

# Survey results

towards green Äänekoski



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## Introduction

This paper is going to analyze the results of the survey conducted in 2019 among workers of the Äänekoski city. The survey was focusing on four areas: waste management, energy, commuting and influencing. The survey aimed to illustrate city's current position regarding the environment and employees' attitudes towards environmental aspects. First, this paper will introduce the starting points of the survey and then examine the results by subareas. In conclusion, the results are reflected in the roadmap created by this project.

Table 1

	Overall	Growth and education	Central administration	Basic security	Technical	Freetime	Sister companies	Total	Not responded
<b>N: Waste management</b>	281	96	33	86	23	9	32	279	2
<b>N: Energy</b>	275	93	32	85	23	9	30	272	3
<b>N: Commuting</b>	273	92	32	85	23	9	30	271	2
<b>N: Influencing</b>	269	91	32	84	23	8	28	266	3

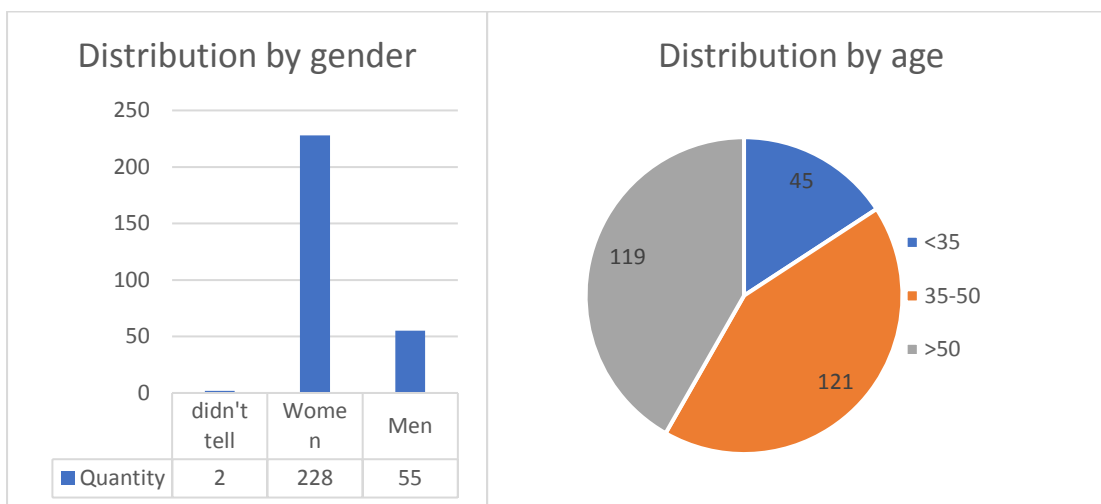


Figure 1

Figure 2

The survey was conducted online and according to the survey forms given us by the city, it seemed that there might have been a small variance in open questions between the departments. These differences are left outside the analysis done for this paper except the notice that telecommuting might be impossible in some duties. At a maximum, 281 respondents were answering the survey but 12 of them have interrupted during the survey and

in the last section only 269 respondents were conducting. Besides, a few of the respondents did not respond to all questions. Detailed information about respondents is shown in chart A and figures A and B.

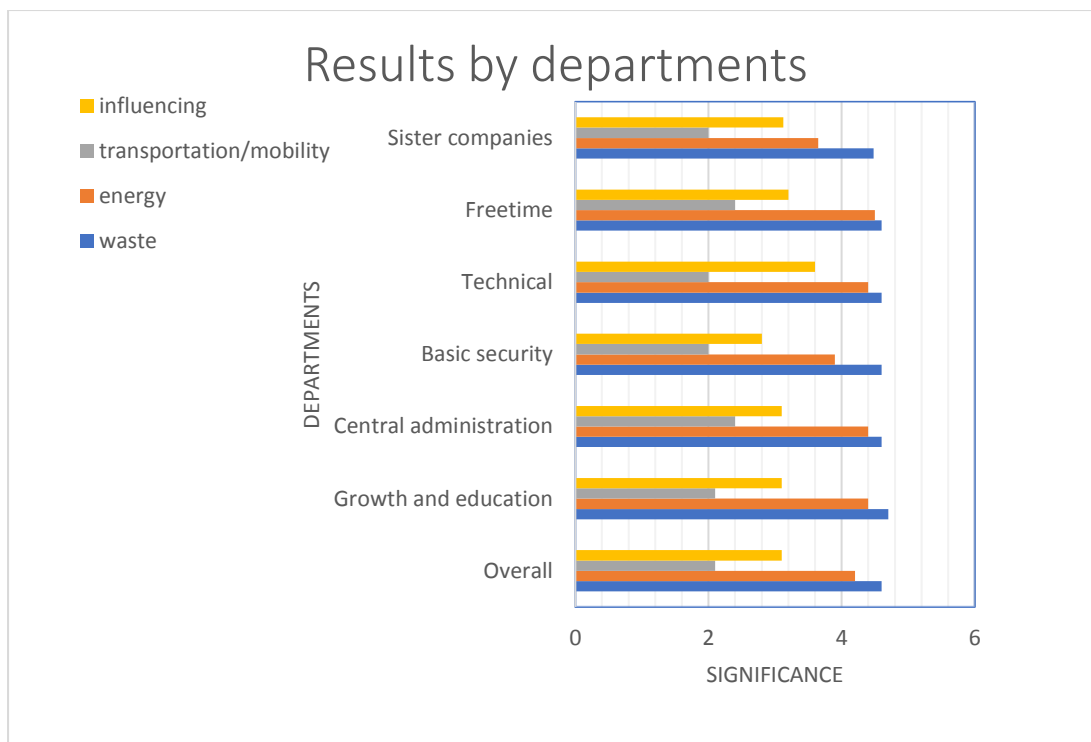


Figure 3

Figure C shows that the trend of the results is quite similar between departments even if there are a few differences regarding the result. It must be noticed that results can not be compared between the survey sections since the scale is not comparable but evaluation between departments can be done. Later on, the results are examined in more detail.

## Waste management

Waste management was overall considered important by an average of 4.6. Reasons for the favor of waste sorting might be linked to its long traditions in Finland. Because of the traditions, recycling and sorting are taken as granted in Finland. Also, sorting and recycling are both easy to execute in Finland as the results also show.

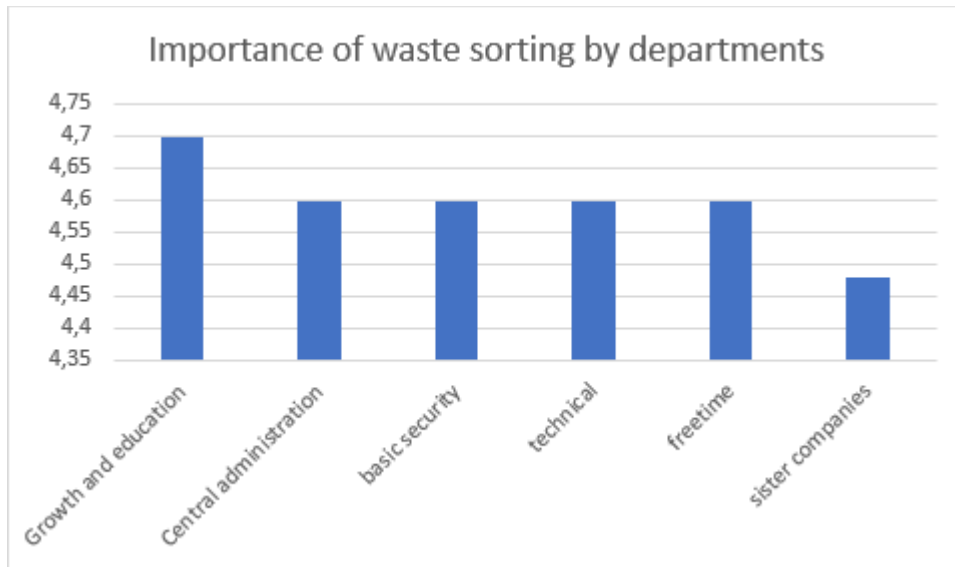


Figure 4

It seems that waste management is considered as the most important theme among all departments. As can be seen from figure D the department of growth and education considered waste sorting with the highest importance by the average of 4.7. However, also other departments valued the importance of waste management high. Sister companies have evaluated waste management by the lowest significance.

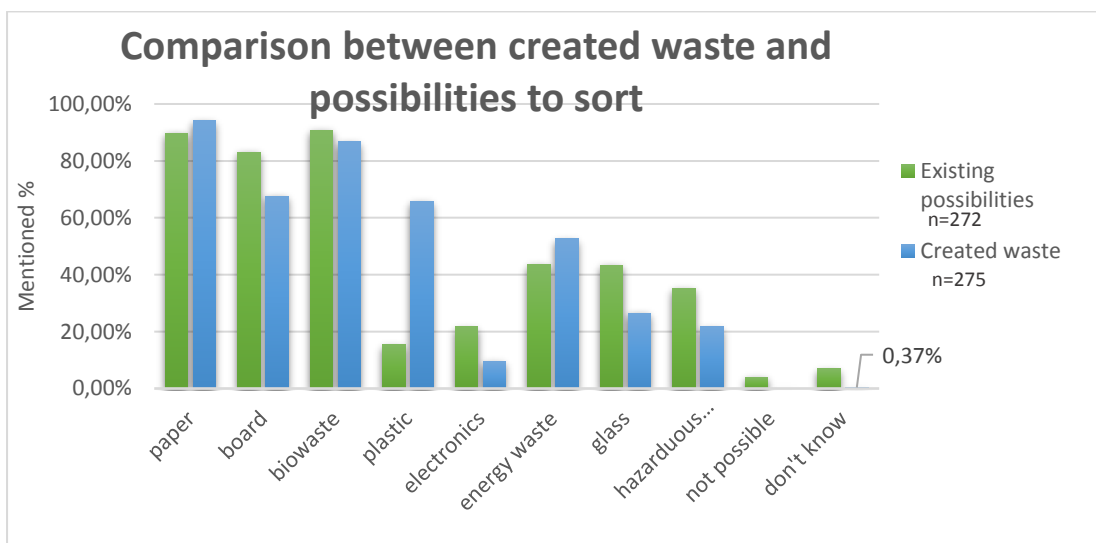


Figure 5

As we can see from figure E the existing possibilities to sort the created waste were mostly in balance. However, conclusions about how adequate sorting possibilities were can not be made because the survey was charting existing possibilities. Board, bio waste, and glass are examples of ordinary waste that seemed to have sorting possibilities over created waste. There also seemed to exist sorting possibilities for waste created less frequently. Hazardous waste and electronics were examples of this kind of waste. Nevertheless, there also occurred a lack of sorting possibilities even with waste created in everyday life such as paper and energy waste. This could be partly explained by the various titles used for energy waste which can be for example called mixed waste. Still, the biggest challenge seemed to be the sorting possibility for plastic which was lacking behind its creation. It is interesting that according to the survey, sorting was not possible in all branches, and in some cases, respondents did not know if the sorting was possible at all. Nonetheless, these shares were occurring at a low level and can not be kept as significant.

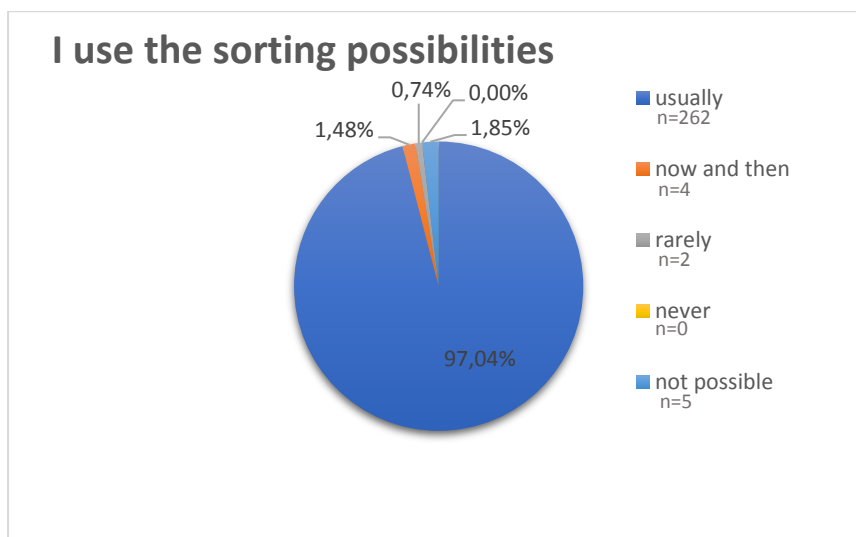


Figure 6

According to survey sorting was very popular among all departments. As figure F says over 97% of respondents were usually sorting their waste. Other answers were minorities. There is a small inconsistency between figures F and E since in figure F fewer respondents choose the option “not possible”. Nevertheless, it can be inferred that sorting and recycling were used frequently.

## Energy

This chapter will go through topics related to energy consumption, such as computer usage and lightning in workplaces. Transportation and telecommuting will be examined in the next chapter. To properly interpret the questions of this section it is important to notice that most of the municipality employees were using a computer in their work. According to the survey 267 of 285 respondents were using a computer and only 7 of respondents answered that they did not use a computer in their work. 11 respondents did not answer.

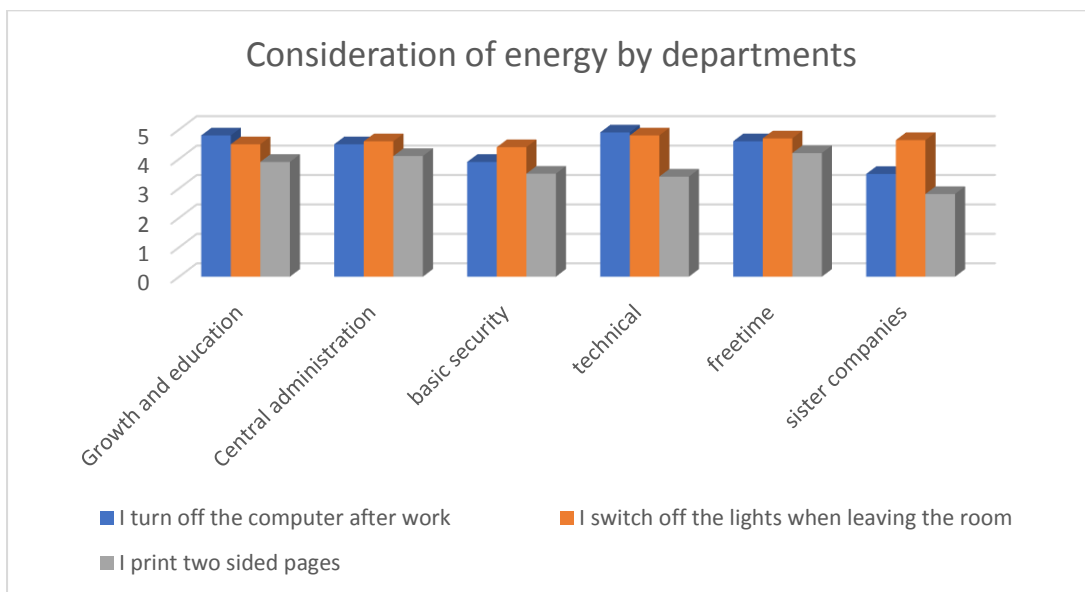


Figure 7

It seems that computers were not always turned off after work especially in the departments of basic security and sister companies. However, such a small action as this should be self-evident in terms of energy saving. Disinclination to shut down computers might be caused for example by log in difficulties. Switching off the lights when leaving the room was generally more common habit and was rated over four in every department. Its rate was still lower than switching off the computer in the growth and education department and technical department. The biggest variance was occurring in printing habits and it is evaluated to be the worst-performing sector in every department.



## Transportation and commuting

In this section commuting modes are analyzed. Overall, it seemed that a private car was the most popular choice to commute. The survey also pointed out that the biggest reason preventing telecommuting was a work task that can not be done from the distance.

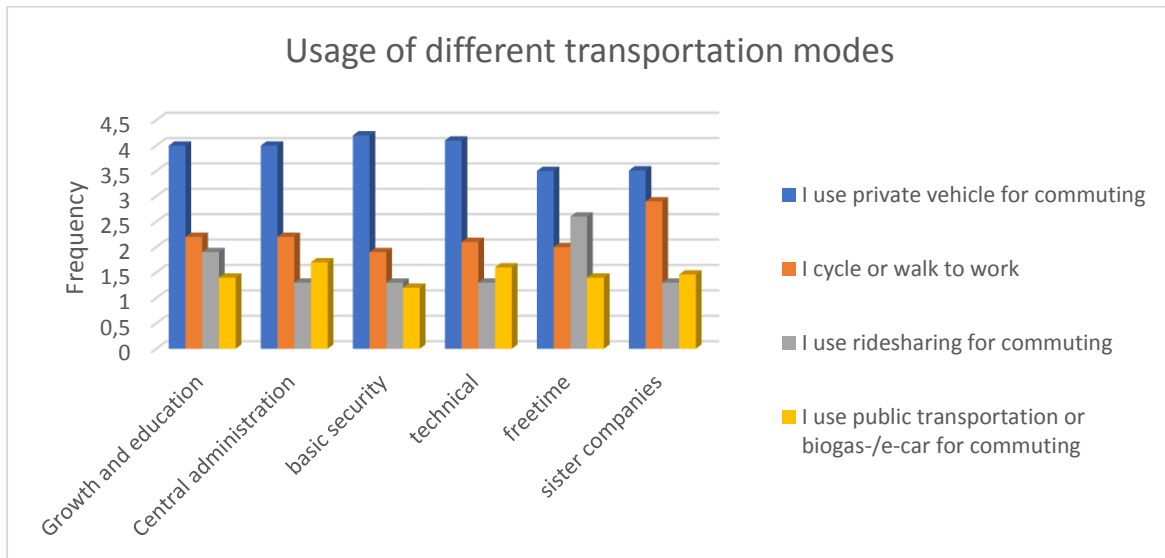


Figure 8

A private car was the most common commuting mode in every department. Cycling or walking was the second most popular choice in all departments except the freetime where ridesharing was ranked to be the second. However, because freetime is a small department with only nine workers the result is not significant. The use of biogas or e-car was varying similarly with ridesharing. Their mutual order depended on the department. According to the survey, 42.46% of respondents would have used the company e-bike for short commutes. 45.96% of respondents answered that they would not use the e-bike for short commutes and 11.58% did not respond. The responses were equally derived between the departments.

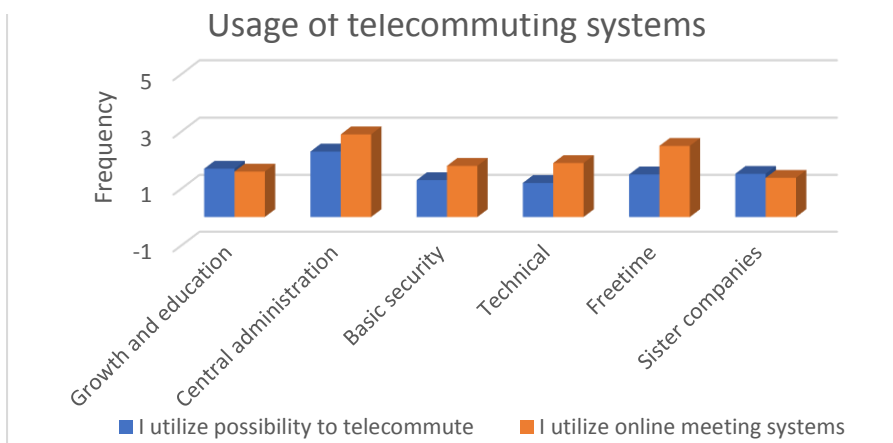


Figure 9

It was foreseeable that both telecommuting and the use of online meeting systems were most popular in the central administration department. Online meeting systems were the second most common option in the freetime department but again the small sampling might disturb the results. However, the overall utilization of online meeting systems was ranked to be more popular than telecommuting. Nevertheless, the framing of the question might have influenced the result since the question asked if the respondent is utilizing the telecommuting possibility but many of the respondents mentioned that the work can not be done properly from the distance. This can be also interpreted from figure J because the rate of telecommuting remained quite low.

## Influencing

Herzberg's theory of motivators and hygiene factors suggests that corporate responsibility can affect employees' long term motivation (Gawel, 1997). Therefore, we infer that possibility to affect environmental issues could lead to higher job satisfaction. In this sense, this chapter is important to improve the sustainability of the city of Äänekoski.

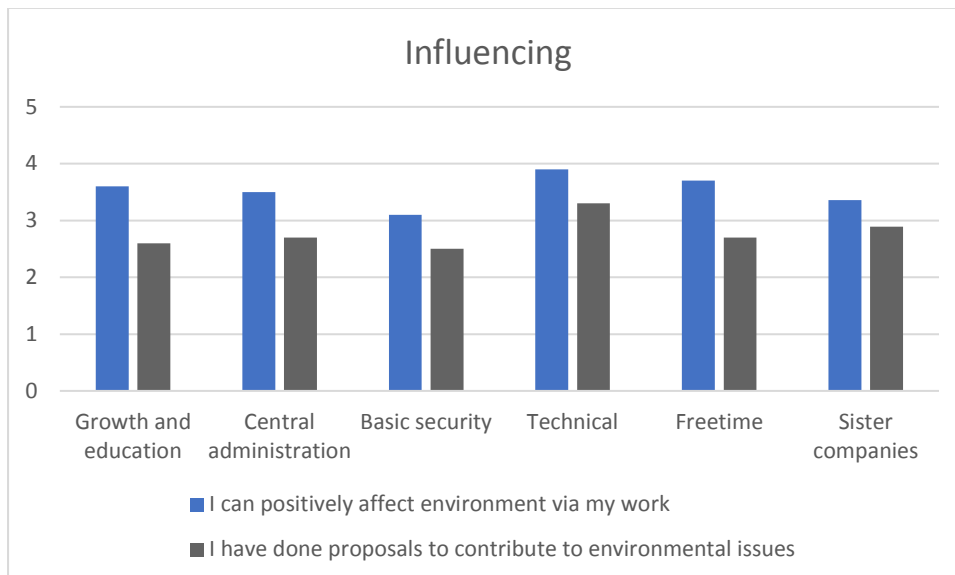


Figure 10

Inferring from the figure K respondents seemed to agree at a low level with the statement that they can positively affect the environment. Oppositely respondents were barely disagreeing with the proposal that they had done proposals to contribute to environmental issues. The technical department was the only one agreeing with both statements. Therefore it can be fruitful to encourage employees to make proposals for better sustainability. Because they somehow feel they can affect positively the environment, there might be potential to do something more. The possibility to influence might also raise job satisfaction as stated previously.

## Conclusion

The two biggest problems occurred seemed to be the usage of a private car for commuting and the lack of plastic recycling possibilities. Especially the shortage of plastic recycling is conflicting with Marin's government program's (2019) recycling objectives and aim of achieving the circular economy. The problem related to commuting can be resolved by improving telecommuting possibilities where it is possible. E-bikes provided by the municipality might also be one solution but the eagerness to use them stayed moderate. However, for example, Dudenhöffer (2013) claimed that green values related to electric vehicles were recognized only after the test drive. Hence bias related to e-bikes could be relented by offering test possibilities. Otherwise, it seemed that environmental issues were taken into the account well. To reduce the energy and paper consumption it might useful to encourage employees to print two-sided papers and to turn off the lights when leaving the room. In the future, technology such as motion detectors could be used.

The results of the survey might be inaccurate because of the small sample. There also seemed to be a reluctance to answer the survey and often all of the respondents did not answer all questions. However, we assume that the survey can still be used to chart where the city of Äänekoski is currently in terms of sustainability and in which field it should focus on.

From the perspective of the roadmap, actions based on the survey results should be included in all steps. The results can be used in the formulation of the vision in the first step, for example by thriving towards a circular economy. In the second step problems that occurred in the survey could be used to determine the targets to achieve sustainability. There were findings in all subareas that could be included in the goal formulation. Next, the city of Äänekoski should set clear targets according to the survey in step three. Especially plastic recycling should be considered, for example by setting a target that 90% of the plastic will be recycled. Other detailed targets should consider the problems related to commuting and influencing. These targets must be determined in a way that they can be measured and the process can be tracked. To achieve these targets new policies should be created and new procedures should be made as step four describes. These procedures can be furthermore included in the corporate culture. Besides, the results should be considered in the last step so the recycling rates can be increased and the carbon footprint of commuting can be decreased in the entire area of the municipality.

## References:

- Gawel, J. E. (1997). Herzberg's Theory of Motivation and Maslow's Hierarchy of Needs. *Practical Assessment, Research, and Evaluation*, 5(11).
- Dudenhöffer, K. (2013). Why electric vehicles failed. *Journal of Management Control*, 24(2), 95-124.
- Valtioneuvosto. (2019). Pääministeri Marinin hallitusohjelma 2019. Helsinki. Retrieved 6.2020 from <https://valtioneuvosto.fi/marinin-hallitus/hallitusohjelma>