



Urban or rural running?

A research into the motives of runners to run where they do



Daniëlle Eleveld
S2579952

Bachelor project Human Geography & Planning
Faculty of Spatial Sciences
University of Groningen
Supervisors: prof. dr. D. Strijker & M. Silveira Brito

Title: Urban or rural running?
Subtitle: A research into the motives of runners to run where they do
Author: Daniëlle Eleveld
Student number: S2579952

Bachelor project Human Geography & Planning
Faculty of Spatial Sciences
University of Groningen
Supervisors: prof. dr. D. Strijker & M. Silveira Brito

Copyright picture front above: Annemerel de Jongh. In use with permission.
Copyright picture front below: Ingrid Oving-Wubs. In use with permission.

Word count: approximately 6600

Abstract

Unhealth due to physical inactivity is an issue that appears on a global scale nowadays. To stimulate people to live an active life, we need to know what is needed and what kind of circumstances are preferred. Not much is known about the geography of Dutch runners and what influences this geography. Therefore, the central question of this research is “What is the difference in physical activity behavior in rural and urban areas and why does this difference occur?”. Data was gathered through a questionnaire using accessibility sampling while visiting running events and using the snowballing technique with an online questionnaire. The number of runners with an urban preference turned out to be insufficient in physical activity levels between runners that prefer to run in the urban and runners that prefer to run in the rural. For this reason, some data is also explored taking into account the actual place for physical activity. Statistical analysis showed that, overall, environment and perceived safety are not significantly influencing physical activity levels of respondents. It also showed that older respondents tend to be slightly more physically active than their younger peers, that people would run more if the environment was more suitable to do so, and that feelings of unsafety are mainly prevalent in women.

Key words

Physical activity
Running
Urban
Rural
Health
Environment
Safety

Index

1. Background and motivation	5
2. Research problem	5
2.1 Reading guide	5
3. Theoretical framework	7
3.1 Health	7
3.1.1 Health benefits of physical activity	7
3.1.2 Geography of inactivity	7
3.1.3 Differences in gender	7
3.2 Environment	8
3.2.1 Built environment and its effect on physical activity	8
3.2.2 Access to facilities	8
3.2.3 Influence of social and personal environment	8
3.3 Safety	9
3.3.1 Safety and its effect on physical activity	9
3.3.2 Safety from traffic	9
3.3.3 Safety from crime	9
3.4 Conceptual model	10
4. Methodology	11
4.1 Data collection instrument	11
4.2 The questionnaire	11
4.3 Ethical considerations	11
4.4 Analysis methodology	12
5. Results	13
5.1 Descriptive statistics	13
5.2 Difference in quantity physical activity	13
5.3 The influence of the environment	14
5.4 The influence of perceived safety	15
5.5 The choice aspect in place for physical activity	15
5.6 Explorative analysis actual place of running	16
6. Conclusion	18
6.1 Reflection and recommendations	18
7. References	20
8. Appendices	22
Appendix 1: Questionnaire (English and Dutch)	22
Appendix 2: Scheme of analysis	28

1. Background and motivation

Nowadays, health is a hot topic: not only in the academic world but also in everyday society. Life expectancy rates have not stopped increasing for decades (The World Bank, 2017), but at the same time, obesity and other health related problems are difficulties an ever-increasing amount of people have to face (World Health Organization, 2016). Figure 1 shows that overweight is also a huge problem in the Netherlands. Physical activity can provide substantial health benefits and can help in reducing the rate of obesity in the Netherlands (World Health Organization, 2017). To get people live a healthier life, physical activity is thus stimulated, for example by the Dutch government (Rijksoverheid, 2017). A lot of research into the motives and barriers for people to perform physical activity has been done in the United States (see for example Brownson et al., 2000; Parks et al., 2003; Patterson et al., 2004; Yousefian et al., 2009; Hill et al., 2016). Dutch or even European data reading this issue is extremely limited, indicating the academic relevance of this research. This study tries to help fill this literature gap and wants to get to know the motives and barriers of the Dutch urban and rural population for being physically active. With this knowledge, a targeted approach can be chosen to stimulate people to be more active. The societal relevance is to provide the government, and other organizations that want to stimulate people's activity, guidance in their approach of doing so.

2. Research problem

The aim of this research is to get to know where runners prefer to be physically active in the Netherlands, to find out if there are differences between certain groups and why these differences occur. Do Dutch runners prefer the urban streetscape or do they like to run in the calm of nature? Is there a difference in, for example, men and women? Why does this difference present itself? The main research question will thus be: "What is the difference in physical activity behavior in rural and urban areas and why does this difference occur?". This research will try to answer this question by studying the following secondary questions:

- Is there a difference in the quantity of physical activity between people that prefer to run in the rural and people that prefer to run in urban surroundings?
- Has the environment, physical and social, influence on the physical activity level of individuals?
- Does perceived safety play a role in the amount of physical activity conducted?

2.1 Reading guide

The theoretical background of this research is set out in chapter 3. The theoretical framework is divided into four subchapters: health, environment, safety and the conceptual model. Information concerning these topics are explored and brought into relation with this specific research. In chapter 4, the methodology of the research is treated. The data collection instrument and the questionnaire itself are taken into account. Next to that ethical considerations are handled. The results can be found in chapter 5. Chapter 6 covers the conclusion of this research and a reflection and recommendations.

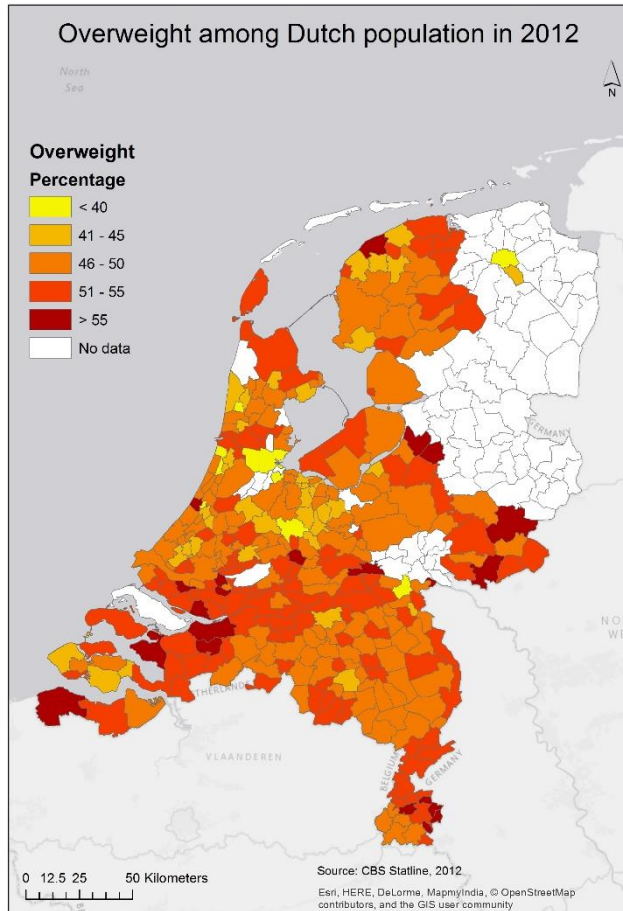


Figure 1: Overweight among Dutch population in 2012

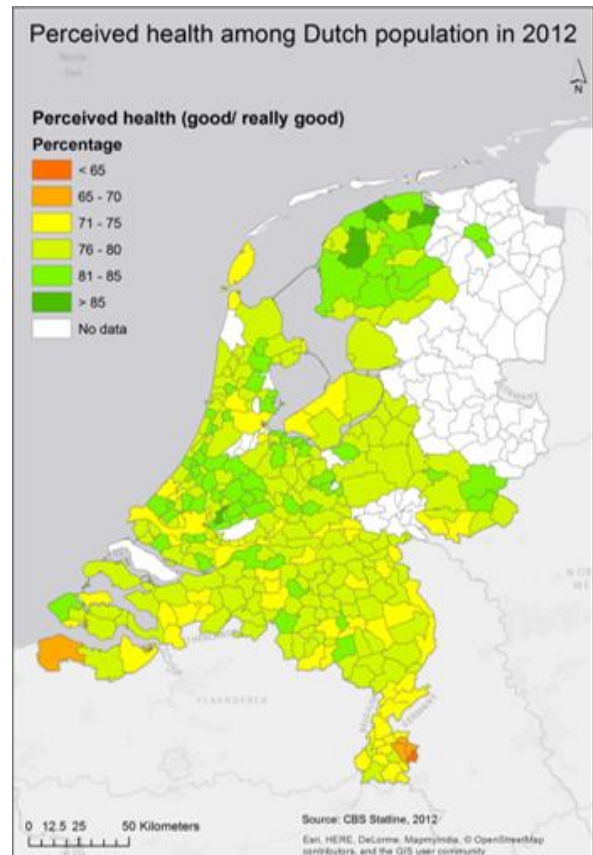


Figure 2: Perceived health among Dutch population in 2012

3. Theoretical framework

3.1 Health

3.1.1 Health benefits of physical activity

Physical activity can have a positive influence on health, and, on the other side, physical inactivity can cause an unhealthy body (Giles-Corti & Donovan, 2002; World Health Organization, 2017). Physical inactivity can be a huge influencer in obesity and chronic conditions (Brownson et al., 2000; Van Lenthe et al., 2004; Witten et al., 2008). Research has proven people do not need a huge amount of activity to stay healthy: even moderate levels of activity have a positive influence on health (Giles-Corti & Donovan, 2002; Coen et al., 2016) and when changing a lifestyle from completely inactive to a lifestyle with a small amount of activity, substantial health benefits can be enjoyed (Brownson et al., 2000). Physical activity in all its levels of intensity causes a positive influence on one's health. Both vigorous and light physical activity and everything in between will benefit one's physical state (Brownson et al., 2000).

The positive effects of an active lifestyle have been proven well in previous research. However, a substantial part of the population does not conduct this active lifestyle but remains in their sedentary mode. This is true for the American population (Brownson et al., 2000), but also for the Dutch population, in which more than 30% does not conduct enough physical activity (Van Lenthe et al., 2004; TNO, 2013). In a survey conducted at the request of the European Commission, more than 60% of the respondents in most participating European countries did not sport on a regular basis (Van Tuyckom et al., 2010). Even though a lot of people do not sport regularly, the biggest share of the Dutch population sees themselves as healthy, as can be seen in figure 2. Figure 2 shows the percentage of the Dutch population that has, according to themselves, a good to really good health.

In general, physical activity depends on age: the older one gets, the less active his or her lifestyle will be (Coen et al., 2016). A lot of factors can influence the amount of activity an individual chooses to conduct in his or her life, such as individual behaviour, physical and social environments, and even policies (Yousefian et al., 2009). Multiple factors play a role in determining one's physical activity. When one tries to change this physical behaviour, the interconnectedness of all factors should be acknowledged.

3.1.2 Geography of inactivity

The risk of unhealth seems prevalent in mainly rural areas (Brownson et al., 2000) for both adults (Patterson et al., 2004) and youth (Yousefian et al., 2009). Higher rates of physical inactivity are found in the rural compared to the urban (Parks et al., 2003; Patterson et al., 2004; Yousefian et al., 2009; Hill et al., 2016). This trend is also true when looking at obesity rates: this rate is higher in rural residents compared to urban residents (Yousefian et al., 2009).

Reasons for this geography of inactivity are somewhat less researched, but Yousefian et al. (2009) name poorer nutrition as a causing factor and Patterson et al. (2004) blame barrier differences. Another possible reason one might think of is the level of physically active work already undertaken by rural residents. Patterson et al. (2004) show that this is not the reason for the inactivity of rural dwellers in the United States since the sectors that require more physical activity (farming, forestry, and fishing) obtain for only 5% of the rural economy. In the Netherlands, we see the same, with agriculture, forestry, fishing and the construction industry together counting for less than 10% of the total jobs (Centraal Bureau voor de Statistiek, 2016).

3.1.3 Differences in gender

Women are consistently less active than men (Patterson et al., 2004; Timperio et al., 2015), and this trend is visible on a global scale (Coen et al., 2016; World Health Organization, 2017). The consequence of this inactive lifestyle among women is that they cannot take advantage of the positive effects an active lifestyle offers. Coen et al., (2016) concluded that gender differences vary in activity type, with women less active in vigorous physical activity than men. Reasons for these differences in gender diverge from having to do with societal masculine ideals to the effect of social and material features of exercise environments to the opportunities for both sexes due to gendered work and family roles (Coen et al., 2016).

However, a study by Van Tuyckom et al. (2010) showed that, for the Netherlands, women tend to be more active regularly compared to men. One remark that has to be made here is the fact that only about 2000 Dutch citizens participated in this research which might limit the validity of the research.

3.2 Environment

3.2.1 Built environment and its effect on physical activity

The built environment can have an influence on physical activity, both positive and negative (Timperio et al., 2015). Parks et al. (2003) found for example that enjoyable scenery was associated with increased physical activity for rural women. Challenging environments with lots of physical barriers like a lack of public open space can have a negative impact on physical activity levels (Yousefian et al., 2009).

Not only facilities that are specifically built to stimulate physical activity, like gymnasiums, swimming pools or golf courses, influence people. The most popular and most frequently used facilities are informal facilities (Giles-Corti & Donovan, 2002). Public open space and the streets are thus of major importance for physically active people. Giles-Corti & Donovan (2002) therefore suggest that to support physical behaviour, it is these places that need attention. Brownson et al. (2000) suggested even earlier that to promote physical activity, changing physical environments would be useful. They recommended for example to build more walking trails. So, policy-wise there is still some work to do to get people to live a more active life in an environment that is adjusted for this lifestyle.

3.2.2 Access to facilities

The accessibility of this built environment and places and facilities is another determinant of physical activity levels. The likelihood that people meet physical activity recommendations is increased if there is an increase in the number of places available for physical activity as well (Parks et al., 2003). Giles-Corti & Donovan (2002) showed that this enhanced access has positive effects independent from one's socioeconomic status. An aspect that appears to be important is convenience: facilities, formal or informal, that have low travelling time, and are thus 'near home', were used the most by respondents of the Giles-Corti & Donovan (2002) research. This was confirmed in a research by Witten et al. (2008) and found to be true in densely populated areas in a research conducted by Hill et al. (2016). Witten et al. (2008) also found that quality of this environment is important: how well the place looked, amenities and size all had influence on whether people used the environment.

Access to places for physical activity is not geographically equally dispersed. These places for physical activity can be found in more quantity in urban areas (Hill et al., 2016). Another disadvantage for rural dwellers found by Hill et al. (2016) is that they have to travel further to reach these venues: places for physical activity are sprinkled over a larger area in the rural. When arrived there, the places also have fewer features and amenities. This might be the reason why rural inhabitants appeared to mainly use the streets for physical activity (Parks et al., 2003). Considering this, one might think that rural areas do not need specific physical activity venues, because of unlimited outdoor recreational opportunities. However, a study by Yousefian et al. (2009) shows that rural dwellers do have a desire for trails and other outdoor amenities because of competition for the use of the places by others, for example by vehicles. To have safe access to outdoor physical activity space, amenities especially for physical activity purposes are needed (Yousefian, 2009).

3.2.3 Influence of social and personal environment

Combining all this information, it is clear that having good access to physical activity facilities is necessary when trying to improve lifestyles into more active ones. Nonetheless, Giles-Corti & Donovan (2002) found that good access alone appears to be insufficient to enhance physical activity levels. Other types of environment, like the social environment, had an even stronger influence on physical activity. A favourable social environment, with support from family and friends and significant others performing sports activities as well, seemed to have a positive influence on physical activity levels. Members of a sports club were, for example, far more likely to meet physical activity recommendations. Next to significant others, the personal mindset also played a role. Positive individual factors and individual determinants increased the likelihood of being physically active (Giles-Corti & Donovan, 2002).

3.3 Safety

3.3.1 Safety and its effect on physical activity

Another element that has a relationship with physical activity levels is safety. Perceived safety and a general feeling of security may have a direct influence on physical activeness (Brownson et al., 2000; Hill et al., 2016). Seeing others perform physical activity may enhance physical activity levels of others as well since this gives the impression that the surroundings are safe to do so (Timperio et al., 2015). In 2002, Giles-Corti & Donovan already suggested paying attention to the design and safety aspects of places for physical activity to fulfil their full potential.

In the case of safety, a gender aspect might be expected. Timperio et al. (2015) did a study into women and leisure time physical activity and found that women living in perceived safe neighbourhoods may feel safer and consequently are more physically active.

Next to gender, geography might play a role as well. Brownson et al. (2000) stated that differences in perceived safety may occur in urban versus rural environments.

To give a better understanding of safety in relation to physical activity, the distinction between safety from traffic and safety from crime is made.

3.3.2 Safety from traffic

When thinking about safety from traffic in relation to physical activity, it might be expected that this would be more of a problem in urban settings, since there is more traffic present in the urban. However, a study by Hill et al. (2016) showed that the influence of safety from traffic had effects on both urban and rural residents. The negative effect of traffic was even a bit larger for rural dwellers. Other studies, including the research by Yousefian et al. (2009), suggest that this has to do with a lack of sidewalks. Yousefian et al. (2009) conducted a research among rural youth and found that safety of traffic was important for not being physically active, but it was not the main factor. Since the respondents were used to the rural traffic it was not a limiting factor anymore. What was mentioned as the main concern was safety from crime and problems of isolation.

3.3.3 Safety from crime

In the study by Yousefian et al. (2009), concerns about safety from crime were named as the main obstacle for physical activity. The respondents were most afraid of strangers, sex offenders, the presence of gangs or threatening individuals and criminal activity. Especially the presence of gangs in places that would otherwise be used for activity purposes is a concern over which local governments should bow their head. In a study by Hill et al. (2016), safety from crime was also a bigger deterrent for physical activity than safety from traffic, independent of venue of physical activity.

Timperio et al. (2015) did a study on the gender aspect of safety of crime. They found that women are more afraid than men to being victims of a variety of crimes. Hill et al. (2016) also conclude that incivilities in the environment reduce the level of physical activity, particularly among women.

Geographically speaking, a dichotomy exists in safety of crime. On the one hand, problems of isolation might play a role in a rural context, as suggested in the study by Yousefian et al. (2009). On the other hand, Timperio et al. (2015) found that rural dwellers felt more safe concerning crime when compared to urban residents. When talking about feeling safe walking in the neighbourhood, day or night, rural women felt safer compared to urban women (Timperio et al., 2015).

3.4 Conceptual model

The different aspects can be deduced into a conceptual model (see figure 3), where the main concepts *environment* and *safety* influence the amount of physical activity an individual undertakes. The concept of *environment* consists of the *physical environment* and the *social environment*. Within the concept of *safety*, a distinction is made between *safety from traffic* and *safety from crime*. This all has its influence on *physical activity*, which in turn influences personal *health*.

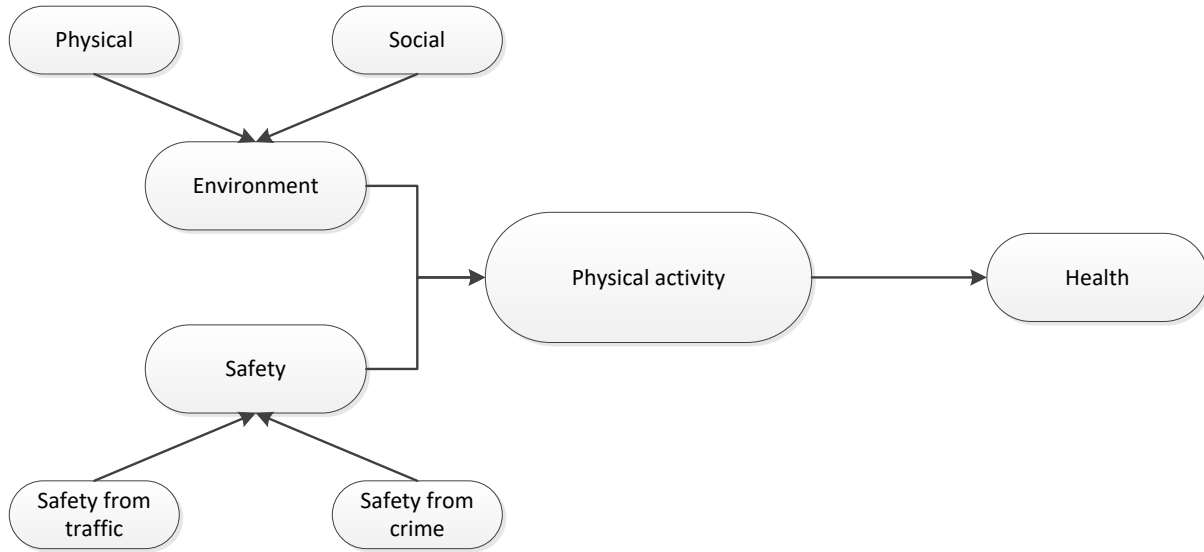


Figure 3: Conceptual Model

4. Methodology

4.1 Data collection instrument

Use of a questionnaire is chosen to gather information for this research. Since the information needed is about people's lives and behaviour and since there is no data already available for the Dutch population on this topic, a questionnaire is a well-advised method (McLafferty, 2010) (the entire questionnaire is added in appendix 1). Since this research aims to be able to say something about the activity of the Dutch population it is necessary to use a quantitative research method: by using questionnaires, individual-level data is gathered but conclusions for general patterns can be drawn when aggregating the data (Gregory et al., 2013).

To find sufficient respondents two running events were visited: the 'Astrea Run Groningen' on the 25th of March and the 'Annerboscross' on the 26th of March. These events were chosen because of their respectively urban and rural background. The 'Astrea Run Groningen' is an event in the city of Groningen, where you might expect runners with an urban preference. The 'Annerboscross' is a trail run in the rural village of Annen in the province of Drenthe, where you might expect runners with a rural preference. While visiting events, you can only make use of accessibility sampling, with which you only reach people that are at that moment at that place (Rice, 2010). To make it possible to reach others as well, the technique of snowballing was used: use some respondents to get in contact with more possible respondents (Valentine, 2005, in Longhurst, 2010). For practical reasons to reach these respondents, a digital questionnaire was set up. A disadvantage of this can be that the respondents filled-out the questionnaire less complete or accurate, because they could not directly get more information from the researcher about questions if they needed or wanted to (McLafferty, 2010).

4.2 The questionnaire

The questionnaire that was used to gather data consists of four sections. The first section contains some general demographic questions like gender and age. The second section is about health and if the respondent sees his- or herself as healthy. The third section is about physical and social environment and their influence on the runners' activity levels. The fourth and last section contains questions about safety from traffic and safety from crime.

To answer the central and partial questions of this research, knowledge about attitudes and opinions of respondents is needed. The Likert-scale is an often-used method to find this out (McLafferty, 2010). To give the respondents the option of a neutral answer, which is, according to previous research, best because the respondent is not forced to choose a direction (McLafferty, 2010), a five-point Likert-scale was used. A five-point scale was chosen above a three-point scale because responses are more accurate when given more options to choose from (McLafferty, 2010). For reasons of clarity, a five-point Likert-scale was chosen over a seven-point Likert-scale.

In the period of March 24 to April 13, 112 filled-out questionnaires were gathered. 54 were filled-out using the snowball technique with the online questionnaire. The other 58 respondents were found on the visited events, where 42 questionnaires were filled-out at the 'Astrea Run Groningen' and 16 at the 'Annerboscross'.

4.3 Ethical considerations

Ethical problems are not expected since personal background facts like income or political stance are not part of the questions in the questionnaire. One thing to keep in mind might be the insider/outsider problem. When conducting questionnaires, you might be seen as an outsider (Sijtsma, 2017). However, in reality, this appeared to be non-applicable in this situation since many people asked if the researcher was a runner too, and because this was the case they might have seen the researcher as an insider. To increase positionality, attention was paid to clothing: a more sportive attire was chosen while conducting questionnaires. The insider/outsider issue might have been more of a problem to the digital respondents than to the real-life respondents since small talk and things like clothing and attitude are non-applicable to online data gathering. With an online questionnaire, the researcher can feel more like a stranger than when conducting questionnaires face to face.

Another consideration is that the given answers might be socially acceptable answers (McGuirk & O'Neill, 2010). In the case of this research, people might state that they conduct a higher amount of sports per week than they actually do. However, because the respondents are all runners, and thus active people, the possibility that this will cause major deviations is small.

Ethical considerations concerning the respondent's given answers and the process of filling-out a questionnaire are stated in the introduction of the questionnaire. Attention is paid to the rights of respondents: they can stop the questionnaire anytime they like, they can skip one or more questions if they would rather do so and they can always ask the researcher for clarification about certain questions or the research itself. Also, clarification about anonymity and what will happen to the gathered data is given: the data are not retraceable to the respondent and it will not be used for other research.

4.4 Analysis methodology

The answers to the secondary questions of this research are needed to try to answer the main question. The secondary questions are answered by using different statistical methods on the gathered data. For an overview of these statistical methods and outcomes, see appendix 2. Which statistical test was used is chosen based on the variables of the question handled. Considering this, Chi Square tests, Oneway ANOVA tests and a single Simple Linear Regression were used (based on Moore & McCabe, 2012). When using the Oneway ANOVA, it appeared that the standard deviations of most tests differed by more than two between highest and lowest value. To control for these deviations, a Kruskal-Wallis test was used as a follow-up. Based on these Kruskal-Wallis tests the findings were noted.

5. Results

5.1 Descriptive statistics

The questionnaire used in this research was filled-out by a total of 112 respondents. Of these respondents, 52.7% is male, and 46.4 % is female. The difference here is common in running: according to a research done by Centraal Bureau voor de Statistiek (2007), 15.8% of the men that are active in solo sports runs. For women, this is 12.5%.

In the data gathered in this research, the age of respondents ranged between 16 and 71. Of the 112 respondents, only 5 were above 65. Because of this, the data considering age is made into three groups: <24 years old, 25-44 years old and 45<. The age group 45< makes up the biggest share, as can be seen in figure 4. This particular distinction is made to have roughly three different groups where different levels of physical activity can be expected: young adults, adults, and older adults.

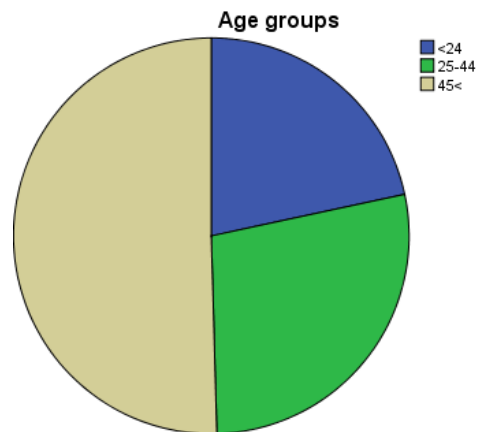


Figure 4: Age distribution of respondents

Place of residence of respondents was quite equally distributed with 42.2% living in a village or town or in the rural and 57.8% living in a city or on the outskirts of a city.

5.2 Difference in quantity physical activity

The level of activity for this research is measured according to the World Health Organization (2011) recommendations. Considering these recommendations, adults between 18-64 years of age should conduct at least 150 minutes of physical activity a week (WHO, 2011). To create health benefits, adults should perform at least 300 minutes of physical activity a week. Respondents of this research filled-out the number of times a week they performed physical activity and the length in minutes for each time they were physically active. With this information, activity in minutes per week was calculated and recoded into three activity groups. The activity groups are based on the recommendations of the World Health Organization and include a group with respondents performing physical activity 150 minutes or less per week, a group with respondents performing physical activity 151-300 minutes per week and a group with respondents that perform physical activity more than 300 minutes per week. As can also be seen in figure 5, 24.1% of respondents does not meet the WHO minimum. However, almost a third of respondents is physically active enough to theoretically enjoy health benefits.

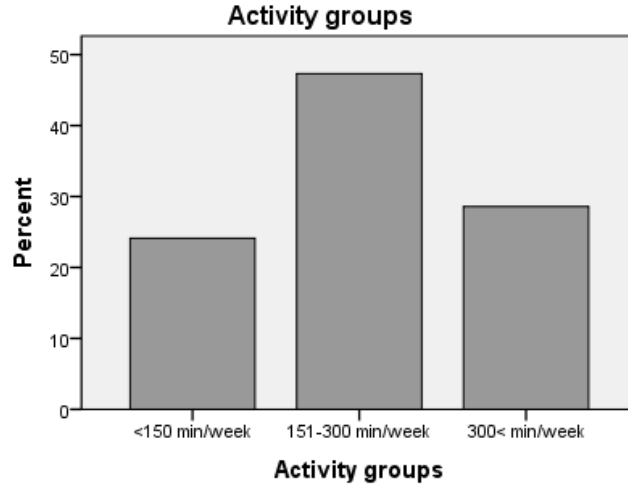


Figure 5: Activity distribution of respondents

According to a research by NOC NSF (2014) and the research by Coen et al. (2016), the older the age, the lower the rate of running. In the gathered data of this research (as shown in figure 6) however, this distinction is not so clear. For respondents being physically active below 150 minutes per week it is true that the oldest age group (respondents of age 45 and older) has the lowest rate of physical activity. In the second activity group however, we see that 50% of respondents below 24 years of age and 50% of respondents above 45 years of age spend 151 to 300 minutes physically active a week. This is more than the 41.9% of the respondents in age group 25 to 44. When we look at the most exercise a week – more than 300 minutes of physical activity per week – we see that the oldest age group contributes the most to this activity group, and thus the oldest people being most active per week. This is a clear contradiction with the results of Coen et al. (2016).

Activity groups * Age groups Crosstabulation

Count

		Age groups			Total
		<24	25-44	45<	
Activity groups	<150 min/week	6	9	11	26
	151-300 min/week	12	13	28	53
	300< min/week	6	9	17	32
Total		24	31	56	111

Figure 6: Count of age according to activity

5.3 The influence of the environment

This research proved that the actual activity would increase if there would be a more suitable environment to run in, consisting of good and safe routes. The Oneway ANOVA and the Kruskal-Wallis test showed that there is a significant influence considering the suitable environment and the number of active minutes per week per respondent. So, the environment can have an influence when it is changed for the better. Next to this one significant influence, the other five questions about the environment did not appear to be significant. In this sense, it can be said that the environment as it is does not have a significant influence on how many minutes per week the respondents are active. This is a contradiction with the results of research as shown in chapter 3.

The social environment is represented in the questionnaire by two questions. The first question entails encouragement to run by a partner and/or family. The second question entails encouragement by the people who the runners run with. Both statistical results appeared not to be significant, meaning that both encouragement by a partner and/or family and fellow runners does not change the number of minutes respondents are physically active. In the Giles-Corti & Donovan (2002) study the opposite was found.

5.4 The influence of perceived safety

To get to know if perceived safety plays a role in the amount of physical activity conducted, six questions about feelings of (un)safety were asked in the questionnaire. During the data collection, respondents expressed their concerns mostly towards this topic, adding information on reasons why they felt unsafe. However, the statistics (as can be seen in the scheme of analysis in appendix 2) show a different picture. None of the questions asked resulted in significant influences for the conducted amount of activity. The discrepancy here might be a result of the way questions were asked: asked was if runners actually run less because of these issues. When other options like changing a route, or running on a different time would have been included another picture might have appeared. Brownson et al. (2000) and Hill et al. (2016) concluded that a general feeling of security and perceived safety do have a direct influence on physical activity levels. The theories do not match with the outcomes of this research.

It also appeared that almost 90% of runners feel safe where they run, as can be seen in figure 7. Of the respondents that said to feel unsafe most of them are women (ranging between 60% to 75%). This is in line with the results of Timperio et al. (2015). One outlier here is the feeling of unsafety because of sort of traffic (for example agricultural vehicles) on the running route: 75% of feelings of unsafety are from male respondents.

A distinction in a higher rate of feelings of unsafety from crime than feelings of unsafety from traffic, as found by Hill et al. (2016) was not found in this research.

I feel safe where I run

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	4	3,5	3,7	3,7
	neutral	7	6,2	6,4	10,1
	agree	62	54,9	56,9	67,0
	totally agree	36	31,9	33,0	100,0
	Total	109	96,5	100,0	
Missing	System	4	3,5		
	Total	113	100,0		

Figure 7: Feelings of safety

5.5 The choice aspect in place for physical activity

The groups for preference of place for physical activity are unequal in this research: 78.6% prefers to run in the rural, 0.9% prefers to run in the urban and 20.5% has no preference. However, 75.0% runs most often in a rural setting, 21.3% in an urban setting, 0.9% on a treadmill and 2.8% on a running track (see also figure 8). So, the percentage of urban runners is quite high compared to the preference of the respondents. This shows that respondents possibly do not always have a choice in where to go for a run, or that place is not that important as long as they can run. Giles-Corti & Donovan (2002) found out that

formal and informal facilities, so streets and public open space included, that are situated ‘near home’ are most popular. This seems to be in line with the results found here.

However, still 75% runs most often in a rural setting where only 42.2% lives in a village or town or in the rural. This shows that some people do take the effort to get away from their place or residence and thus do not run ‘near home’. What is noticeable here is that none of the respondents living in the rural or in a village or town runs most often in the city, where 57.9% of urban dwellers (including people that live on the outskirts of a city) runs most often in the rural. This shows again that the rural is the place most respondents prefer to run.

According to Kruskal-Wallis test outcomes, place of residence is not significantly related to how many minutes a person runs a week. So, place of residence influences the choice someone has in where to run and also the actual place to run, but it does not have an influence on how many minutes a week someone runs.

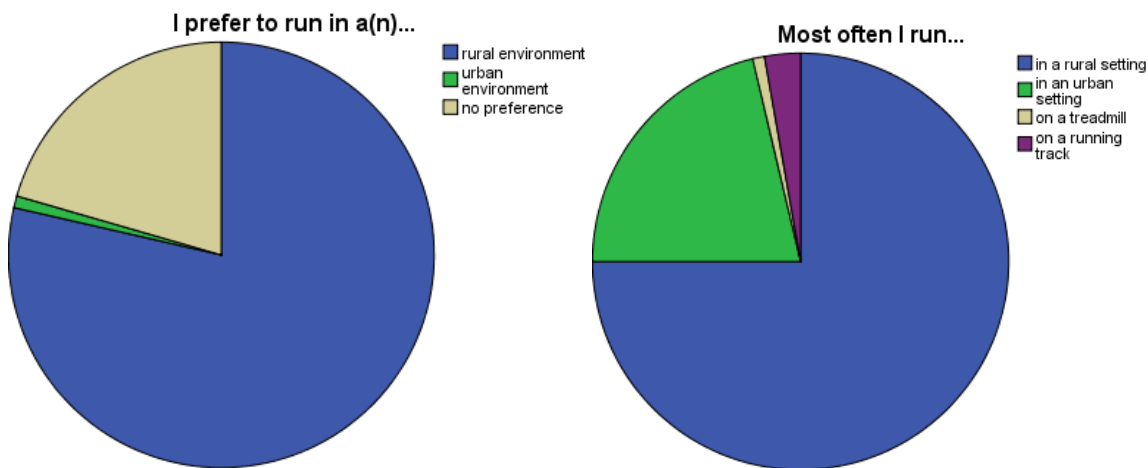


Figure 8: Preference for place of running and actual running location

5.6 Explorative analysis actual place of running

For this research, the aim was to get two equal groups for place of running preference. In the gathered data, these groups are far from equal, as can also be seen in figure 8. Because of these unequal groups, a statistical analysis regarding the difference in quantity of physical activity between people that prefer to run in the rural and people that prefer to run in urban surroundings could not be made. Because of this, the data was further explored considering where runners actually run most often. This showed that there are some cases in which the actual place of running, in contradiction to the preferred place of running, has an influence.

This explorative analysis showed that where one runs most often depends on age: the 75.7% of respondents that most often run in the rural are on average 42.9 years old. The 20.6% of respondents that most often run in the city are on average 36.7 years old. The 2.8% of respondents that most often run on a running track are on average 20.3 years old.

The connection to where one runs most often and the perceived health appeared significant as well: 76.8% and respectively 77% of the respondents that agreed or totally agreed on the statements ‘I think I am a healthy person’ and ‘I exercise enough’ where runners that most often run in the rural. This shows that the rural has a positive influence on perceived health. The rural runners also seem to maintain their level of physical activity: 74.7% of respondents that disagreed or totally disagreed on the statement ‘The older I get, the less I do sports’ most often run in the rural.

The respondents do seem consistent in their answers concerning where they run and what they prefer: there is a significant connection between where one runs most often and whether they like to

run in an urban environment or not. When respondents most often run in the city, they tend to agree or totally agree with the statement 'I like to run in an urban environment'. 'Totally disagree' was an answer that was only given by respondents that most often run in the rural.

There appeared to be a significant connection between where one runs most often and whether one says to run less often because of shortcomings in the environment. More than three-quarters of the runners that agreed or totally agreed on the statement 'Because of shortcomings in my environment, I run less often' run most often in a rural environment. This might imply that the rural knows shortcomings that are worth mentioning. What these shortcomings exactly are can be a topic of further research.

6. Conclusion

What this research made perfectly clear is that runners definitely prefer to run in a rural environment. This is true for both men and women and goes for all age groups. However, running does appear to have a very personal side to it. Every runner has its own habits when it comes to place of running and number of active minutes. Next to that, this research found that the rural environment has a positive influence on perceived health.

A conclusion cannot be drawn for the question about difference in the quantity of physical activity between people that prefer to run in the rural and people that prefer to run in urban surroundings. Since only 0.9% of respondents preferred to run in the urban nothing significant can be said about this distinction. Further research might make this issue clearer. When making the distinction in actual place of running, there also appeared to be no significant connection.

The influence of the physical and social environment on the physical activity level appeared not to be significant. It did appear that changing the environment for the better will increase active minutes per week. Further research might investigate which specific changes have to be made to achieve this. It also appeared that 'near home' facilities are most used, which is in line with prior research.

Regarding the influence of perceived safety on the physical activity level of respondents, it appeared that safety is not really an issue for runners. Over 90% of respondents feel safe where they run and this did not influence the number of active minutes significantly. What is worth mentioning is that feelings of unsafety are mainly prevalent in women.

In contradiction to prior research, this research showed no measurable differences in physical activity behavior in runners that prefer to run in the rural and runners that prefer to run in the urban.

6.1 Reflection and recommendations

A disadvantage of this research is the distribution of respondents among the aimed for two groups: runners that prefer to run in the urban and runners that prefer to run in the rural. The groups were far from equal in size. This could possibly have been solved by investing more time in gathering respondents: visiting more events in different parts of the country, distribute the questionnaire in a broader network etcetera. However, due to the time limit regarding this research this was not possible. Investing more time will not ensure two equal groups. It might be that there are just more runners preferring the rural as place of physical activity: the groups can be unequal in essence. To get a clearer view on this subject, further research should be conducted.

Concerning the topic of environment more questions could have been asked. Issues like lighting and dogs were not included in this research, but can play an important role in choosing where to run and where not to run. These issues came up while talking to respondents.

Dependence on interpretation of questions is an inconvenient issue as well. How respondents understand the words 'good and safe routes' and 'shortcomings' can be interpreted differently per respondent. A follow-up open question might have been meaningful here to find out what runners make of these words.

Another issue that was not covered in this research was the opportunity for other solutions for feelings of unsafety. For example, the questionnaire only offered questions in which choosing not to run because of feelings of unsafety was included. It might also be that people choose to run a different route because of certain treats.

Another issue that should be mentioned is the use of a digital questionnaire for the technique of snowballing. With using a digital questionnaire, you exclude certain groups of people for taking part in the research (for example groups of people that do not own a computer). On the other hand, runners

that did take part in the online questionnaire now, might possibly have been missed while not choosing to do a digital questionnaire. Both methods have advantages and disadvantages.

All in all, there is a chance to do more research into this. Follow-up studies can choose to go more in-depth on a specific topic (health, environment or safety), instead of covering all of them. By doing this, more clear and significant conclusions can be drawn.

7. References

- Bottenburg, M. van & Hover, P. (2009). *Evenementenlopers in beeld*. Eindrapport. 's Hertogenbosch: s.n.
- Brownson, R.C. & Housemann, R.A. & Brown, D.R. & Jackson-Thompson, J. & King, A.C. & Malone, B.R. & Sallis, J.F. (2000). Promoting Physical Activity in Rural Communities Walking Trail Access, Use, and Effects. *American Journal of Preventive Medicine*, 18(3), 235-241.
- Centraal Bureau voor de Statistiek (2016). *Arbeidsvolume naar bedrijfstak en geslacht; nationale rekeningen*. Conducted on 04-03-2017 via <http://statline.cbs.nl/Statweb/publication/?DM=SLNL&PA=82579ned&D1=0&D2=0&D3=0&D4=0-4,39&D5=I&HDR=G1,G2,T&STB=G3,G4&VW=T>
- Centraal Bureau voor de Statistiek (2007). *Sportdeelname Nederlandse bevolking (6-79 jaar) naar tak van sport, 2007*. Conducted on 09-05-2017 via <https://www.cbs.nl/nl-nl/nieuws/2010/15/grote-verschillen-in-sportbeoefening-tussen-mannen-en-vrouwen>
- Coen, S.E. & Subedi, R.P. & Rosenberg, M.W. (2016). Working out across Canada: Is there a gender gap? *The Canadian Geographer*, 60(1), 69-81.
- Giles-Corti, B. & Donovan, R.J. (2002). The relative influence of individual, social and physical environment determinants of physical activity. *Social Science & Medicine*, 54(12), 1793-1812.
- Gregory, D., Johnston, R., Pratt, G., Watts, M.J. & Whatmore, S. (2013). *The Dictionary of Human Geography*. 5th edition. Hoboken: Wiley-Blackwell.
- Hill, J.L. & Waters, C.N. & Kolvras, K.N. & Estabrooks, P.A. & Zoellner, J.M. (2016). Do the Features, Amenities, and Quality of Physical Activity Resources Differ Between City and County Areas of a Large Rural Region? *Family and Community Health*, 39(4), 273-282.
- Longhurst, R. (2010). Semi-structured interviews and Focus Groups. In N. Clifford, S. French & G. Valentine (Red.), *Key Methods in Geography* (103-115). London: SAGE Publications Ltd.
- McGuirk, P.M. & O'Neill, P. (2010). Using questionnaires in qualitative human geography. In I. Hay (Red.), *Qualitative research methods in human geography*, 3rd edition (191-216). Oxford: Oxford University Press.
- McLafferty, S.L. (2010). Conducting Questionnaire Surveys. In N. Clifford, S. French & G. Valentine (Red.), *Key Methods in Geography* (77-88). London: SAGE Publications Ltd.
- Moore, D.S. & McCabe, G.P. (2012). *Statistiek in de praktijk*. 5th revised edition. Den Haag: Sdu Uitgevers bv
- NOC NSF (2014). *Wensen en behoeften huidige en potentiële hardlopers*. Hardlooprapportage. S.l.: Gfk.
- Parks, S.E. & Housemann, R.A. & Brownson, R.C. (2003). Differential correlates of physical activity in urban and rural adults of various socioeconomic backgrounds in the United States. *Journal of Epidemiology and Community Health*, 57(1), 29-35.
- Patterson, P.D. & Moore, C.G. & Probst, J.C. & Shinogle, J.A. (2004). Obesity and Physical Inactivity in Rural America. *The Journal of Rural Health*, 20(2), 151-159.
- Rice, S. (2010). Sampling in geography. In N. Clifford, S. French & G. Valentine (Red.), *Key methods in geography* (230-252). London: SAGE Publications Ltd.
- Rijksoverheid (2017). *Sport en bewegen*. Conducted on 05-03-2017 via <https://www.rijksoverheid.nl/onderwerpen/sport-en-bewegen>

Sijtsma, F. (2017). *Ethische overwegingen in wetenschappelijk onderzoek* [Lecture to Sociale Geografie & Planologie], *GEBPROJSG.2016-2017.2: Bachelorproject SG&P*. Rijksuniversiteit Groningen. March 6.

The World Bank (2017). *Life expectancy at birth, total (years)*. Conducted on 05-03-2017 via <http://data.worldbank.org/indicator/SP.DYN.LE00.IN>

Timperio, A. & Veitch, J. & Carver, A. (2015). Safety in numbers: Does perceived safety mediate associations between the neighbourhood social environment and physical activity among women living in disadvantaged neighborhoods? *Preventive Medicine*, 43(74), 49-54.

TNO (2013). *Bewegen in Nederland 2000-2013*. Conducted on 04-03-2017 via <https://www.tno.nl/media/4377/bewegen-in-nederland-2000-2013.pdf>

Van Lenthe, F.J. & Brug, J. & Mackenbach, J.P. (2004). Neighbourhood inequalities in physical inactivity: the role of neighbourhood attractiveness, proximity to local facilities and safety in the Netherlands. *Social Science & Medicine*, 60(4), 763-775.

Van Tuyckom, C. & Scheerder, J. & Bracke, P. (2010). Gender and age inequalities in regular sports participation: A cross-national study of 25 European countries. *Journal of Sports Sciences*, 28(10), 1077-1084.

World Health Organization (2011). *Global recommendations on physical activity for health*. Conducted on 17-05-2017 via <http://www.who.int/dietphysicalactivity/physical-activity-recommendations-18-64years.pdf?ua=1>

World Health Organization (2016). *Obesity and overweight*. Conducted on 05-03-2017 via <http://www.who.int/mediacentre/factsheets/fs311/en/>

World Health Organization (2017). *Physical activity*. Conducted on 04-03-2017 via <http://www.who.int/mediacentre/factsheets/fs385/en/>

Witten, K. & Hiscock, R. & Pearce, J. & Blakely, T. (2008). Neighbourhood access to open spaces and the physical activity of residents: A national study. *Preventive Medicine*, 34(47), 299-303.

Yousefian, A. & Ziller, E. & Swartz, J. & Hartley, D. (2009). Active Living for Rural Youth: Addressing Physical Inactivity in Rural Communities. *Journal of Public Health Management Practice*, 15(3), 223-231.

8. Appendices

8.1 Appendix 1: Questionnaire (English and Dutch)

Questionnaire

Dear runner,

Thank you so much for taking the time to fill out this questionnaire! By doing so, you are helping me with my bachelor project for the study Human Geography & Planning at the University of Groningen. **My research is about runners and where they like to run, and for what reason they like to run there.**

This questionnaire will take about **5 minutes**. If you have any questions, don't hesitate to ask me. If you'd rather not fill out a question, or you can't, you can leave that one open. This questionnaire is anonymous: after the questionnaire is processed, the data won't be retraceable to you. The data will only be used for this research. Would you like to stay updated on my research? Leave your email address at the end of the questionnaire.

Once again, thank you for your time!

Daniëlle Eleveld
d.eleveld@student.rug.nl
+31611187590

For general questions about the research you can contact me or my supervisor:
prof. dr. Dirk Strijker: d.strijker@rug.nl.

General questions

1. I am

male

female

I'd rather not say

2. I am years old

3. I live...

...in a village or town

...in a city

... on the outskirts of a
city (the urban fringe)

... in the rural

Questions concerning health and level of fitness

	Totally disagree	Disagree	Neutral	Agree	Totally agree
4. I think I am a healthy person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I exercise enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I do physically demanding work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. The older I get, the less I do sports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. How many times do you exercise a week?					

9. What amount of time do you exercise each time (on average)?					

Questions concerning the environment

	Totally disagree	Disagree	Neutral	Agree	Totally agree
10. I like to run in a rural environment/setting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I like to run in an urban environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Because of the enjoyable scenery, I run more often	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Because of shortcomings in my environment, like too little or no suitable routes, I run less often	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. If there would be a suitable environment to run, think for example of good and safe routes, I would run more often	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. The environment in which I run has influence on how often I run	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Only fill out question 16+17 when applicable</i>					
16. My partner and/or family stimulate me to run	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. The people I run with stimulate me to run	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. I prefer to run in a(n)...

...rural environment	...urban environment	No preference
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Most often I run...

...in a rural setting	...in an urban setting	... on a treadmill	... on a running track
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Questions concerning safety

	Totally disagree	Disagree	Neutral	Agree	Totally agree
20. I feel safe where I run	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I feel unsafe because of the amount of traffic on my route	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I feel unsafe because of the type of traffic on my route (for example agricultural vehicles)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I feel unsafe because of bothersome individuals or groups on my route	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I feel unsafe because of the possibility of sexual harassment on my route	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Because I (sometimes) feel unsafe I run less	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you have any remarks concerning this questionnaire? Leave them here.

If you would like to stay updated on my research, you can leave your email address here.

Enquête

Beste hardloper,

Hartstikke bedankt dat je de tijd wil nemen deze enquête in te vullen! Hiermee help je mij bij mijn afstudeeronderzoek voor de studie Sociale Geografie & Planologie aan de Rijksuniversiteit Groningen.

Mijn onderzoek gaat over hardlopers en waar zij graag hardlopen, en om welke reden zij daar graag hardlopen.

De enquête duurt ongeveer **5 minuten**. Mocht je vragen hebben, stel deze gerust! Wil je een vraag liever niet beantwoorden, of kun je een vraag niet invullen, dan kun je deze openlaten. De enquête is anoniem: na het verwerken van de enquêtes zal de data niet naar jou te herleiden zijn. De gegevens zullen alleen voor dit onderzoek gebruikt worden. Wil je graag op de hoogte worden gesteld van mijn onderzoek? Laat dan je emailadres achter aan het einde van de enquête.

Nogmaals bedankt voor je tijd!

Daniëlle Eleveld
d.eleveld@student.rug.nl
 0611187590

Voor algemene vragen over het onderzoek kun je contact opnemen met mij of met mijn begeleider:
 prof. Dr. Dirk Strijker: d.strijker@rug.nl.

Algemene vragen

1. Ik ben een

man

vrouw

zeg ik liever niet



2. Ik ben jaar oud

3. Ik woon...

...in een dorp

...in een stad

...aan de rand van een stad

...op het platteland



Vragen over gezondheid en fitheid

	Helemaal oneens	Oneens	Neutraal	Eens	Helemaal eens
4. Ik vind mezelf gezond	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Ik sport voldoende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Ik doe lichamelijk (zwaar) werk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Des ter ouder ik word, des te minder ik sport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Hoe vaak per week sport je?	<hr/> <hr/>				
9. Hoe lang sport je gemiddeld per keer?	<hr/> <hr/>				

Vragen over de omgeving

	Helemaal oneens	Oneens	Neutraal	Eens	Helemaal eens
10. Ik loop graag hard in een landelijke omgeving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Ik loop graag hard in een stedelijke omgeving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Door de mooie omgeving/uitzichten ga ik vaker hardlopen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Door tekortkomingen in mijn omgeving, zoals te weinig of geen goede routes, loop ik minder vaak hard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Als er een geschiktere omgeving zou zijn om hard te lopen, denk aan goede en veilige routes, zou ik vaker hardlopen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Mijn sportomgeving heeft invloed op hoe vaak ik sport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vraag 16 en 17 alleen invullen indien van toepassing					
16. Mijn partner en/of familie stimuleert mij om hard te lopen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. De mensen met wie ik hardloop stimuleren mij om te gaan hardlopen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Ik loop het liefst hard...

...in een landelijke omgeving	...in een stedelijke omgeving	het maakt me niets uit
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Ik loop het vaakst hard...

...in een landelijke omgeving	...in een stedelijke omgeving	...op een loopband	... op een atletiekbaan
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Vragen over de veiligheid

		Helemaal oneens	Oneens	Neutraal	Eens	Helemaal eens
20.	Ik voel me veilig waar ik hardloop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21.	Ik voel me onveilig door de hoeveelheid verkeer op mijn route	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22.	Ik voel me onveilig door het soort verkeer op mijn route (bijvoorbeeld landbouwwerktuigen)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23.	Ik voel me onveilig door vervelende individuen of groepen (zoals hangjongeren) op mijn route	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24.	Ik voel me onveilig door de mogelijkheid van seksuele intimidatie op mijn route	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.	Doordat ik me (weleens) onveilig voel loop ik minder vaak hard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Heb je nog opmerkingen over deze enquête? Plaats ze hieronder.

Als je graag op de hoogte gehouden wilt worden van mijn onderzoek kun je hier je emailadres achterlaten.

Appendix 2: Scheme of analysis

Question	Variable	What to do?	Which test?	Remark	Outcome
1	Nominal	Difference in men/women compared to -rural/urban preference (18: nominal) -amount of activity (8+9: ratio)	-Chi Square -Oneway ANOVA + Kruskal-Wallis		Q1.1: 0,745 → not significant Q1.2: 0,974 → not significant + 0,825 → not significant
2	Ratio	Difference in age compared to -rural/urban preference (18: nominal) -amount of activity (8+9: ratio)	-Oneway ANOVA -Simple linear regression	Recode into different variables. Age groups: <24, 25-44, 45-64, 65<	Q2.1: 0,008 → significant + 0,372 → not significant Q2.2: 0,782 → not significant
3	Nominal	Difference in place of residence compared to -rural/urban preference (18: nominal) -amount of activity (8+9: ratio)	-Chi Square -Oneway ANOVA + Kruskal-Wallis		Q3.1: 0,102 → not significant Q3.2: 0,881 → not significant + 0,780 → not significant
4	Ordinal	Compare with -amount of activity (8+9: ratio) -place where respondents most often run (19: nominal)	-Oneway ANOVA + Kruskal-Wallis -Chi Square		Q4.1: 0,055 → not significant + 0,014 → significant Q4.2: 0,000 → significant
5	Ordinal	Compare perceived activity with -amount of activity (8+9: ratio) -place where respondents most often run (19: nominal)	-Oneway ANOVA -Chi Square		Q5.1: 0,000 → significant + 0,000 → significant Q5.2: 0,000 → significant
6	Ordinal	Compare with -amount of activity (8+9: ratio) -place where respondents most often run (19: nominal) -place of residence (3: nominal)	-Oneway ANOVA + Kruskal-Wallis -Chi Square -Chi Square		Q6.1: 0,979 → not significant + 0,827 → not significant Q6.2: 0,000 → significant Q6.3: 0,020 → significant
7	Ordinal	Compare with -place where respondents most often run (19: nominal) -place of residence (3: nominal)	-Chi Square -Chi Square		Q7.1: 0,000 → significant Q7.2: 0,541 → not significant
8+9	Ratio			Combine question 8+9 to get average minutes per week. Also recode into different variables. Activity groups: <150 min/week, 151-300 min/week, 300< min/week	
10-17	Ordinal	Compare environment with -amount of activity (8+9: ratio) -place where respondents most often run (19: nominal)	-Oneway ANOVA + Kruskal-Wallis -Chi Square		Q10.1: 0,259 → not significant + 0,135 → not significant Q10.2: 0,066 → not significant Q11.1: 0,504 → not significant + 0,873 → not significant Q11.2: 0,003 → significant Q12.1: 0,033 → significant + 0,170 → not significant Q12.2: 0,130 → not significant Q13.1: 0,003 → significant + 0,050 → just about not significant Q13.2: 0,008 → significant Q14.1: 0,015 → significant + 0,048 → significant Q14.2: 0,125 → not significant Q15.1: 0,371 → not significant + 0,312 → not significant Q15.2: 0,176 → not significant Q16.1: 0,123 → not significant + 0,158 → not significant Q16.2: 0,717 → not significant Q17.1: 0,707 → not significant + 0,492 → not significant Q17.2: 0,951 → not significant

18	Nominal	Compare preference with - amount of activity (8+9: ratio) - gender (1: nominal) - age (2: ratio) - place of residence (3: nominal)	-Oneway ANOVA + Kruskal-Wallis -Chi Square -Oneway ANOVA -Chi Square		Q18.1: 0,334 → not significant + 0,466 → not significant Q18.2: see Q1.1 Q18.3: see Q2.1 Q18.4: see Q3.1.
19	Nominal	Compare where they most often run with -where they prefer to run (18: nominal) -amount of activity (8+9: ratio) -gender (1: nominal) -age (2: ratio) -place of residence (3: nominal)	-Chi Square -Oneway ANOVA -Chi Square -Oneway ANOVA -Chi Square	-Says something about choice	Q19.1: 0,003 → significant Q19.2: 0,050 → just about not significant Q19.3: 0,851 → not significant Q19.4: 0,010 → significant Q19.5: 0,002 → significant
20-25	Ordinal	Compare perceived safety with - amount of activity (8+9: ratio) - place where respondents most often run (19: nominal)	-Oneway ANOVA + Kruskal-Wallis -Chi Square		Q20.1: 0,486 → not significant + 0,510 → not significant Q20.2: 0,298 → not significant Q21.1: 0,119 → not significant + 0,640 → not significant Q21.2: 0,279 → not significant Q22.1: 0,534 → not significant + 0,661 → not significant Q22.2: 0,120 → not significant Q23.1: 0,733 → not significant + 0,721 → not significant Q23.2: 0,171 → not significant Q24.1: 0,331 → not significant + 0,225 → not significant Q24.2: 0,374 → not significant Q25.1: 0,136 → not significant + 0,208 → not significant Q25.2: 0,679 → not significant

