



Master thesis

DIFFERENCES IN LATER-LIFE SPORTS PARTICIPATION BETWEEN
WOMEN WITH AND WITHOUT NON-WESTERN MIGRATION
BACKGROUNDS

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Preface

Hereby I present to you my master's thesis to complete my master's at Erasmus School of Health, Policy & Management. After my graduation for my physical therapy degree in 2019, I felt like I did not want practice it after and I was determined to do my master's in health economics, Policy and Law. My interest truly lies within the scope of the human body and health, health care and doing research into this field. I knew that I needed to do a pre-master, which I successfully completed, before I could start my masters at the beginning of this academic year. Even though it has been a challenge for me, given the Covid-19 context and working from home, I am grateful of what I have learned, experienced, and developed the last two years at the Erasmus University in Rotterdam.

At first, I would like to thank my supervisor Thijs van den Broek. During the past six months he has always taken the time to have extensive video-calls, in which we discussed his honest and helpful feedback. I really appreciate his patience during my thesis trajectory, and I am thankful for a very pleasant cooperation. I would also like to thank the co-reader, Frank Eijkenaar for providing me with feedback on my thesis proposal and for reviewing my thesis.

Last but most definitely not least, I would like to thank my family for being supportive, especially after my decision that I wanted to continue studying and do the master Health Economic Policy and Law at the Erasmus University. It meant that I was going to study for two more years, instead starting my career as a physical therapist. As of today, I am still happy that I made this decision, and I am proud of what I have achieved the last two years. In particular I want to thank my girlfriend, Jessica van Rumpt, for supplying me with lifesaving help during the past months, she was always ready to help me push through whenever I could not find that strength myself. I am so extremely grateful for that.

I hope you enjoy reading my thesis.

Sincerely,

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Abstract

The part of elderly people within the population in the Netherlands is increasing. Besides that, people with a migration background represent a large part of the Dutch population. Literature shows that often people with a non-western migration background in the Netherlands experience a worse health in comparison to people without a non-western migration background. Physical activity is one of the most important factors in having a healthy lifestyle and plays an important role in preventing these chronic diseases. Among other determinants like educational level and socio-economic status, they found that men from these migrant groups were more likely to engage in sports than women. Therefore, this research will focus on women of the age of 55 and older only. Specifically, the potential influence of traditional gender attitudes as a barrier for sports participation among women with non-western migrant backgrounds in the Netherlands will be explored. Because traditional gender attitudes are more present within non-western cultures, it is expected to find that these are a contributing factor to the difference in later-life exercise and sports between different ethnic groups with- and without migration backgrounds. The moderating influence of acculturation will also be explored.

The approach of this research is quantitative. A dataset is supplied via the Survey Integratie Minderheden (SIM), accessible through Data Archiving and Networked Services (DANS). The inclusion criteria for this research are to be a female of at least 55 years old, and to belong to one of the following groups: 1. Turkish, 2. Moroccan, 3. Surinamese, 4. Antillean/Aruban, and 5. native Dutch. In total 603 respondents are included. The dependent variable is 'sports participation', the independent variable is 'migration background', the mediating variable 'gender attitudes', the moderating variable is 'acculturation' and the control variables are 'age', 'education' and 'employment status'. Multiple logistic regression analyses will be performed, resulting in three different models. The log-odds ratios will be analyzed by a significance level of 0.05. To analyze the mediation- and moderation effect the SPSS macro extension PROCESS is used.

One of the outcomes of the logistic regression analyses, the chance at regular sports participation differs per ethnicity group. The results clearly show that in all three models, Moroccan, Turkish, Surinamese and Antillean/Aruban respondents have a smaller chance at regular sports participation compared to their native Dutch counterparts. By adding 'gender attitudes' and 'acculturation' to the logistic regression the chances at regular sports participation

for Moroccan and Turkish respondents increased from respectively: OR 0.519 to 0.726 and OR 0.036 to 0.570. For the Surinamese and Antillean/Aruban groups the increase was only minor. It should be acknowledged that not all outcomes for each ethnicity group were significant. 'Gender attitudes' itself appears to decrease the chance at regular sports participation by 13.5% per one-unit increase towards more egalitarian gender attitudes. For 'acculturation' goes the opposite, which clearly increases the chance at regular sports participation by 33% per one-unit increase towards a higher rate of acculturation. Both the results for 'gender attitudes' and 'acculturation' are significant. A significant mediation is established from 'gender attitudes' on 'sports participation' for the Moroccan and Turkish groups. On the other hand, the moderation analysis did not establish a significant moderating effect of 'acculturation' on the relationship between 'gender attitudes' and 'sports participation'.

In conclusion, different migration backgrounds are related to sports participation on women in later life. The mediation by 'gender attitudes' is only established between the Moroccan and Turkish groups, but with the opposite effect to what was expected. The outcomes for 'acculturation' are also different from the expectations, and a significant moderation effect on the relationship between 'gender attitudes' and 'sports participation' was not established.

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1. Introduction

1.1 Population in the Netherlands

Of the current population in the Netherlands, a large part consists of elderly people. A person is considered elderly when reaching the age of 65 (Hobbs, 2001). The share of elderly people in the population is increasing, meaning the total population is ageing. As reported by the Centraal Bureau voor de Statistiek (CBS) on the 1st of January 2020, from all elderly people in the Netherlands, 54% was female, opposed to only 46% male. In the category over 80 years of age the share of females was even higher, namely 63% (CBS, 2020). Another large part of the Dutch population are people with migration backgrounds (CBS, 2021), namely 24.7%. In that percentage, CBS includes people who were born in a foreign country themselves, and people whose parents were born in a foreign country. From this group, 10.7% has a western migration background, and 14.1% has a non-western migration background (CBS, 2021). From people over 80 years of age the share of females was even higher, namely 63% (CBS, 2020).

1.2 Health differences

Literature shows that often people with a non-western migration background in the Netherlands experience a worse health in comparison to people without a non-western migration background (Denktas, 2011). Ikram et al. (2014) finds that people with a non-western migration background have more chronic diseases such as diabetes, high blood pressure and diseases of the musculoskeletal system, but also experience more psychosocial difficulties such as fear, depression, and loneliness. An important factor to the worse health among non-western immigrants is lifestyle. El Fakiri and Bouwman-Notenboom (2016) state that people with a non-western migration background exercise and being notably less physically active compared to others without a non-western migration background. Physical activity is one of the most important factors in having a healthy lifestyle and plays an important role in preventing these chronic diseases (Nystoriak & Bhatnagar, 2018).

Aizlewood et al. (2006) finds that non-western immigrants face a lot of constraints due to a language barrier and a lack of knowledge about sports participation. Among other determinants, like educational level and socio-economic status, they found that men from these migrant groups were more likely to engage in sports than women. A reason for this finding might be that women stay at home and within family surroundings more often, and thus their education, language, knowledge, and social participation is lower than that of men from the same groups

(de Gruijter et al., 2007). Because sports participation has always been dominated by men (van Tuyckom et al., 2010), and physical activity can be very beneficial to one's health, in combination with the larger share of elderly females in the Dutch population, this research will focus on women of the age of 55 and older only (mentioned as 'later-life'). Specifically, the potential influence of traditional gender attitudes as a barrier for sports participation among women with non-western migrant backgrounds in the Netherlands will be explored. Traditional gender attitudes seem to be very present in non-western cultures (van de Vijver, 2007), more so than in western cultures (Arends-Tóth & van de Vijver, 2009). Because these traditional gender attitudes are so present within non-western cultures, it is expected to find that they are a contributing factor to the difference in later-life exercise and sports between these different ethnical groups with- and without migration backgrounds.

1.3 Relevance

It is important to research gender attitudes as a potential contributing factor for multiple reasons. First, because prior research has shown the undeniable physical benefits of exercise (Nystoriak & Bhatnagar, 2018). Secondly, research has also shown that participation in sports for older adults can have a positive effect on the mental and social health (Jenkin et al., 2017). And last, it can also be important for policy makers and others to consider gender attitudes when trying to increase sports participation in specific groups. Hopefully, this research can add some weight to invent policies or projects which can help to create environments in which everyone, no matter their age, sex, ethnicity, or religion, can participate in sports and exercise, and experience these benefits themselves.

2. Objective and research question

This research will be about the differences in later-life sports participation among women with different non-western migration backgrounds and their native Dutch counterparts without a migration background. Later, in the theoretical framework the impact of traditional gender attitudes on the role of women in society will be explained. The aim of this research is to find new insights on which immigrant groups those traditional gender attitudes are prominent, and if these are of influence on the later-life sports participation. The goal is to see whether gender attitudes have a mediating effect on sports participation, in theory and practice. If there is, it can be important to consider this for future initiatives regarding sports participation in the Netherlands.

The research question is formulated as follows:

“Can the relationship between (not) having a non-western migration background and sports participation on women in later life partially be explained by the mediating presence of gender attitudes and the moderating presence of acculturation?”

3. Theoretical framework

As written in the introduction (chapter 1) the goal is to find the presence of a mediating effect of traditional gender attitudes on the sports participation of older women with and without wester migration backgrounds. Therefore, prior research on this topic will be analyzed.

3.1 Hofstede's dimensions

A role is the expected behavior associated with a status, which is a position that a person has which comes with determinants of how this person will be defined and treated (Lindsey, 2015). To explain what these roles are, the masculinity-femininity dimension of Hofstede (2001) is used. Masculinity-femininity refers to the preference in society for achievement or cooperation. The masculinity side represents the strive for achievement, assertiveness, and success. The society is more competitive, whereas the femininity side stands for cooperation, modesty, caring for others and quality of life. In this case, the society is more based on consensus. For gender attitudes this means that in a more masculine society, men are supposed to be more assertive, tough and strive for material success. Women, on the other hand, are expected to be modest, tender and care for the quality of life. The gender attitudes are clearly differentiated Hofstede (2001) points out that this differentiation is what masculine societies strive for, a dominant belief in inequality between sexes, meaning the attitudes towards gender are not egalitarian. Whilst in a more feminine society, the roles for both genders overlap and there is a belief in equality of sexes. Especially the roles within a masculine society that are assigned to females, are more prominent in a feminine society for both genders. Both men and women must be modest, tender and care for the quality of life (Hofstede, 2001). The gender attitudes are more equal and fluid than those in a masculine society. The score for the Netherlands on the masculinity-femininity scale is 14 out of 100 (Hofstede Insights, n.d.). The higher the score, the more masculine the society is, and vice versa. Generally, the origin countries of the biggest immigrant groups in the Netherlands score a lot higher on this index. For example, Morocco scores 53, Turkey 45 and Surinam 37. This means that those countries have a more masculine society than the Netherlands.

3.2 Gender attitudes

The scores on the masculinity-femininity dimension per country confirm the findings of van de Vijver (2007), who states that these traditional, more conservative gender attitudes, are very present in non-western cultures. Within these cultures, women are often the heart of the family

resulting from staying home and mainly doing household tasks and raising the children, whereas the men are breadwinners and are more absent in the family life (Pels, 2000). Pels (2000) also finds that the older women, from the first generation of immigrants, prefer to keep this role division in opposite to the more modern roles. The duties and tasks that come with these traditional gender attitudes can be seen as a cause for barriers to social participation, one of them being sports. Henderson and Hickerson (2007) reported a lack of time, lack of money, housework responsibilities and lack of support from their partner as a big part of those barriers. De Gruijter et al. (2007) reported similar findings in a research among immigrant women in four big cities in the Netherlands.

3.3 Sports participation

Traditionally, in Islamic countries, participation in sports is considered inappropriate when not fully hidden from the male eye (Harkness, 2012). As a result of this conception, if seclusion from men is not possible, Muslim women may rather not participate in sports activities. Religious affiliation can be a tributing factor to lower levels of sports participation. Aizlewood et al. (2006) found that religious affiliation has a negative effect on the level of sports participation. Duyvendak et al. (1998) supports this with a research that showed lower rates of participation in sports clubs in Rotterdam for all ethnic minorities, who often have different religious beliefs, in comparison with native Dutch people. When pairing these findings with Hofstede's (2001) masculinity-femininity scores there could be a connection between gender attitudes and sports participation. The experienced barriers that keep older women from participating in sports could be provoked by these traditional, less egalitarian gender attitudes.

3.4 Acculturation

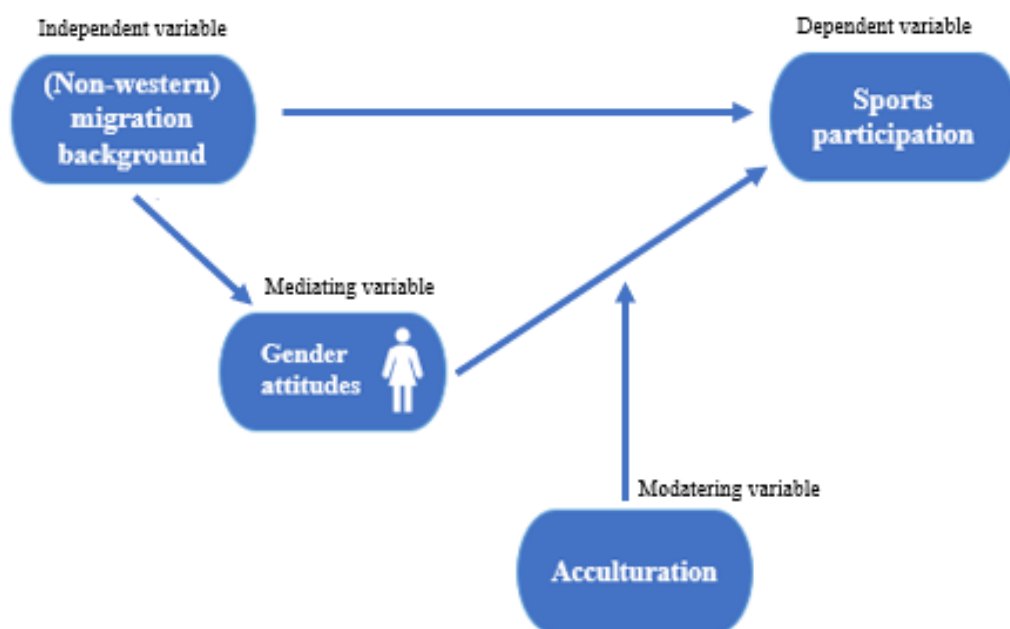
A way to alter these traditional norms and values comes from acculturation (Berry, 1997). Whilst staying at home and within surroundings that hold the same cultural values and gender role division, the course of acculturation will be slow. Acculturation refers to the process of change and learning experienced by an individual, resulting from contact with people, groups, and social influences, from other cultures (Schwartz et al., 2010). Acculturation is a long-term process and can result in lasting modifications in the culture of the minority group, but also in aspects of the culture from the dominant society involved (Berry, 2005). A cultural value or norm is likely to change when the value or norm is not seen as essential to the culture, and the pressure to change from the dominant society is large. However, when a cultural value or norm

is respected as a core value or norm of the culture, and the pressure of the dominant society to change is not strong, the value or norm is prone to change (Arends-Tóth & van de Vijver, 2009). Hosper et al. (2008) states that women who experienced a higher level of acculturation were less in agreement with culturally specific attitudes. They also find that immigrant women who become more oriented towards the culture in the host country, had less traditional and more positive attitudes towards physical activity, which resulted in increased sports participation. As stated earlier, the Dutch society has a more feminine, and thus more egalitarian attitude towards gender than for example the society of Morocco. Based on the findings in the referenced articles it is assumed that women who experience a higher degree of acculturation have more egalitarian gender attitudes and participate more in sports. This is also supported by earlier research (Evenson et al., 2004; Kandula and Lauderdale, 2005).

As a result of the theory from Hofstede, and the theory on gender attitudes and acculturation, the following conceptual model displays the expected relationships between the chosen relevant variables in figure 1:

Figure 1

Conceptual model



Based on the presented theory, the following hypotheses are formulated:

- 1. More egalitarian gender attitudes result in more sports participation on older women with and without non-western migration backgrounds.*
- 2. A higher level of acculturation has a positive effect on the chance at sports participation on older women with and without non-western migration backgrounds.*

4. Research methods

In this chapter the methods used to carry out this research will be discussed. First, there is a general introduction regarding the research and survey used. Besides that, the operationalization of this quantitative research will be discussed. Finally, the statistical analysis will be presented.

4.1 Research design

The approach of this research is a quantitative approach. The goal is to test the hypotheses about the relationship between variables described in chapter 3. All data is already available, so no additional data collection is required. The data used is supplied via the Survey Integratie Minderheden (SIM), accessible through Data Archiving and Networked Services (DANS).

4.2 Data collection

The Ministry of Social Affairs and Employment held a long-lasting survey to monitor the social position of migrant groups in the Netherlands. The survey was performed by the Social- and Cultural Planning Bureau (SCP) from the 29th of January until the 15th of July 2015. During this period data was collected via a mixed mode design, meaning the population was approached digitally and face-to-face by interviewers, answering an elaborate questionnaire. Approximately 15.000 respondents participated in the survey. When interviews needed to be held in another language than Dutch, a translator was always present, to maximize understanding the questions and given answers. The online questionnaire could be accessed through a web link, which the respondents received by postal mail. The sample of the survey was delivered by the Central Bureau of Statistics (CBS) by, among others, the following data: unique ID, zip code, date of birth, origin and sex. The survey is mainly filled with socio-demographic characterized questions. The sample size was expanded with a standby sample, covering a lower-than-expected response rate. For each group the guaranteed response was achieved. The response per group can be found in figure 2 and are corrected for improper non-response.

Figure 2

Response.

	Respons		Garantie
Autochtonen	1.046	58%	50%
Turken	920	51%	50%
Marokkanen	951	48%	45%
Surinamers	1.045	46%	40%
Antillianen/Arubanen	1.112	48%	40%
Polen	1.129	45%	35%
Somaliërs	626	37%	30%
Totaal	6.829		

Note: Retrieved from SIM 2015.

Because all data was handed over in the form of a dataset, no new data collection was required. Also meaning there will be a secondary data analysis. Out of the 3.739 female respondents in total, only 603 women remain to be included in the study. The inclusion criteria for this research are to be a female of at least 55 years old, and to belong to one of the following groups: 1. Turkish, 2. Moroccan, 3. Surinamese, 4. Antillean/Aruban, and 5. native Dutch. Meaning the following respondents will be excluded, in case they meet one of the following criteria: male, age of 54 years or younger and belonging to the Polish or Somalian group. By applying these exclusion criteria, 3.136 respondents are not considered for this research.

4.3 Variables

With respect to the research question, the collected theory and the available data from the SIM database, the operationalization of the variables is established. The dependent variable 'sports participation' is operationalized as follows: 'In the past 12 months, how often have you exercised?'. There are five ordinal answer scales the respondent could choose from: 1. two or more times a week, 2. once a week, 3. once a month, 4. few times a year, 5. less than once a year/never. The variable will be recoded, whereby participants will be split in two groups, making the variable dichotomous (van Tuyckom, 2010): 'regular sports participants' and 'no regular sport participants'. With dichotomizing the variable groups are merged, where answer groups 1 and 2 and are coded as 1, where answer groups 3, 4, and 5 are coded as 0. This means that respondents fall within category 1 they are regular sports participants and respondents within category 0 are non-regular sports participants.

The independent variable 'migration background' will indicate the background of the participants. The participants answered the following question to make their background known: 'Respondent belongs to the following group', with the following nominal answers possible: 1. Turkish, 2. Moroccan, 3. Surinamese, 4. Antillean/Aruban, and 5. native Dutch.

To research the indirect effect of gender attitudes on the relationship between having a migration background and sports participation in later life, the mediating variable 'gender attitudes' will be added. A mediating variable identifies the relationship between the independent and dependent variable(s). The goal of the mediating variable is to find the indirect effect on the relationship between the independent and dependent variables (Mackinnon, 2015). A mediator is a variable that is in a causal sequence between two variables, whereas a moderator is not part of a causal sequence between the two variables (Robins and Greenland, 1992). The mediating variable 'gender attitudes' has a continuous form at ratio level. This variable will be computed out of several items from the survey: 'It is best if the man carries the responsibility for the money', 'It is more important for boys to earn their own money than it is for girls', 'Decisions about large purchases are best made by the husband' and 'A woman must stop working when she becomes a mother'. The variable is operationalized as follows: 1. completely agree, 2. agree, 3. somewhat agree/somewhat disagree, 4. do not agree, 5. completely disagree and 99. don't know/no answer. Respondents who answered with 99. don't know/no answer will be excluded. For all four question the answers were operationalized the same manner. To create a scale for the variable 'gender attitudes' scores are awarded to each answer. For answer possibility 1. the score will be one, for answer possibility 2. the score will be two, and so on. This means when a participant scores the lowest score possible of four, they have less egalitarian gender attitudes, respondents with the highest score of 20 will have the most egalitarian gender attitudes. The scores from all questions will be added and divided by the number of included respondents (N) to calculate a mean per background group.

As explained in the theoretical framework the variable 'acculturation' is added in the conceptual model as a moderator on the relationship between mediating variable 'gender attitudes' and dependent variable sports participation. 'Acculturation' is added as a moderator variable since a moderator modifies the strength or direction of a relationship between a dependent and independent variable (Wu & Zumbo, 2008). Variables that affect the hypothesized relation among a set of variables in such ways are known as moderators and are often tested as interaction effects (Baron and Kenny, 1986). Like stated before, research has shown that the

level of acculturation is of influence on the amount of participation in activities, such as sports (Hosper et al, 2008; de Vroome et al., 2014). Therefore, the variable ‘acculturation’ will consist of the following questions from the questionnaire: ‘How often are you in contact with native friends or family?’, ‘How often are you in contact with native Dutch neighbors?’, ‘To what extent do you feel Dutch?’ and ‘How many days a week do you watch Dutch channels on television?’. The answer scales for these questions were all slightly different, but resembled the same answers regarding the variable ‘acculturation’. For example, the answer possibilities for the question ‘To what extent do you feel Dutch?’ were: 1. Very strong, 2. Strong, 3. Somewhat, 4. Not, 5. Not at all. Then, the answer possibilities for ‘How many days a week do you watch Dutch channels on television?’ were: 1. (Almost) every day, 2. Multiple times a week, 3. Once a week, 4. Less than once a week, and 5. Never. Those answer possibilities resemble the same direction to the variable of ‘acculturation’. These questions are chosen from the questionnaire because they are considered to best fit the concept of acculturation as mentioned in the theoretical framework. Although each of used items from the questionnaire for ‘acculturation’ has almost the same answer possibilities, the variable still needs to be computed to resemble the scale of ‘gender attitudes’, so that the scoring makes sense. For the ‘acculturation’ variable the answers are computed with scores of 1 for answer possibility 5, 2 for answer possibility 4, 3 for answer possibility 3, 4 for answer possibility 2 and 5 for answer possibility 1. Like the scores for ‘gender attitudes’, a mean per group will also be calculated based on the scores awarded to the given answers. The minimum score is 5, which represents the lowest rate of acculturation, the maximum score is 20, which represents the highest rate of acculturation. Because the question ‘To what extent do you feel Dutch?’ was not asked to native Dutch respondents, a score must be awarded to all, motivated by reasonable expectations. Even though it can differ from person to person, for example one could feel more as an ‘European’ rather than a Dutch person, for this research we assume a native Dutch person feels as a Dutch person, rather than identifying to one of the other groups. The native Dutch respondents are awarded a score of 5 on this item.

Control variables are included in regression analyses to estimate the causal effect of a treatment on an outcome and are being kept constant (Hünernmund & Louw, 2020). In order to analyze the effects of traditional gender attitudes and acculturation on sports participation, control variables will be added to the analysis. There will be controlled for age, education, and employment status. The variable ‘age’ is split into three categories, namely: 1. 55 till 64 years of age, 2. 65 till 74 years of age and 3. 75 years and older. The 55 till 64 years is the reference

group. The control variable for education is computed from the following variable: 'Highest diploma including current education'. The scale is also set to three scores, of which 1. represents highest educational levels, 2. middle educational levels and 3. lowest educational levels. The third control variable is whether a respondent has paid work or not.

To ensure the quality of this research, it is important to consider validity and reliability. Validity can be defined as 'the extent to which a concept is accurately measured in a quantitative study'. Reliability relates to the consistency or accuracy of a measure (Heale & Twycross, 2015). As the reliability of an instrument is narrowly related with its validity, an instrument can only be valid if it's reliable, but its reliability does not depend on its validity (Tavakol & Dennick, 2011). Content validity looks at whether the instrument adequately covers all the content that it should with respect to the variable (Heale & Twycross, 2015). To secure adequate content validity regarding the construct 'gender attitudes', only questions from SIM are used. These four questions should cover basic concepts regarding gender attitudes such as money and work, following the concepts mentioned in research of Pels (2000) and Hofstede (2001). This secure process of choosing adequate questions is also applied to forming the construct of 'acculturation', relating to the concept mentioned by Berry (2005). When creating a new variable from different items, it is important to control whether the internal consistency is adequate to ensure reliability. To measure the internal consistency of the new variables 'gender attitudes' and 'acculturation', for both a Cronbach's Alpha analysis has been performed. Tavakol & Dennick (2011) state that the Cronbach's Alpha is important when evaluating data assembled through questionnaires and should be performed to increase accuracy of the data interpretation. The Cronbach's Alpha for the variable 'gender attitudes' scored 0.729 and for the variable 'acculturation' scored 0.599. The Cronbach's alpha result is a number between 0 and 1, whereby a score of 0.7 or higher is acceptable (Heale & Twycross, 2015). This means that the Cronbach's Alpha for 'gender attitudes' is deemed acceptable, and the internal reliability is considered adequate. This is not the case for 'acculturation', of which the Cronbach's Alpha is below the acceptable range from 0.7. to 1. However, Perry et al. (2004) state that a Cronbach's Alpha from 0.5. to 0.7 shows moderate reliability. With excluding one of the chosen questions to form the construct the Cronbach's Alpha can be brought up to 0.632, but it is decided not to. This decision is based on the earlier stated theory on 'acculturation', which would be compromised by deleting one of the questions from the construct. In addition to this, as stated before, the construct is considered moderately reliable.

4.4 Logistic regression analysis

Given the dichotomous dependent variable, the type of analysis best fit for this research is a logistic regression analysis. The goal of performing a logistic regression analysis is to describe the relationship between the independent variable and dichotomous dependent variables (Kleinbaum and Klein, 2002). By performing a logistic regression analysis, a predictive model can be estimated to measure the probability of a positive outcome of a dichotomous dependent variable. Dichotomous means that there are only two possible outcomes, for example 0 and 1 or man and women. The statistical software that will be used to perform this logistic regression is Statistical Package for the Social Sciences (SPSS).

A logistic regression will model the chance of an outcome based on individual characteristics. The result is the impact of each variable on the odds ratio of the observed event of interest (Sperandei, 2013). Odds of the event is the ratio of the probability of the event happening by divided by the probability of the event not happening (LaValley, 2008). Hailpern and Visintainer (2003) state that the odds ratio (OR) is a measure of the strength of association between exposure and disease. In this research the exposure is gender attitudes, and the ‘disease’ or outcome is sport participation. The OR is calculated as the ratio of the products of pairs of diagonal elements in a 2x2 table. The result of the OR is a number, whereby an OR smaller than 1 indicates that the odds of exposure are lower than odds of non-exposure and an OR higher than 1 indicates that the odds of exposure are higher than the odds of non-exposure (Hailpern and Visintainer, 2003). For example, in this research, an OR higher than 1 can be interpreted as that the odds of sports participation are higher in case of the presence of gender attitudes than the absence of gender attitudes.

In this research, three different logistic regression analyses will be performed, resulting in three models. Model 1 will only contain the independent variable ‘migration background’, the dependent variable ‘sports participation’ and the control variables ‘age’, ‘education’ and ‘employment status’. In model 2, the mediating variable ‘gender attitudes’ will be added. In model 3, the moderating variable ‘acculturation’ will be added. The models are visualized in table 1.

Table 1*Logistic regression models*

	Model 1	Model 2	Model 3
Dependent variable	Sports participation	Sports participation	Sports participation
Independent variable	Migration background	Migration background	Migration background
Control variable	Age Education Employment Status	Age Education Employment Status	Age Education Employment Status
Mediating variable	-	Gender attitudes	Gender attitudes
Moderating variable	-	-	Acculturation

The logistic regression model can be formulated as follows:

$$Y = \beta_0 + \beta_1 * X + \beta_2 * GA + \beta_3 * GA * AC + \beta_4 * A + \beta_5 * Edu + \beta_6 * ES + \varepsilon$$

Whereby:

Y = Sports participation

X = Migration background

GA = Gender Attitudes

AC = Acculturation

A = Age

Edu = Education

ES = Employment Status

β_0 = Intercept (constant)

β_1 = Coefficient of migration background

β_2 = Coefficient of gender attitudes

β_3 = Coefficient of interaction term Gender Attitudes and Acculturation

β_4 = Coefficient of Age

β_5 = Coefficient of Education

β_6 = Coefficient of Employment Status

ε = Error

The logistic regression coefficients, or log odds ratios, can be interpreted as the effect of a one-unit change in the variable. A positive coefficient of the independent variable implies a positive effect on the dependent variable and a negative coefficient implies a negative effect on the

dependent variable (Hailpern and Visintainer, 2003). It will say something about the probability of the event. A significance level of 0.05 will be used ($p = 0.05$), in order to determine whether the results are statistically significant. The p-value is defined as probability and measures how likely it is that the observed outcome is due to chance (Dahiru, 2008). In case the p-value is 0.05 or lower, it can be concluded that the results are statistically significant. The null hypothesis can be rejected, and the alternative hypothesis can be accepted. In all other cases, a p-value higher than 0.05, the results are not statistically significant.

To test the mediation of 'gender attitudes' on the relationship between 'non-western migration background' and 'sports participation', the SPSS macro extension PROCESS (Hayes, 2012) was used. Using PROCESS, regression analyses can be executed with mediation- and/or moderation components in one analysis. For mediation, model 4 in PROCESS is used, for moderation, model 1 in PROCESS is used. With the analysis in PROCESS all different and important effects will be tested on significance simultaneously. With a possible mediation effect, a direct and indirect effect of the mediator will be tested. The advantage of the PROCESS macro analysis is that limitations, such as incorrectly rejecting or assuming a mediation effect on wrong grounds, can be avoided. For both models, bootstrapping was used in which 5000 samples were generated, so that confidence intervals are obtained for the mediation effects. Without these intervals, there is no data obtained about the significance of the mediation effects. Via 'mean center for products', all variables are automatically centered, if necessary, to avoid problems with collinearity (Hayes, 2012). The confidence interval is set at 95 percent, meaning that relationships are significant at a p-value of 0.05, when the upper and lower boundaries of the interval are either both above zero or both below zero. To test the moderation model, an interaction product of 'gender attitudes' x 'acculturation' is created. If the interaction is significant, then the moderation effect is also significant. The same as for the mediation model, all variables are automatically centered if necessary and bootstrapping is applied.

In order to validate the logistic regression models, the Hosmer-Lemeshow Test will be performed in all three models. The test can help to determine if the model represents the data appropriately (Hosmer et al. 2013). The test demonstrates a poor fit when the p-value is below 0.05. For the models to be recognized as worthwhile, the p-value should be greater than 0.05.

5. Results

In this chapter, the results of various analyses will be discussed. All these analyses contribute to the correct interpretation of the results of the logistic regression, which is the final part to be discussed in the results chapter.

5.1 Descriptive analysis

The descriptive statistics can be found in table 2. The percentage of regular sports participants differs in all groups. With 57.9%, the group of the native Dutch respondents has the most regular sport participants. This is also the group with the most included respondents. The group with most non-regular sports participants are the respondents with a Moroccan migration background, where 74.4% falls within this category. The Surinamese and Antillean/Aruban groups have almost the identical % number of respondents within the regular and non-regular groups. The same goes for the Moroccan and Turkish respondent groups. The group with the most egalitarian views regarding gender attitudes are the native Dutch with a mean of 16,9, followed by Antillean group (16,7), the Surinamese group (16,2), the Moroccan and Turkish groups (14,2). For acculturation, the native Dutch group has the highest mean of 17.1, followed by the Antillean/Aruban group (15.9), Surinamese group (15.5), Moroccan group (13.1) and the Turkish group (11.1). This means the Turkish respondents score the lowest on 'acculturation'. Looking at the age categories, the Moroccan group has the largest % number in the youngest age category, where their native Dutch counterparts have a notable lower % share of respondents in the same category. The Surinamese group has the largest % number of respondents in the age category over 75 years of age. Of the Moroccan and Turkish groups a very large % of the respondents enjoyed low education in the Netherlands and none of them fall within the category 'high'. The largest % share of respondents with higher education is within the Surinamese group. The percentage of respondents being employed are highest for the Surinamese and Antillean/Aruban group, followed by the native Dutch respondents. The Moroccan and Turkish group have the second least and least respondents being employed.

Table 2*Descriptive statistics*

Variable	Native Dutch (n=214)	Moroccan (n=55)	Turkish (n=69)	Surinamese (n=145)	Antillean/ Aruban (n=120)	Total %
Sports participation (%):						
Regular	57.9	25.5	27.5	35.2	32.5	41,0
Non-regular	42.1	74.5	72.5	64.8	67.5	59,0
Gender Attitudes (\bar{x})	16.9	14.2	14.2	16.7	16.2	
Acculturation (\bar{x})	17.1	13.1	11.1	15.5	15.9	
Age group (%):						
55-64 years	38.3	70.9	44.9	55.9	64.2	51,4
65-74 years	34.6	21.8	42.0	25.5	30.0	31,2
75 and older	27.1	7.3	13.0	18.6	5.8	17,4
Educational level (%):						
Low	63.2	81.3	86.2	46.7	50.9	61,1
Middle	19.6	18.8	13.8	30.7	32.1	24,0
High	17.2	0.0	0.0	22.6	17.0	14,9
Employment status (%):						
Employed	25.2	5.5	1.4	29.0	29.2	22,4
Not employed	74.8	94.5	98.6	71.0	70.8	77,6

Note: total sample consists of 603 respondents. Numbers retrieved from SIM, 2015.

5.2 Logistic regression

As described in the Research Design (Chapter 4) three logistic regression models are performed.

Model 1 excludes the mediating variable ‘gender attitudes’ and moderating variable ‘acculturation’. As displayed in table 3, the odds ratios (Exp (B)) for all ethnicity groups are below 1, with the native Dutch respondents as reference group. This means that, for example, Turkish respondents have 0.365 times less chance at participating in sports regularly than their native Dutch counterparts. All results for ethnicity groups are significant. The odds ratios for the age groups of 65-74 and 75+ are 0.923 and 0.540 respectively. Meaning that respondents in both age groups have less of a chance at participating in sports regularly. However, only the outcome for the age group of 75+ is significant. Having a middle- (OR = 1.216) or high education (OR = 2.567) are all indications for a higher chance at regular sports participation than respondents with a low education. Only the odds ratio for high education is significant ($p = 0.001$).

Table 3*Model 1*

Variables	B	S.E.	Sig.	Exp(B)	95% C.I. for Lower	EXP(B) Upper
Native Dutch			.000***			
Moroccan	-.656	.545	.229	.519	.178	1.511
Turkish	-1.008	.436	.021*	.365	.155	.859
Surinamese	-1.108	.240	.000***	.330	.206	.528
Antillean/Aruban	-1.203	.261	.000***	.300	.180	.500
Age 55-64			.102			
Age 65-74	-.080	.239	.739	.923	.577	1.476
Age 75+	-.616	.302	.041*	.540	.299	.976
Low education			.003**			
Middle education	.195	.231	.398	1.216	.773	1.912
High education	.943	.274	.001**	2.567	1.501	4.389
Employed	-.139	.249	.577	.871	.534	1.418
Constant	.494	.247	.045*	1.639		
Hosmer-Lemeshow Test			0.677			

Note: Dependent, independent and control variables, excluding mediator and moderator.

Significance levels: * p-value < 0.05, ** p-value < 0.01, *** p-value < 0.001

Model 2 includes the mediating variable ‘gender attitudes’ and excludes the moderating variable ‘acculturation’. The odds ratio for ‘gender attitudes’ of 0.862 is significant ($p = 0.005$). Meaning that a one-unit increase in score on ‘gender attitudes’ decreases the chance at regular sports participation with 13.8%. This influences the odds ratios of all other variables, even though the changes seem small. For instance, in model 2 the chance of a respondent from the Turkish group at regular sports participation is 59.3% ($OR = 0.407$) smaller than for a native Dutch respondent, where in model 1 this was 63.5% smaller ($OR = 0.365$). However, the outcome in model 2 is not significant ($p = 0.053$). This is also the case of all other ethnicity groups. The only ethnicity group in which a decrease ($OR = 0.330$ versus $OR = 0.339$) of the odds ratio took place in model 2, is the Surinamese group. This means the chance at regular sports participation when including ‘gender attitudes’ in comparison to the native Dutch group decreased with 0.9%. In comparison to model 1, the odds ratios for all age groups increased. Still the only group with a significant outcome is the 75+ group, where the odds ratio increased from 0.540 to 0.586. Where in model 1 the high education group had 257% more chance at sports participation ($OR = 2.567$) in comparison to the low education group, in model 2 this is decreased to 233% ($OR = 2.331$). With a p-value of 0.002 the outcome is still significant. The

odds ratio for being employed also increased to 0.923, but the outcome is not significant. The results are visible in table 4.

Table 4

Model 2

Variables	B	S.E.	Sig.	Exp(B)	95% C.I. for Lower	EXP(B) Upper
Gender attitudes	-.148	.062	.016*	.862	.764	.973
Native Dutch			.000***			
Moroccan	-.518	.557	.352	.596	.200	1774
Turkish	-.899	.465	.053	.407	.164	1013
Surinamese	-1.135	.245	.000***	.322	.199	.519
Antillean/Aruban	-1081	.267	.000***	.339	.201	.572
Age 55-64			.192			
Age 65-74	-.060	.246	.807	.942	.582	1525
Age 75+	-.535	.311	.086	.586	.318	1078
Low education			.010*			
Middle education	.190	.239	.427	1.209	.757	1.932
High education	.846	.278	.002**	2.331	1.352	4.019
Employed	-.080	.255	.755	.923	.560	1523
Constant	1184	.383	.002**	3267		
Hosmer-Lemeshow Test			0.289			

Note: Dependent, independent, mediating and control variables, excluding moderator.

Significance levels: * p-value < 0.05, ** p-value < 0.01, *** p-value < 0.001

Model 3 includes both the mediating variable ‘gender attitudes’ and the moderating variable ‘acculturation’. The odds ratio for ‘gender attitudes’ (OR = 0.865) is still significant (p = 0.019) after adding ‘acculturation’ to the logistic regression. ‘Acculturation’ has a significant odds ratio of 1.327 (p = 0.042), meaning a one-unit increase on the score of ‘acculturation’ enhances the chance at regular sports participation with 32.7%. Like with ‘gender attitudes’, the odds ratios of all other variables are influenced. For all ethnicity groups the odds ratio increased, and only the outcomes for the Surinamese (p = 0.000) and Antillean/Aruban (p = 0.000) groups remain significant. This means the presence of ‘acculturation’ has a positive effect on the chance at regular sports participation in all ethnicity groups. Except for ‘middle education’, all odds ratios of the control variables decreased. The p-value of middle and high education remain significant. The results are visible in table 5.

Table 5*Model 3*

	B	S.E.	Sig.	Exp(B)	95% C.I. for Lower	EXP(B) Upper
Gender attitudes	-.145	.062	.019*	.865	.766	.977
Acculturation	.283	.139	.042*	1.327	1.011	1.742
Native Dutch			.000***			
Moroccan	-.320	.568	.573	.726	.238	2211
Turkish	-.562	.495	.256	.570	.216	1504
Surinamese	-1.046	.249	.000***	.351	.216	.572
Antillean/Aruban	-1.023	.270	.000***	.360	.212	.610
Age 55-64			.180			
Age 65-74	-.080	.247	.747	.923	.569	1499
Age 75+	-.556	.313	.076	.573	.310	1.060
Low education			.011*			
Middle education	.197	.240	.410	1.218	.761	1.949
High education	.837	.279	.003**	2.309	1335	3991
Employed	-.119	.257	.644	.888	.536	1470
Constant	.008	.691	.991	1.008		
Hosmer-Lemeshow Test			0.361			

Note: Dependent, independent, mediating and control variables, excluding moderator. levels:

* p-value < 0.05, ** p-value < 0.01, *** p-value < 0.001

5.3 Mediation analysis

In table 6 the results of the mediation analysis are displayed. Beneath ‘Indirect effect of X on Y’ the outcomes for BootLLCI and BootULCI indicate for the Moroccan and Turkish groups the indirect effect of ‘gender attitudes’ on ‘sports participation’ is significant, and for the Surinamese and Antillean/Aruban group not, with the native Dutch group as reference. Hayes and Preacher (2014) mention that when the BootLLCI and BootULCI interval does not include 0, the indirect effect is significant. In that case, mediation is observed. In this case, mediation from ‘gender attitudes’ on ‘sports participation’ is only established for the Moroccan and Turkish group. The output also shows that the direct effect C’ is significant for all groups. This means that all groups have a direct relationship with ‘gender attitudes’, but not all are mediated by it. The direct effect measures the extent to which the dependent variable changes when the independent variable increases by one unit and the mediator variable remains unaltered (Hayes and Preacher, 2014).

Table 6*Mediation analysis*

Relative indirect effects of X on Y				
Effect	Effect	BootLLCI	BootULCI	
Moroccan	-0.311	-.580	-.127	
Turkish	-0.314	-.569	-.131	
Surinamese	-0.001	-.067	.072	
Antillean/Aruban	-0.056	-.144	.015	
Relative direct effects of X on Y				
	Effect	se	p	LLCI ULCI
Moroccan	-1.218	.359	.0007***	-1.920 -.515
Turkish	-1.017	.322	.0016**	-1.649 -.385
Surinamese	-.996	.230	.0000***	-1.446 -.547
Antillean/Aruban	-.929	.245	.0002***	-1.410 -.448

Note: Outcome from model 4 in the PROCESS marco. X = Migration background. Y = Sports participation. Significance levels: * p-value < 0.05, ** p-value <0.01, *** p-value < 0.001

5.4 Moderation analysis

Next to the mediation analysis, a moderation analysis was executed. When a relationship between two variables changes as a function of a third variable, moderation can occur. Moderation is established when the coefficient falls within the confidence interval and has a significant p-value. As displayed in table 7, there is no significant moderating effect of ‘acculturation’ on the relationship between ‘gender attitudes’ and ‘sports participation’.

Table 7*Moderation analysis*

Model	Coeff	p	LLCI	ULCI
Constant	-0,459	0.000***	-0,629	-0,289
Gender attitudes	-0,209	0.000***	-0,305	-0,113
Acculturation	0,414	0.000***	0,215	0,612
Interaction (Gender attitudes x Acculturation)	-0,029	0,583	-0,13	0,073

Note: Significance levels: * p-value < 0.05, ** p-value <0.01, *** p-value < 0.001

6. Discussion

In the discussion, the focus lies on the discussion of the main findings and interpretation of the results. It will be related to the theoretical framework and to the research questions. Besides this, the limitations and recommendations will be discussed.

6.1 Main findings and interpretation

Resulting from the gathered logistic regression analysis, the chance at regular sports participation differs per ethnicity group. The results clearly show that in all three models, Moroccan, Turkish, Surinamese and Antillean/Aruban respondents have a smaller chance at regular sports participation compared to their native Dutch counterparts. By adding 'gender attitudes' and 'acculturation' to the logistic regression the chances at regular sports participation for Moroccan and Turkish respondents increased notably (increase of OR, respectively: 0.519 to 0.726 and OR 0.036 to 0.570). For the Surinamese and Antillean/Aruban groups the increase was only minor. It should be acknowledged once more that not all outcomes for each ethnicity group were significant. 'Gender attitudes' itself appears to decrease the chance at regular sports participation by 13.8% per one-unit increase towards more egalitarian gender attitudes. For 'acculturation' goes the opposite, which clearly increased the chance at regular sports participation by 32.7% per one-unit increase towards a higher rate of acculturation. Both the results for 'gender attitudes' and 'acculturation' are significant. Through the mediation analysis there is a significant mediation established from 'gender attitudes' on 'sports participation' for the Moroccan and Turkish groups. However, from the performed mediation analysis, it must also be considered that there is no mediation established for the Surinamese and Antillean/Aruban group, only a significant direct relationship. The moderation analysis also did not establish a significant moderating effect of 'acculturation' on the relationship between 'gender attitudes' and 'sports participation'. Furthermore, looking at the results it can also be stated that these results are independent from changes in characteristics age, education level and employment status.

Earlier research by Hofstede (2001) showed that scores on the masculinity-femininity scale indicates whether the society of country is leaning more towards a masculine or feminine country. For example, it is stated that Morocco and Turkey have a more masculine society in comparison to the Netherlands. In these countries a more prominent role division is present. Pels (2000) found that older women from these societies prefer to keep this role division,

instead of switching towards a more egalitarian role division. The results from this research are in agreement with these statements, as the chances at regular sports participation increased for both Moroccan and Turkish respondents after adding 'gender attitudes' to the logistic regression. However, these results are not significant and therefore the statistical value is not adequate to draw conclusions. Surinam had a lower score on the masculinity-femininity scale, which is also in line with only the minor increase found after adding 'gender attitudes'. In addition to this, the odds ratio for 'gender attitudes' on itself is also below 1, meaning the chance at regular sports participation decreased when having more egalitarian gender attitudes. Considering these results, the following hypothesis regarding 'gender attitudes' cannot be accepted: *'More egalitarian gender attitudes result in more sports participation on older women with and without non-western migration backgrounds.'*

Earlier research by Pels (2000), Henderson and Hickerson (2007) and De Gruijter et al. (2007) support the result that a higher rate acculturation enlarges the chance at regular sports participation. In this research the Moroccan and Turkish group both had the same score (14.2) for 'acculturation', the lowest of all ethnic groups included, which corresponds with the scores on 'gender attitudes'. Both the scores of the Surinamese and Antillean/Aruban groups on 'acculturation' did not differ much from the native Dutch group. This is also shown in the logistic regression since the adding of 'acculturation' did not alter the outcomes for these group by much. It is remarkable that for the Moroccan and Turkish groups, the addition of 'acculturation' increased their chance at regular sports participation, even though the scores were lower than those of the Surinamese and Antillean/Aruban groups. These findings are not in agreement with the theoretical framework, so the following hypothesis regarding 'acculturation' cannot be accepted: *'A higher level of acculturation has a positive effect on the chance at sports participation on older women with and without non-western migration backgrounds.'*

6.2 Limitations

There are a few limitations to the research that should be considered.

First, a limitation in the theory is the absence of a score for the Antillean/Aruban group on the masculinity-femininity scale by Hofstede (2001). Because this score is missing, there is no reference point for the outcomes of this group to be compared to. Second, the reliability of the data set is impacted by the translation of the survey. It was translated to six different languages by translators, but it is still possible that the translation was not fully identical to the original (Dutch language) survey and therefore questions could be interpreted in another way by the respondent. This also goes for the face-to-face interviews. Third, the generalizability of the results is limited by the sample size of the different groups. Within this research, the different ethnic groups are analyzed, and the sample size of the Moroccan, Turkish, Surinamese and Antillean/Aruban groups are remarkable lower compared to the native Dutch group. Therefore, it is hard to determine if the results can be generalized. Fourth, the reliability of the variable ‘acculturation’ should be considered. The variable ‘acculturation’ is created out of multiple items from the survey. However, the Cronbach’s Alpha is below 0.7, which is not within the acceptable range from 0.7 – 1.0. As mentioned before, research of Perry et al. (2004) state that it only shows moderate reliability, not acceptable reliability. Lastly, the logistic regression analysis in this research only controls for the variables ‘age’, ‘education’ and ‘employment status’. There could be other control variables that were not considered but do have effect on the dependent variable.

6.3 Recommendations

It is recommended to do further research into this topic. In future research it could be explored which other variables have impact on sports participation. In this research, the scores on both variables ‘gender attitudes’ and ‘acculturation’ are in line with earlier research, but when analyzed in combination with sports participation the outcome does not match the expectations. Perhaps ethnicity is not a strong indicator for both variables, and research could better look for differences caused by other factors, for example religious affiliation, being a single mother or other responsibilities (such as care tasks) that are time consuming. This is based on the findings in the theoretical framework.

Besides that, it is recommended to include male respondents in the sample as well, in order to see the impact of 'gender attitudes' on different sexes. It is also interesting to extend the diversity population and to include younger respondents, in order to see trends and changes among different generations. For example, starting from the age of 21, since from that age people are completely independent, and are less prone to influences from their guardians.

Also, it is recommended to extend the sample size in order to have more people included in each ethnicity group. In this way, it is more likely to draw conclusions that can be generalizable for the entire population and for each single ethnic group. Furthermore, it could be interesting to include other ethnic groups as well, such as the Polish respondents.

6.4 Conclusion

The research question to be answered in this research is: *'Can the relationship between (not) having a non-western migration background and sports participation on women in later life partially be explained by the mediating presence of gender attitudes and the moderating presence of acculturation?'*. It can be concluded that the relationship between different migration backgrounds and sports participation on women in later life can partially be explained by the presence of gender attitudes, but not for all ethnic groups, and not can be explained by the moderating presence of acculturation. The mediation by 'gender attitudes' is only established between the Moroccan and Turkish groups, but with the opposite effect to what was expected. The outcomes for 'acculturation' are also different from the expectations, and a significant moderation effect on the relationship between 'gender attitudes' and 'sports participation' was not established.

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Appendices

Appendix 1 - List of abbreviations

A	Age
AC	Acculturation
Antill	Antillean
CBS	Centraal Bureau voor de Statistiek
DANS	Data Archiving and Networked Services
Edu	Education
ES	Employment Status
GA	Gender Attittudes
N	Number of included respondents
SCP	Sociaal Cultureel Planbureau
SIM	Survey Integratie Minderheden
SPSS	Statistical Package for the Social Sciences
OR	Odds Ratio
X	Migration Background
\bar{x}	Mean of sample
Y	Sports Participation

Appendix 2 - SPSS output: N per group.

Moroccan Moroccan

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	,00 Others	602	91.6	91.6	91.6
	1,00 Moroccan	55	8.4	8.4	100.0
	Total	657	100.0	100.0	

Turkish Turkish

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	,00 Others	588	89.5	89.5	89.5
	1,00 Turkish	69	10.5	10.5	100.0
	Total	657	100.0	100.0	

Surinamese Surinamese

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	,00 Others	512	77.9	77.9	77.9
	1,00 Surinamese	145	22.1	22.1	100.0
	Total	657	100.0	100.0	

Antillean Antillean

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	,00 Others	537	81.7	81.7	81.7
	1,00 Antillean	120	18.3	18.3	100.0
	Total	657	100.0	100.0	

Dutch_native Dutch_native

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	,00 Others	443	67.4	67.4	67.4
	1,00 Dutch_native	214	32.6	32.6	100.0
	Total	657	100.0	100.0	

Appendix 3- SPSS SYNTAX

* Encoding: UTF-8.

```

DATASET ACTIVATE DataSet1.
RECODE geslacht (1=0) (2=1) INTO Vrouw.
VARIABLE LABELS  Vrouw 'Vrouw'.
EXECUTE.

```

```

RECODE leeftijd (1=0) (2=0) (3=0) (4=0) (5=1) (6=1) (7=1) INTO Age_55_above.
VARIABLE LABELS  Age_55_above 'Age_55_above'.
EXECUTE.

```

```

USE ALL.
COMPUTE filter_$=(Vrouw AND Age_55_above).
VARIABLE LABELS filter_$ 'Vrouw AND Age_55_above (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.

```

```

RECODE etngba (2=0) (3=0) (4=0) (1=1) (5=0) (6=0) (7=0) INTO Moroccan.
VARIABLE LABELS  Moroccan 'Moroccan'.
EXECUTE.

```

```
RECODE etngba (3=0) (4=0) (5=0) (6=0) (7=0) (1=0) (2=1) INTO Turkish.  
VARIABLE LABELS Turkish 'Turkish'.  
EXECUTE.
```

```
RECODE etngba (4=0) (5=0) (6=0) (7=0) (1=0) (2=0) (3=1) INTO Surinamese.  
VARIABLE LABELS Surinamese 'Surinamese'.  
EXECUTE.
```

```
RECODE etngba (5=0) (6=0) (7=0) (1=0) (2=0) (3=0) (4=1) INTO Antillean.  
VARIABLE LABELS Antillean 'Antillean'.  
EXECUTE.
```

```
RECODE etngba (5=0) (6=0) (1=0) (2=0) (3=0) (4=0) (7=1) INTO Dutch_native.  
VARIABLE LABELS Dutch_native 'Dutch_native'.  
EXECUTE.
```

```
DATASET ACTIVATE DataSet3.  
RECODE mangeld (1=3) (2=3) (3=2) (4=1) (5=1) INTO GN_Mangeld.  
VARIABLE LABELS GN_Mangeld 'GN_Mangeld'.  
EXECUTE.
```

```
RECODE inkjongs (1=3) (2=3) (3=2) (4=1) (5=1) INTO GN_Inkjongs.  
VARIABLE LABELS GN_Inkjongs 'GN_Inkjongs'.  
EXECUTE.
```

```
RECODE manaanka (1=3) (2=3) (3=2) (4=1) (5=1) INTO GN_Manaanka.  
VARIABLE LABELS GN_Manaanka 'GN_Manaanka'.  
EXECUTE.
```

```
RECODE vrwstopw (1=3) (2=3) (3=2) (4=1) (5=1) INTO GN_Vrwstopw.  
VARIABLE LABELS GN_Vrwstopw 'GN_Vrwstopw'.  
EXECUTE.
```

```
RECODE fqsport (1=1) (2=1) (3=2) (4=2) (5=2) INTO Sports_participation.  
VARIABLE LABELS Sports_participation 'Sports_participation'.  
EXECUTE.
```

```
DATASET ACTIVATE DataSet1.  
RECODE etngba (7=0) (1=1) (2=2) (3=3) (4=4) INTO Groups.  
VARIABLE LABELS Groups 'Groups'.  
EXECUTE.  
RECODE leeftijd (5=1) (6=2) (7=3) INTO Age.  
VARIABLE LABELS Age 'Age'.  
EXECUTE.
```

```
DATASET ACTIVATE DataSet1.  
CROSSTABS  
  /TABLES=Age BY Groups  
  /FORMAT=AVALUE TABLES  
  /CELLS=COUNT
```

/COUNT ROUND CELL.

COMPUTE Genderroles=GN_Mangeld + GN_Inkjongs + GN_Manaanka + GN_Vrwstopw.
EXECUTE.

COMPUTE Genderroles=mangeld + inkjongs + manaanka + vrwstopw.
EXECUTE.

COMPUTE Acculturation_mean=MEAN(Acculturation,Groups).
EXECUTE.

RECODE leeftijd (5=1) INTO Leeftijd_5565.
VARIABLE LABELS Leeftijd_5565 'Leeftijd_5565'.
EXECUTE.

RECODE leeftijd (6=1) INTO Leeftijd_6574.
VARIABLE LABELS Leeftijd_6574 'Leeftijd_6574'.
EXECUTE.

RECODE leeftijd (7=1) INTO Leeftijd_75.
VARIABLE LABELS Leeftijd_75 'Leeftijd_75'.
EXECUTE.

RELIABILITY
/VARIABLES=ACC_Contaut ACC_ContBaut ACC_VoelNL ACC_TVned
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA.

RELIABILITY
/VARIABLES=GN_Mangeld GN_Inkjongs GN_Manaanka GN_Vrwstopw
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA.

DATASET ACTIVATE DataSet1.
COMPUTE ACC=ACCVNL + ACCtaut + ACCBaut + ACCTVned.
EXECUTE.

RECODE voelnl (1=5) (2=4) (3=3) (4=2) (5=1) INTO ACCvNL.
VARIABLE LABELS ACCvNL 'ACCvNL'.
EXECUTE.

RECODE contaut (1=5) (2=4) (3=3) (4=2) (5=1) INTO ACCtaut.
VARIABLE LABELS ACCtaut 'ACCtaut'.
EXECUTE.

RECODE contbaut (1=5) (2=4) (3=3) (4=2) (5=1) INTO ACCbaut.
VARIABLE LABELS ACCbaut 'ACCtaut'.
EXECUTE.

RECODE tvned (1=5) (2=4) (3=3) (4=2) (5=1) INTO ACCtv.

```
VARIABLE LABELS ACCtv 'ACCtv'.  
EXECUTE.
```

```
RELIABILITY  
/VARIABLES=ACCvNL ACCtaut ACCbaut ACCtv  
/SCALE('ALL VARIABLES') ALL  
/MODEL=ALPHA.
```

```
COMPUTE ACC=ACCvNL + ACCtaut + ACCbaut + ACCtv.  
EXECUTE.
```

```
RECODE Groups (0=1) (1=2) (2=3) (3=4) (4=5) INTO Groups1.  
VARIABLE LABELS Groups1 'Groups1'.  
EXECUTE.
```

```
COMPUTE ACCmean=MEAN(ACCvNL,ACCtaut,ACCbaut,ACCtv).  
EXECUTE.
```

```
DATASET ACTIVATE DataSet1.  
RECODE maxoplnl (1=1) (2=2) (3=3) INTO MaxoNL.  
VARIABLE LABELS MaxoNL 'MaxoNL'.  
EXECUTE.
```

```
RECODE MaxoNL (1=1) (2=2) (3=3) (SYSMIS=99).  
EXECUTE.
```

```
RECODE GNMgeld GNInkJ GNManA GNVrwS (1=1) (2=2) (3=3) (4=4) (5=5).  
EXECUTE.
```

```
COMPUTE GA=GNMgeld + GNInkJ + GNManA + GNVrwS.  
EXECUTE.
```

```
RECODE maxdipnu (1=1) (2=2) (3=3) INTO Edu.  
VARIABLE LABELS Edu 'Edu'.  
EXECUTE.
```

```
LOGISTIC REGRESSION VARIABLES SP  
/METHOD=ENTER Groups Age Edu nuwerk  
/CONTRAST (Age)=Indicator(1)  
/CONTRAST (Groups)=Indicator(1)  
/CONTRAST (Edu)=Indicator(1)  
/CONTRAST (nuwerk)=Indicator(1)  
/PRINT=GOODFIT CI(95)  
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

```
LOGISTIC REGRESSION VARIABLES SP  
/METHOD=ENTER GA Groups Age Edu nuwerk  
/CONTRAST (Age)=Indicator(1)  
/CONTRAST (Groups)=Indicator(1)  
/CONTRAST (Edu)=Indicator(1)
```

```

/CONTRAST (nuwerk)=Indicator(1)
/PRINT=GOODFIT CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

```

LOGISTIC REGRESSION VARIABLES SP

```

/METHOD=ENTER GA ACCmean Groups Age Edu nuwerk
/CONTRAST (Age)=Indicator(1)
/CONTRAST (Groups)=Indicator(1)
/CONTRAST (Edu)=Indicator(1)
/CONTRAST (nuwerk)=Indicator(1)
/PRINT=GOODFIT CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

```

Appendix 4 - Outcome mediation analysis PROCESS.

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 3.5.3 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model : 4
Y : SP
X : Groups
M : GA

Sample
Size: 577

Coding of categorical X variable for analysis:

Groups	X1	X2	X3	X4
.000	.000	.000	.000	.000
1.000	1.000	.000	.000	.000
2.000	.000	1.000	.000	.000
3.000	.000	.000	1.000	.000
4.000	.000	.000	.000	1.000

OUTCOME VARIABLE:
GA

Model Summary

R	R-sq	MSE	F	df1	df2	p
.3310	.1096	3.4772	17.5930	4.0000	572.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	4.9809	.1290	38.6158	.0000	4.7275	5.2342

X1	1.6606	.2868	5.7906	.0000	1.0974	2.2239
X2	1.6754	.2664	6.2890	.0000	1.1522	2.1986
X3	.0048	.2041	.0233	.9814	-.3961	.4056
X4	.2959	.2184	1.3552	.1759	-.1330	.7248

OUTCOME VARIABLE:

SP

Coding of binary Y for logistic regression analysis:

SP Analysis

.00 .00
1.00 1.00

Model Summary

-2LL	ModelLL	df	p	McFadden	CoxSnell	Nagelkrk
729.0768	54.4306	5.0000	.0000	.0695	.0900	.1212

Model

	coeff	se	Z	p	LLCI	ULCI
constant	1.2756	.2978	4.2836	.0000	.6920	1.8592
X1	-1.2177	.3587	-3.3951	.0007	-1.9206	-.5147
X2	-1.0171	.3224	-3.1544	.0016	-1.6491	-.3852
X3	-.9959	.2293	-4.3433	.0000	-1.4453	-.5465
X4	-.9291	.2454	-3.7857	.0002	-1.4101	-.4481
GA	-.1875	.0524	-3.5789	.0003	-.2902	-.0848

These results are expressed in a log-odds metric.

***** DIRECT AND INDIRECT EFFECTS OF X ON Y

Relative direct effects of X on Y

	Effect	se	Z	p	LLCI	ULCI
X1	-1.2177	.3587	-3.3951	.0007	-1.9206	-.5147
X2	-1.0171	.3224	-3.1544	.0016	-1.6491	-.3852
X3	-.9959	.2293	-4.3433	.0000	-1.4453	-.5465
X4	-.9291	.2454	-3.7857	.0002	-1.4101	-.4481

Omnibus likelihood ratio test of direct effect of X on Y:

Chi-sq	df	p
31.6380	4.0000	.0000

Relative indirect effects of X on Y

Groups	-> GA	-> SP		
Effect	BootSE	BootLLCI	BootULCI	
X1	-.3114	.1153	-.5801	-.1272
X2	-.3141	.1121	-.5689	-.1313

X3	-.0009	.0343	-.0667	.0715
X4	-.0555	.0402	-.1441	.0147

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
5000

NOTE: Direct and indirect effects of X on Y are on a log-odds metric.

----- END MATRIX -----

Appendix 5 - Outcome moderation analysis PROCESS.

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 3.5.3 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model : 1
Y : SP
X : GA
W : ACCmean

Sample
Size: 629

OUTCOME VARIABLE:
SP

Coding of binary Y for logistic regression analysis:
SP Analysis
.00 .00
1.00 1.00

-2LL	ModelLL	df	p	McFadden	CoxSnell	Nagelkrk
800.3864	46.5855	3.0000	.0000	.0550	.0714	.0965

Model	coeff	se	Z	p	LLCI	ULCI
constant	-.4588	.0869	-5.2820	.000	-.6290	-.2885

GA	-.2091	.0491	-4.2569	.0000	-.3054	-.1128
ACCmean	.4138	.1012	4.0884	.0000	.2154	.6121
Int_1	-.0286	.0520	-.5494	.5827	-.1304	.0733

These results are expressed in a log-odds metric.

Product terms key:

Int_1 : GA x ACCmean

Likelihood ratio test(s) of highest order
unconditional interactions(s):

	Chi-sq	df	p
X*W	.2950	1.0000	.5870

***** ANALYSIS NOTES AND ERRORS

Level of confidence for all confidence intervals in output:
95.0000

NOTE: The following variables were mean centered prior to analysis:
ACCmean GA

----- END MATRIX -----