Neighbourhood Determinants of Well-being:

The Influence of Social Cohesion, Safety Perceptions and Ethnic Diversity

Master Thesis

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Abstract

Subjective well-being, encompassing life satisfaction and happiness, is increasingly recognized as a vital aspect of overall health and quality of life. This study examines the effects of perceived social cohesion, safety, and ethnic diversity in the neighbourhood on subjective well-being, taking into account demographic control factors including gender, age, household size, income and ethnic background. Through data analysis from a online survey of 1,876 respondents from Dutch households, I find that neighbourhood social cohesion and safety perceptions significantly increased life satisfaction and happiness. Although individuals from first-generation non-Western backgrounds report lower life satisfaction, suggesting potential challenges in terms of integration and socioeconomic disadvantage, perceptions of ethnic diversity do not have significant direct effects or moderated effects on life satisfaction and happiness. These findings show the critical role of neighbourhood social cohesion and safety perceptions in promoting subjective well-being, while demonstrating the need for tailored support for migrant populations to improve their subjective well-being.

Introduction:

Neighbourhood social cohesion and safety perceptions play a crucial role in shaping subjective well-being, as research shows that living in cohesive, safe neighbourhoods leads to many positive outcomes, including lower crime rates (Tolsma et al., 2009), stronger social bonds (Jennings & Bamkole, 2019), and improved overall quality of life (Mouratidis & Poortinga, 2020; Jennings & Bamkole, 2019; Cramm & Nieboer, 2015). Villarreal & Silva (2006) found that the greater spread of information regarding crimes occur in more cohesive neighbourhoods where residents interact more frequently with each other. As a result, crime rates are lower in these neighbourhoods. Similarly, Hyyppä (2010) demonstrates that neighbourhoods with greater social capital have lower mortality rates, underscoring the importance of social cohesion for population health and well-being.

Valente and Crescenzi-Lanna (2022) showed a strong correlation between neighbourhood safety and residents' mental health, and safer neighbourhoods were associated with lower levels of psychological distress and anxiety. This link highlights the importance of a safe environment in promoting mental health and reducing stressors that can lead to mental health challenges. Furthermore, research by Kim et al. (2020) showed that individuals living in more socially cohesive neighbourhoods reported better mental health outcomes and higher life satisfaction. Neighbourhoods characterized by strong social connections and support networks are associated with lower levels of depression and higher overall life satisfaction.

In addition to the direct impact on subjective well-being, neighbourhood social cohesion and safety perceptions can also affect the social and economic opportunities available to residents, shaping the long-term trajectory of health and prosperity. For example, research by Chetty et al. (2022) and Stafford, Chandola and Marmot (2007) suggests that cohesive neighbourhoods contribute to the spread of social support networks and access to resources, promoting economic mobility and upward social mobility. Conversely, neighbourhoods characterized by social divisions and safety concerns may hinder residents' ability to build social capital and access opportunities, thereby exacerbating disparities in health and well-being.

While some studies have explored the relationship between neighbourhood ethnic diversity and social cohesion (Laurence, & Bentley, 2016; Koopmans, & Schaeffer, 2016; Meer, & Tolsma, 2014), there are still gaps in research on the specific impact of residents' perceptions of the presence of immigrants, especially in countries with large migration background population. Laurence and Bentley (2016) found that the relationship between ethnic diversity and the level of social cohesion is related to stayers and movers, while Koopmans and Schaeffer (2016) found a negative correlation between ethnic diversity and social cohesion in 938 German, Dutch and French neighbourhoods in their study. Meer and Tolsma (2014) report that the impact of neighbourhood ethnic diversity on social cohesion depends on the level of social integration among residents. These studies suggest that while neighbourhood ethnic diversity may influence social cohesion, the specific mechanisms and outcomes vary depending on environmental factors and residents' perceptions. Understanding how residents feel about the proportion of immigrants in their neighbourhoods could play a important role in

how social cohesion & safety affects neighbourhood subjective well-being. In 140 neighbourhoods of two German cities, a higher proportion of immigrants is associated with a higher perception of disorder (Janssen et al., 2022). Therefore, my study will also investigate how Dutch residents' perceptions of the proportion of immigrants in their neighbourhoods affect their level of social cohesion, safety perception and finally the overall subjective well-being.

This study researches the degree of influence of social cohesion and safety perceptions on the subjective well-being of Dutch neighbourhood residents, and the moderating effect of neighbourhood ethnic diversity on this relationship. This study use questionnaire data from the LISS dataset from 2020, which includes 3,332 respondents from the Netherlands and I use this for an empirical analysis exploring neighbourhood social cohesion, perceptions of safety during the day and night, and residents' perception of the proportion of immigrants in their neighbourhoods.

Theory and literature

Neighbourhood social cohesion

Neighbourhood social cohesion refers to the social bonds and connections among residents within a specific geographical area (Mouratidis, & Poortinga, 2020; Cramm, & Nieboer, 2015). It encompasses the sense of belonging, mutual trust, and reciprocity among individuals living in close proximity. This concept highlights the strength of social relationships and the extent of residents' social interactions, shared values, and a sense of belonging.

Research shows that neighbourhood social cohesion is a key factor promoting neighbourhood well-being and enhancing residents' quality of life. For example, Sampson, Raudenbush, and Earls (1997) conducted a seminal study on collective efficacy, which refers to the shared belief among residents in their ability to intervene for the common good. They found that neighbourhoods characterized by high levels of social cohesion and collective efficacy exhibited lower rates of violent crime, even after controlling for individual-level factors such as socioeconomic status.

One key component of neighbourhood social cohesion is the extent to which residents share the same values. When individuals within a neighbourhood hold similar beliefs, norms, and cultural practices, it fosters a sense of unity and solidarity. This shared value system provides a foundation for cooperation, collaboration, and mutual support among neighbours (Kramer & Porter, 2011). Take a typical example, research by Carpiano et al. (2011) found that gay men living in neighbourhoods where residents shared similar attitudes towards homosexuality reported higher levels of social cohesion and support networks.

Interacting in a pleasant way is another crucial aspect of neighbourhood social cohesion. When residents engage in positive social interactions, such as greeting neighbours, participating in neighbourhood events, and offering assistance to one another, it fosters a sense of social cohesion and belonging. These interactions create a supportive and inclusive

environment where residents feel valued, respected, and deeply connected to their neighbourhood. Studies by Carpiano et al. (2011) found that neighbourhoods where residents interacted in a pleasant way experienced greater social cohesion and collective efficacy, leading to improved neighbourhood well-being and resilience.

Safety perception

Safety perception is an aspect of neighbourhood well-being, affecting residents' quality of life and overall satisfaction with living environment. It refers to an individual's subjective assessment of the level of safety within their neighbourhood, including various factors such as crime rates, social disorder, and the presence of facilities and resources that promote safety. Research shows that perception of safety is shaped by both objective factors, including crime statistics and physical conditions of the neighbourhood, and subjective factors, including personal experiences, social interactions, and media representations (Jackson, 2005).

Perceptions of neighbourhood safety significantly affect subjective well-being and quality of life. Individuals who perceive their neighbourhoods as safe are more likely to participate in outdoor sports, socialize with their neighbours, and participate in neighbourhood activities， because the risk of these activities is reduced. And if a person believes the neighborhood they live in is unsafe, they may avoid going out at night or participating in outdoor activities to reduce the risk of potential threats. (Foster & Giles-Corti, 2008). Conversely, concerns about safety can lead to increased stress, anxiety, and social withdrawal, negatively impacting physical and mental health outcomes (Imran et al., 2020).

A key aspect of safety is the perception of crime and criminal activity within the neighbourhood. Residents' perception of crime risk and fear of victimization significantly affect their daily lives, influencing their mobility patterns, social interactions, and overall well-being. Previous research has found that people who perceive their neighbourhoods as unsafe are more likely to experience higher levels of stress, anxiety, and psychological distress (Carpiano et al., 2011). In addition, perceived safety is strongly linked to residents' use of public spaces and neighbourhood resources, with individuals feeling safer in areas with well-lit streets, visible law enforcement presence, and active neighbourhood involvement (Park & Garcia., 2020).

Safety perceptions are also influenced by social factors such as neighbourhood social cohesion and social capital. Neighbourhoods characterized by strong social ties and collective effectiveness tend to foster a greater sense of safety among residents because neighbourhood members are more likely to look out for each other and work together to solve safety problems (Berkman et al., 2000). Otherwise, neighbourhoods with high levels of social disorder and limited social cohesion may experience higher levels of crime and disorder, leading residents to perceive their environment as less safe.

Subjective well-being and its determinants

Subjective well-being (SWB) is an individual's overall evaluation of their life, including life satisfaction, happiness, positive impact and other dimensions (Maddux, 2017; Skevington, &

Böhnke, 2018). It is a subjective and multi-dimensional structure that is influenced by a wide range of factors, including individual, social and environmental determinants.

At the heart of understanding subjective well-being are two key components: life satisfaction and happiness. Life satisfaction refers to a cognitive, evaluative process in which individuals assess the quality of their lives against criteria of their own choosing (Frisch, 2005). This dimension of well-being is relatively stable and reflects a person's overall satisfaction with life circumstances, accomplishments, and alignment with personal goals and values. It includes assessments in specific areas such as work, health, family and leisure activities. High life satisfaction indicates that individuals consider their living conditions to be fulfilling and close to their ideal standards.

Happiness, on the other hand, is more emotional and transient. It includes the presence of positive emotions and moods, such as contentment, enthusiasm and the relative absence of negative emotions like sadness and anger (Gruber et al., 2011). Happiness is more likely to fluctuate based on daily experiences and changes in immediate circumstances. Together, life satisfaction and happiness provide a comprehensive SWB picture that balances long-term, stable assessments with short-term, emotional experiences.

One of SWB's key determinants is social relationships and support networks. Research shows that individuals with strong social connections and supportive relationships tend to report higher levels of life satisfaction and happiness (Fuller-Iglesias, 2015). Social support from family, friends and neighbourhood members are vital for buffering stress, enhancing resilience and promoting emotional well-being (Thoits, 2011). In addition, belonging to cohesive and inclusive neighbourhoods where individuals feel valued, accepted, and connected can contribute to a sense of belonging and accomplishment, further enhancing subjective well-being (Sadeghi et al., 2022).

A sense of safety in a neighbourhood environment also has an impact on subjective well-being, with those who perceive their neighbourhoods as safe and free of crime and violence more likely to experience higher levels of life satisfaction and overall well-being (Carpiano et al., 2011). A sense of safety enables individuals to participate in social activities, take advantage of neighbourhood resources, and build positive relationships with their neighbours, enhancing their sense of belonging and connection to the neighbourhood. Studies have also shown that economic safety is fundamental to a sense of personal stability, autonomy, and overall life satisfaction (Diener et al., 2018). Research has shown that individuals living in socioeconomically disadvantaged neighbourhoods or facing financial hardship are more likely to experience lower levels of subjective well-being due to increased stress, financial strain, and limited access to resources and opportunities (Kahneman & Deaton, 2010).

Predictably, individual characteristics such as personality characteristics, coping strategies and resilience play a major role in the formation of subjective well-being. Positive personality traits, such as optimism, gratitude, and resilience, are associated with higher life satisfaction and happiness, while negative personality traits, such as neuroticism and pessimism, are

associated with lower happiness (Diener et al., 2009). Effective coping strategies and adaptive responses to stress and adversity can buffer negative life events and enhance an individual's overall well-being (Jiménez et al., 2012).

Neighbourhood ethnic diversity and its effects

Neighbourhood diversity refers to the presence of individuals from various cultural, ethnic, and socioeconomic backgrounds within a neighbourhood. It encompasses both demographic diversity, such as racial and ethnic composition, as well as diversity in terms of socioeconomic status, education, and occupation (Letki, 2008).

Research suggests that neighbourhood ethnic diversity can have both positive and negative effects on neighbourhood dynamics and individual outcomes. On one hand, ethnic diversity can foster intergroup contact, cross-cultural understanding, and social cohesion by exposing individuals to different perspectives, customs, and experiences (Putnam, 2007). Contact theory posits that meaningful interactions between individuals from diverse backgrounds can reduce prejudice, increase empathy, and promote social harmony (Hodson et al., 2018). Moreover, diverse neighbourhoods may offer a rich type of cultural resources, amenities, and opportunities for residents to engage in multicultural experiences and activities (Chen & Tse, 2020). These interactions can foster a sense of unity, mutual respect, and shared identity among residents, contributing to stronger social ties and collective efficacy (Putnam, 2007).

On the other hand, neighbourhood ethnic diversity may also give rise to challenges such as social fragmentation, ethnic tensions, and conflicts stemming from cultural differences and socioeconomic disparities (Meer & Tolsma, 2014). Research has documented instances of social polarization and segregation within diverse neighbourhoods, where residents may self-segregate along racial, ethnic, or socioeconomic lines, leading to limited intergroup interactions and social cohesion (Bettencourt et al., 2019). Moreover, perceived threats to social identity and status resulting from increased diversity can trigger feelings of anxiety, unsafety, and social withdrawal among certain individuals, undermining neighbourhood trust and solidarity (Croucher & Cronn-Mills, 2018).

Current study

This study builds on existing research on neighbourhood social cohesion, perceived safety, and subjective well-being in the Netherlands to explore the interaction between these factors and the moderating role of neighbourhood ethnic diversity. While previous research has extensively explored the relationship between neighbourhood characteristics and individual outcomes, there are still gaps in understanding the specific role of neighbourhood ethnic diversity, particularly in residents' perceptions of the presence of people with migration background.

The main focus of this study is to examine the extent to which social cohesion and perceived safety affect the well-being of neighbourhood residents, while considering the moderating effect of neighbourhood ethnic diversity on these relationships. I predict that:

Higher neighbourhood social cohesion is positively correlated with residents' subjective well-being, which is manifested as higher life satisfaction and happiness. This hypothesis is based on previous research showing that cohesive neighbourhoods promote social support networks and positive social interactions, thereby improving residents' subjective well-being (Cramm et al., 2013; Carpiano et al., 2011).

The positive safety perception in the neighbourhood is positively correlated with the subjective well-being of residents. I expected that people who perceived their neighbourhoods to be safe would report higher levels of life satisfaction and overall well-being because of reduced stress and anxiety (Diener et al., 2018; Krefis et al., 2018).

Neighbourhood ethnic diversity can regulate the relationship between neighbourhood social cohesion and subjective well-being, safety perception and subjective well-being. I expect there can be both positive and negative effects of cohesion and safety on subjective well-being to be diminished in more diverse neighbourhoods, as the presence of multicultural backgrounds can lead to challenges such as social fragmentation and cultural tension (Putnam, 2007), however contact theory holds that meaningful interactions between individuals from different backgrounds can promote social cohesion (Hodson et al., 2018).

To test these hypotheses, questionnaire data from the 2020 LISS dataset are used. The datasets included responses from 3,332 individuals from different neighbourhoods in the Netherlands and 2,663 individuals participate in the neighbourhood perceptions survey. Neighbourhood social cohesion is measured using indicators such as residents' sense of belonging and mutual trust, while safety perceptions will be assessed based on residents' subjective assessments of day and night safety. Subjective well-being will be measured using criteria that assess life satisfaction and happiness. In addition, I will explore residents' perceptions of neighbourhood ethnic diversity, paying particular attention to their satisfaction with the proportion of people with foreign origin in their neighbourhoods.

Data and methods

In this study, I use data of neighbourhood perceptions from the LISS (Longitudinal Internet Studies for the Social sciences) panel collected in the Netherlands from 06-07-2020 to 28-07-2020 and data of personality from 04-05-2020 to 30-06-2020. The LISS panel is a research platform based on real probability samples taken by the Netherlands Population Registry and aims to ensure an accurate representation of the Dutch population. Made up of 5,000 households (approximately 7,500 individuals aged 16 and over) drawn from a statistical Netherlands sample, participants joined by invitation and simple computer and internet connections were provided to families unable to participate. Members complete online questionnaires totaling about 60 minutes each month and receive monetary rewards. The LISS Core study is repeated annually, tracking changes in the lives of members, and there is plenty of room for additional research. Fully operational since October 2007, all data collected can be used for research through the LISS data archive (*How It Works - LISS Panel*, 2023).

To create a comprehensive dataset for our analysis, I combine detailed background information on Dutch households with neighbourhood perception and personality data. Background data includes key demographic variables such as gender, age, family size, and education level. These variables are controls for explaining individual differences that may affect the results of the study.

The dependent variables are life satisfaction and happiness, they were assessed through a series of questions, in which life satisfaction was determined by questions including "How satisfied are you with the life you lead at the moment?" , "In most ways my life is close to my ideal", etc. Happiness is defined by "On the whole, how happy would you say you are?" ", "How do you feel at the moment? ", "In general, how do you feel?" Independent variables include neighbourhood social cohesion and safety perceptions measures. Neighbourhood social cohesion is assessed by trust issues "You can trust people in this neighbourhood" and shared values "People in this neighbourhood have the same values". Safety perceptions were assessed by daytime and nighttime safety questions "How safe do you feel in your neighbourhood when walking alone during the day?", "When you're walking around the neighbourhood by yourself at night, how safe do you feel in the neighbourhood?"

In addition, I examine the moderating effect of neighbourhood on the perception of ethnic diversity, as measured by the question "What do you estimate, what percentage of the residents of your neighbourhood are of foreign origin?" This variable allowes us to explore how perception with neighbourhood ethnic diversity affects the relationship between neighbourhood social cohesion and safety perceptions.

Dependent Variables

In this study, I focus on two main dependent variables: life satisfaction and happiness. These variables were measured using a composite scale derived from multiple survey questions, each designed to capture different dimensions of respondents' overall subjective well-being and emotional state.

Life satisfaction, as a dependent variable, is determined by a series of questions that assess how individuals perceive and evaluate various aspects of their lives. The questions used to measure life satisfaction include:

"How satisfied are you with the life you lead at the moment?" (measured on a scale from 0 to 10)

"In most ways, my life is close to my ideal." (measured on a scale from 1 to 7)

"The conditions of my life are excellent." (measured on a scale from 1 to 7)

"I am satisfied with my life." (measured on a scale from 1 to 7)

"So far, I have gotten the important things I want in life." (measured on a scale from 1 to 7)

“If I could live my life over, I would change almost nothing.” (measured on a scale from 1 to 7)

Together, these questions form a comprehensive scale that captures respondents' cognitive judgments about their lives as a whole. The responses to these questions were aggregated into a composite score that represents overall life satisfaction. Using multiple items to measure life satisfaction allows for a more nuanced and reliable assessment of this structure because it takes into account different aspects of an individual's life, from overall satisfaction to the achievement of personal goals and ideals.

Happiness, another key dependent variable in this study, is defined through questions designed to measure respondents' overall emotional state and general well-being. Questions used to measure happiness include:

"On the whole, how happy would you say you are?" (measured on a scale from 0 to 10)

"How do you feel at the moment?" (measured on a scale from 1 to 7)

"In general, how do you feel?" (measured on a scale from 1 to 7)

These items combine to form a comprehensive measure of well-being that reflects both transient emotional states and a more stable, general sense of well-being. By including both immediate and general assessments, this scale captures the essence of happiness fluctuations, as well as its more permanent aspects. The combined score on these questions provides a powerful measure of respondents' overall well-being.

Responses to each set of questions were standardized and then averaged to construct a comprehensive scale of life satisfaction and happiness. This ensures that each question contributes equally to the total score, allowing for a balanced and comprehensive measurement of each structure. The resulting composite scores were then used to analyze their relationship to various predictors, including neighbourhood trust, shared values, perceptions of safety and the perceived percentage of foreign residents in the neighbourhood.

Independent Variables

The independent variables in this study focus on two key neighbourhood characteristics: neighbourhood social cohesion and safety perceptions. Neighbourhood social cohesion is an important independent variable in the study, which represents the strength of social bonds and mutual trust among residents within a neighbourhood. This variable was measured using the LISS dataset, which collects data from a representative sample of Dutch households. Specifically, neighbourhood social cohesion was assessed using two items: "You can trust people in this neighbourhood" and "people in this neighbourhood share the same values." The first question, "you can trust people in this neighbourhood," directly measures how much residents trust their neighbours. Trust is a fundamental component of social cohesion because it underpins the willingness of individuals to cooperate and support each other. Previous research has highlighted the importance of trust in promoting collective efficiency and

reducing crime rates within neighbourhoods (Bruinsma et al, 2013). The second question, "People in this neighbourhood share the same values," reflects the extent to which residents recognize a common set of beliefs and norms within the neighbourhood. Shared values are essential for building solidarity and a sense of solidarity among neighbours, which can strengthen cooperation and mutual support (Schiefer & Van der Noll, 2017).

Safety perceptions in the neighbourhood are important independent variables in this study as they capture how safe residents feel when they walk alone in their neighbourhood during the day and night. They are measured using two survey items: "How safe do you feel in your neighbourhood when you walk alone during the day?" and "How safe do you feel in your neighbourhood when you walk alone at night?"

Participants responded to these items on a Likert scale, which ranges from 1 to 4, where: 1 indicates "very unsafe", 2 indicates "a bit unsafe", 3 indicates "a bit safe", 4 indicates "very safe". This scale allows us to quantify the subjective safety perceptions of residents in a structured manner. Higher scores on this scale reflect a greater sense of safety, whereas lower scores indicate a feeling of unsafety. It provides a simple yet effective way to measure the intensity of individuals' feelings about their safety. It enables the capture of variations in safety perceptions, which are essential for understanding how these perceptions impact overall subjective well-being. In the analysis, I treat daytime and nighttime safety perceptions as distinct variables because the sense of safety can significantly differ depending on the time of day. This distinction helps us to capture the comprehensive picture of how safety perceptions influence residents' overall satisfaction with their neighbourhood.

Moderating Variable

This study introduces a moderating variable to explore their impact on the relationship between independent and dependent variables of life satisfaction and happiness. It is the perceived neighbourhood ethnic diversity and is assessed by the following questions:

"What do you estimate, what percentage of the residents of your neighbourhood are of foreign origin?" (Measurement range from 0% to 100%)

This variable measures respondents' perceptions of ethnic diversity within their neighborhood. It reflects subjective estimates of the proportion of residents of foreign descent, including immigrants and minorities. Using perceived neighborhood ethnic diversity as a moderating variable, it is possible to examine how the perception of living in a ethnic diverse neighborhood affects the relationship between the major predictors (trust, shared values, and perceived safety) and the dependent variables of life satisfaction and happiness.

This moderating variable helps shed light on whether and how the effects of neighbourhood trust, shared values, and a safety perception on life satisfaction and happiness depend on an individual's perception of ethnic diversity.

Control Variables

Several control variables are included to account for potential confounding factors that may influence the relationship between neighbourhood social cohesion, safety perceptions and ethnic diversity perceptions. These control variables help isolate the effects of the independent and moderating variables, providing a clearer understanding of their impact on the dependent variables. The control variables used in this study are gender, individual monthly net income, number of household members, ethnic origin, and age of the household member.

Gender is a significant demographic variable that can influence perceptions of neighbourhood social cohesion, safety, and life satisfaction. Previous research has shown that men and women may have different experiences and perceptions of their neighbourhood environments. For instance, women might perceive higher levels of safety concerns, especially when walking alone at night, compared to men (Loukaitou-Sideris, 2014). By controlling for gender, this study aims to account for these potential differences and ensure that the results are not biased by gender-specific perceptions.

The number of household members is another control variable in which larger households may have different dynamics and resource allocations compared to smaller households, which can influence overall life satisfaction and perceptions of the neighbourhood. For example, households with more members might benefit from a greater sense of social support and safety, potentially leading to higher neighbourhood satisfaction (Liu et al., 2019). Conversely, larger households might also face more challenges, such as noise and crowding, which could negatively impact life satisfaction. Controlling for the number of household members allows the study to consider these varying household dynamics.

Age is a factor that affects individuals' experiences and perceptions of their neighbourhoods. Older residents may have different priorities and concerns compared to younger residents. For instance, older adults might place a higher emphasis on neighbourhood safety and social cohesion due to concerns about mobility and vulnerability (Won et al., 2016). Younger residents, on the other hand, might prioritize amenities and social opportunities. By including age as a control variable, the study can account for these generational differences and their potential impact on subjective well-being.

I also use the individual monthly net income in euros as the control variable. This variable accounts for an individual's economic status, which can significantly affect their perceptions of social cohesion and safety. Higher income levels are often associated with better access to resources, improved living conditions and safer neighbourhoods, which may influence how individuals respond to environmental issues in their neighbourhoods (Ziersch et al., 2005). By controlling for individual monthly net income, it is possible to isolate the effects of neighbourhood social cohesion, perceived safety and ethnic diversity on overall well-being.

To ensure the accuracy of the analysis, a control variable, ethnic origin, is added to capture the ethnic background diversity of the participants. Ethnic origin variables are divided into the following categories: 0 for native Dutch background, 101 for First generation foreign, Western background, 102 for First generation foreign, non-western background, 201 for

Second generation foreign, Western background, and 202 for Second generation foreign, non-western background. The inclusion of ethnic origin variables allows us to consider the potential effects of cultural and intergenerational diversity on life satisfaction and happiness, thereby more accurately separating the effects of neighborhood cohesion, safety, and especially the perception of ethnic diversity on subjective well-being (Chetty et al., 2022 & Putnam, 2007). Instead of simply comparing native Dutch background and population with immigrantion background, I chose to use separate variables for different generations of immigrant backgrounds. The generational differences reflect the unique experiences and challenges faced by first-generation immigrants, who may face more immediate acculturation pressures and potential discrimination than second-generation immigrants, who may have stronger roots and social networks in the country (Noels & Clément, 2015). Second, distinguishing between Western and non-Western backgrounds helps to highlight varying degrees of cultural differences and blending experiences, these factors can significantly influence subjective well-being.

Analytical approach

In the empirical analysis, I use 4 linear regression models for each dependent variable to examine the relationship between neighbourhood characteristics and subjective well-being. Given our data structure, which includes individuals nested within households, I avoid the potential non-independence of the observations by dropping some respondents who share a household with others in the dataset. This allows to address the problem of correlations within families, which, if ignored, can lead to standard errors of underestimation. Multiple individuals from the same family may have related perceptions and experiences of their neighbourhood. Regarding this and prior to the analysis, I optimize the dataset by excluding respondents who shared their households with others in the dataset and drop useless data. Totally 787 respondents are removed. This step reduce potential biases that could be caused by correlations within the family. The program meets the goal of accurately assessing the relationship between neighborhood-level variables and individual outcomes without the confounding influence of common family characteristics.

Table 1 shows the descriptive statistics of the variables, including the mean, standard deviation, minimum, and maximum values for each variable.

Table 1. Descriptive statistics (N = 1,876).

	Mean / %	**Std. dev.**	**Min**	**Max**
Safety	3.743	0.43	1	4
Social cohesion	3.51	0.833	1	5
Ethnic diversity	2.183	1.839	0	10
Gender	1.529	0.499	1	2
Age	56.52	17.094	18	95
Household members	2.243	1.191	1	8
Monthly net income(1000 euros)	1.818	1.095	0	10.8

Native Dutch background	83.69%		0	1
First generation foreign, Western background	3.84%		0	1
First generation foreign, non-western background	4.32%		0	1
Second generation foreign, Western background	5.54%		0	1
Second generation foreign, non-western background	2.61%		0	1
Life satisfaction	5.477	1.153	0.833	7.5
Happiness	6.223	1.07	0.667	8

Life satisfaction and happiness models

Model 1: Baseline model

In the first model, I examined the direct impact of social cohesion (neighborhood trust, shared values) and safety perceptions (day and night) on life satisfaction and happiness. These two models establish a basic understanding of how these core variables are related to life satisfaction and happiness, regardless of any interaction effects or other variables.

Model 2: Add control variables

In this model, in addition to the variables in Model 1, I also added control variables for gender, age, net income, family size, and ethnic origin. This ensures that the observed relationships are not confounded by these demographic factors, providing a more robust and accurate understanding of the determinants of life satisfaction and happiness.

Model 3: Interaction effect

Based on the baseline model, neighborhood ethnic diversity was introduced as the main influencing factor. In addition, I included its interaction with social cohesion and perception of safety. This model allows us to examine how the relationship between social cohesion and perceived safety and two dependent variables (life satisfaction and happiness) is modulated by neighborhood ethnic diversity.

Model 4: Complete model

The final model builds on Model 3 by adding control variables to include all variables. This step allows a detailed investigation of how different factors interact and affect life satisfaction and happiness.

For life satisfaction and happiness, multiple regression analysis was used to estimate the coefficients of the independent variables and their interactions. By gradually increasing the variables and interactions between the four models, I systematically explored direct, moderate, and controlled relationships. This approach provides a comprehensive understanding of the factors that influence life satisfaction and happiness in the context of neighborhood dynamics.

Results

I conducted a study of 4 sets of regression analysis models for both life satisfaction and happiness. The results indicates that neighbourhood social cohesion and safety perceptions significantly affect life satisfaction and happiness to varying degrees. The numbers in the tables represent coefficients, indicating the size of the impact of each variable on life satisfaction or happiness. The numbers in parentheses represent standard errors, and the asterisks indicate the level of statistical significance (* p < .05, ** p < .01, *** p < .001). The specific results are shown in the following two tables.

Table 2. Effects of various variables on life satisfaction (N = 1,876).

	(1)	(2)	(3)	(4)
Social cohesion	0.319***	0.285***	0.295***	0.274***
	(0.0323)	(0.0323)	(0.0498)	(0.0494)
Safety	0.413***	0.384***	0.376**	0.350**
	(0.0642)	(0.0646)	(0.116)	(0.117)
Gender		0.137*		0.135*
		(0.0546)		(0.0548)
Age		0.00358*		0.00285
		(0.00163)		(0.00166)
Number of household members		0.111***		0.106***
		(0.0226)		(0.0227)
Monthly net income		0.114***		0.112***
		(0.0248)		(0.0249)
First generation foreign, Western background (ref. Native Dutch background)		-0.289*		-0.275*
		(0.130)		(0.130)
First generation foreign, non-western background		-0.424***		-0.368**
		(0.124)		(0.127)
Second generation foreign, Western background		0.00442		0.0203
		(0.109)		(0.109)
Second generation foreign, non-western background		-0.209		-0.183
		(0.159)		(0.159)
Ethnic diversity			-0.0246	-0.0266
			(0.0969)	(0.0967)
Social cohesion X Ethnic diversity			-0.00175	-0.00167
			(0.0155)	(0.0154)
Safety X Ethnic diversity			-0.00664	-0.000573
			(0.0282)	(0.0281)
Constant	2.816***	2.207***	3.156***	2.499***

	(0.229)	(0.287)	(0.425)	(0.475)

Table 3. Effects of various variables on happiness (N = 1,876).

	(1)	(2)	(3)	(4)
Social cohesion	0.242***	0.214***	0.236***	0.224***
	(0.0301)	(0.0303)	(0.0465)	(0.0464)
Safety	0.421***	0.413***	0.226*	0.231*
	(0.0600)	(0.0608)	(0.108)	(0.110)
Gender		0.100		0.0904
		(0.0513)		(0.0515)
Age		0.00710***		0.00644***
		(0.00153)		(0.00156)
Number of household members		0.0508*		0.0478*
		(0.0212)		(0.0213)
Monthly net income		0.0734**		0.0737**
		(0.0234)		(0.0234)
First generation foreign, Western background (ref. Native Dutch background)		-0.129		-0.117
		(0.122)		(0.122)
First generation foreign, non-western background		-0.132		-0.0839
		(0.117)		(0.119)
Second generation foreign, Western background		-0.0457		-0.0284
		(0.102)		(0.102)
Second generation foreign, non-western background		-0.114		-0.0959
		(0.149)		(0.149)
Ethnic diversity			-0.178*	-0.161
			(0.0904)	(0.0908)
Social cohesion X Ethnic diversity			-0.00681	-0.00812
			(0.0145)	(0.0145)
Safety X Ethnic diversity			0.0420	0.0438
			(0.0263)	(0.0264)
Constant	3.805***	3.142***	4.659***	3.907***
	(0.214)	(0.270)	(0.397)	(0.446)

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The life satisfaction scale consisted of six items (α = .920, mean inter-item covariance = 1.223), and the happiness scale consisted of three items (α = .857, mean inter-item covariance = 1.035). The high Cronbach's alpha values indicate that both the life satisfaction and happiness scales have good internal consistency, meaning the items within each scale are well-correlated and reliably measure their respective constructs.

Life satisfaction

Table 2 presents regression results for life satisfaction, as assessed by a series of nested models. Each model looks at the effects of various predictors, control variables, and interactions.

Model 1 includes the main predictors. The results showed that social cohesion ($\beta = 0.319$, $p < 0.001$) and sense of safety ($\beta = 0.413$, $p < 0.001$) significantly positively affected life satisfaction, indicating that the higher the social cohesion and sense of safety, the higher the life satisfaction.

Model 2 introduces demographic control variables, including ethnic origin. Social cohesion ($\beta = 0.285$, $p < 0.001$) and safety ($\beta = 0.384$, $p < 0.001$) remained significant. Gender had a positive effect ($\beta = 0.137$, $p = 0.012$), indicating that women's life satisfaction was slightly higher than men's. Age ($\beta = 0.00358$, $p = 0.028$) also had a slight positive effect. The number of family members ($\beta = 0.111$, $p < 0.001$) and monthly net income ($\beta = 0.114$, $p < 0.001$) were significantly positively correlated with life satisfaction. The ethnic origin variables indicated that first-generation foreigners from a Western background ($\beta = -0.289$, $p = 0.026$) and first-generation foreigners from a non-Western background ($\beta = -0.424$, $p < 0.001$) reported lower life satisfaction compared to individuals from a Dutch background. There is no significant difference in life satisfaction between the second generation immigrants and the Dutch.

Model 3 adds ethnic diversity and interaction terms, but excludes demographic control variables. Ethnic diversity itself was not significant ($\beta = -0.0246$), nor were the interactions between social cohesion and ethnic diversity ($\beta = -0.00175$) and between safety and ethnic diversity ($\beta = -0.00664$). However, social cohesion ($\beta = 0.295$, $p < 0.001$) and sense of safety ($\beta = 0.376$, $p = 0.001$) continued to have a significant positive impact on life satisfaction.

Model 4 combines all variables, including demographic control, ethnic origin, ethnic diversity, and interaction conditions. Social cohesion ($\beta = 0.274$, $p < 0.001$) and safety ($\beta = 0.350$, $p = 0.003$) remained significant predictors. Gender ($\beta = 0.135$, $p = 0.014$), number of family members ($\beta = 0.106$, $p < 0.001$), monthly net income ($\beta = 0.112$, $p < 0.001$) continued to be significant. Ethnic origin variables continue to show that first-generation immigrants, particularly those from non-Western backgrounds, report lower life satisfaction.

Overall, the results suggest that social cohesion and a sense of safety are key determinants of life satisfaction. Demographic factors, including gender, age, number of family members and monthly net income, play an important role. The ethnic origin variable emphasizes that

first-generation immigrants, especially those from non-Western backgrounds, have lower life satisfaction. However, ethnic diversity did not significantly moderate the effects of social cohesion and safety on life satisfaction.

Happiness

Table 3 presents regression results for happiness, assessed using 4 nested models. Each model assesses the influence of various predictors, control variables, and interaction effects.

Model 1 includes the main predictors. The results showed that social cohesion ($\beta = 0.242$, $p < 0.001$) and sense of safety ($\beta = 0.421$, $p < 0.001$) significantly positively affected happiness, indicating that the higher the level of social cohesion and sense of safety, the higher the sense of happiness.

Model 2 introduces demographic control variables, including ethnic origin. Social cohesion ($\beta = 0.214$, $p < 0.001$) and safety ($\beta = 0.413$, $p < 0.001$) remained significant. Age ($\beta = 0.007$, $p < 0.001$) has a positive effect on happiness, indicating that older people are happier. The number of family members ($\beta = 0.051$, $p = 0.017$) and monthly net income ($\beta = 0.073$, $p = 0.002$) were positively correlated with happiness. With the exception of a non-significant negative coefficient for first-generation immigrants from non-Western backgrounds ($\beta = -0.132$), the ethnic origin variables were not significantly different in terms of happiness in most categories compared to the Dutch background group.

Model 3 includes neighborhood ethnic diversity and interaction terms, but does not include demographic control variables. Ethnic diversity itself had a significant negative effect on happiness ($\beta = -0.178$, $p = 0.049$). There was no significant interaction between social cohesion and ethnic diversity ($\beta = -0.00681$) and safety with ethnic diversity ($\beta = 0.0420$). Social cohesion ($\beta = 0.236$, $p < 0.001$) and safety ($\beta = 0.226$, $p = 0.036$) continued to have a positive impact on happiness.

Model 4 combines all variables, including demographic control, ethnic origin control, ethnic diversity, and interaction conditions. Social cohesion ($\beta = 0.224$, $p < 0.001$) and safety ($\beta = 0.231$, $p = 0.036$) remained significant predictors. Age ($\beta = 0.00644$, $p < 0.001$), number of family members ($\beta = 0.0478$, $p = 0.025$), monthly net income ($\beta = 0.0737$, $p = 0.002$) remained significant. In most categories, the ethnic origin variables continued to show non-significant differences in happiness, suggesting that being an immigrant or having an immigrant background had no significant effect on happiness in this sample.

The results show that social cohesion and safety perceptions are key determinants of happiness. Demographic factors such as age, number of family members, and monthly net income also play an important role. Ethnic origin variables showed that immigrant background had no significant effect on happiness. Ethnic diversity had a negative effect on happiness, but it did not interact significantly with neighbourhood social cohesion or safety.

Interaction with ethnic diversity

When looking at how ethnic diversity interacts with key variables such as neighbourhood social cohesion and safety perceptions on life satisfaction and happiness, the results show a consistent pattern. The positive effects of social cohesion and safety perceptions on life

satisfaction and happiness do not change significantly with the change of ethnic diversity level. This consistency suggests that these factors are fundamentally conducive to subjective well-being in diverse neighborhood contexts. The primary effect of ethnic diversity on life satisfaction is not statistically significant, suggesting that ethnic diversity itself do not significantly affect life satisfaction when other factors are taken into account. There was a slight indication that ethnic diversity might have a negative effect on happiness, but this effect is weakened when control variables are added.

The lack of significant interaction effects between ethnic diversity and welfare factors such as neighbourhood social cohesion and safety perceptions can be attributed to several reasons. First, Allport's contact hypothesis holds that under certain conditions, inter-group contact can reduce prejudice and improve social relations (Allport, 1954). In neighborhoods with higher levels of safety and social cohesion, these positive interactions may mitigate the potential negative effects of ethnic diversity on happiness. However, the relatively weak interaction effect may also be due to the complexity of social trust and integration in multi-racial neighborhoods. Research suggests that even when safety is perceived to be high, the lack of a deep trust relationship may reduce the positive effects of safety on well-being (Putnam, 2007).

In addition, the difference between perceived and actual feelings of safety may also play a role. Even in low-crime neighborhoods, residents may feel unsafe because of stereotypes or prejudices, diminishing the impact of interactions on happiness (Sampson, 2008). The strength of the social support network may also influence these results. The positive effects of safety perceptions on happiness are even more pronounced in multiracial neighborhoods with strong social support networks. Conversely, weak social support networks may reduce the mitigating effects of perceived safety (Thoits, 2011). These subtle dynamics suggest that while safety perceptions and social cohesion are generally beneficial, their interaction with ethnic diversity is influenced by deeper issues of social integration and neighbourhood trust.

Conclusions & discussion

The study examines the effects of neighbourhood social cohesion, safety perceptions, and ethnic diversity on life satisfaction and happiness, while taking into account demographic control factors include gender, age, number of family members, monthly net income, and background of ethnic origin. The findings highlight the importantance of neighbourhood social cohesion and safety in improving life satisfaction and happiness, while also revealing the complex interactions between these variables and ethnic diversity.

The analysis confirmed that both neighbourhood social cohesion and perceptions of neighbourhood safety were strong predictors of life satisfaction and happiness. Across all models, higher levels of social cohesion and safety were consistently associated with higher life satisfaction and happiness. These results are consistent with previous research showing the importance of neighborhood bonds and a safe environment for subjective well-being (Helliwell & Putnam, 2004).

Ethnic origin variables differentiate between different generational and ethnic backgrounds,,, people from first-generation non-Western backgrounds reported significantly lower life satisfaction than those from Dutch backgrounds. This finding suggests that cultural

integration and potential experiences of discrimination or socioeconomic disadvantage could be a key role in shaping subjective well-being (Berry, 1997).

Surprisingly, neighbourhood ethnic diversity did not show a significant direct effect on life satisfaction or happiness, nor did it significantly mediate the effects of neighbourhood social cohesion and safety perceptions. This may be due to the different contexts in which ethnic diversity operates and may depend on the level of neighborhood integration and social policies that promote inclusion (Alesina & La Ferrara, 2002). While the findings strongly support the positive role of neighbourhood social cohesion and safety, the non-significant role of ethnic diversity requires more in-depth exploration. The measures of ethnic diversity used in this study may not capture qualitative aspects of interracial interactions that may affect subjective well-being. Future research could benefit from more detailed measures of neighborhood integration and the quality of social interactions between different ethnic groups.

In addition, the negative association between life satisfaction from first-generation non-Western backgrounds raises important questions about the socio-economic and cultural challenges faced by these groups. Policymakers should consider targeted interventions to improve the integration and support systems of immigrant populations, which in turn can improve their subjective well-being.

Combining the results for life satisfaction and happiness, I observe a consistent pattern: neighborhoods characterized by strong social cohesion and a high sense of safety foster greater overall subjective well-being. Life satisfaction and happiness, although distinct constructs, both reflect important dimensions of subjective well-being. Life satisfaction captures a cognitive evaluation of one's life circumstances, while happiness encompasses both transient emotional states and a more stable sense of subjective well-being.

Discussion

Neighbourhood social cohesion and safety perceptions significantly improve life satisfaction and happiness, consistent with existing literature. However, the extent and nature of these effects vary. Safety perceptions may be more important in highly mobile urban areas, while neighbourhood social cohesion could be more important in stable rural areas. First-generation immigrants, especially those from non-Western backgrounds, have lower life satisfaction, reflecting challenges associated with integration, discrimination, and acculturation (Berry, 1997). This highlights the need for targeted policies to support the happiness of migrants.

Ethnic diversity has a negative effect on happiness but not on life satisfaction, suggesting that it poses a challenge for immediate emotional happiness but not for cognitive life assessments (Putnam, 2007). On the contrary, research has shown that ethnic diversity can enhance cultural richness and inclusion and improve happiness (Stolle et al., 2008).

Policies that strengthen neighbourhood social cohesion and safety can significantly improve subjective well-being. Inclusive policies that promote cultural integration, language acquisition, and employment opportunities are essential to improve migrants' life satisfaction. Interventions based on the Allport contact hypothesis can promote positive intergroup relationships and mutual understanding, mitigating the slight negative effects of diversity on

happiness (Allport, 1954).

In addition, the study is not without limitations. Cross-sectional design limits the ability to infer causality. Longitudinal studies are necessary to establish causality and examine changes in life satisfaction and happiness over time. In addition, relying on self-reported measures may introduce response bias. Objective measures, including neighborhood characteristics and safety, can provide a fuller picture of the factors that influence subjective well-being.

Another point worth discussing is that the study did not control for (perceived) poverty, affluence, or income in the neighbourhood. The considering is that controlling for these economic variables may obscure the main focus of the study, which is to study social and cultural dynamics within a neighborhood, which can be an independent predictor of well-being regardless of economic status. And perceptions of a neighborhood's economic status can be highly subjective and fluid. Influenced by personal experiences and prejudices, different residents may have different views of affluence or poverty. Including such subjective measures may affect objective assessments of social cohesion and safety. Economic status undoubtedly affects happiness, and economic affluence may improve life satisfaction by improving access to resources and opportunities. In this study, individuals' income status was used as the control variable. Consider that in order to maintain a clear focus on the social dimension, there is still no control for perceived neighbourhood poverty, affluence or income.

While neighbourhood social cohesion and safety perceptions emerge as key determinants of subjective well-being, the role of ethnic diversity and ethnic origin background underscores the need for a nuanced approach in promoting life satisfaction and happiness. Future research should continue to explore these complex interactions, providing insights for more effective and inclusive policies.

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