I don’t even take my laptop with me anymore. I come here when I don’t have much work at the moment, I come here to chill, talk to colleagues, participate some meetings, go for lunch and then leave.” (Group D)

Group C, on the other hand, prefers working from office rather than from home because they can concentrate better:

“I come here to work because at home I don’t have a feeling of working. Here it is easier to concentrate.” (Group C)

All groups mentioned the comfort of two display screens the office provides for working. People who are not coming to the office so much anymore all declared they have set up similar conditions at home.

“Everything is so easy at home. I have two screens, Jabra (a device for conference calls without headphones), I have nothing to worry about there.” (Group B)

Group C confessed they prefer working from office due to the possibility of using two screens and that they have not set those up at home:

“I come here when I need to work with excel sheets and two screens. I don’t have those (screens) at home, maybe I should buy..” (Group C)

During the interviews, there were many complaints about working conditions due to the open layout and not being able to work freely at one’s desk. This, in turn, has lead to fewer people coming to office as they choose to work from home instead. When employees do not seek to use or due to different work tasks are not able to use the benefits, such as higher communication and sense of community, that open office provides, then they still end up doing the majority of their communication via online and remote communication tools. The highest ranking group based on job role seniority mentioned the same:

“Actually it’s nonsense; my team should be working together in the office but we cannot because we disturb others (when we talk to each other); that’s why we don’t come here.”

(Group B)

“People don’t come to here because open office is bad environment for working,... So even if I’m here, we still end up in Lync. And Lync is better, then I don’t have to leave my desk to communicate.” (Group B)

3.7. Employee recommendations

One of the goals of the interviews was also to understand how to make the office environment more appealing to the employees where they could spend their working hours productively leveraging more on the benefits of the open layout.

- Two groups (A and D) mentioned that everyone should follow open office rules of making phone calls/meetings in private meeting rooms and in case someone is not following the rules then others are allowed to draw attention to it.
- C and D brought out that they would invest in a “smart” office, more precisely in room booking system. It would make mobility between rooms easier when there would be a screen next to the door showing when this room is free/booked.
- Group B discussed that it would be most beneficial to implement “box system”, where functions would be sharing the same location and where the walls would be easily removable to allow more flexibility in case of different needs. This would also allow private discussions to be held in the office and save the time of going to meeting rooms.
- Group A cherished the opportunity of being asked about working conditions and would suggest regular surveys with improvements to be implemented.
- Two groups (C and D) thought there should be (occasional) free snacks, drinks, rooms for creative working, board games and other benefits.

3.8. Management view

After analysing answers from focus group interviews and questionnaire, the results were discussed with the chairman of the board using guiding questions (Appendix 5). The discussion shows that in general the goal of the move from the old office to new was to change the work environment and “freshen up” the climate and this was achieved. Another advantage mentioned was the simplicity open office provides in terms of relocating employees and teams according to company needs and re-organisations. Relocating someone physically took up to three months and several discussions in the old office, but now can be done within days. The reason behind this could be that people are more willing to move to different locations in the new setting as the office provides equal opportunities to everyone. In old office employees felt more connected to their designated seat and were less prone to change. Also, the company has gone through re-organisations in recent years which means more flexibility is required from office space. The new office is proven to be more cost efficient due to the flexible space utilization it provides but is not remarkably cheaper per employee from board view due to merging different units and also additional costs like parking.

Regarding privacy in general management agrees that discrete conversations cannot be held in open environment but did not see this nor lack of “screen privacy” as an issue whereas the employees seemed to prefer more private seats. In fact, in board view the office could be even more open to having a fresher and cosier look and tall cupboards that are separating tables from the corridor currently, which help to hide the desktop screens from bypassers, should be removed.

The open layout will have a positive impact on communication in case job tasks require talking to fellow employees in the same office. But in the case of surveyed ICT company where “50 people might have 25 managers from across the region”, the benefits will not be so visible. The reason is that people are working in a matrix structure in regional or global projects and they would not benefit so much from the open setting, except a few projects that are run for Estonian customers with local resources. Therefore it is not expected that people will have to come to the office daily. This does not mean that the board is indifferent to it and is rather optimistic in changing the office environment to be more employee friendly. For example, the idea of two screens was taken positively and will be taken in the plan to be implemented; also allocating people based on the nature of their tasks (more concentration or teamwork required). Chairman of the board was also prone to listen to employees more to improve the environment, just currently they have been more focused on high-level tasks about aligning different organisations within the company.

Who should be proactive and responsible for lower level changes is currently a bit foggy due to some internal structural changes but the author is optimistic that this will be solved soon.

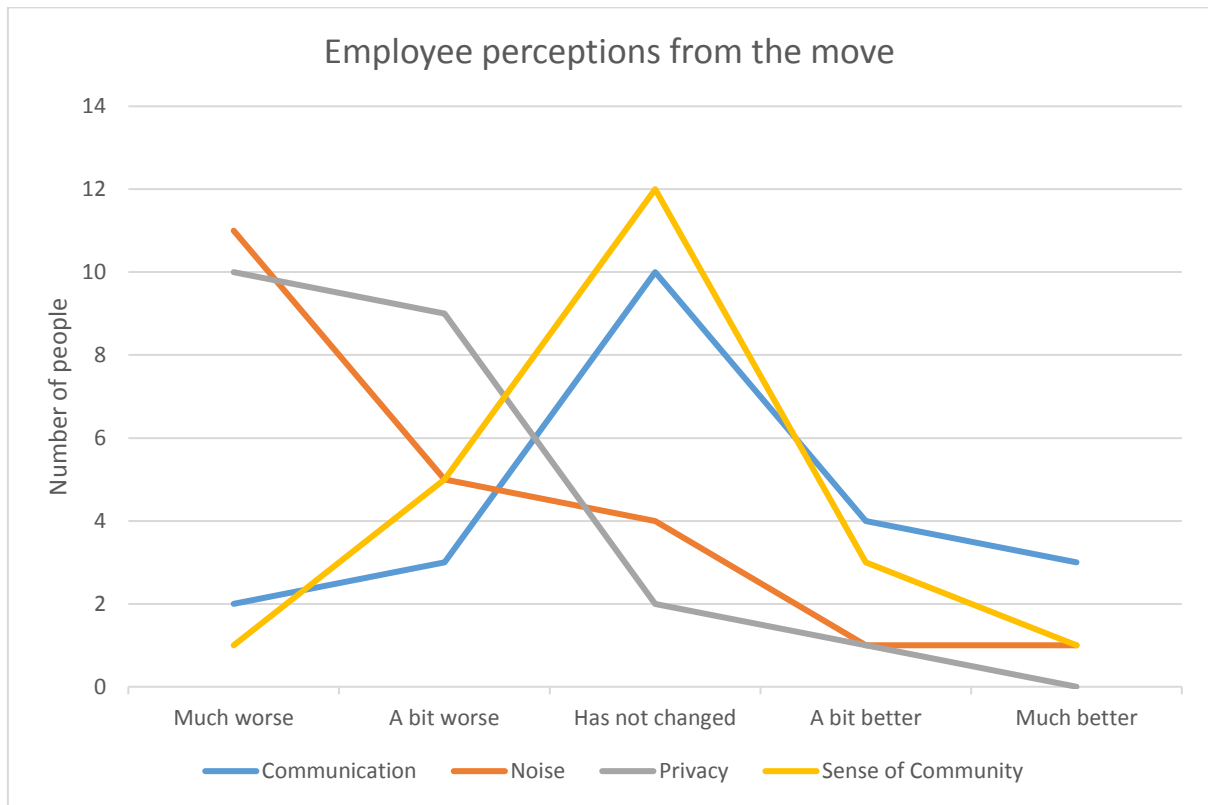
In general, the board is happy about the change and wishes to improve working conditions if it brings people physically back together.

3.9. Summary of findings

Research results show that the company achieved a significant decrease in office cost per employee via decreased office space which was as expected as its one of the reasons for moving from private to open office setting. Another goal such as more flexibility was achieved also, as now it is much easier to relocate people around based on business needs.

Results from quantitative research show that, according to employees, there is now less privacy and higher noise level in the new office, but there is almost no change in communication and sense of community (Figure 5). However, results from qualitative research revealed more about those numbers and enabled to understand additional factors.

Figure 5. Summary of questionnaire results



Source: Author's chart

With the move to the new office, the biggest aggressor is the expectation to do all phone calls, Skype meetings and conversations from meeting rooms or phone booths.

“It annoys me that when I have a phone call I have to quickly stand up and start looking for an empty room.” (Group B)

People feel they spend too much time looking for available rooms and moving around with necessary items such as laptop and some paper copies. Instead of going to meeting room to talk people sometimes still prefer to stay at their desks although they are quite aware how annoying this might be to their proximity colleagues who either point that out to the noise-maker, suffer silently to avoid conflict, put on headphones which some say is not so comfortable, or simply go to a meeting room to be able to concentrate on work.

“For me, the negative part is that I spend 70% of my day on phone conferences and I really cannot bother to go to a meeting room every time and I am pretty sure that I am quite hated for that, especially by the people sitting nearby.” (Group C)

It is unavoidable that some conversations are still held in seating areas which increase noise levels. Many mentioned that they were quite annoyed with this at the beginning but have got used to it.

“My first seating place in this office was horrible. Since I came here from a small private office, I could not concentrate at all, I had headaches and it was really tough, people were walking around me all the time, ..., but currently I am very happy... .” (Group A)

Also, lack of privacy is something people have got used to and mostly mentioning dissatisfaction with computer screen privacy when others can see what they are working on. This is understandable as all these people were working in private offices before. As a result of above inconveniences people working from home more has massively increased but which is not discouraged by the management as majority of the work is done in global teams and it does not matter where one is working.

“There are many people who were coming to office regularly in the previous office but now in the new office, we don’t see them. Their statement is that the new office does not have conditions for working.” (Group A)

There is little research done on the consequences of remote working in the long run on employee productivity and company success but it is proven that face-to-face communication is more effective than virtual communication (Bernstein and Turban, 2018).

Another interesting finding from interviews was the reason why some people come to office these days and this is to communicate with colleagues and go to lunches or attend meetings in the office when there are.

“Those times when I come to office, I don’t even take my laptop with me anymore. I come here when I don’t have much work at the moment, I come here to chill, talk to colleagues, participate some meetings, go for lunch and then leave.” (Group D)

Coming to the office just to work privately seems to be a decreasing trend. In case there are many Skype meetings scheduled some people prefer not to come to the office, many have also set up similar technical conditions at home with IT equipment like two screens and conference call devices. Some say, that they cannot work from home or do not have convenient settings there and therefore prefer coming to the office to work.

Sense of community is an important aspect of ones motivation to work and according to results from the research, this has not changed much with the move. It is however questionable whether

working from home has a positive impact on it. During the interview chairman of the board brought out that common events are the triggers that bring people together. During the focus group interviews, it was mentioned that motivation is mostly depending on the project lead and not so much if people are physically located together or not. It triggered a question if the sense of community is an issue in this company, but this was not the goal of current research to find out.

Interviewees also had a chance to suggest ideas to improve working conditions. In general, they really valued the opportunity to speak up and were eager to understand what will happen as a result of this research and if any of their proposals will be put in life. One idea to set up more convenient phone conferencing conditions with two screens in meeting rooms was received really positively from the chairman of the board and hopefully will be implemented. Another idea to relocate people based on their requirements to working conditions was also received positively.

3.10. Research limitations

Despite authors efforts to improve research reliability when compiling focus groups and picking time-slots for interviews, the question remains if participants would have answered differently in different circumstances. Also, there is a probability that focus groups are biased as not everyone who was invited were able to participate due to other engagements or just due to working from home. The researcher is part of the organisation and therefore research results can be also biased based on the interviewer's personal opinion as this is one of the threats of qualitative research. Research validity can be impacted by other factors such as company re-organisation and redundancy period in 2017-2018 when many people left.

Another limitation of this research is that the results cannot be applied to the whole company or building because only a specific group of people were eligible to be in the population, additionally, the other teams in the same office have direct managers based locally. Also instead of longitudinal study employees feelings were asked once – one and half years later since the move. As time has passed, most of them have got used to the new setting and initial emotions might have been forgotten.

CONCLUSION

The goal of this research was to find out, which factors and in which magnitude is impacting an employee in an open office who has moved there from traditional office based on the example of an ICT company. Understanding better people's feelings and needs, especially after such changes, will help the company to increase its attractiveness as an employer, retain its top talent and achieve its business goals.

Firstly, the research aimed to reveal background about office type evolution and based on previous studies maps the most important factors that are influencing an employee in an open office setting. This was achieved in literature review and the factors were noise, privacy, communication, sense of community and cost which were then used to build the research. The main reason for moving from private to open office is to cut costs, but the new setting also means less privacy to its occupants and higher noise levels that hinders concentration. Sense of community is proved to increase with the removal of the walls, but results from the impact on communication were different. Some researches showed that it improves as people spend more time communicating, especially with the ones closeby, but others pointed out the negative aspect of it, such as the disturbing factor on others.

The research was carried out using mainly qualitative method with semi-structured focus group interviews. In addition to qualitative research also quantitative research was performed to complement findings from the interviews in the form of a questionnaire. Out of research population of 43 people, four focus groups with a total of 17 participants were conducted and 22 answers received from the questionnaire. Document analysis was performed to understand how cost on office rent was influenced. Results were then discussed with the chairman of the board.

Interviews revealed that in open office people find most inconvenient the need to go to a meeting room when verbal communication in person or by phone is required because they do not want to disturb others. Many feel that the new office does not have suitable working conditions because a big part of the work is done in conference calls due to participation in global projects. This has

caused a growing trend of more people working from home. Also, the reason for going to office has shifted for some who now go to work mainly to socialise. Home office is less used by people who do not have so convenient circumstances and therefore go to the office instead.

Higher noise and less privacy were the most influenced factors mentioned by the employees in the survey but interviews revealed that many have got used to those and learned to take measures against, for example by using headphones, going to a meeting room for isolation from sounds or working from home instead. The way people communicate with each other has changed and shift from face-to-face to virtual communication has taken place but satisfaction with it and sense of community have not changed so much with the move. Last but not least impact on cost was positive, as rental costs decreased by 47% per employee which was mainly achieved due to decreased office space by 51% per person.

Employee recommendations on how to develop working conditions in the new office environment, such as equip meeting rooms with two large screens to be able to run meetings better, and rearrange the seating plan of teams, were received positively and hopefully are going to be implemented.

Further research can concentrate on a comparison of perceptions of transitioning to open office between employees who have and who have not worked in private offices prior to the move. Another field could be about home office impact on employee productivity and commitment and if the employer should encourage remote working considering factors such as lack of face-to-face communication.

With the growing trend of open offices main challenge for the employers is to understand what kind of role the open setting plays in achieving business results, how to get maximum benefits from the positive factors and how to minimise the negative factors. Environmental factors are playing an important role in employee satisfaction and performance and considering different job roles the key is to find a balance between increased communication and possibilities of working alone in silence if necessary.

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APPENDICES

Appendix 1. Theory summary

Previous research	Cost Impact		Impact on Communication		Noise Impact		Impact on Privacy		Impact on Sense of Community	
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
Enables cost saving and business to be more profitable (Heerwagen, 2004)	x									
Proved connection between financials and office desing improvements (Brill, et al. 1985)	x									
Supportive physical environment increases productivity (Brill, 1993)	x									
Open office fosters faster time to market (Haynes, et al. 2017)	x									
Open office Helps to save cost on maintenance, rental, land, or build, also lower services and security charges (Duffy, 2000),	x									
Enhances communication and information sharing (van der Voordt, 2004)			x							
Noise has a social benefit of creating sense of belongingness among office occupants (Hedge, 1982)						x			x	
Higher sense of community and satisfaction when new design implemented (McElroy and Morrow 2010)									x	
Enhance a sense of community and shared mission (Davis, 1984).									x	
Employees felt their jobs had less significance after the move to open space (Oldham and Brass 1979)										x

Greater empathy and understanding between teams which improved sense of community and cooperation (Hall and Ford, 1998)											x											
Increased group sociability (Brookes and Kaplan, 1972)											x										x	
Open office environment enhances communication because it allows its occupants to interact in collaborative and spontaneous manner																						
										x												
										x												
										x												
										x												
Less time is spent in formal meetings and more in informal communication (Brennan, Chugh and Kline, 2002)																						
Communication perceived by one party as distraction and it has positive impact on the performance only if the interruption is related to task at hand (Mark, Gudith and Klocke, 2008)										x											x	
Colleagues who are sitting close to each other have more face-to-face interaction (Keller and Holland, 1983).										x												
Communication increases if your colleagues know where you are sitting and you are easy to find (Kabo, 2018).										x												
Increased communication leads to more effective collaboration (Heerwagen et al., 2004)																						x
Multitaskers are most suffering from open office distractions (Ophir et al. 2009)																						
Distraction in leads to office occupants communicating less and become indifferent to their colleagues (Sander et al., 2019).																						

Appendix 2. Interview plan for focus groups

Introduction

Goal of the research and reason why those people were selected for the interviews.

Explanation about recording the interview and anonymity of persons.

General questions

What do you believe are the benefits of working in open office environment? Bring an example.

What are the downsides?

What was most difficult to get used to in the new office? What became easier?

Communication

With how many people in your close proximity do you need to speak to due to work every day?

Does the fact you see them have an impact on the ease of communication?

How do you approach someone when you want to speak to him/her? Is it different now?

Were there any rules communicated with the new setting? And are they followed?

Noise

How do you feel noise levels have changed on the new office?

How do you evaluate your ability to concentrate now that you cannot close the door and work in silence?

How do you handle tasks that require high concentration?

Privacy

How does it impact you that your colleagues can see what you do (when you come, leave, what are you working on) now that you are more visible?

How does open office impact the way you have private conversations?

Do you have enough privacy to do your work tasks?

Sense of Community

Do you feel the new setting has changed the company culture regarding being more united because of no walls?

Is it important to you that all employees have equal opportunities based on where they are sitting in the office?

How has open office impacted your motivation to do your work?

Proposals

What can the company do to increase your satisfaction on open office

Appendix 3. Interview recordings

Interview recordings are available from May 13th until June 5th 2019 in following web address:

<https://drive.google.com/drive/folders/1I4bWafNxbmge-frwGN4msTobC4IWIQB2?usp=sharing>

Later as per request.

Appendix 4. Questionnaire

- 1) Rank four different factors based on the impact they have (communication, noise, privacy, sense of community).
- 2) Which factors have changed to positive, which to negative direction and which have not changed at all?
- 3) Open question to add comments.

Õpiku avatud kontori mõju võrreldes Järvevana tee kontoriga

* Required

Järjesta sind enim mõjutavad faktorid avatud kontoris (1 - kõige rohkem mõjutav, 4 - kõige vähem mõjutav) *

	1	2	3	4
Kommunikatsioon töökaaslastega	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Müra	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Privaatsus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ühtsustunne	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Mil määral mõjutavad sind allolevad faktorid Õpiku avatud kontoris võrreldes Järvevana kontoriga? *

	On palju parem	On veidi parem	Ei ole muutunud	On veidi halvem	On palju halvem
Kommunikatsioon töökaaslastega kontoris	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Müratase	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Privaatsus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ühtsustunne	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Lisaks loetletule (müra, kommunikatsioon jne), kas avatud kontoris on veel midagi, mis sind mõjutab? Mis on selle tulemus?

Your answer

SUBMIT

Never submit passwords through Google Forms.

Appendix 5. Chairman of the board interview questions

- 1) What do you believe are the benefits of working in open office environment? What are the downsides?
- 2) What were the goals for moving the office? Was the move successful from board point of view?
- 3) Presenting and discussing results from qualitative and quantitative research.
- 4) Is it important to have employees coming to office to work from your point of view?
- 5) Discussion about proposals from employees to improve the office environment.

Appendix 6. Company HR strategy

People Strategy



GOAL	Success indicators:	
<p>Through People Strategy we have balanced Leaders, who care, listen and develop in change. Organization with best Technology Leadership competences in Sustainable Culture. Employees as Brand Ambassadors are open minded towards innovation.</p>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Commitment Engagement perception</p> </div> <div style="text-align: center;">  <p>Commitment Right competence</p> </div> <div style="text-align: center;">  <p>Commitment Work Environment</p> </div> </div>	
Key goals for 2019		
<p>Sustainable Culture</p> <p>Brand Ambassadors – every individual is a brand ambassador. One team approach - role clarity.</p> <ul style="list-style-type: none"> — Coaching & Mentoring — Feedback culture/recognition/empathy & diversity — Safety first — Work & Life Balance 	<p>Continuous Development</p> <p>Developing new skills to prepare you for future business demands.</p> <ul style="list-style-type: none"> — Strategic competencies related to EST & units strategy — IPM evolution 	<p>Succession Management</p> <p>Right people at the right place.</p> <ul style="list-style-type: none"> — Common framework & tools — Cooperation with Universities — Career planning – leaders involvement how to support

Appendix 7. Questionnaire results

1. Rank the factors(based on 1 - most influenced; 4 - least influenced)	Communication	Noise	Privacy	Sense of community
Number of people who answered these are most influenced factors	3	7	8	4
	2	7	6	7
	11	3	5	3
Number of people who answered these are least influenced factors	6	5	3	8
2. How are below factors influencing you compared to old office?	Communication	Noise	Privacy	Sense of community
Much worse	2	11	10	1
A bit worse	3	5	9	5
Has not changed	10	4	2	12
A bit better	4	1	1	3
Much better	3	1	0	1